



November 10, 2014
7:00 P.M.

CITY COUNCIL AGENDA

NOTICE TO READERS: City Council meeting packets are prepared several days prior to the meetings. Timely action and short discussion on agenda items is reflective of Council's prior review of each issue with time, thought and analysis given. Many items have been previously discussed at a Council Study Session.

Members of the audience are invited to speak at the Council meeting. Citizen Communication (Section 7) is reserved for comments on any issues or items pertaining to City business except those for which a formal public hearing is scheduled under Section 10 when the Mayor will call for public testimony. Please limit comments to no more than 5 minutes duration.

1. **Pledge of Allegiance**
2. **Roll Call**
3. **Consideration of Minutes of Preceding Meetings** (October 27, 2014)
4. **Report of City Officials**
 - A. City Manager's Report
5. **City Council Comments**
6. **Presentations**
 - A. 2014 IEDC Excellence in Economic Development Award
7. **Citizen Communication (5 minutes or less)**

The "Consent Agenda" is a group of routine matters to be acted on with a single motion and vote. The Mayor will ask if any Council member wishes to remove an item for separate discussion. Items removed from the consent agenda will be considered immediately following adoption of the amended Consent Agenda.

8. **Consent Agenda**
 - A. Agreement Concerning the City Contribution to Hyland Village Subdivision Improvements
 - B. City Hall Ice Melt Design and Contract Administration Services
 - C. Municipal Court Public Defender Services Contract
 - D. Wastewater Collection System Improvement Project/Lining Contract
 - E. Amended Design Services Contract – Westminster Station Infrastructure, Phase One
 - F. Second Reading of Councillor's Bill No. 34 re Strasburg Natural Resource Farm Lease Renewal
9. **Appointments and Resignations**
10. **Public Hearings and Other New Business**
 - A. Public Hearing to Rezone the Westminster Center Urban Reinvestment Plan Site to Specific Plan District
 - B. Councillor's Bill No. 35 Rezoning Westminster Center Urban Reinvestment Plan Site
 - C. Adoption of the Westminster Downtown Specific Plan
11. **Old Business and Passage of Ordinances on Second Reading**
 - A. Second Reading of Councillor's Bill No. 26 Amending W.M.C. re Salaries of Elective Officers
 - A. Councillor's Bill No. 29 Amending Section 10-1-12, W.M.C., re RV Parking on Streets (Tabled 10-13-14)
 - B. Special Legal Counsel Services for Drafting of Collective Bargaining Ordinance (Tabled 10-27-14)
12. **Miscellaneous Business and Executive Session**
 - A. City Council
13. **Adjournment**

NOTE: Persons needing an accommodation must notify the City Clerk no later than noon on the Thursday prior to the scheduled Council meeting to allow adequate time to make arrangements. You can call 303-658-2161/TTY 711 or State Relay or write to lyeager@cityofwestminster.us to make a reasonable accommodation request.

GENERAL PUBLIC HEARING PROCEDURES ON LAND USE MATTERS

- A.** The meeting shall be chaired by the Mayor or designated alternate. The hearing shall be conducted to provide for a reasonable opportunity for all interested parties to express themselves, as long as the testimony or evidence being given is reasonably related to the purpose of the public hearing. The Chair has the authority to limit debate to a reasonable length of time to be equal for both positions.
- B.** Any person wishing to speak other than the applicant will be required to fill out a “Request to Speak or Request to have Name Entered into the Record” form indicating whether they wish to comment during the public hearing or would like to have their name recorded as having an opinion on the public hearing issue. Any person speaking may be questioned by a member of Council or by appropriate members of City Staff.
- C.** The Chair shall rule upon all disputed matters of procedure, unless, on motion duly made, the Chair is overruled by a majority vote of Councillors present.
- D.** The ordinary rules of evidence shall not apply, and Council may receive petitions, exhibits and other relevant documents without formal identification or introduction.
- E.** When the number of persons wishing to speak threatens to unduly prolong the hearing, the Council may establish a time limit upon each speaker.
- F.** City Staff enters a copy of public notice as published in newspaper; all application documents for the proposed project and a copy of any other written documents that are an appropriate part of the public hearing record;
- G.** The property owner or representative(s) present slides and describe the nature of the request (maximum of 10 minutes);
- H.** Staff presents any additional clarification necessary and states the Planning Commission recommendation;
- I.** All testimony is received from the audience, in support, in opposition or asking questions. All questions will be directed through the Chair who will then direct the appropriate person to respond.
- J.** Final comments/rebuttal received from property owner;
- K.** Final comments from City Staff and Staff recommendation.
- L.** Public hearing is closed.
- M.** If final action is not to be taken on the same evening as the public hearing, the Chair will advise the audience when the matter will be considered. Councillors not present at the public hearing will be allowed to vote on the matter only if they listen to the tape recording of the public hearing prior to voting.

CITY OF WESTMINSTER, COLORADO
MINUTES OF THE CITY COUNCIL MEETING
HELD ON MONDAY, OCTOBER 27, 2014, AT 7:00 P.M.

PLEDGE OF ALLEGIANCE

Mayor Atchison led the Council, Staff, and audience in the Pledge of Allegiance.

ROLL CALL

Mayor Herb Atchison, Mayor Pro Tem Faith Winter, and Councillors Bruce Baker, Bob Briggs, Alberto Garcia, Emma Pinter, and Anita Seitz were present at roll call. Also present were City Manager J. Brent McFall, Acting City Attorney Hilary Graham, and City Clerk Linda Yeager.

CONSIDERATION OF MINUTES

Councillor Briggs moved, seconded by Councillor Baker, to approve the minutes of the regular meeting of October 13, 2014, as presented. The motion carried unanimously.

CITY MANAGER'S REPORT

Mr. McFall announced there would be no other meetings tonight following adjournment of this meeting. However, the City Council had called a special meeting to be held in the Council Board Room tomorrow, October 28, beginning at noon. The purpose of the meeting was to convene an executive session to interview finalists for the City Attorney position and to discuss issues that might be subject to negotiation.

COUNCIL REPORTS

Mayor Atchison thanked Debbie Mitchell, General Services Director, support staff in Human Resources, and Councillors Garcia and Pinter for their diligence in spearheading the recruitment of City Attorney candidates, reviewing applications, and conducting initial interviews to narrow the applicant field to group of qualified finalists. He then reminded those present that November 4 was Election Day and urged citizens to exercise their right to vote. Councillor Pinter added there was a 24-hour, 7-day per week ballot box curbside at City Hall for Adams and Jefferson County electors to drop-off their ballots.

Councillor Garcia reported that the City's beautiful sculpture garden at 3915 West 73rd Avenue would rotate art work and unveil new sculptures on November 8. He invited the public to attend. He congratulated Councillor Briggs' alma mater, Westminster High School, on having reached the 5A State Football Competition and wished them success in the tournament. Legacy High School's football team also had won their league and would be competing in the state tournament. Although the high school was located in Broomfield, it was attended by many Westminster youth. He wished them success, too.

Councillor Briggs reported that he was on the Westminster Wolves football team in 1953 when it went to La Junta to play in the state tournament finals. Having lost, it had been a long train ride home. He wished the 2014 team the best of luck and hoped they won the tournament. Additionally, Councillor Briggs invited the public to Coffee and Dessert with City Council at Covenant Village tomorrow, October 28, at 7 p.m. There was no agenda for the event, and Council was interested in hearing from the citizenry.

Councillor Baker congratulated the Legacy High School Band on its outstanding performance during recent competition. Football was not the only activity that the students at Legacy High School did well.

COMMUNITY PLANNING WEEK PROCLAIMED

Councillor Garcia read a proclamation designating the last week in October to be Community Planning Week and presented it to Mac Cummins, Planning Manager.

LENGTH OF SERVICE AWARDS

In celebration of employment anniversaries, the Council was pleased to recognize employees for their length of service to the organization and their families for supporting them throughout their tenure. Councillor Seitz presented certificates and pins for 20 years of service to Danny Fitch and Scott Murdie. Mayor Atchison presented certificates, pins, and a monetary gift for 25 years of service to Linda Brown and Jackie June. Mayor Pro Tem Winter recognized Tracy Haze for 30 years of service and presented him with a certificate and service pin. Councillor Briggs recognized Laura Magnetti and Kevin Sailor for 35 years of service and presented each with a certificate and service pin. Councillor Baker presented Bill Work with a certificate and service pin, congratulating him on 40 years of service to the City. Including other employees with 20 or more years of service that were not able to attend this meeting, their combined years of service totaled 495 years.

CITIZEN COMMUNICATION

Jeremy Rodriguez, Constituent Service Representative for Congressman Ed Perlmutter, announced upcoming events the Congressman would sponsor: a Senior Resource Workshop on November 21 from 9 a.m. to noon; and a District Office Open House on December 6 from noon to 2 p.m.

Paul DesRocher of Smart Commute Metro North explained commuting programs for people using the I-25 corridor. For \$100 monthly, commuters could be one of four passengers traveling in Chevrolet Traverses through the Smart Commute program. DRCOG (Denver Regional Council of Governments) also sponsored My Way to Go so residents traveling from generally the same area in the north corridor could commute with others going to the same general vicinity within the metro area. He encouraged commuting to reduce congestion, enhance air quality, and preserve natural resources.

CONSENT AGENDA

The following items were submitted for Council's consideration on the consent agenda: accept the September Financial Report as presented; accept the third quarter 2014 Insurance Claims Report; authorize the City Manager to sign contracts for legal services on an as-needed basis in a form acceptable to the City Attorney's Office with counsel selected by the City Attorney's Office to advise the Finance Director in formal tax hearings held pursuant to Section 4-1-26, W.M.C.; authorize the City Manager to enter into an agreement for special legal counsel services with the law firm of Clark Baird Smith LLP, in an amount not to exceed \$25,000 in connection with the proposed creation of a collective bargaining ordinance; approve Fleet Maintenance cumulative purchases in 2014 with Dellenbach Chevrolet for the purchase of four vehicles, not to exceed \$110,000 through year end; based on the results of the National Joint Powers Alliance bid, award the bid of an Elgin Street Sweeper to Faris Machinery for \$246,985.50; authorize the City Manager to execute an amended construction engineering services contract for the Orchard Parkway (136th Avenue to 144th Avenue) and 142nd Avenue (Orchard Parkway to Huron Street) Project with JR Engineering in the amount of \$71,080, bringing the total contract amount to \$393,620; based on the recommendation of the City Manager, find that the public interest was best served by a negotiated contract with JR Engineering, LLC for construction engineering services for the McKay Drainageway Channel and Regional Detention Pond Project, authorize the City Manager to execute a contract with JR Engineering, LLC in the amount of \$223,520 for these construction engineering services, and authorize a project contingency of \$25,000; authorize the City Manager to execute a contract with the low bidder, Lillard & Clark Construction Co., in the amount of \$477,039 for construction of the 95th Avenue and Federal Boulevard Lift Station Rehabilitation Project plus a contingency of \$47,704 for an expenditure of \$524,743 and authorize an amendment to the design contract with Lidstone and Associates, Inc. to include engineering services during construction in the amount of \$69,220 plus a contingency of \$6,922 for an expenditure of \$76,142, increasing the total authorized expenditure with Lidstone and Associates, Inc. from the previously approved amount of \$108,167 to \$184,309; final passage on second reading of Councillor's Bill No. 27 appropriating funds for fiscal years 2015 and 2016; final passage on second reading of Councillor's Bill No. 28 amending Section 1-7-2 of the Westminster Municipal Code by setting the salary for the Municipal Judge for 2015; final passage on second reading of Councilor's Bill No. 30 making revisions to the Westminster Municipal Code concerning Specific Plan District creation; final passage on second reading of Councillor's Bill No. 31 appropriating funds

received from the Adams County Open Space Grant Program in the amount of \$754,600 for the Johnson open space acquisition; final passage on second reading of Councillor's Bill No. 32 appropriating wastewater funds from the Utility Capital Project Reserve in the amount of \$250,000 for the 95th Avenue and Federal Boulevard Lift Station Rehabilitation Project; and final passage on second reading of Councillor's Bill No. 33 implementing water, wastewater and reclaimed water rate adjustments for 2015 and 2016 by amending sections 8-7-7, 8-8-5 and 8-12-7 of the Westminster Municipal Code.

Councillor Baker moved to approve the consent agenda excluding Item 8D. Councillor Garcia seconded the motion, and it carried unanimously.

SPECIAL LEGAL COUNSEL FOR CREATION OF A COLLECTIVE BARGAINING ORDINANCE

Councillor Garcia moved to table consideration of this item. Councillor Seitz seconded the motion, which passed unanimously.

COUNCILLOR'S BILL NO. 34 RENEWING STRASBURG NATURAL RESOURCE FARM LEASE

Councillor Pinter moved, seconded by Councillor Baker, to pass on first reading Councillor's Bill No. 34 authorizing the City Manager to enter into a one-year lease, renewable automatically on an annual basis for four additional one-year terms, for dry-land farming of the Strasburg Natural Resource Farm in return for one third of the gross annual crop sale revenues; and as a part of the lease, authorize the payment of weed control costs not to exceed \$50,000 per calendar year. On roll call vote, the motion passed unanimously.

COUNCILLOR'S BILL NO. 26 TO AMEND ELECTIVE OFFICERS' SALARIES REMOVED FROM TABLE

Upon a motion by Councillor Briggs, seconded by Mayor Pro Tem Winter, the Council voted unanimously to remove Councillor's Bill No. 26 from the table.

COUNCILLOR'S BILL NO. 26 AMENDING W.M.C. RE SALARIES FOR ELECTIVE OFFICERS

Councillor Briggs moved, seconded by Councillor Seitz, to pass on first reading Councillor's Bill No. 26 amending the Westminster Municipal Code to allow for automatic biennial adjustments to City Council's compensation in an amount equal to the percentage of the Non-Exempt General Pay Plan's market adjustments; the compensation adjustments to be effective the first full pay period in January, 2016, and effective the first full pay period in even-numbered years thereafter. For reasons stated by several Council members, the motion carried at roll call by a 5:2 margin with Councillors Baker and Garcia voting no.

ADJOURNMENT

There was no further business to come before the City Council, and, hearing no objections, Mayor Atchison adjourned the meeting at 7:50 p.m.

ATTEST:

City Clerk

Mayor



W E S T M I N S T E R

Agenda Item 6 A

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: 2014 IEDC Silver Excellence in Economic Development Award

Prepared By: J. Brent McFall, City Manager

Recommended City Council Action

Mayor Atchison present the International Economic Development Council (IEDC) 2014 Silver Excellence in Economic Development Award to the City's Economic Development Staff.

Summary Statement

On October 20, 2014 the City of Westminster received the IEDC 2014 Silver Excellence in Economic Development Award presented at IEDC's 2014 Annual Conference. The award recognizes "the world's best economic development program and partnerships, marketing materials and the year's most influential leaders." Westminster was particularly recognized in the category of Business Retention and Expansion.

City Council is requested to present the award to the Westminster Economic Development staff members who work daily with the City's businesses to help them grow and prosper in Westminster.

Expenditure Required: \$0

Source of Funds: N/A

Policy Issue

None Identified

Alternative

None Identified

Background Information

The IEDC sets the standard of excellence around the world in Economic Development. To receive the Silver Excellence in Economic Development Award for Business Retention efforts is quite an achievement. It speaks well of the City's endeavors, started in 1990, to reach out and listen to its existing business community. The award also recognizes the positive effect of making economic development a City wide endeavor and goal.

Judging criteria for the award were:

- Extent of the economic impact on its community, such as an increase in the overall tax base, the creation of new jobs, or criteria relevant to the goals of the program;
- Achievement of its stated objective with measurable results;
- Development of strong relationships with relevant players and widespread support in the community;
- Innovation, originality, and cost effectiveness;
- Relevance and transferability of elements to other communities; and
- Program must have been active for at least three years.

The "Award Entry Form" and the "Supplemental Profile" about the City's Business Services Program are attached.

Though this is a City award, the Economic Development Staff have been asked to accept the award since they oversee the day-to-day interaction with City Businesses.

The conveyance of this award to the ED staff supports the City's Strategic Plan goals of Dynamic, Diverse Economy; and Excellence in City Services.

Respectfully submitted,

J. Brent McFall
City Manager

Attachments:

- Award Entry Form and Supplemental Profile



2014 IEDC EXCELLENCE IN ECONOMIC DEVELOPMENT AWARDS ENTRY FORM

Please complete this section for each entry.

Include 5 hard copies of the Entry Form and all supplemental information with your submission.

| | |
|---|--------------------------------------|
| ORGANIZATION: City of Westminster Economic Development Office | |
| CONTACT NAME: Susan Grafton | EMAIL: sgrafton@cityofwestminster.us |
| PROJECT/PROGRAM NAME: Business Services Program | |
| CATEGORY FOR ENTRY: Business Retention & Expansion - Program of 3 Years or More | |
| POPULATION CATEGORY (<25K, 25K-200K, 200K-500K, >500K): 25K-200K | |
| DATE PROJECT BEGAN: 1990 | DATE OF COMPLETION (if applicable): |
| For Entries in Categories 10 & 11, Enter your website URL: | |

PROJECT DESCRIPTION

Please refer to the **Category Description and Judging Criteria Sheet** corresponding to your category when answering the following questions in the space provided.

Select:

- Promotional Award Categories 1-9 – See Sheet A (page 9)
- Internet and New Media Categories 10-12 – See Sheet B (page 10)
- Program Award Categories 13-21 – See Sheet C (page 11-12)
- Partnership Award Categories 22-24 – See Sheet D (page 13)

THIS SECTION IS INTENDED TO PROVIDE AN OVERVIEW OF THE PROJECT. PLEASE KEEP ANSWERS TO EACH QUESTION UNDER 1,200 CHARACTERS (INCLUDING SPACES).

YOU MAY EXPAND ON THIS INFORMATION IN A SEPARATE PROFILE OF NO MORE THAN 3 PAGES, DOUBLE-SPACED.

1. Please provide a brief description of the project.

In Westminster, existing businesses have always been seen as the foundation from which to grow our local economy. The Business Services Program works to touch as many businesses as possible. Westminster initiated its Business Retention Visit Program in 1990, which has evolved over the last 24 years to keep pace with the needs of our business community into a comprehensive Business Services Program.

During 2013, a total of 256 existing businesses were directly touched through the Business Services Program, including 108 one-on-one visits with key employers. Nurturing relationships with our business community through multiple contacts and depth has lead to retention of businesses and provided us opportunities to help facilitate critical expansions across a variety of industries. Key components of our program include:

- 1) Business Retention Visits including a newly formed partnership with the Fire Department;
- 2) Small Business Capital Project Grants and Scholarships;
- 3) TechConnect networking opportunities for the technology business community;
- 4) Business Roundtables;
- 5) Business Legacy Awards;
- 6) Partnerships with local and regional resources.

2. What is the goal or purpose of this project?

The Business Services Program supports the vision of Westminster's Economic Development Office to "Make Westminster the place to be for business" as well as our mission to "create and maintain a vital economy and sustainable community." The Business Services Program is a comprehensive program to retain and expand our current businesses by broadening our outreach to all businesses, increasing our unique business contacts. To achieve these goals our program objectives include the following:

- Ensure the needs of local businesses are heard and addressed
- Better understand the city's business environment and the perceptions of doing business in Westminster
- Express appreciation to business for choosing to locate and stay in Westminster
- Create and maintain mutually beneficial relationships with local businesses
- Educate local businesses about city programs and services
- Educate local business about projects and activities in Westminster
- Explore new ideas from the local business community

3. Who are the participants in this project? Who was involved in planning/implementation? Who is affected?

Westminster approaches economic development activity as a citywide goal, thereby including senior staff, elected officials and departments that have regular and direct contact with the business community as partners in our outreach efforts. In 2013, we significantly modified our efforts to reach more businesses through a partnership with the Fire Department. As a matter of practice, the Fire Department visits all Westminster businesses on a rotating basis to conduct routine inspections. The Fire Department regularly receives superior remarks from the business community.

Working together with our Fire Department, we developed a set of key questions that help the city in assessing whether a business is looking to relocate or expand and whether or not they are experiencing any challenges working with the City to be asked during the Fire Department visits. The Fire Department visits in 2013 resulted in more than double the number of face-to-face business visits in previous years. Significant information has been gleaned from these visits and it provides the Fire Department the opportunity to lead the way as ambassadors for Westminster in connecting with the business community.

4. What has been the impact of the project? How effective has it been in furthering economic development in your community? Identify any tangible and/or intangible results and value added.

In 2013 alone, we had 252 unique contacts with companies in a face-to-face environment where city staff were able to carry on dialogue or conversation with a company representative. A large reason for this success has come from our introduction of new/smaller forums for interacting and communicating with businesses via meetings like TechConnect, the Business Legacy Awards and major employer roundtables.

Our Fire Department partnership resulted in the identification of an employer on the verge of relocating out of Westminster, Surefire Medical. With this information, our staff was able to work with Surefire Medical to facilitate city, county and state incentives to not only retain the company, but to succeed in securing their expansion in Westminster. We gained a manufacturing operation and a 100% growth in that business through this direct outreach.

We can directly attribute retaining three significant businesses, as well as their long-term commitment to Westminster, across three distinct industries in 2013 due to our visits and depth of contact with the business community.

5. Is this project replicable or transferable? Can it be adapted for use in other communities? What lessons have been learned?

Westminster's Business Services Program is based on listening and responding to the needs of our diverse business community. In order to be responsive to businesses, we revisit all of the components of the Program yearly to assess their success against our goals. This program is not carried out today exactly as it started in 1990, however, the intent of the program remains to keep an open dialogue between the city and the business community

We adapt the components of our program to the current needs of our business community to ensure that the services provided are relevant to their needs and continue to provide the city with quality opportunities to interact with and develop quality relationship building visits with our businesses. We have learned that all businesses (large and small) in our community are important to the city's overall goal of a "Strong, Balanced Local Economy."

The elements of Westminster's Business Services Program are not only applicable to Westminster. The services that make up our program can work in other communities, but will take on the personality of the community - its representatives, culture and business climate.

6. In what ways is this project innovative or creative?

The innovation behind the Business Services Program is two-fold:

- 1) listening to and adapting our services to the meet the needs of the business community; and,
- 2) making economic development a citywide priority not just the work of economic development staff.

At times innovation requires taking a risk. Recently we made the decision to replace our annual Business Appreciation Event with several smaller events in an effort to better penetrate our business community. The annual event had been a tradition for xx years. While the Business Appreciation Event provided exposure to many people at one time, the quality of those conversations and networking was not as substantive. The outcome is that the Economic Development Office staff have growing rapport with our business community through our more intimate settings created for the purpose of dialogue.

7. Are there any other relevant details not covered above or specific to your category?

As part of our Business Services Program, we support and partner with local and regional resources to further support the business community. We strongly support the Small Business Development Center at Front Range Community College, which provides training classes and one-on-one counseling for start-ups and small businesses; we were a charter member and founder of the Colorado Lending Source and Colorado Enterprise Funds; and we work closely with the Metro North Chamber of Commerce, Adams County Economic Development, Jefferson County Economic Development, and the Metro Denver Economic Development Corporation.

Supplemental information is attached to this entry including:

- Supplemental Entry Profile
- Trimble Press Release
- Business Legacy Awards Article
- Westminster Economic Development Business Services Packet with sample brochures

2014 IEDC Excellence in Economic Development Awards

Supplemental Profile for
City of Westminster, Colorado Business Services Program

OVERVIEW

Westminster's Economic Development Office has grown a business services program since 1990 whose goal it is to: **Grow and Nurture Existing Businesses.** Face-to-face interaction with business is so effective that if resources were unlimited, every business in Westminster would be contacted personally every year.

Council Strategic Plan Goal:
“Strong, Balanced Local Economy”

Economic Development Mission Statement:
Grow and maintain a vital and sustainable local economy

Economic Development Vision:
Westminster is *the Place* to be for Business

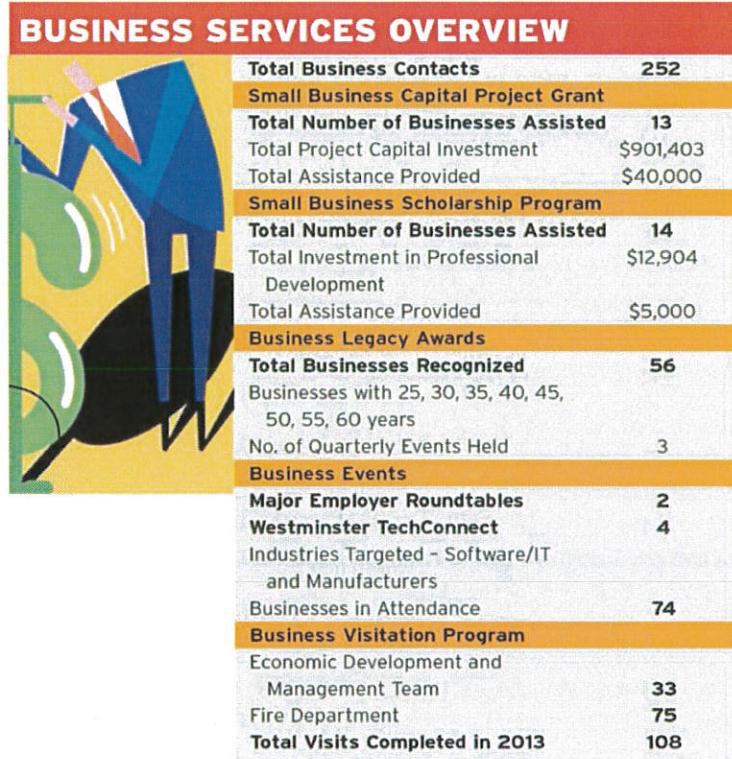
In practice, we utilize numerous programs and opportunities to touch our business community in order to meet our mutually beneficial goals.

- *Engages in quality face-to-face interactions* such as Business Retention Visits, Business Legacy Awards, TechConnect networking events, and industry Roundtables;
- *Provides resources* for businesses including grants and scholarships, Business Directory, North Metro Small Business Development Center, and extensive business resources at College Hill Library;
- *Extends Economic Development staff support* to businesses looking for up-to-date real estate information, internal advocate in navigating planning or other city processes, and deep knowledge of local, regional, state and federal business related issues, regulations and opportunities;
- *Partners* with local, regional and state resources for the benefit of Westminster businesses

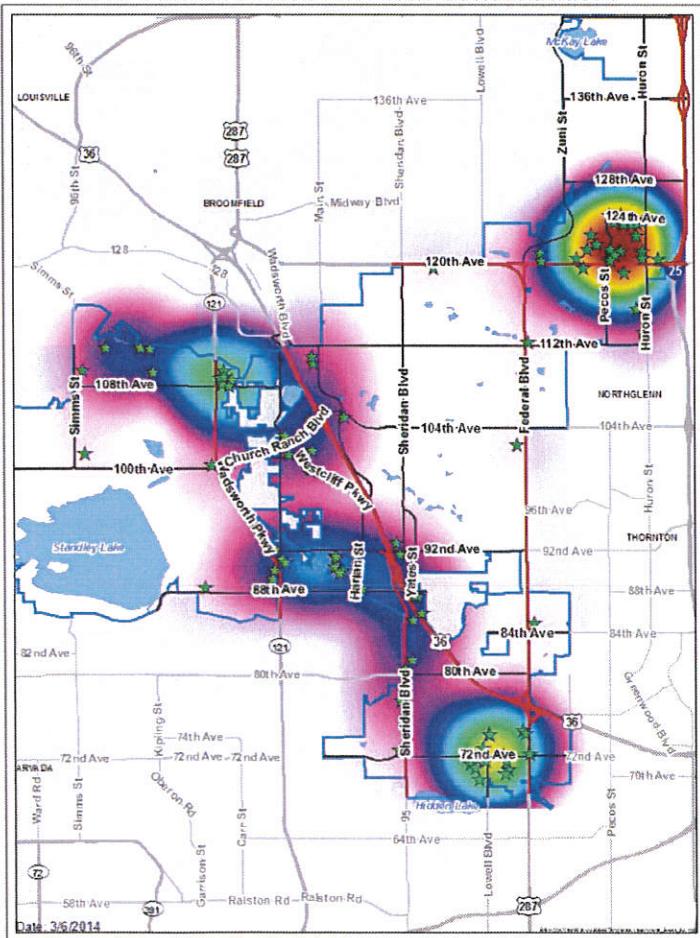
RETENTION VISITS

A long-time component of the Business Services Program is the business retention visitation program, where members of the City's management team and Economic Development Office – often in conjunction with members of City Council – make personal visits to around fifty businesses per year in order to hear concerns about the business environment in Westminster and to learn of any possible

expansion or relocation plans. Through an abbreviated version of the formal business retention visit program, that couples the Fire Department – who already visit most Westminster businesses annually through the fire inspection program – with the City's Economic Development Office, our retention visits more than doubled in 2013. These visits combined with the many other opportunities to connect in smaller settings created significant results as shown in the graphic.



2013 Business Retention Visit Concentrations



GEOGRAPHIC OUTREACH

Our business community reaches all corners of the approximate 35 square miles of Westminster's boundaries. In addition, we have two major transportation corridors, on our eastern border and one that divides a portion of our community.

We take great care to no concentrate visits to one area, but to ensure that we connect with businesses throughout our diverse sub-regions within the city. This map demonstrates how those visits looked in 2013.

RECENT SUCCESSES

Success in retaining and helping to facilitate the expansion of numerous businesses across a wide spectrum of industries over the years has come as a direct result of our visits and outreach contacts through the Business Services Program. Highlights in the past three years include:

- Surefire Medical – retention and expansion of manufacturing operation creating 100% growth
- Melco – retention
- Plato BioPharma – retention and expansion
- Trimble Navigation – retention and significant expansion leading to 100% growth

In addition, businesses have taken advantage of other programs to improve their business through:

- Small Business Capital Project Grants – all monies allocated by the 3rd quarter in 2013
- Small Business Scholarship Program – 14 businesses received scholarships in 2013
- Business Legacy Awards – 56 businesses were formally recognized in 2013 with 57% of those businesses celebrating their 25 year anniversary

BIGGER THAN ECONOMIC DEVELOPMENT

Our Economic Development success is greatly attributed to understanding the importance all city staff across all departments plays in furthering positive interactions with the business community.

We partner with city staff and departments in our outreach efforts. In turn, Westminster staff understand the important role the business community plays to support the city's efforts to provide quality amenities and services that make Westminster an attractive, welcoming community.

HOW ECONOMIC DEVELOPMENT WORKS





W E S T M I N S T E R

Agenda Item 8 A

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: Agreement Concerning the City Contribution to Hyland Village Subdivision Improvements

Prepared By: Dave Downing, City Engineer

Recommended City Council Action

Authorize the City Manager to execute the attached Agreement with West-Hy Holdings, LLC regarding a commitment by the City to use \$876,513 of remaining funds from a previously cashed surety bond to reimburse the new developer of Hyland Village Subdivision for certain improvements within that development.

Summary Statement

- In 2007, the City and McStain Enterprises, Inc. executed four separate Public and Private Improvements Agreements establishing that developer's obligation to the City to install certain infrastructure and enhancements necessary for the development of Hyland Village Subdivision, located on the west side of Sheridan Boulevard between approximately 94th Avenue and 98th Avenue. The construction of those improvements was guaranteed by various performance bonds issued by Bond Safeguard Insurance Company (Bond Safeguard).
- In 2009, McStain filed for bankruptcy, and City staff negotiated with Bond Safeguard for the resolution of outstanding improvements. Those negotiations concluded in 2012 with the bonding company's issuance of a \$1.957 million cash settlement to the City.
- During 2012 and 2013, staff used over one-half of those bond proceeds to design and construct 98th Avenue between Sheridan Boulevard and Westminster Boulevard, which was one of McStain's development obligations.
- West-Hy Holdings, LLC has acquired the majority of the undeveloped property within Hyland Village Subdivision. This new developer wishes to document an agreement reached with City staff regarding the use of the remaining \$876,513 of the cashed bond money. In general, staff's proposal is to reimburse West-Hy Holdings for expenses incurred in constructing a community clubhouse and/or a community swimming pool up to a maximum amount of \$876,513.
- Council action is requested to ratify staff's proposed use of these cashed bond proceeds by authorizing the City Manager to execute the attached Agreement.

Expenditure Required: \$876,513

Source of Funds: General Capital Improvement Fund - Hyland Village Public/Private Improvements Project

Policy Issue

Should the City agree to use cashed bond proceeds obtained through the bankruptcy of the original developer of Hyland Village Subdivision to pay for certain development obligations that were inherited by a subsequent developer of the property?

Alternatives

The City Attorney has opined that the City is under no legal obligation to use the proceeds of the cashed bonds for any specific purpose, either at Hyland Village or elsewhere. Nonetheless, City staff is of the belief that it would be appropriate to use this money to help ensure that necessary public and/or private improvements at the Hyland Village site are provided for the benefit of current and future residents of this subdivision. In July of 2012, the City Council endorsed staff's opinion by authorizing the first of a few design and construction-related contracts that led to the City's construction of 98th Avenue adjacent to the subdivision – a normal development responsibility. However, the City Council is under no legal obligation to continue this practice, and Council could opt to use the remaining \$876,513 for any purpose that it sees fit. However, staff still recommends that this money be used to help facilitate the installation of public and/or private improvements at Hyland Village Subdivision.

Background Information

When McStain Enterprises, Inc. filed for bankruptcy in 2009, a multitude of public and private improvement obligations at Hyland Village Subdivision remained to be fulfilled by the developer. At that time, the City was the named beneficiary to various performance bonds totaling in excess of \$2 million. While it was clear that McStain's bonding company, Bond Safeguard Insurance Company, was legally required to hire designers and contractors, as necessary, to install all of the outstanding development obligations, it became painfully apparent to City staff that it would take years for this to occur. Tedious negotiating sessions, incredibly slow responses from Bond Safeguard's representatives and the constant reminders that an option to negotiation was to force the City to pursue this matter through the court system, thus delaying the resolution of the improvements for even more years, motivated staff to seek a cash settlement. Eventually, Bond Safeguard and the City agreed to a settlement in the amount of \$1.957 million.

During 2012 and 2013, staff, with the full endorsement of West-Hy Holdings, LLC, the heir to the vast majority of McStain's undeveloped lots within Hyland Village, caused the design and construction of 98th Avenue abutting the subdivision. This effort cost a total of \$1,080,487, which was fully paid from the bond proceeds.

With the completion of 98th Avenue, \$876,513 still remains within the account in which the bond proceeds were deposited. Staff has been in frequent communication with the West-Hy Holdings representative, and many discussions regarding the use of these remaining funds have occurred. While the list of outstanding obligations is still long, staff and the new developer have focused on the required community clubhouse and swimming pool – two private improvements that might benefit the most current and future residents of Hyland Village. Although the design and, hence, the cost of these two facilities have not yet been fully identified, it is apparent that the total cost of the two will certainly exceed \$876,513. Therefore, staff and the developer have reached a preliminary agreement that the remaining funds be used to reimburse West-Hy Holdings for the costs of the clubhouse and/or swimming pool up to a maximum contribution from the City of \$876,513. The developer has requested that this understanding with staff be formally approved by the City Council, and the

attached Agreement would accomplish that. Again, the City is not legally obligated to formalize this understanding, but the developer has indicated that it would be to his great benefit to be able to provide documentation of this commitment by the City to his lending institutions, and staff is inclined to accommodate their request.

This proposed action by the City to facilitate the construction of the community clubhouse and swimming pool at Hyland Village Subdivision would help to fulfill Council's Strategic Plan goal of providing Vibrant and Inclusive Neighborhoods.

Respectfully submitted,

J. Brent McFall
City Manager

Attachment – Agreement

AGREEMENT CONCERNING THE CITY CONTRIBUTION TO HYLAND VILLAGE SUBDIVISION IMPROVEMENTS

THIS AGREEMENT, is made and entered into this _____ day of _____, 2014, by and between the **CITY OF WESTMINSTER**, Colorado, a municipal corporation, hereinafter called "City", and West-HY Holdings, LLC, a Texas limited liability company, hereinafter called "Owner", whose address is 10210 N. Central Expressway, Suite 300, Dallas, TX 75231.

RECITALS suite

- A. The City approved a preliminary development plan (PDP), official development plan, and subdivision for the Hyland Village Subdivision in 2007, which approvals required the original owners thereof to install certain public and private improvements for the development of the Hyland Village Subdivision. The developer provided performance bonds for the installation of the improvements.
- B. After installation of certain public and private improvements, the original developer of the Hyland Village Subdivision filed for bankruptcy protection and did not complete the remaining improvements in the subdivision.
- C. As of the date of this Agreement, Owner has taken over the ownership and development of certain lots in the Hyland Village Subdivision, as described in Exhibit A, attached hereto and incorporated herein by this reference, hereinafter called "Property", and desires to continue with the development of the subdivision, including the completion of certain public and private improvements, as specified in the Ninth Amended Official Development Plan for Hyland Village Subdivision, recorded in the office of the Jefferson County Clerk and Recorder on May 19, 2014 under Reception No. 2014038263 (the "ODP").
- D. The City received certain payments, for a portion of the uncompleted public and private improvements, as proceeds of the performance bonds from which it proceeded to design and complete the construction of 98th Avenue. The remainder of the performance bond proceeds equals approximately \$876,513.
- E. The City is willing to use the remainder of the performance bond proceeds to reimburse Owner a portion of its costs for its installation of certain remaining uncompleted improvements in the subdivision, namely, the community swimming pool and clubhouse.

COVENANTS

Now, therefore, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the City and Owner agree as follows:

1. Owner agrees to construct the community swimming pool and the community clubhouse, as and if those improvements are approved by the City pursuant to its official development plan and building permit processes.

2. City agrees to reimburse Owner for a portion of its costs of constructing the community swimming pool and the community clubhouse, including design, permitting, labor and materials costs, until the remainder of the performance bond proceeds have been exhausted. The City will reimburse Owner a total not to exceed \$876,513 for these improvements.

3. In order to receive reimbursement as described in 2. above, Owner will provide to City copies of all invoices for which it seeks cost reimbursement as well as any and all paid receipts and lien releases related thereto. Upon receipt of these items, City will reimburse Owner within 60 days of the acceptance/final inspection of the improvements by the City or, in the case of the community clubhouse, the issuance of a final Certificate of Occupancy.

4. In the event that the improvements, or any of them, described in 2. above have not been completed by Owner and accepted by the City within twelve months after the City's issuance of the 167th residential building permit, exclusive of any such permits issued for dwelling units located within Land Use Parcel B (Lot 1, Block 9) at Hyland Village Subdivision , this Agreement shall terminate and be of no force and effect and any reimbursement obligation on the part of City shall be extinguished.

5. City agrees to not unreasonably withhold, condition or delay any plan approvals or inspections related to the community swimming pool and the community clubhouse.

6. This Agreement shall be binding upon the heirs, executors, successors and assigns of the parties and shall be binding upon the successors in ownership of the Property. Owner agrees to provide the City at least 14 days in advance written notice of the sale or transfer of the Property or any part of it; provided, however, that Owner shall not be obligated to provide such notice of any sale or transfer of individual lots for the construction of homes.

7. Nothing in this Agreement shall be construed as creating any third party beneficiary rights or status to anyone not a party to this Agreement, and the City and the Owner expressly disclaim any intent to create any such third-party beneficiary rights or status by this Agreement.

8. This Agreement shall be governed and construed in accordance with the laws of the state of Colorado. Further, this Agreement shall be subject to, and construed in strict accordance with, Westminster Municipal Code.

Approved:

OWNER

CITY OF WESTMINSTER

WEST-HY HOLDINGS, LLC.
A Texas limited liability company

By: _____
Name: _____
Title: _____

J. Brent McFall

Approved as to form:

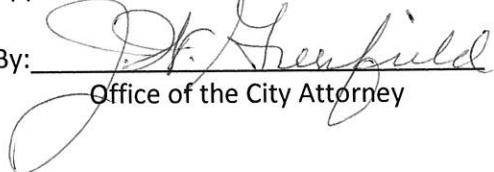
By: 
Office of the City Attorney

Exhibit A

[insert property description]



W E S T M I N S T E R

Agenda Item 8 B

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: City Hall Ice Melt Design and Contract Administration Services

Prepared By: Tom Ochtera, Energy and Facilities CIP Coordinator

Recommended City Council Action

Authorize the City Manager to amend the contract with Beaudin Ganze Consulting Engineers, Inc. for the design and contract administration of the City Hall Courtyard ice melt system and boiler piping consolidation project. This increases the existing contract amount of \$57,690 by \$21,415 for a total of \$79,105.

Summary Statement

- The existing cooling system at City Hall is coupled to the City's domestic water distribution system. This no longer meets building codes and will need to be converted to a new cooling (and heating) system prior to repair work on the domestic water system. A lifecycle cost analysis feasibility study conducted in 2013 revealed that a ground source system of deep wells in a closed loop will provide the best value to the City. Beaudin Ganze Consulting Engineers was selected for the lifecycle cost analysis and the design of the new system. After the award of the geothermal design, additional needs were identified.
- One need is to consolidate the piping in the boiler room to save room and make the boiler-side pumping more efficient. The existing system has been modified multiple times creating maintenance challenges. This portion of the additional design will cost \$1,250. The second need arose from the addition of an ice melt system as a portion of the City Hall Courtyard renovation. The design fee for this additional work is \$20,165.

Expenditure Required: \$21,415

Source of Funds: General Capital Improvement Fund

- City Hall Geothermal Project (\$1,250)

General Capital Improvement Fund

- City Hall Courtyard Concrete Project (\$20,165)

Policy Issue

Should City Council authorize the selection of Beaudin Ganze Consulting Engineers for the additional design and contract administration of the boiler repiping and ice melt system project?

Alternative

Council can choose to not authorize the use of Beaudin Ganze Consulting Engineers for the design of the system, and direct Staff to send out an RFP for engineering services. This is not recommended based on the project schedule; their familiarity with the existing City Hall system; work already completed in the investigation phase; and the expertise and experience they bring to the project.

Background Information

The City of Westminster retained Beaudin Ganze Consulting Engineers (BGCE) in early 2013 to review the condenser water loop system at the City Hall building. It was determined that the current installation was not code compliant and BGCE proposed three alternatives to modify the existing system. These alternatives were presented in the context of a Life Cycle Cost Analysis (LCCA) that considered capital investment, operational cost and maintenance cost over a 20 year life. The goal of this exercise was to identify the system that would provide the best value to the City and not simply the least first-cost. It was determined that a geo-thermal cooling loop system was the most efficient and cost effective method of heating and cooling for City Hall. BGCE was selected for the design of the system due to both their award winning expertise in geothermal design as well as their familiarity of this project's scope and constrictions.

The ice melt system, a system that warms the walking areas of the courtyard plaza to melt the snow, is expected to save the city money through reduced labor in shoveling and longer lasting concrete due to less chemical corrosion. In addition, the system will utilize the “free” heat from the geothermal well field to supplement the boilers for the ice melt system in the winter. Finally, during the sunny days of winter, the ice melt system will bring the warm water from sun-warmed concrete into the building and provide most of the daytime heating needed in the winter. Integrating the design of the ice melt system, with the geothermal wellfield, with the rest of City Hall building HVAC system creates greater efficiency of all the systems.

Because the ice melt system will be tied to the boiler room and the geothermal system, BGCE is the appropriate choice to do this additional design work. They have the drawings, load calculations, and greatest familiarity with the geothermal system’s capabilities. Conversely, competitively bidding the additional scope is believed to be a more expensive, less pragmatic, and more likely to lead to finger-pointing after construction is complete. With integrated building systems, a less-partitioned more-holistic approach is warranted.

Staff believes that continuity of the geothermal design with the additional project design will best serve the City by providing a timely design phase and completion of the project in the limited time available.

The selection of Beaudin Ganze Consulting Engineers supports Council’s Strategic Plan goals of a “Beautiful, Desirable, Environmentally Responsible City” and “Excellence in City Services” by providing well maintained and energy efficient City facilities and infrastructure.

Respectfully submitted,



W E S T M I N S T E R

Agenda Item 8 C

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: Municipal Court Public Defender Services Contract
Prepared By: Debbie Mitchell, General Services Director
Carol J. Barnhardt, Municipal Court Administrator

Recommended City Council Action

Authorize the City Manager to execute an agreement with David Rockwell for Municipal Court Public Defender Services for the twelve-month period beginning January 1, 2015, and authorize up to four one-year renewals of the agreement.

Summary Statement

- Since 2010, the Municipal Court has utilized the services of David Rockwell as public defender at the Municipal Court. The 5 year contract agreement for these services expires at the end of 2014, and City Staff prepared a Request for Proposals (RFP) to obtain competitive bids.
- An RFP was developed and two individuals submitted sealed bids. They were: David Rockwell and Linda Lauchli.
- The proposed rates submitted by the two attorneys ranged from \$67,500 to \$70,000 flat rate.
- Interviews by a six-member selection panel were conducted on September 25, 2014.
- Based on a review of the candidates' qualifications and the interview process, the oral board selection panel is recommending that David Rockwell has the best qualifications to perform the public defender services at the Municipal Court.
- This is a one-year contract that is renewable for up to four additional years.
- The Contract price for renewal periods shall be negotiated and agreed to by both parties, and any adjustment shall not exceed the annual percent change of more than 1% per year.

Expenditure Required: \$80,000

Source of Funds: General Fund – 2015 Municipal Court Budget
2015 General Services Department Operating Budget
2015 Supplemental Appropriation (2014 Carryover Funds - if required)

Policy Issue

Should City Council continue to contract for public defender services and select David Rockwell to provide these services?

Alternative

City Council could direct Staff to negotiate with several attorneys to perform public defender services. Staff does not recommend this alternative due to the administrative burden and expenses that would be incurred.

City Council could direct Staff to consider an in-house public defender position to be funded at a three-quarter (.75) full time equivalent (FTE). Staff does not recommend this option for the reasons detailed in the Staff Report dated November 3, 2014.

Background Information

Public defender services are provided to indigent defendants in cases where jail time may be imposed if the defendant is convicted. The judges can appoint a public defender when justified by a defendant's lack of financial resources or mental incapacities.

The public defender confers with defendants to determine the issues involved in the case. The public defender explains the elements the prosecution must prove, and the consequences of a guilty plea to the original charge(s) or other possible charge(s). Public defender representation ends upon sentencing. If a defendant appeals or has probation revocations, the defendant must reapply and qualify for representation.

The public defender is scheduled every Wednesday. Hearings are scheduled at 8:00 a.m. for arraignments, pre-trials, hearings and in-custody matters. An afternoon docket starts at 1:00 p.m. and consists of pre-trials, Trials to the Court, and Jury Status Conferences. Public defender services are also required in court on the Thursdays when public defender cases are scheduled for jury trial(s). Double jury trials are scheduled every other Thursday. Additional public defender coverage is required in the event two public defender jury cases proceed to jury trial. The public defender is responsible to provide additional coverage for double jury trial days. The public defender dedicates additional work hours to client interviews, discovery, case development and preparation.

Since 2010, David Rockwell has provided public defender services for the Municipal Court. The 5-year contract agreement for these services expires at the end of 2014, and City Staff prepared a Request for Proposals (RFP) to obtain competitive bids. City Staff, through the RFP process, sought legal representation for indigent defendants that have been charged with a municipal code violation, including domestic violence, and/or criminal traffic violation, and face possible jail sentences.

The RFP proposals required:

- Resumes of attorneys who will provide public defender services, (including the bidder and any attorneys who may be providing backup, additional and/or conflict coverage);
- A minimum of three professional references for the bidder;
- A description of criminal law experience, specialized areas of practice and, in particular, public defender experience, and the percentage each constitutes of their total practice;
- An overview of how the public defender services will be managed and who will be the key personnel including backup support if public defender is not available to provide contracted services because of conflicts, scheduling problems, vacations, etc.;
- Any other information the bidder felt would be helpful for the selection committee;

- Full disclosure as to whether responding attorney(s) has been disciplined or sanctioned for a breach or possible breach of ethics or unprofessional conduct (including a private letter of admonition, reprimand or censure);
- A proposed flat fee to provide all of the required services for the 2015 calendar year. Fees should include expenses for all attorneys, secretarial and clerical services, costs of mailing, all related expenses, and anticipated time necessary to perform all the public defender functions, duties and responsibilities; and
- A proposal for fixed pricing for five years. Without any representation or guarantee that renewal will occur, bidders were asked to set a fee for up to 5 years of service, not to exceed a 1% annual increase.

The proposed agreement requested that bidders propose a flat fee, to be paid one-twelfth of the annual payment on a monthly basis. For accountability, the public defender shall submit an invoice to the Municipal Court Administrator for monthly fees and reimbursable expenses. Allowable and reimbursable expenses include: costs of subpoenas, service of process copies of government documents, language interpreters (to be provided by the Court upon approval), transcripts (to be provided by the Court upon approval), and expert witnesses (to be approved by the Court).

On September 11, 2014, two sealed bids were submitted and opened by the City Purchasing Agent and the Court Administrator. The two bidders were: David Rockwell and Linda Lauchli. The flat rate proposal from Linda Lauchli was \$67,500 and the flat rate proposal from David Rockwell was \$70,000.

On September 25, 2014, a six-member oral board selection panel conducted interviews. The selection panel was comprised of Councillor Alberto Garcia, General Services Director Debbie Mitchell, Court Administrator Carol Barnhardt, Probation Supervisor Brian Poggenklass, Senior Human Resource Analyst Donna Diaz, and Assistant City Attorney Leslie Annand. Both of the candidates participated in an interview that covered approximately 15 questions and both candidates submitted written responses to 12 questions.

The following factors were considered for each candidate:

1. Prior Experience as Public Defender;
2. Communication Skills;
3. Credibility;
4. Attitude, Interest, Motivation; and
5. Overall Impression.

As a result of this process and after an in-depth discussion, the selection panel is recommending that Council approve a contract with David Rockwell based on his experience in criminal law and his interest in providing this service to indigent defendants. The selection panel determined that David Rockwell has the requisite qualifications to perform the public defender services.

As part of the 2015/2016 budget process, Council authorized funding for public defender services. For 2015, public defender services have a funding level of \$30,812 within the Municipal Court budget. Additional funds were not requested in the 2015 budget because the outcome of the RFP bids were unknown at the time of budget development. Due to the increase in cost, Staff will look within the overall 2015 General Services Departmental budget to make up any deficiency in funding. Any additional funding that may be required will be allocated via a 2015 supplemental appropriation from 2014 carryover funds. The request for funding for this action is \$70,000 for the public defender base agreement, funds for conflict counsel and additional allowable and reimbursable expenses of up to \$10,000 for a total of \$80,000 in anticipated expenses for 2015 public defender services. The contract price for renewal periods shall be negotiated and agreed to by both parties, and any adjustment shall not exceed a 1% annual percent change.

This is a one-year contract that is renewable for up to four additional years.

This Staff recommendation achieves the Strategic Plan Goals of “Excellence in City Services” by providing services for indigent defendants in cases where jail time may be imposed if the defendant is convicted.

Respectfully submitted,

J. Brent McFall
City Manager

Attachment

**AGREEMENT TO FURNISH SERVICES
TO THE CITY OF WESTMINSTER FOR
PUBLIC DEFENDER SERVICES**

THIS AGREEMENT, made and entered into this ____ day of November, 2014, between the **CITY OF WESTMINSTER**, hereinafter called the "City," and David Rockwell, an individual practicing law in the State of Colorado, hereinafter called the "Public Defender," is as follows:

WHEREAS, the City wishes to employ the Public Defender as special legal counsel as authorized by City Charter, Section 4.14; and

WHEREAS, the City desires to engage the Public Defender to render the professional services described in this Agreement and the Public Defender is qualified and willing to perform such services; and

WHEREAS, sufficient authority exists in City Charter and state statute, sufficient funds have been budgeted for these purposes and are available, and other necessary approvals have been obtained.

NOW, THEREFORE, in consideration of the mutual covenants of the parties contained herein, the parties agree as follows:

SECTION 1. TERM

- A. Terms of Agreement. This Agreement shall commence on January 1, 2015, and continue through December 31, 2015 (the "Initial Term") unless terminated sooner pursuant to Section 1F below or unless renewed pursuant to Section 1E below.
- B. The legal representation provided by the Public Defender shall consist of all general legal services required under the Code of Professional Responsibility including, but not limited to, the following:
 - a. All necessary court appearances;
 - b. All necessary preparation, including client meetings;
 - c. All necessary filing of documents;
 - d. Subpoena services;
 - e. Investigative work; and
 - f. Appeals (if appointed).
- C. The representation of each defendant shall begin when the Public Defender receives notification from the Municipal Court, and shall continue until the case is finally terminated in the Municipal Court or until such time as the Court allows the Public Defender to withdraw from the case upon a showing of good cause.
- D. The Public Defender is not obligated to represent defendants whose representation will present an ethical conflict.
- E. Renewal. This Agreement may be renewed by the City on an annual basis, for a total of up to five (5) years of service, including the Initial Term. This Agreement shall automatically renew each year for an additional one (1) year term, effective January 1 of each subsequent year ("Renewal Years"), unless the City or the Public Defender has terminated the Agreement pursuant to paragraph 1.F below. The contract price for each Renewal Year shall be agreed upon in writing by both parties by November 1 before each Renewal Year; provided, however, that Public Defender agrees to limit increases to not more than 1% per year. If an agreement cannot be reached as to a renewal rate, this Agreement shall terminate. The adjustment of the contract price for each Renewal Year, if any, shall not be retroactive, and shall apply only to services provided in the new calendar year.

F. Termination. Either party may elect to terminate this Agreement upon ninety (90) days written notice to the other. In the event of termination, the Public Defender shall be paid for all services actually rendered through the effective date of termination, and for any services rendered beyond the termination date that, in the City's opinion, are reasonably necessary to conclude any representation commenced prior to the date of the notice of termination.

SECTION 2. SERVICES AND COMPENSATION

- A. Fees - all inclusive. The Public Defender shall be paid a flat fee of Seventy thousand and no/100 dollars (\$70,000.00) annually, to be paid one-twelfth of the annual payment on a monthly basis. The Public Defender will not be reimbursed for any incidental expenses incurred in the performance of services for the City. For accountability, the Public Defender shall submit an invoice to the Municipal Court Administrator for monthly fees and reimbursable expenses.
- B. Court Dates. The public defender is scheduled every Wednesday. Hearings are scheduled at 8:00 a.m. for arraignments, pre-trials, hearings and in-custody matters. An afternoon docket starts at 1:00 p.m. and consists of pre-trials, Trials to the Court, and Jury Status Conferences. Public defender services are also required in Court on the Thursdays when public defender cases are scheduled for jury trial(s). Double jury trials are scheduled every other Thursday. Additional public defender coverage is required in the event two public defender jury cases proceed to jury trial. The public defender is responsible to provide additional coverage for double jury trial days, when necessary.
- C. Services. The following services are to be provided by the Public Defender:
1. Attorney time as may be appropriate and necessary for serving as Public Defender in court and for all necessary case preparation, motions, trials and miscellaneous office activities.
 2. Attorney time related to the attendance of meetings requested by the Municipal Court Administrator or other City Staff for the purpose of discussing Municipal Court procedures or such other matters reasonably related to the delivery of the public defender services.
 3. On a quarterly basis, or as requested, the Public Defender shall submit to the Municipal Court Administrator, detailed statistics of all cases handled.
- D. Clerical and Secretarial Services. All clerical, secretarial, and word processing services including costs of all mailings necessary to perform the Public Defender's duties under this Agreement are included as part of the Public Defender's Fixed Monthly Fee and there shall be no additional charges for these services.
- E. Non-Allowable Charges and Expenses for the Public Defender and Conflict Public Defender.
1. Charges for time spent on administrative activities, such as preparing requests for payment, making copies, faxing documents, and mailing letters will not be reimbursed.
 2. Items purchased for indigent (or other) persons represented. These include meals, books, clothing, and other personal items.
 3. Mileage.
 4. Travel time.
 5. Any other expense not specifically addressed in this Agreement.
- F. Discovery Costs. Any costs for preparation of discovery will be waived for both the Public Defender and any Conflict Public Defender(s) appointed.
- G. Allowable and Reimbursable Expenses. Upon prior approval of the Municipal Court Administrator in cases where the Public Defender or Conflict Public Defender incurred

expenses and/or costs for case preparation and defense, the Court will reimburse the allowable costs upon presentation of original receipts or invoices for expenses indicating that the Public Defender has paid for the expenses and other costs as deemed necessary for representation. Such costs include:

1. Costs of subpoenas
2. Service of process
3. Copies of government documents
4. Language Interpreters (to be provided by the Court upon approval)
5. Transcripts (to be provided by the Court upon approval)
6. Expert witnesses (to be approved by the Court or Court Administrator)

- H. Use of Backup Attorney(s) and/or Additional Coverage Attorney(s). The Public Defender shall be solely responsible for the performance of all legal duties enumerated herein, however, the Public Defender may use comparably qualified attorney(s) approved by the Municipal Court Administrator for emergency and backup services such as vacations or illness. The Public Defender shall be responsible for payment to attorneys for emergency and backup services. The Public Defender shall notify the Court Administrator in advance of utilizing backup services and inform the Court Administrator who the backup attorney(s) will be and the length of time of his/her expected services.

The Public Defender shall be solely responsible for engaging in the services of additional public defenders to provide additional coverage as deemed necessary. Additional public defender coverage is required in the event two public defender cases proceed to jury trial, or whenever the docket requires additional services, as determined by the Judges and/or Court Administrator. The Public Defender shall be responsible for payment to attorneys for additional services.

- I.1. Conflict Public Defenders. Subsequent to filing a Motion To Appoint Conflict Public Defender, and obtaining a Court Order, the Public Defender shall have the authority to engage the services of a conflict public defender. The conflict public defender shall be retained by the Public Defender as an independent subcontractor to the Public Defender. The City will pay for the services of the conflict public defender. A schedule of maximum hourly rates and maximum amounts for these appointments will be as set forth below.

| Conflict Attorney Fees | |
|--|----------------------------------|
| Hourly Rate | \$70 per hour |
| Maximum Total Compensation per Appointment | \$1,000 – with or without trial. |

* Compensation for trials taking longer than one (1) day to complete will be set by the Court.

Allowable Expense for Conflict Public Defenders. Upon prior approval of the Municipal Court Administrator, in cases where the Conflict Public Defender has to procure certified copies of government documents and/or the service of process for witnesses for case preparation and defense, the Court will pay the Public Defender upon presentation of original receipts or invoices for expenses and other costs as deemed necessary for representation.

- I.3. Time Sheets or Billings for Conflict Public Defenders.

1. All time sheets must include the defendant's name and case number, the dates and time of service, and a brief description of the service.
2. Time must be billed in tenths of an hour using the decimal system. For example, 30 minutes should be billed as 0.5 hours.

3. Time sheets shall be prepared to support the summarized hours billed.
4. Time sheets must include all time spent between the beginning and ending dates of the billing and must be in chronological order.
5. Original receipts or invoices for expenses must be attached with an indication that the appointee has paid the expense (example – receipts for subpoena service, service of process).
6. All time sheets or billings must be presented to the Public Defender for review and then submitted to the Municipal Court Administrator for final review and payment to the Public Defender.

SECTION 3. OTHER TERMS AND CONDITIONS OF EMPLOYMENT.

- A. Professional Obligations. The Public Defender shall at all times during the term of this Agreement comply with the Colorado Rules of Professional Conduct, the Colorado Rules of Municipal Court Procedure, the Colorado and United States Constitutions and all applicable rules and regulations pertaining to the practice of law in the State of Colorado. The Public Defender and all attorneys working for the Public Defender shall be currently licensed to practice law by the Colorado Supreme Court and shall remain in good standing during the term of this Agreement.
- B. Independent Contractors. The Public Defender shall be an independent contractor and shall determine the means and methods of accomplishing duties hereunder, including the authority to exercise judgment and discretion necessary to meet the ethical obligation as Public Defender.
- C. Modification. City Council may fix any other terms and conditions of service as, from time to time it may determine, relating to the performance of the duties of the Public Defender, provided such terms and conditions are not inconsistent with or in conflict with the provisions of this Agreement, the City Charter, or any other law. If any other such new terms or conditions impose additional responsibilities upon the Public Defender not contemplated herein, additional compensation shall be provided therefore as agreed to by the parties. This agreement may not be modified except in a writing duly authorized and executed by the parties hereto.
- D. Immigration Compliance. To the extent this Agreement constitutes a public contract for services pursuant to C.R.S. § 8-17.5-101 et seq., the following provisions shall apply: Public Defender shall not knowingly employ or contract with an illegal alien to perform work under this Agreement. In addition, Public Defender shall not enter into a contract with a subcontractor that fails to certify to the Public Defender that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Agreement. If Public Defender obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien, Public Defender shall notify the subcontractor and the City within three (3) days that Public Defender has actual knowledge that the subcontractor is employing or contracting with an illegal alien. Furthermore, Public Defender shall terminate such subcontract with the subcontractor if, within three (3) days of receiving the notice required pursuant to this paragraph, the subcontractor does not stop employing or contracting with the illegal alien. Except that Public Defender shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

Public Defender certifies that, prior to executing this Agreement, it has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement through participation in either the E-verify program

administered by the United States Department of Homeland Security and the Social Security Administration (the “E-verify Program”), or the employment verification program administered by the Colorado Department of Labor and Employment (the “Colorado Verification Program”). Public Defender shall not use either the E-verify Program or the Colorado Verification Program procedures to undertake pre-employment screening of job applicants while performing this Agreement.

Public Defender shall comply with all reasonable requests by the Colorado Department of Labor and Employment made in the course of an investigation undertaken pursuant to the authority established in C.R.S. § 8-17.5-102(5).

To the extent required by C.R.S. § 8-17.5-102(1), by submitting a bid, the Public Defender certifies that at the time of bid submission it did not knowingly employ or contract with an illegal alien who will perform work under this Agreement, and that the Public Defender will participate in the E-verify Program or the Colorado Verification Program in order to verify the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement.

- E. Equal Employment Opportunity. In connection with the execution of this Agreement, Public Defender shall not discriminate against any subcontractor, employee or applicant for employment because of race, religion, color, sex, national origin, or disability. Such actions shall include, but not be limited to the following: employment; upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Public Defender represents that it will require a similar affirmation of nondiscrimination in any contract it enters into with a subcontractor as part of the execution of this Agreement.
- F. Indemnification. Public Defender agrees to indemnify, defend, and save and hold harmless the City and its officials and employees from and against any claims, judgments, damage, losses and expenses, including attorney fees, arising out of or resulting from the Public Defender’s performance of services pursuant to this Agreement.
- G. Insurance. During the term of this Agreement, Public Defender shall maintain professional liability insurance in an amount not less than \$1,000,000 per claim, or such other amount as may be approved in writing by the Court Administrator. Public Defender shall file a certificate of such insurance with the Court Administrator prior to commencing any representation pursuant to this Agreement.
- H. Prohibited Interest. Public Defender agrees that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Consultant further agrees that in the performance of the Agreement, no person having any such interests shall be employed. Further, no official or employee of the City shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement this ____ day of _____, 20____.

DAVID ROCKWELL

CITY OF WESTMINSTER, COLORADO

By: _____

BY: _____
J. Brent McFall, City Manager

Address:
255 Canyon Blvd, #100
Boulder, CO 80302

Address:
4800 West 92nd Avenue
Westminster, CO 80031

APPROVED AS TO FORM:

City Attorney

Linda Yeager, City Clerk

ATTEST:



W E S T M I N S T E R

Agenda Item 8 D

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: 2015 Wastewater Collection System Improvement Project/Lining Contract

Prepared By: Robert L. Booze, Distribution and Collection Superintendent
Stephen Gay, Utilities Operations Manager

Recommended City Council Action

Authorize the City Manager to execute a contract with the low bidder, Layne Inliner, LLC in the amount of \$355,513 for small diameter wastewater pipe lining plus a contingency of \$35,551 for a total expenditure of \$391,064.

Summary Statement

- The City owns and maintains 385 miles of wastewater collection pipelines, which transport wastewater to the treatment facilities.
- Each year Staff identifies the pipelines that exhibit the most serious deterioration, based on a numerical condition rating that is assigned during an annual inspection of the City's entire wastewater collection system. The most severely deteriorated pipelines are then selected for rehabilitation.
- This project includes the lining of approximately 2.3 miles of small diameter wastewater pipelines in various locations throughout the City.
- The technology used in this process has proven to be successful and is minimally disruptive for residents and traffic flows.
- Staff recommends City Council award the contract to the low bidder, Layne Inliner, LLC.
- This project will begin in early 2015, and Staff anticipates that the work will be completed in May 2015.
- Adequate funds were approved in the 2015 Budget for this expense.

Expenditure Required: \$391,064

Source of Funds: Utility Capital Improvement Fund – Sanitary Sewer Line Rehabilitation Project

Policy Issue

Should City Council authorize a contract with the low bidder Layne Inliner, LLC to rehabilitate deteriorated small diameter wastewater pipelines?

Alternatives

1. City Council could choose to delay this wastewater lining rehabilitation project. This is not recommended as the City would risk additional wastewater pipeline failures and damages that may occur due to line collapse.
2. City Council could choose to reject all of the construction bids and rebid the project. The City received two bids from qualified companies. It is unlikely that new bids would be lower or that the City would receive more bids. Staff recommends awarding the contract to the low bidder, Layne Inliner, LLC (Layne).
3. City Council could choose to not authorize the project. Staff does not recommend this alternative, as the wastewater pipelines selected for rehabilitation are severely deteriorated and require rehabilitation to function properly.

Background Information

The City's entire wastewater collection system consists of approximately 385 miles of pipeline, which transport wastewater to the treatment facilities. These pipelines deteriorate over time due to a variety of factors including the presence of hydrogen sulfide gas (a byproduct of wastewater), which wears away the concrete mortar and causes joint leaks and corrosion along the top of the wastewater lines. This damage can eventually cause the wastewater pipeline's structural support to fail and cause a total pipeline collapse.

Each year, Staff identifies the pipelines that exhibit the most serious deterioration, based on a numerical condition rating assigned during an annual inspection of the wastewater collection system. The most severely deteriorated pipelines are then selected for rehabilitation. To achieve the required pipe rehabilitation, a Cured-In-Place Pipe (CIPP) trenchless technology is used, which allows for the repair of the impacted pipelines without digging up or "trenching" the road to access those pipelines. This rehabilitation process has been a reliable method of repair utilized by the City in past years, and is minimally disruptive for residents and traffic flows. The 2015 Wastewater Collection System Improvement Project/Lining contract will repair the most serious defects in approximately 2.3 miles of small (between eight and twelve inches) diameter pipeline around the City.

The 2015 Wastewater Collection System Improvement Project/Lining contract was advertised and bids were opened on October 15, 2014. Two bids were received and are summarized in the following table.

| Contractors | Bid Price |
|-------------------------|------------------|
| Layne Inliner, LLC | \$355,513 |
| Insituform Technologies | \$365,587 |

A review of the bids received indicated that Layne's bid was valid and the dollar amount reasonable for the scope of the work. Staff recommends executing a contract with Layne for this project. The City has utilized Layne's services in the past for similar CIPP lining projects and has been satisfied with the quality of their work. The project will commence in January 2015 and Staff anticipates project completion in May 2015.

The majority of the work in this contract is in the area south of 104th Avenue and east of Wadsworth Boulevard, but there are a few lines that are being addressed in other parts of the City. A project map is attached to illustrate the specific areas to be completed in this project.

This project helps achieve the City Council's Strategic Plan Goals of Excellence in City Services by rehabilitating deteriorated infrastructure to provide improved and effective service to customers.

Respectfully submitted,

J. Brent McFall
City Manager

Attachment: Map

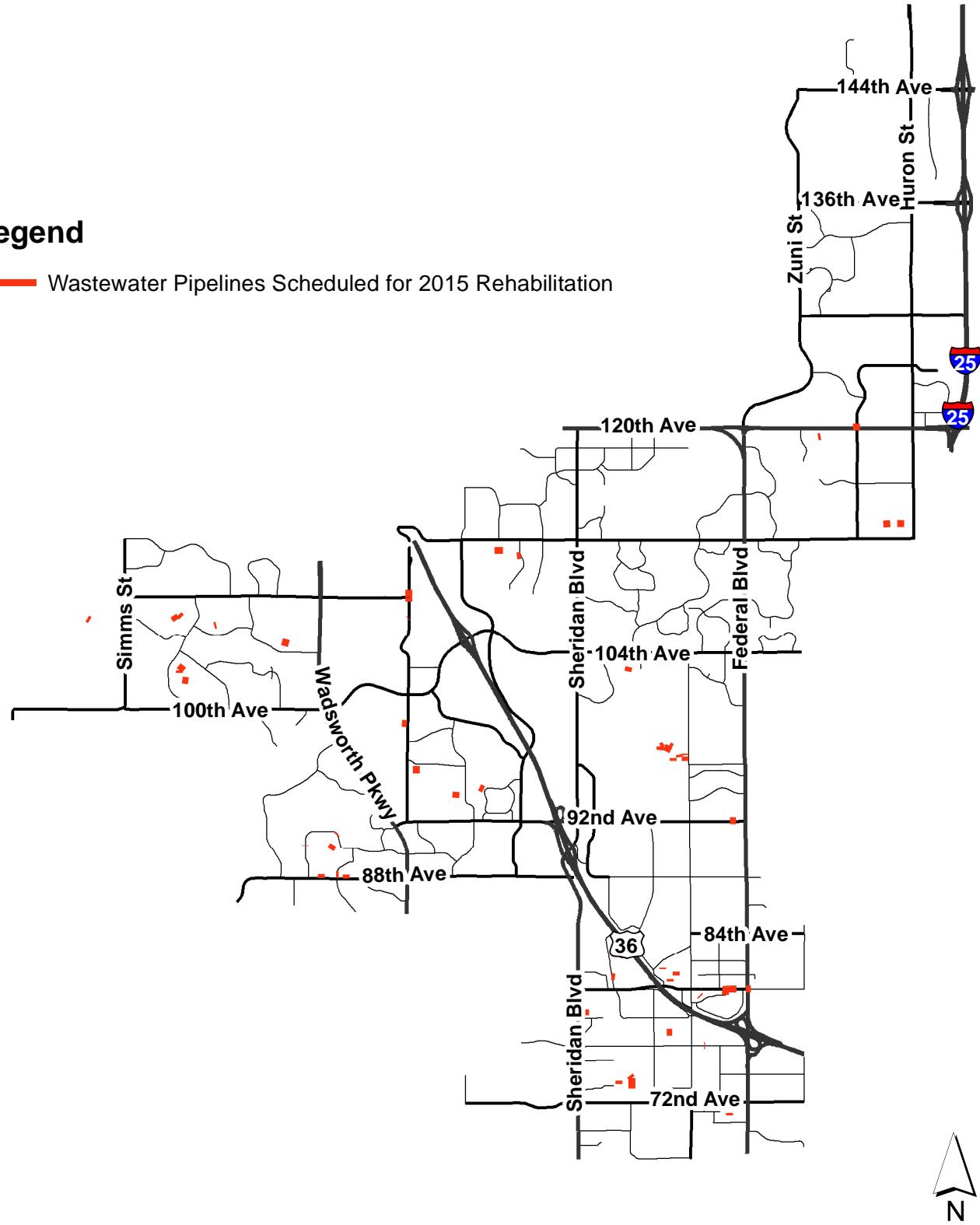


W E S T M I N S T E R

2015 WASTEWATER COLLECTION SYSTEM IMPROVEMENTS

Legend

— Wastewater Pipelines Scheduled for 2015 Rehabilitation





Agenda Item 8 E

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: Westminster Station Infrastructure, Phase One
Contract Amendment for Design Engineering Services

Prepared By: Seth Plas, Engineer

Recommended City Council Action

Authorize the City Manager to execute a third amendment to the Westminster Station Infrastructure, Phase One contract with Martin/Martin, Inc. in the amount of \$338,895 for the design of the relocation of the bus transfer facility (\$169,165) and the design of the Federalview Subdivision water main (\$169,730), bringing the total amount of this contract to \$733,691, and authorize a design contingency of \$33,890 bringing the total design project budget to \$767,581.

Summary Statement

- Previously prepared plans for Westminster Station Drive, the main access to Westminster Station from Federal Boulevard, must be redesigned in order to accommodate the revised property acquisition from Nolan RV and the desired relocation of the bus transfer facility. As a result of continued negotiations with the owner of Nolan RV, Westminster Station Drive must be shifted farther to the south in order to maintain the desired amount of parking for the business. Additionally, ongoing discussions with Regional Transportation District (RTD) staff have led to a decision to move the proposed bus transfer facility to the City's new parking structure rather than the originally envisioned site along Westminster Station Drive.
- At the same time, Department of Public Works & Utilities staff have budgeted funds for a water line construction within Federal Boulevard between the proposed Westminster Station Drive and 72nd Avenue to serve the current demands of the area as well as the future build-out of the Transit Oriented Development (TOD) area. As part of a coordinated effort between Public Works & Utility and Community Development personnel, the staff concluded that the City could save time and money by including the water line extension in Martin/Martin's scope of work. The consultant is familiar with the project area and has already performed much of the necessary survey work during the original design of the Westminster Station North Infrastructure project.
- Funding for the described design services will be shared by the two Departments. The water main portion of the design will be funded through the Utility Fund and the remainder of the amendment to the original contract will be funded through the Westminster Station North Infrastructure project of the General Capital Improvement Project Fund. Adequate funds were budgeted and are available for this expense.

Expenditure Required: \$372,785

Source of Funds:
General Capital Improvement Fund
– Westminster Station North (\$186,082)
Utility Capital Improvement Fund
– Lowell Boulevard Water Main (\$186,703)

Policy Issues

1. Should the City amend the contract with Martin/Martin, Inc. for the desired additional design services pertaining to the Westminster Station Infrastructure, Phase One project?
2. Should the City include the engineering services desired for the Federalview Area Pipelines project in Martin/Martin's existing contract?

Alternatives

1. The alternative to the recommended action pertaining to the redesign of Westminster Station Drive and the bus transfer facility is to not amend the contract for design services with Martin/Martin and, instead, publish a Request For Proposals from other engineering firms to revise the construction plans as needed. However, given Martin/Martin's extensive background working on the project, the reasonable scope and fee this company has submitted for these services and the need to complete this design and the construction prior to the opening of Westminster Station, staff recommends authorization of the amended contract for the Westminster Station Infrastructure, Phase One project design services.
2. City Council could also choose to direct staff to advertise the Federalview Area Pipelines project design for proposals from different engineering firms. However, Staff believes that the scope and fee that Martin/Martin submitted for this work is responsible and competitive, and it is unlikely that proposals from other firms would be appreciably better in scope or more competitive in price than Martin/Martin's scope and fee.

Background Information

In June 2012, City Council approved an intergovernmental agreement (IGA) with RTD that describes the parties' responsibilities for designing and building Westminster Station, the commuter rail station to be located at approximately 70th Avenue and Irving Street. Through their concessionaire, Denver Transit Partners (DTP), RTD will be responsible for all track work, the station platform and the pedestrian tunnel. These features will allow rail users to pass from the Transit-Oriented Development area to the station platform. As part of RTD's Eagle P3 Program, rail service for this short portion of the Northwest Rail Line is intended to open in mid to late 2016. The program also includes service along the East Corridor (to Denver International Airport) and the Gold Line (to Arvada and Wheat Ridge).

Under the terms of the IGA, the City is responsible for providing streets and utility infrastructure sufficient to support the station operations. The originally recommended design of the project extended Hooker Street from south of 71st Avenue to the proposed north plaza with proposed Westminster Station Drive continuing east to Federal Boulevard where a new signalized intersection was approved by the Colorado Department of Transportation (CDOT). A bus transfer facility was originally located adjacent to the south side of Westminster Station Drive. This layout was included as part of the scope of work in the original contract for engineering services with Martin/Martin.

Following the acquisition of the Nolan's property and the determination that Westminster Station Drive needed to be slightly relocated, City staff requested a revised proposal from Martin/Martin to accommodate the desired shift in roadway alignment. This design work will include street and utility improvements, lighting, landscaping and the coordination, as appropriate, with RTD, CDOT and the Beck Group, the consultant contracted to design and construct the parking garage.

Additionally, the City's Department of Public Works & Utilities staff were preparing to send out a Request for Proposals for the Federalview Area Pipelines project. This project is included in the 2015 Capital Improvement Plan that will fund the project through construction. The timeline for Martin/Martin to redesign Westminster Station Drive and the proximity the two projects share would allow for an economy of effort in designing both projects at the same time and bidding them for construction together. Staff also saw an opportunity to consolidate efforts in coordinating with CDOT on its nearby Federal Boulevard Bridge project. Staff believes bridge construction, traffic control and paving schedules associated with the CDOT Federal Boulevard Bridge project will be more manageable and better

coordinated by combining the Westminster Station project with the Federalview Area Pipelines project. Staff also believes combining these projects will limit the impact of construction to residents and businesses as well as save the City time and funds that would otherwise be needed to coordinate two separate projects at the same time and in the same area. Staff intends to negotiate an amendment to Martin/Martin's engineering services agreement for engineering construction phase services, to be presented City Council for approval in the future.

Since Martin/Martin provided a full design of the original roadway alignment and has direct knowledge of the existing conditions, staff recommends that this firm be used to prepare construction documents for the realigned roadway and water line projects. Staff believes the proposed fee for the final design assignment, totaling \$372,785, is appropriate for the tasks described in the proposal. Staff believes this fee proposal would be competitive if requested from other consultants, and none other has the familiarity of the project. The City will also benefit by not having to spend months soliciting proposals and familiarizing another firm with this important piece of Westminster Station North infrastructure.

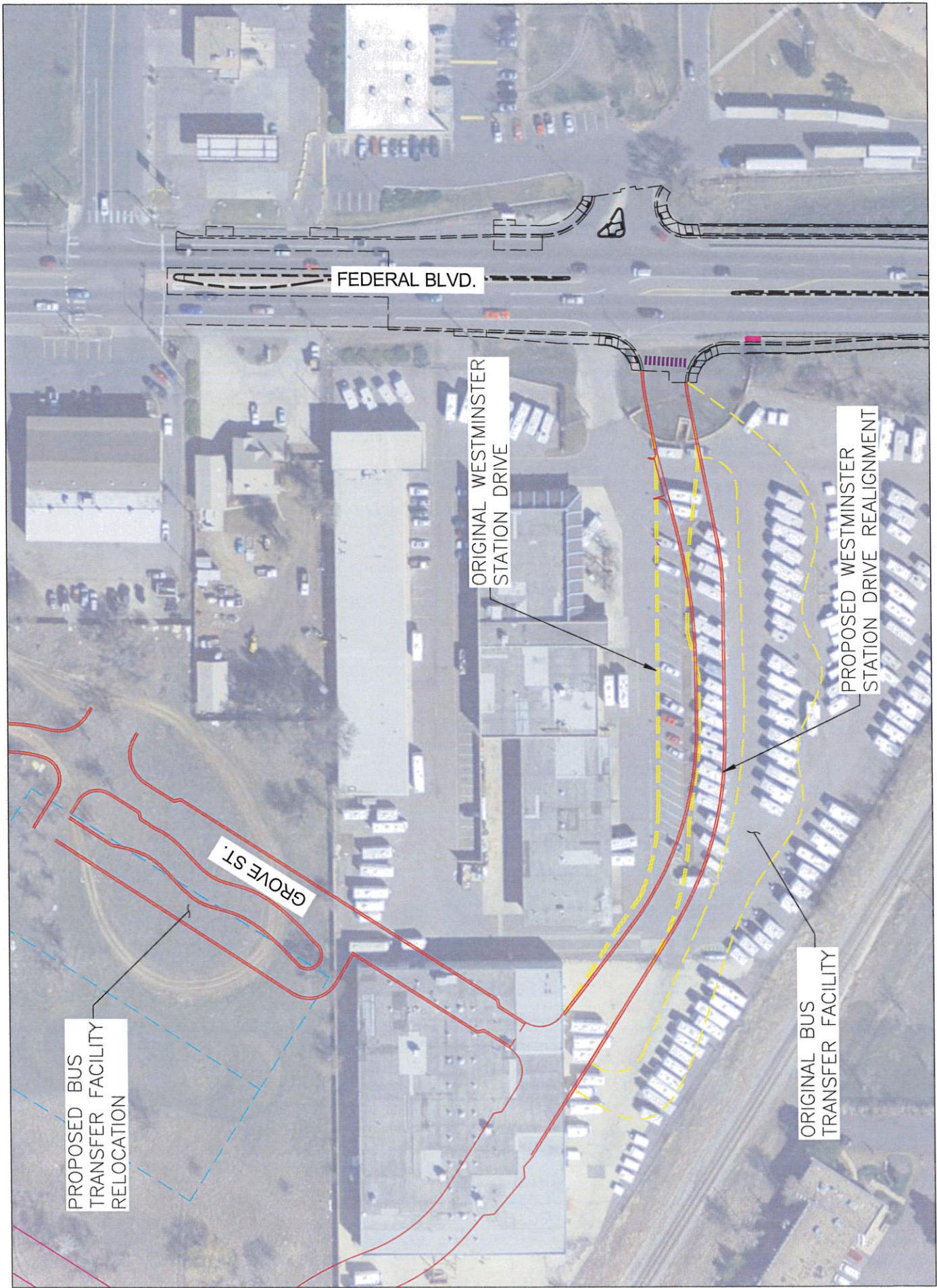
The project scope, to accommodate commuter rail transit within the City of Westminster and prepare for the eventual implementation of TOD in the vicinity of the station, meets the City Council goals of “Dynamic, Diverse Economy,” “Excellence in City Services,” and “Ease of Mobility.”

Respectfully submitted,

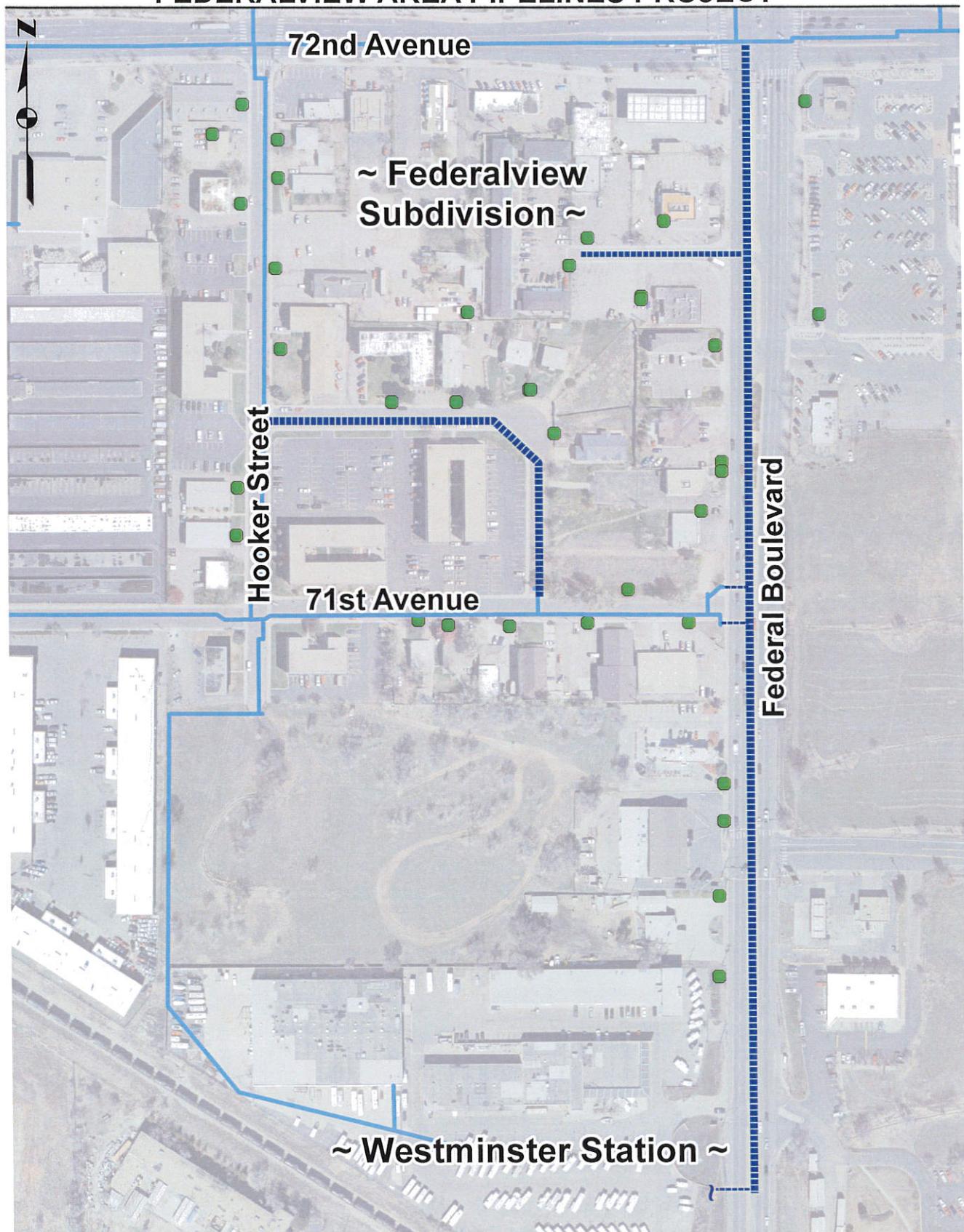
J. Brent McFall
City Manager

Attachments Westminster Station Drive Realignment Exhibit
Federalview Area Pipelines Project Exhibit

WESTMINSTER STATION DRIVE
REALIGNMENT EXHIBIT



FEDERALVIEW AREA PIPELINES PROJECT



Legend

- Existing Westminster Water Lines
- Replace Crestview Water Meters with Westminster Water Meters
- ===== New Westminster Water Main

~CDOT Bridge Project~

500

250

0

500 Feet



W E S T M I N S T E R

Agenda Item 8 F

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: Second Reading of Councillor's Bill No. 34 re Strasburg Natural Resource Farm Lease Renewal

Prepared By: David Meyer, Water Quality Specialist
Mike Happe, Utilities Planning and Engineering Manager

Recommended City Council Action

Pass Councillor's Bill No. 34 on second reading authorizing the City Manager to enter into a one-year lease, renewable automatically on an annual basis for four additional one-year terms, for dry-land farming of the Strasburg Natural Resource Farm in return for one third of the gross annual crop sale revenues; and as a part of the lease, authorize the payment of weed control costs not to exceed \$50,000 per calendar year.

Summary Statement

- The City owns approximately 3,000 acres of farmland for the purpose of applying the biosolids generated by the City's wastewater treatment process to agricultural crops.
- Two farmers currently lease property on the Strasburg Natural Resource Farm and coordinate with Staff in the selection and timing of the crops planted on the property.
- The lease under consideration is a one year lease to Greg Schoonveld for 1,420 acres of non-irrigated (dry-land) fields that are generally used for wheat production. The lease would be automatically renewable every year for four additional one-year terms, and expire in 2019.
- Under this lease agreement Mr. Schoonveld will pay the City one third of the revenue from the sale of the crops produced as payment for use of the land.
- As a condition of the lease, the City will pay chemical and application costs for weed control. These costs are not anticipated to exceed \$50,000 per year.
- Adequate funds are budgeted and available.
- This bill was approved on first reading by City Council on October 27, 2014.

Expenditure Required: Not to exceed \$50,000 per year
Source of Funds: Utility Fund - Big Dry Creek Wastewater Treatment Plant Operating budget

Respectfully submitted,

J. Brent McFall
City Manager

Attachment: Ordinance
2014 Farm Lease

BY AUTHORITY

ORDINANCE NO. **3744**

COUNCILLOR'S BILL NO. **34**

SERIES OF 2014

INTRODUCED BY COUNCILLORS
Pinter - Baker

A BILL
**FOR AN ORDINANCE APPROVING A LEASE AGREEMENT FOR CITY-OWNED
PROPERTY KNOWN AS THE STRASBURG NATURAL RESOURCE FARM**

WHEREAS, the City owns property in central Adams County that it purchased for the purpose of applying biosolids; and

WHEREAS, it is in the City's best interest to enter into a lease to grow crops thereon; and

WHEREAS, the terms of the lease agreement have been accepted and filed with the City Clerk.

THE CITY OF WESTMINSTER ORDAINS:

Section 1. That certain lease between the City and Greg Schoonveld is approved and the City Manager is hereby authorized to execute said lease, in substantially the same form as attached hereto as Exhibit A.

Section 2. This ordinance shall take effect upon its passage after second reading. The title and purpose of this ordinance shall be published prior to its consideration on second reading. The full text of this ordinance shall be published within ten (10) days after its enactment after second reading.

INTRODUCED, PASSED ON FIRST READING, AND TITLE AND PURPOSE ORDERED PUBLISHED this 27th day of October, 2014.

PASSED, ENACTED ON SECOND READING, AND FULL TEXT ORDERED PUBLISHED this 10th day of November, 2014.

ATTEST:

Mayor

City Clerk

APPROVED AS TO LEGAL FORM:

City Attorney's Office

LAND LEASE

1. Parties

This lease for the rental of agricultural property is between the City of Westminster ("City") and GREG SCHOONVELD ("lessee").

The person/position authorized to manage the leased premises for the City is:

Name David Meyer
Address City of Westminster
13150 N. Huron, Westminster, Colorado 80234
Phone 303-658-2376

2. Leased Premises

The City hereby leases to lessee the premises described below:

1,420 acres of farmable dry land, generally located approximately eight (8) miles north of Strasburg, Colorado, in Adams County. The fields are depicted as CW-22-1-200, CW-22-2-200, CW-23-1-107, CW-23-3-320, CW-27-1-100, CW-27-2-320, and CW-35-1-240 on the map attached hereto as Exhibit A.

3. Term

Fixed Term. The initial term of this lease shall be from November 11, 2014, to August 15, 2015. The lease term shall be automatically renewed on an annual basis for four additional one year terms on August 15th of each year, without requirement of further written notice or amendment, terminating no later than August 15, 2019. Either party may choose not to annually renew for the following year by providing written notice to the other party by June 15th, in which case the lease shall terminate on August 15th of that year.

4. Rent

A. Fixed Term. The total annual rental price for the term of this lease shall be a one-third (1/3) split of gross profits from the sale of the harvested and locally delivered grain realized from dry land farming, payable prior to December 1st of each year. No proration will be made for a term less than a calendar year.

B. Rent payments shall be made to:

Citv of Westminster, 13150 N. Huron, Westminster, Colorado 80234
Attn: David Meyer

C. Lessee shall incur and be charged Five Dollars (\$5.00) per day as a late fee for payment of rent received after 5 p.m. o'clock on the 15th day of December following each lease year . Such fee, which will be

considered additional rent, may be collected immediately by the City. Late fees may be waived if the City agrees in writing. Lessee should request such waiver by notifying the City on or before the rental due date and mutually arranging an alternative payment date.

A charge of up to Twenty Five Dollars (\$25.00) may be imposed for any lessee's check returned to the City because of insufficient funds.

5. Use

- A. Lessee's use of the leased premises shall be limited to agricultural purposes, including crop production.
- B. Lessee acknowledges that a major factor in the City's decision to lease the premises is to insure the viability of the leased premises as a receiving site for bio-solids application. For that reason, lessee agrees to co-ordinate, consult, and cooperate with the City's Water Resources and Treatment Program representative in the selection and timing of the crops planted on the leased premises.
- C. Lessee shall not engage in any illegal activities on the premises.
- D. Lessee shall not apply fertilizers without prior approval of City.
- E. Lessee shall not use, store, or dispose of any chemicals that might create liability for the City resulting from contamination from such chemicals.
- F. Lessee shall obtain City's approval of all chemicals, including pesticides and herbicides, prior to their use.

6. City's Obligations

City agrees to furnish the property, and to:

- A. Provide all posts and fence for fence maintenance; and
- B. Pay taxes on land, improvements, and personal property owned by City; and
- C. Pay the cost of City-approved chemicals purchased by Lessee for weed control and pay the Lessee for application of weed control chemicals at the rate of Five Dollars per Acre (\$5.00/acre).

7. Lessee's Obligations

Lessee agrees to:

- A. Provide all machinery, equipment and labor necessary to farm the premises properly.

- B. Provide all seed, inoculant, disease-treatment materials, and fertilizers, to the extent they are permitted by the City.
- C. Provide the City with invoices showing the amount and type of weed control chemicals used and the acreage to which they were applied by the end of the month following application.
- D. Coordinate crop selection, field preparation, and planting schedules to allow the City adequate access to apply biosolids.
- E. Maintain and take proper care of, and prevent injury to, all trees and shrubs. Not to cut any trees without the City's prior consent.
- F. Prevent noxious weeds from going to seed on the premises, and keep trim the weeds and grasses on the roads adjoining the leased premises.
- G. Maintain and keep in good repair any established watercourses or ditches on the premises.

 8. Compensation for Damage

At the conclusion of this Lease, lessee shall pay to City a reasonable compensation for any damage to the property, for which Lessee is responsible, after due allowance is made for damage resulting from ordinary wear and depreciation or from causes beyond Lessee's control.

N/A 9. Utilities

 10. Right to Re-Entry

City reserves the right of itself, its employees, assigns, or prospective buyers, to enter upon the leased premises at any reasonable time for the purpose of viewing the same or making repairs or improvements thereon, or of plowing after severance of crops, or of seeding, or applying bio-solids, provided that such entry and activity shall not interfere with the occupancy of lessee.

If Lessee should fail to carry out substantially the provisions of this Lease, within ten days after service by City of written notice to Lessee of Lessee's failure to fulfill his obligations, City shall have the right to re-enter and to take full possession of the farm and buildings, which Lessee agrees to vacate peaceably without claim for damages.

 11. Assignment/Subleasing/Release

Lessee shall not assign this lease, or sublet any portion of the leased premises, for any part or all of the term of this lease without prior written consent of the City.

 12. Nuisance

Lessee agrees not to create any nuisance such as will disturb the peace and quiet of neighbors.

13. Compensation for Termination of Lease

- A. If terminated for cause, no compensation will be paid to lessee.
- B. If terminated at the end of five years or at the end of any annually renewable year, Lessee will be paid for field preparation activities on fallow fields at the rate of Five Dollars per Acre (\$5.00/acre).

14. Notice

Unless otherwise specified in this lease, all notices provided by this lease shall be in writing and shall be delivered to the other party personally, or sent by first class mail, postage pre-paid, as follows:

To the City: City of Westminster
13150 N. Huron
Westminster, Colorado 80234
Attn: David Meyer

To lessee: At lessee's last known address. At the time of this lease, Lessee current address is: 3600 Headlight Rd., Strasburg, CO 80136

Notice to one lessee shall be deemed to be notice to all lessees.

15. Insurance

The City's insurance does not cover lessee's personal possessions in the event of loss or damage due to fire, windstorm, flood, theft, vandalism, or other similar cause.

Lessee agrees to carry liability insurance covering bodily injury and property damage in an appropriate amount approved by the City and to make the City an additional named insured under this liability policy, and to provide the City with a copy of such insurance policy as evidence of coverage, throughout the term of the lease. Lessee agrees to provide a Certificate of Insurance demonstrating such coverage no later than September 30, 2014.

16. Attorney's fees

In the event of any legal action concerning this lease which results in a judgment, the losing party shall pay to the prevailing party reasonable attorney's fees and court costs to be fixed by the court.

17. Liability

Lessee will indemnify, defend, and hold harmless the City from and against any claim for personal injury or property damage resulting from any act or omission of its agents.

18. Subordination

This lease shall be subordinate to all existing and future mortgages and deeds of trust upon the property.

19. Waiver

Any waiver by either party of any breach of any provision of this lease shall not be considered to be a continuing waiver or a waiver of a subsequent breach of the same or a different provision of this lease.

20. Severability

The unenforceability of any provision or provisions of this lease shall not affect the enforceability of any other provision or provisions.

21. Joint and Several Liability

If this lease is signed on behalf of lessee by more than one person, then the liability of the persons so signing shall be joint and several. The language "joint and several" means that if more than one person has signed this lease, then each of these persons individually and all of these persons collectively are fully responsible for fulfilling all of the obligations of this lease, except where expressly otherwise agreed between the City and lessee. For example, one person signing the lease may be liable for any or all damages to the premises, even if caused by another person signing the lease, and one person signing the lease is liable for the total amount of rent due, even though other persons have also signed the lease.

22. Signatures/Amendment of Lease

This lease contains the entire agreement of the parties and may not be altered or amended except by mutual written agreement signed by both parties.

Signed this _____ day of _____, 20____.

CITY OF WESTMINSTER

LESSEE

By:

J. Brent McFall

Title:

City Manager

Greg Schoonveld

Approved as to legal form:

Janet Greenfield

City Attorney's Office



W E S T M I N S T E R

Agenda Item 10 A - C

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: Public Hearing and Councillor's Bill No. 35 Rezoning the Westminster Center Urban Reinvestment Plan Site to Specific Plan District and Adoption of the Westminster Downtown Specific Plan

Prepared By: Natalie Winsen, Planner

Recommended City Council Action

1. Hold a public hearing.
2. Pass Councillor's Bill No. 35 on first reading for the rezoning of the site of the former Westminster Mall from Planned Unit Development to Specific Plan District. This is based on a finding that the criteria as set forth in section 11-5-3 and 11-4-7.5 of the Westminster Municipal Code have been considered and satisfied.
3. Adopt the Westminster Downtown Specific Plan. This is based on a finding that the criteria as set forth in section 11-5-20(H) of the Westminster Municipal Code have been considered and satisfied.

Summary Statement

- The Westminster Economic Development Authority (WEDA) has submitted a rezoning request for Specific Plan District (SPD) zoning and a Specific Plan for the 108 acres located to the southeast of 92nd Avenue and Harlan Street. Key components of the Specific Plan include circulation and streetscape design, built form, green space and public art.
- The proposed rezoning is a City-initiated rezoning authorized by Westminster Municipal Code (W.M.C.) Section 11-5-3. The proposed rezoning ordinance would rezone the entire 108-acre site from Planned Unit Development (PUD) to Specific Plan District (SPD).
- This Specific Plan has been initiated by the City in cooperation with the WEDA pursuant to W.M.C., Section 11-5-20(D) and C.R.S., Section 31-25-112. The purpose of this Specific Plan is to aid the Authority in connection with the planning and undertaking of the Authority's urban renewal project previously designated by the Authority as the Westminster Urban Center Reinvestment Project.
- C.R.S., Section 31-25-112 of the Colorado Urban Renewal Law specifically authorized the City to cooperate with WEDA in connection with the planning and undertaking of the Authority's plans and projects, including assistance in the form of planning and zoning proposed for redevelopment by the Authority.

Expenditure Required: \$0

Source of Funds: N/A

Planning Commission Recommendation

The Planning Commission met on Tuesday October 28, 2014 to consider the rezoning of the Westminster Center Urban Reinvestment Plan site to Specific Plan District and the adoption of the Westminster Downtown Specific Plan and voted unanimously (6-0) in favor of approval. No one spoke in favor or opposition to the proposal.

Planning Commission also recommended that City Council require a sentence be added to the Westminster Downtown Specific Plan document that states there will be opportunities for public and periodic review of the document.

Policy Issues

- Should the City Council approve the rezoning of the site from PUD to SPD?
- Should the City Council approve the Westminster Downtown Specific Plan?

Alternatives

1. The City could retain the existing PUD zoning on the site. Staff does not recommend this as the SPD zoning makes the process of development review approval easier, more efficient, less costly, and more expeditious than a negotiated PUD zone process in the context of the Westminster Urban Reinvestment Plan (WURP) project. If this option were selected, a Specific Plan would not be required.
2. Approve the rezoning of the site to SPD, but not recommend the adoption of the Westminster Downtown Specific Plan. This option is not recommended as the adoption of the Specific Plan is necessary to guide development of the former Westminster Mall site to ensure a vibrant, high quality, mixed-use development.
3. Approve the rezoning of the site to SPD and adoption of the Westminster Downtown Specific Plan with modifications. Components of the Specific Plan can be amended if the City Council concludes that detailed elements require changing or refining.

Background Information

Specific Plan District Creation

In October 2014, City Council approved the addition of a new zoning category to be added to the WMC, called Specific Plan District (SPD) which is intended for use in redevelopment areas. The expectation for this District was established in the most recent Comprehensive Plan, when the City established “Focus Areas,” which were envisioned to be further defined by a Specific Plan at a future date.

The SPD merges the concepts of regulatory zoning requirements (setbacks, parking, height, etc.) with the negotiated design requirements of the City’s standard Planned Unit Development (PUD) zoning into one “Euclidean” zoning category that has all requirements located in one place (i.e., in each specific plan). This will make the process of development review approval in these targeted areas easier, more efficient, less costly, and more expeditious than a negotiated PUD zone process.

Specific Plans serve as comprehensive, self-contained, and generally self-executing regulatory document for the governance, control and implementation of land uses and development within a SPD, consistent with the goals and objectives of the SPD’s Focus Area designation in the Comprehensive Plan.

The Westminster Downtown Focus Area was identified in the 2013 Comprehensive Plan and the planning process for the Westminster Downtown Specific Plan (Specific Plan) began in July 2013.

Westminster Downtown Specific Plan

The Westminster Downtown Specific Plan provides the regulatory framework for implementing City Council's vision of a new downtown for the City of Westminster. Over the summer of 2013, City Council authorized staff to enter into a contract with Torti Gallas and Partners to develop the specific plan for the Westminster Urban Reinvestment Plan (WURP) site. Additional consultants, which are a part of the Torti Gallas team, include Martin and Martin for civil engineering, Nelson Nygaard for transportation, and Communitas for development feasibility.

Scope of Work and Plan Process

The scope of the plan process included a comprehensive analysis of all aspects of physical planning for the site to serve as a basis for policy making, design and implementation of the plan. As such, utility, drainage, and traffic analyses were prepared in concert with preparation of an overall development program for the site. These analyses assessed existing conditions and the impact of net new development on infrastructure. Proposed improvements to infrastructure (both site-specific and area - or city-wide) are outlined in the documents and include as elements of the overall framework plan for downtown. These analyses are included in Chapter 8 of the Specific Plan as appendices—8.2 Traffic Analysis, 8.3 Utility Plan and 8.4 Drainage Plan. In addition to the infrastructure analysis prepared for the site, Project for Public Spaces (PPS) prepared a report entitled Placemaking in Downtown Westminster. This report addresses the themes, programming, and quality of public spaces and parks of the Downtown Westminster framework plan. This report is also included in Chapter 8 as Appendix 8.1 Public Spaces Study.

The Specific Plan scope of work also included a robust site plan development and public outreach process. An initial site plan was developed for the area after an intense City and consultant team design charrette. This site plan, or framework plan, was vetted with City Council in August 2013 and the community in the first round of outreach in September 2013. The framework plan was approved as a Preliminary Development Plan (PDP) in October 2013.

Following approval of the PDP, staff and their consultants have worked to develop a cohesive regulatory planning document (Westminster Downtown Specific Plan) to implement the vision and physical framework for a new downtown district. The framework plan for the site has been further informed and refined by the involvement of developer Oliver McMillan beginning in March 2014. Staff has worked closely with Oliver McMillan to refine the framework plan and create a vision for a significant first phase of development on the site. A second round of community outreach was held in early September 2014 which gave City Council and the Westminster community an opportunity to weigh in on the direction of the plan and its implementation.

Plan Analysis

An integral part of the planning process for the downtown site was the development of an overall land use program for the site. This land use program was based upon the carrying capacity of the plan as well as economic market analyses completed for non-residential and residential uses. The resulting development program assumes a full build-out of the blocks planned within the site:

Projected Development Program at Buildout

| <i>Land Use</i> | <i>Projected Development</i> |
|-------------------|------------------------------|
| Residential | 2,400 units |
| Retail Commercial | 780,000 square feet |
| Hotel | 280,000 square feet |
| Office | 1,000,000 square feet |

This development program was used as a basis for initial analysis for the utility, drainage, and traffic studies completed for the site. These analyses were completed as part of the Preliminary Development Plan process in late 2013. Several analyses for citywide infrastructure improvements and planning, including water availability and sanitary sewer improvements, were conducted in mid-2014. These analyses assumed an additional 400 dwelling units, consistent with the Specific Plan's residential development capacity limit of 2,400 dwelling units. If development exceeds any of these projections,

updates to the analyses will need to be completed to ensure infrastructure capacity is adequately met on site.

The analyses completed for the Specific Plan and included in Chapter 8 are summarized below and included as part of Attachment B.

Public Space Study

The City contracted with Project for Public Spaces (PPS), a nationally recognized firm whose expertise is creating outstanding public spaces. They produced a study for the City regarding the proposed public spaces entitled “Placemaking in Downtown Westminster.” This study provides an invaluable contribution to the downtown plan and future design of the area’s parks and public spaces. Achieving a high quality public realm and experience that encourages visitors and community members to visit and return to Westminster’s downtown is essential for achieving the vibrancy and identity that City Council wishes to achieve for the site. As such, the study provides direction on how key themes that resonate with the Westminster community and future residents and workers will drive programming and design of each of these public spaces. Capturing these themes included significant stakeholder outreach, community input through the Specific Plan’s outreach process and citywide surveys completed by the Parks, Recreation and Libraries Department, and marketing, economic and demographic analysis. The themes identified in the study include:

- Health and Fitness
- Food and Gardening
- Tech-Oriented Amenities and Activities
- Dynamic, Interactive Art
- Community Celebrations and Gatherings
- Flexibility
- Spontaneity

The study also provides programming direction for each park and public space planned for the site as well as direction for optimal surrounding land use and urban design elements to maximize the success of each space.

Traffic Analysis

A traffic analysis was completed for the Westminster Downtown Specific Plan as part of the initial PDP approval for the site. This analysis used as its basis the development program described above. Additional assumptions of the analysis included retaining the existing signalization along 88th and 92nd avenues, as well as an overall trip capture reduction rate of 35 percent. This trip reduction rate assumes that the mix of uses — (residential, commercial and office), — combined with the site’s strategic access to a significant regional transit hub, reduces the overall vehicle trips that would otherwise be generated by each use individually if located as separate developments. In other words, this means that many residents and workers within the site will walk to key neighborhood services like a grocer, café or bank, rather than drive. Likewise, many visitors to the retail uses on the site will park once and walk to retail destinations, thanks to the walkable, urban scale of the site. Finally, the presence of significant transit opportunities adjacent to the site will allow these same residents and workers to leave their cars behind in order to reach areas of employment elsewhere in the region.

However, the site will still generate significant traffic from the projected development. It is projected that approximately 34,500 vehicle trips will be generated on a daily basis. In comparison, vehicle trips generated by the mall when it was at full capacity (fully leased and operating) comprised approximately 43,500 daily trips. This comparison indicates that the projected development program will distribute approximately 30 percent less daily traffic than the former mall site. In terms of existing levels of service (or congestion) at the major intersections along 88th and 92nd avenues, it is anticipated that with minor improvements and optimization of signal timing that the levels of service will not be impacted (will remain at D, which is the City’s accepted level of service for major arterial, high traffic intersections as stated in the Comprehensive Plan and Roadway Master Plan).

Utility Plan

Like the traffic analysis, the utility plan was completed in concert with the PDP and used as its basis for the projected development program above. The existing infrastructure on the site will not meet the full extent of development anticipated at plan buildout as it was originally designed to meet the needs of a 1,000,000+ square foot mall development. The introduction of another approximately 1,000,000 square feet of non-residential development and 2,000 dwelling units will require additional infrastructure capacity. It is anticipated that improvements to infrastructure, both on-site and area - or city-wide will over time accommodate new development on the site. As part of the initial phase of street construction, new water and sanitary sewer lines will be constructed to establish a framework for new lines and connections to developments. Additionally, several area-wide infrastructure improvements are underway, including installation of a 24-inch water transmission main and improvements to the Little Dry Creek Interceptor Sewer Line.

Drainage Plan

The drainage analysis was completed in July 2014 and used as its basis for the above development program. Additional assumptions include an impervious surface percentage of 90 percent for streets and 80 percent for the rest of the site. (The previous mall site was nearly 100% impervious.) This assumption is conservative, as several parks are planned and some developments may have smaller courtyard or green spaces/roofs integrated on-site to reduce water run-off. Existing drainage of the site is directed to two off-site detention ponds. Drainage from the western portion of the site is accommodated by a City owned detention pond located just south of the Lowe's shopping center south of 88th Avenue abutting the BNSF railroad. The eastern portion of the downtown site drains to an existing detention pond at the southeast corner of the site, at the northwest corner of the Sheridan Boulevard and 88th Avenue intersection.

The anticipated drainage resulting from a 100-year event from the western basin of the downtown site will not exceed the existing Lowe's pond volume. Drainage from the development within the eastern basin of the downtown site will be accommodated within a relocated and enlarged detention pond as shown in the framework plan.

Downtown Specific Plan Intent

Planning for a downtown must encompass a long-term vision for how a place may evolve over time. In order to retain flexibility and a sense of organic growth over time, the regulatory framework must allow for a range of uses, development types and ownerships to exist and be responsive to changes to the economic, social and natural environment. Likewise, the plan must establish the physical underpinnings for a civic, social and economic center that will endure and mature over time as a vibrant downtown. These elements include a walkable, connected street grid, well-programmed parks and public spaces, and an urban form that foster activity, engagement and accessibility. Thus, the key components of the Specific Plan include land use, urban design, the public realm, physical infrastructure, and guidance for how these elements will be implemented.

Plan Assumptions

Several key assumptions underlie the Specific Plan, including the incorporation of existing uses and infrastructure. Several uses remain on the site, on land owned by other entities as well as the City. The Brunswick Bowling facility and the McMurtry dental office sites are owned independently; JCPenney, Olive Garden and US Bank operate within City-owned lease areas. The Specific Plan allows for the continued operation of all of these uses with a street grid and block regulations that accommodate adaptive reuse or redevelopment over time. Existing infrastructure on the site is also retained to the extent possible, primarily comprising the existing intersections and signals along 92nd and 88th avenues, however the vast majority of this will be removed as its not in the correct location (i.e. water and sewer lines).

Plan Goals

The framework plan and subsequent development of the Specific Plan are based on the achievement of six essential goals that reinforce the City's vision of a new downtown:

1. *Visual and Physical Center of Westminster*, defined by an urban form, streetscape design and civic spaces that create a visual and physical prominence within the city.

2. *Urban District with Active Frontages*, established by a built environment and cohesive public realm activated by a vibrant ground level with ample entries and windows, sidewalks that accommodate outdoor uses, public plazas, and attractive green spaces and landscaping.
3. *Pedestrian Oriented Environment*, fostered by the design and massing of buildings, an attractive and supportive streetscape environment with ample lighting and furnishing, and a connected street grid that supports walkability.
4. *Interconnected Circulation Network*, accommodating all modes of travel including vehicular, bicycle, walking and transit with a range of options for navigating downtown by vehicle, bike or foot.
5. *Multi-Faceted Green Space and Park Network*, offering a variety of spaces, functionality and uses and emphasized by connections and extensions into the urban environment.
6. *Direct, Convenient Access to Transit*, initially established by connectivity to the Westminster Center Park-and-Ride and availability of transit access within the site, as well as future access and accommodation for connections to commuter rail south of 88th Avenue.

Plan Components

The Westminster Downtown Specific Plan is comprised of several components, as described below. The *regulating plan* establishes the street network, developable parcels, land use and development intensity permitted in downtown. The regulatory plan illustrates the location of new rights-of-way, dedicated park and public spaces, and development parcels. Permitted and prohibited land uses that support an active, urban environment with a wide range of uses are listed. Complementing the regulation of land uses are requirements for ground floor retail and active frontages to support a vibrant public realm as well as minimum development intensity to ensure an efficient use of land for both residential and non-residential uses.

Streetscape design within the plan provides conceptual design direction for various streets and street types within the downtown area. This design direction will serve as the conceptual basis for more detailed design efforts as development occurs and streets are constructed. However, the Specific Plan will establish an overall palette of materials, plantings and fixtures such as lighting and furnishings to ensure an overall cohesiveness and design quality for the downtown area.

Built form standards and guidelines establish the urban form of the downtown area. These standards are separated into block standards, building type and frontage regulations. Block development standards seek to accomplish an overall consistency in building placement, heights, and frontages along the street edge while also accommodating for unique conditions and relationships between uses (such as buildings that front onto park or plaza spaces). Building type standards address design within the overall block, with standards for façade width, lot width, pedestrian access, parking, green space, landscape and building massing. Finally, frontage regulations specifically address the relationship between the building and the street—the interaction and activity that is fostered in the public realm, or the sidewalk. These regulations set standards for ground floor design of buildings, how setbacks are utilized, and where and how building entries are located and designed.

The *green space guidelines* in the plan provide an overview of the entire green space network as well as more specific goals and programming elements for individual spaces. The development of this portion of the Specific Plan has been in concert with Project for Public Spaces (PPS) staff, who analyzed the overall framework plan and provided direction for how each public and park space could be maximized for the public benefit.

Finally, the *implementation* component of the plan focuses on how development and infrastructure will be realized. This portion of the plan describes the streamlined development review and approval process, and provides an overview of the specific infrastructure elements that will need to be constructed both initially within the site and over time as development occurs. An implementation program with a detailed breakdown of each infrastructure piece will also be provided for staff to more easily track necessary improvements.

Nature of Request

A rezoning of the site from PUD to SPD is required to enable the adoption of the Westminster Downtown Specific Plan. The Specific Plan will provide the regulatory framework for implementing City Council's vision of a new downtown for the City of Westminster.

Location

The site is located to the southeast of 92nd Avenue and Harlan Street. (Please see attached vicinity map).

Public Notification

Westminster Municipal Code 11-5-13 requires the following three public notification procedures:

- Published Notice: Notice of public hearings scheduled before Planning Commission shall be published and posted at least 10 days prior to such hearing and at least four days prior to City Council public hearings. Notice was published in the Westminster Window on October 16, 2014.
- Property Posting: Notice of public hearings shall be posted on the property with one sign in a location reasonably visible to vehicular and pedestrian traffic passing adjacent to the site. Eight signs were posted on the property on October 16, 2014.
- Written Notice: At least 10 days prior to the date of the public hearing, the applicant shall mail individual notices by first-class mail to property owners and homeowner's associations registered with the City within 300 feet of the subject property. The required notices were mailed on October 16. Also, a postcard notifying people of the public hearing was mailed door-to-door within a 0.5 mile radius of the site.

Surrounding Land Use and Comprehensive Land Use Plan Designation

| Development Name | Zoning | Comprehensive Plan Designation | Use |
|---|---------------|---|---------------------------|
| North: Franklin Square & Madison Hill | PUD & R-4 | Private Open Space, R-3.5, & R-8 | Single Family Residential |
| West: Plaza Northwest, Bivins, Lake Arbor, & Harlan Commercial Center | PUD & C-1 | Retail Commercial, Flex/Light Industrial | Commercial |
| East: US-36, Sheridan Park, Westminster Restaurant Plaza, & Hyland Office Park, Turnpike Commercial | PUD | Retail Commercial, Office R&D High Intensity & Office | US 36 & Commercial |
| South: Westminster Village & Lowe's | PUD & M-1 | Retail Commercial | Commercial |

Applicant

Westminster Economic Development Authority (WEDA)
4800 W. 92nd Avenue
Westminster, CO 80031

Service Commitment Category – not applicable at this time.Neighborhood Meeting(s) and Public Comments

Staff held a visioning session with the City Council early in 2012 to mark the beginning of public outreach and the plan development phase of the planning process. Four community-wide visioning meetings have followed that meeting: two at the end of March, 2012 and two in September, 2013. Both meetings focused on refining the vision and identifying citizen concerns for the site with interactive opportunities for input and discussion with City staff. Over 200 community members participated in the March 2012 outreach and over 150 participated in September 2013.

A third round of community outreach was held in early September 2014 which gave City Council and the Westminster community an opportunity to weigh in on the direction of the Specific Plan and its implementation. Over 115 people attended the open house meeting and their responses to the Specific Plan were generally very positive. Reoccurring comments included the fact people were excited about seeing something happening on the site and wanted to know when they could live/work there.

The project website, City website, Westy Connect and the City's social networking sites have also played an important role in providing ongoing opportunities for public input throughout the planning process. For example, in our latest round of outreach, 350 people viewed copies of the open house documentation on the Westy Connect website.

Westminster Municipal Code Criteria

WMC 11-5-3 (B) authorizes the City to initiate a rezoning of any property in the City without the consent of the property owner, when the City Council determines that the current zoning is inconsistent with one or more of the goals or objectives of the City's Comprehensive Plan, or that surrounding development is or may be adversely impacted by the current zoning. Staff believes that the proposed SPD zoning will be more successful than the current PUD zoning in delivering the redevelopment goals and objectives of the City for this site as set forth in the City's Comprehensive Plan and the Westminster Urban Reinvestment Center Plan (WURP) that the City Council has previously approved. It will also enable the adoption of the Westminster Downtown Specific Plan which will serve as a comprehensive, self-contained, and generally self-executing regulatory documents for the governance, control and implementation of land uses and development within the SPD.

WMC 11-4-7.5 sets out general provisions and permitted uses for Specific Plan Districts. The Westminster Downtown Focus Area was identified in the 2013 Comprehensive Plan is consistent with the goals and objectives of the SPD's Focus Area designation. Permitted uses for this SPD are listed in chapter 2 of the Specific Plan document.

Section 11-5-20 of the Westminster Municipal Code lists the general intent, special plan and official development plan requirements, applicability of the WMC to specific plan districts, initiation requirements, and content requirements for Specific Plans. Staff has reviewed each of the relevant standards and finds the proposed Specific Plan to be in compliance with these standards.

The proposed Specific Plan exhibits creative development principles that emphasize higher intensity, transit-supportive development with a walkable, pedestrian-oriented building scale and public realm. The Specific Plan establishes the street network, developable parcels, land use and development intensity permitted in downtown. Permitted and prohibited land uses that support an active, urban environment with a wide range of uses are listed.

Standards and guidelines for the architecture, landscaping, streetscape and other urban design features for development establish the urban form of the downtown area. These standards are separated into block standards, building type and frontage regulations. Building type standards address design within the overall block, with standards for façade width, lot width, pedestrian access, parking, green space, landscape and building massing. The streetscape design proposed in the Specific Plan will serve as the conceptual basis for more detailed design efforts as development occurs and streets are constructed.

A program of implementation measures has been provided in Chapter 6 of the Specific Plan which presents an overview of the specific infrastructure elements that will need to be constructed both initially within the site and over time as development occurs.

Strategic Plan

Staff considers the development of a cohesive vision and plan for the new Westminster Downtown as furthering several of the City Council's Strategic Plan goals. These include:

- 1) A Beautiful, Desirable, Environmentally Responsible City;
- 2) Comprehensive Community Engagement;
- 3) Dynamic, Diverse Economy;

- 4) Visionary Leadership and Effective Governance; and
- 5) Vibrant and Inclusive Neighborhoods;

all of which encourage the development of an active, livable, transit-oriented and urban environment within the heart of the City.

Respectfully submitted,

J. Brent McFall
City Manager

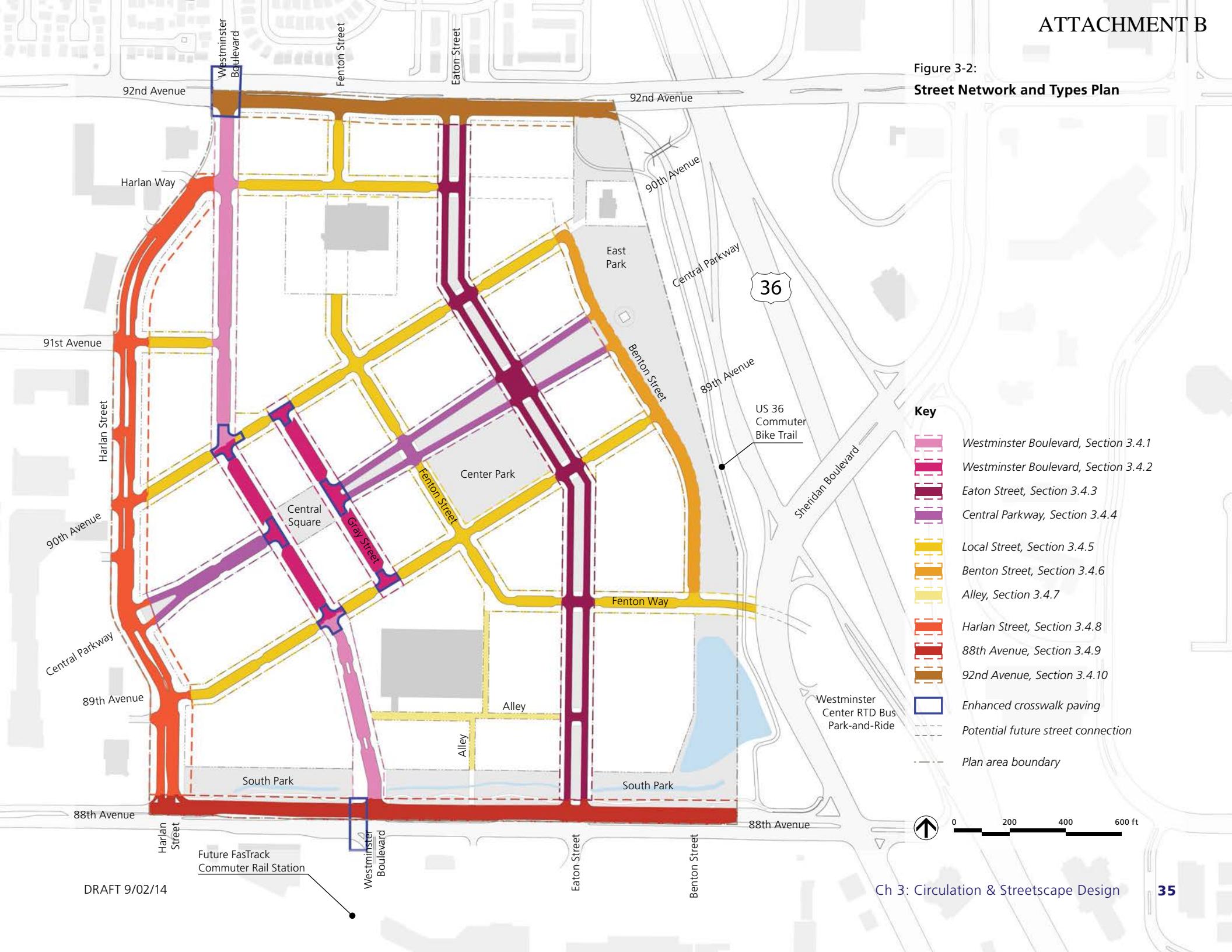
Attachments

- Attachment A - Vicinity Map
- Zoning Ordinance
- Westminster Downtown Specific Plan
 - 8.1 – Public Space Study
 - 8.2 – Traffic Study
 - 8.3 – Utility Plan
 - 8.4 - Drainage Plan

ATTACHMENT A



Figure 3-2:
Street Network and Types Plan



BY AUTHORITY

ORDINANCE NO.

COUNCILLOR'S BILL NO. **35**

SERIES OF 2014

INTRODUCED BY COUNCILLORS

**A BILL
FOR AN ORDINANCE AMENDING THE ZONING
OF THE WESTMINSTER CENTER URBAN REINVESTMENT PLAN SITE
LOCATED AT 92ND AVENUE AND HARLAN STREET, JEFFERSON COUNTY,
COLORADO, FROM PLANNED UNIT DEVELOPMENT TO SPECIFIC PLAN DISTRICT**

THE CITY OF WESTMINSTER ORDAINS:

Section 1. The City Council finds:

- a. The Westminster Economic Development Authority (the "Authority") has requested that the City rezone the property described in Exhibit A attached hereto (the "Property") from Planned Unit Development (PUD) to Specific Plan District (SPD) in order to facilitate the redevelopment of this approximately 108 acre site pursuant to the Westminster Center Urban Reinvestment Plan.
- b. WEDA is the owner of a substantial majority of the Property. All of the Property is included in the Westminster Center Urban Reinvestment Plan that has been previously approved by the City Council.
- c. C.R.S. § 31-25-112 of the Colorado Urban Renewal Law specifically authorizes the City to cooperate with the Authority in connection with the planning and undertaking of the Authority's plans and projects, including assistance in the form of planning and zoning property proposed for redevelopment by the Authority.
- d. W.M.C. § 11-5-3 (B) authorizes the City to initiate a rezoning of any property in the City without the consent of the property owner when the City Council determines that the current zoning is inconsistent with one or more of the goals or objectives of the City's comprehensive land use plan, or that surrounding development is or may be adversely impacted by the current zoning.
- e. The Property has been previously designated as a Focus Area in the Comprehensive Plan. As a designated Focus Area, the Comprehensive Plan and W.M.C. § 11-4-7.5 require the adoption of SPD zoning and a Specific Plan for the Property. Therefore, the current PDP zoning is inconsistent with the designation of the property as a Focus Area pursuant to the Comprehensive Plan.
- f. The notice requirements of W.M.C. § 11-5-13 have been met.
- g. The proposed rezoning has been referred to the Planning Commission, which body held a public hearing thereon on October 28, 2014, and has recommended approval of the request.

h. Council has completed a public hearing on the proposed rezoning pursuant to the provisions of Chapter 5 of Title XI of the Westminster Municipal Code and has considered the criteria in W.M.C. § 11-5-3 and § 11-5-14.

i. Based on the evidence produced at the public hearing, City Council finds:

- (A) The current zoning of the Property is inconsistent with the City's Comprehensive Land Use Plan.
- (B) The proposed SPD zoning complies with all requirements of the Westminster Municipal Code, including the provisions of W.M.C. § 11-5-3 and W.M.C. § 11-4-7.5.
- (C) The rezoning of the property to SPD will further the redevelopment goals and objectives of the City and the Authority as set forth in the City's Comprehensive Plan and the Westminster Center Urban Reinvestment Plan.

Section 2. The Zoning District Map of the City is hereby amended by reclassification of the Property to Specific Plan District, as depicted on Exhibit B, attached hereto and incorporated by reference.

Section 3. Upon final adoption of this ordinance, the Preliminary Development Plan for the Property, adopted on October 28, 2013, shall have no further force or effect.

Section 4: This ordinance shall take effect upon its passage after second reading.

Section 5. The title and purpose of this ordinance shall be published prior to its consideration on second reading. The full text of this ordinance shall be published within ten (10) days after its enactment after second reading.

INTRODUCED, PASSED ON FIRST READING, AND TITLE AND PURPOSE ORDERED PUBLISHED this 10th day of November, 2014.

PASSED, ENACTED ON SECOND READING, AND FULL TEXT ORDERED PUBLISHED this 24th day of November, 2014

Mayor

ATTEST:

City Clerk

APPROVED AS TO LEGAL FORM:

City Attorney's Office

WESTMINSTER MALL
REDEVELOPMENT OVERALL
BOUNDARY

A PARCEL OF LAND LOCATED IN THE SOUTH HALF OF SECTION 24, TOWNSHIP 2 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF WESTMINSTER, COUNTY OF JEFFERSON, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SECTION 24, TOWNSHIP 2 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN; THENCE N44°34'47"W A DISTANCE OF 105.18 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF HARLAN STREET SAID POINT BEING THE POINT OF BEGINNING; THENCE ALONG THE SAID EASTERLY LINE THE FOLLOWING EIGHT (8) CONSECUTIVE COURSES;

- 1.) 128.70 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 73°44'29" AND A CHORD WHICH BEARS N36°09'44"W A DISTANCE OF 120.00 FEET;
- 2.) THENCE N00°42'30"E A DISTANCE OF 252.68 FEET;
- 3.) THENCE 104.72 FEET ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 200.00 FEET, A CENTRAL ANGLE OF 30°00'00" AND A CHORD WHICH BEARS N14°17'30"W A DISTANCE OF 103.53 FEET;
- 4.) THENCE N29°17'30"W A DISTANCE OF 253.49 FEET;
- 5.) THENCE 52.36 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 30°00'00" AND A CHORD WHICH BEARS N14°17'30"W A DISTANCE OF 51.76 FEET;
- 6.) THENCE N00°42'30"E A DISTANCE OF 1022.79 FEET;
- 7.) THENCE 241.91 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 360.00 FEET, A CENTRAL ANGLE OF 38°30'06" AND A CHORD WHICH BEARS N19°57'33"E A DISTANCE OF 237.39 FEET;
- 8.) THENCE N39°12'36"E A DISTANCE OF 216.41 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF HARLAN STREET AND THE SOUTHERLY LINE OF WEST 92ND AVENUE RECORDED AT RECEPTION NO. F0832987; THENCE ALONG THE SAID EASTERLY LINE AND SOUTHERLY LINE OF WEST 92ND AVENUE THE FOLLOWING FOURTEEN (14) CONSECUTIVE COURSES;
 - 1.) S50°48'48"E A DISTANCE OF 20.34 FEET;
 - 2.) THENCE N39°11'12"E A DISTANCE OF 55.78 FEET;
 - 3.) THENCE 26.01 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 16.50 FEET, A CENTRAL ANGLE OF 90°18'15" AND A CHORD WHICH BEARS N05°39'40"W A DISTANCE OF 23.40 FEET TO A POINT OF REVERSE CURVATURE;
 - 4.) THENCE 208.95 FEET ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 393.50 FEET, A CENTRAL ANGLE OF 30°25'28" AND A CHORD WHICH BEARS N24°16'43"E A DISTANCE OF 206.50 FEET;
 - 5.) THENCE N09°03'59"E A DISTANCE OF 16.12 FEET;
 - 6.) THENCE 33.06 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 500.50 FEET, A CENTRAL ANGLE OF 03°47'05" AND A CHORD WHICH BEARS N07°10'20"E A DISTANCE OF 33.05 FEET TO A POINT OF REVERSE CURVATURE;
 - 7.) THENCE 38.28 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 48.50 FEET, A CENTRAL ANGLE OF 45°13'15" AND A CHORD WHICH BEARS N27°53'25"E A DISTANCE OF 37.29 FEET;
 - 8.) THENCE S89°13'00"E A DISTANCE OF 100.73 FEET;
 - 9.) THENCE S89°12'30"E A DISTANCE OF 16.89 FEET;
 - 10.) THENCE 51.40 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 1036.00 FEET, A CENTRAL ANGLE OF 02°50'33" AND A CHORD WHICH BEARS S87°47'44"E A DISTANCE OF 51.39 FEET;
 - 11.) THENCE S86°22'27"E A DISTANCE OF 303.71 FEET;
 - 12.) THENCE 69.00 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 1260.31 FEET, A CENTRAL ANGLE OF 03°08'13" AND A CHORD WHICH BEARS S87°56'42"E A DISTANCE OF 68.99 FEET TO A POINT OF COMPOUND CURVATURE;

- 13.) THENCE 8.73 FEET ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1259.00 FEET, A CENTRAL ANGLE OF 00°23'51" AND A CHORD WHICH BEARS S89°42'48"E A DISTANCE OF 8.73 FEET;
- 14.) THENCE S89°54'43"E A DISTANCE OF 162.21 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY LINE OF WEST 92ND AVENUE RECORDED AT RECEPTION NO. F1097396; THENCE ALONG SAID SOUTHERLY LINE S89°55'03"E A DISTANCE OF 50.00 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY LINE OF WEST 92ND AVENUE RECORDED AT RECEPTION NO. F083987; THENCE ALONG SAID SOUTHERLY LINE THE FOLLOWING TWO (2) CONSECUTIVE COURSES;
- 1.) S00°45'31"W A DISTANCE OF 9.26 FEET;
- 2.) THENCE S89°16'45"E A DISTANCE OF 495.77 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF BENTON STREET AND U.S. HIGHWAY 36 RECORDED AT BOOK 2489 PAGE 903; THENCE ALONG THE SAID WESTERLY LINE THE FOLLOWING TWO (2) CONSECUTIVE COURSES;
- 1.) S45°07'17"E A DISTANCE OF 143.20 FEET;
- 2.) THENCE S15°22'31"E A DISTANCE OF 1476.62 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF BENTON STREET AND U.S. HIGHWAY 36 RECORDED AT BOOK 2489 PAGE 901; THENCE ALONG SAID WESTERLY LINE S00°05'03"W A DISTANCE OF 904.69 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF WEST 88TH AVENUE; THENCE ALONG SAID NORTHERLY LINE THE FOLLOWING TWO (2) CONSECUTIVE COURSES;
- 1.) 23.73 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 15.00 FEET, A CENTRAL ANGLE OF 90°37'27" AND A CHORD WHICH BEARS S45°23'47"W A DISTANCE OF 21.33 FEET;
- 2.) THENCE N89°17'30"W A DISTANCE OF 1682.39 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF WEST 88TH AVENUE RECORDED AT RECEPTION NO. 89053018; THENCE ALONG SAID NORTHERLY LINE THE FOLLOWING THREE (3) CONSECUTIVE COURSES;
- 1.) N00°39'31"E A DISTANCE OF 2.10 FEET;
- 2.) THENCE N88°29'13"W A DISTANCE OF 135.26 FEET;
- 3.) THENCE N89°17'30"W A DISTANCE OF 74.75 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 107.261 ACRES (4,672,310 SQ. FT.), MORE OR

LESS. BASIS OF BEARINGS

BEARINGS ARE BASED ON THE SOUTHERLY LINE OF THE SOUTHEAST QUARTER OF SECTION 24, TOWNSHIP 2 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN BEARING S89°17'30"E AND BEING MONUMENTED BY A FOUND 3" ALUMINUM CAP PLS #17488 AT THE SOUTH QUARTER CORNER AND A FOUND 3-1/4" ALUMINUM CAP PLS #13155 AT THE SOUTHEAST CORNER.

PREPARED BY RICHARD A. NOBBE, PLS
FOR AND ON BEHALF OF
MARTIN/MARTIN INC.
12499 W. COLFAX AVE.
LAKEWOOD, CO. 80215
(303) 431-6100
(303) 431-4028 FAX
September 25, 2013

REZONING

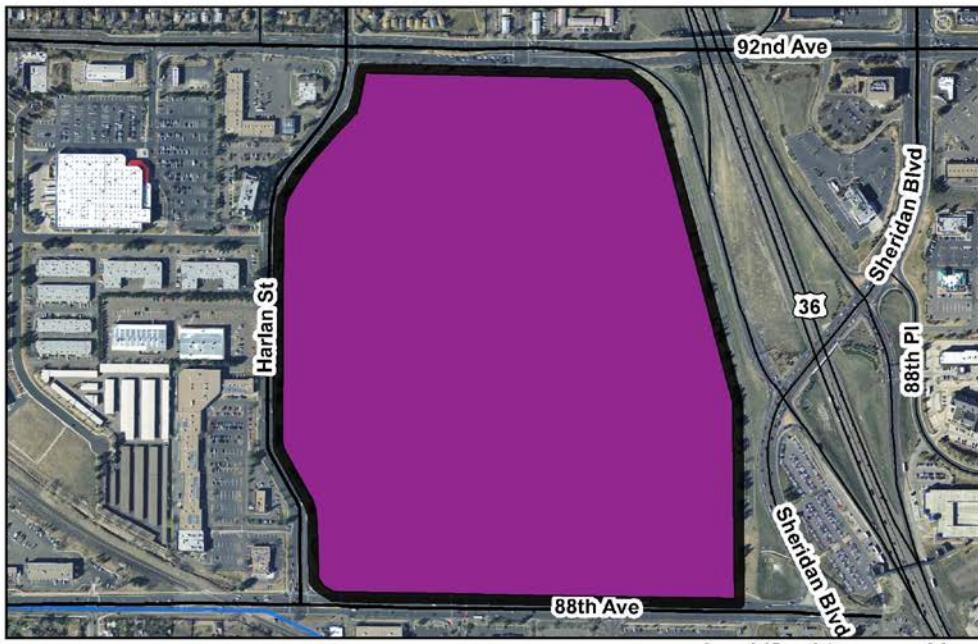


Current Zoning PUD

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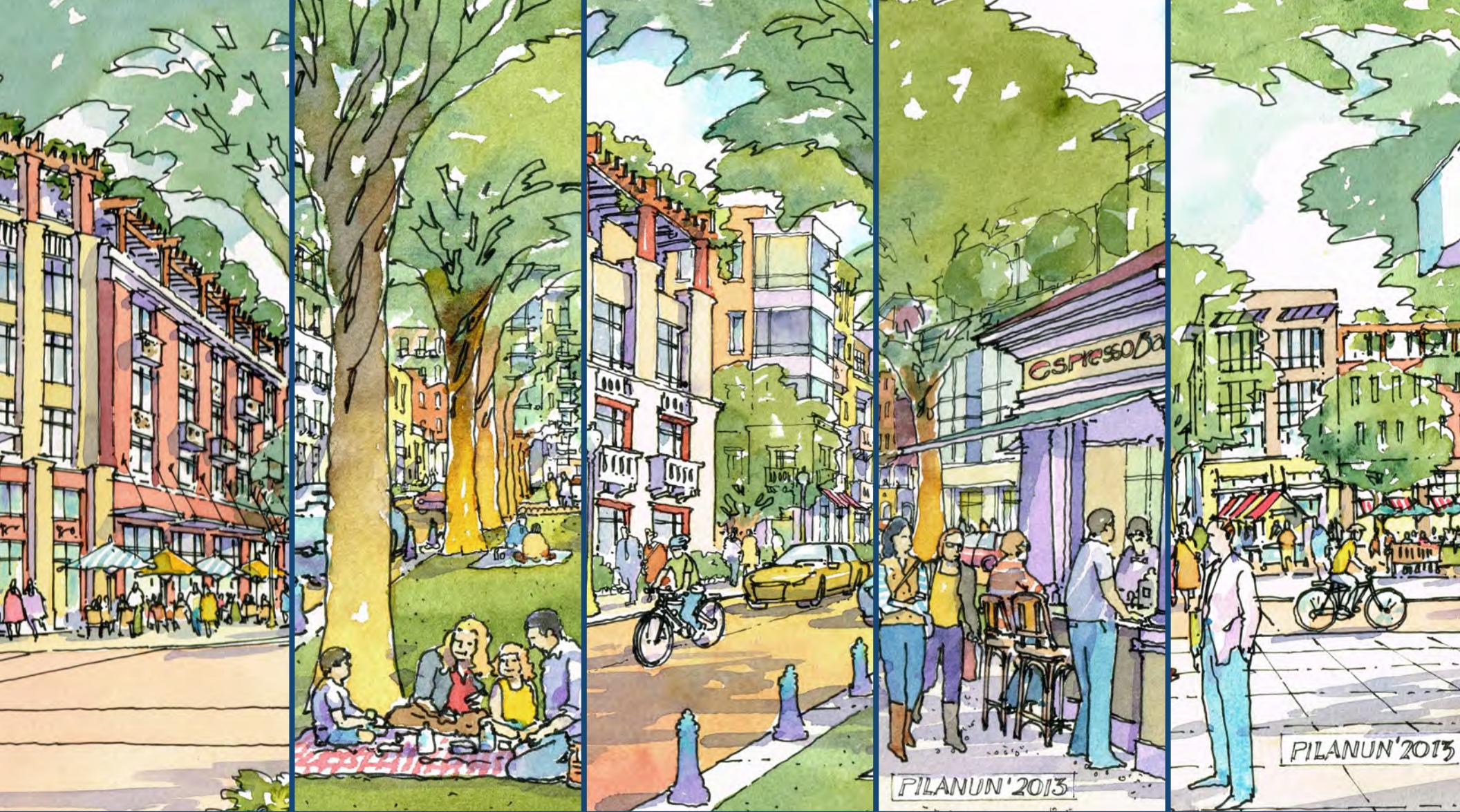
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| B-1 | O-1 | R-1 | R-5 | T-1 |
| C-1 | PUD | R-2 | R-A | SPD |
| M-1 | R-3 | R-4 | R-E | |



Proposed Zoning SPD

0 0.05 0.1 0.2 Miles



DOWNTOWN SPECIFIC PLAN

PLANNING COMMISSION
DRAFT



WESTMINSTER

WESTMINSTER, COLORADO
OCTOBER 28, 2014

CREDITS

CITY OF WESTMINSTER

City Council

Herb Atchison, Mayor
Faith Winter, Mayor Pro Tempore
Bruce Baker, Councillor
Bob Briggs, Councillor
Alberto Garcia, Councillor
Emma Pinter, Councillor
Anita Seitz, Councillor

Former City Council

Nancy McNally, Mayor
Mark L. Kaiser, Councillor
Mary Lindsey, Councillor
Scott Major, Councillor

Planning Commission

Donald Anderson, Chair
Jim Boschert
David Carpenter
Mike Litzau
Joe McConnell
Richard Mayo
Tracy Colling
Lawrence Dunn
Tracey Welch

City Staff

Brent McFall, City Manager
Steve Smithers, Deputy City Manager
Barbara Opie, Assistant City Manager
Marty McCullough, City Attorney
Susan Grafton,
 Director of Economic Development
John Carpenter,
 Director of Community Development
Mac Cummins, Planning Manager
Sarah Nurmela,
 Sr. Urban Designer/Project Manager
Grant Penland, Principal Planner
Walter Patrick, Planner
Natalie Winsen, Planner
Joe Schalk, Landscape Planner
Dave Downing, City Engineer
Dave Loseman, Assistant City Engineer
Donald M. Tripp,
 Director of Parks, Recreation and Libraries
Jason Genck,
 Parks, Rec. and Libraries Operations Manager
Becky Eades, Landscape Architect II
Jody Andrews,
 Director of Public Works and Utilities
Mike Happe,
 Utilities Planning and Engineering Manager
Stephen Grooters, Sr. Projects Engineer
Tom Ochtera, Energy and Utilities Project Coordinator
Dave Horras, Chief Building Official
Bob Hose, Fire Marshall
Jeri Elliott,
 Sr. Management Analyst, Police Department

CONSULTANT TEAM

Torti Gallas and Partners, Inc. Architecture and Urban Design

523 West 6th Street, Suite 212
Los Angeles, California 90014
ph: (213) 607-0070
fx: (213) 607-0077

Neal Payton, Principal in Charge
Martin Leitner, Project Manager
Daniel Astary
Radoslav Brandersky
Kelsey Lew
Jamie Molina
Chaiwat Pilanun

Martin/Martin, Inc. Civil Engineering

Raymond Tuttle
David Lovato

Nelson\Nygaard Traffic Engineering

Rick Chellman

Communitas Developer Review

Will Fleissig

Project for Public Spaces Public Space Programming

Meg Walker, Vice President
Elena Madison, Vice President

PLANNING COMMISSION DRAFT DOWNTOWN SPECIFIC PLAN

WESTMINSTER, COLORADO
ADOPTED MONTH ##, 2014

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1

INTRODUCTION

1.1. INTRODUCTION

In 2009, the City of Westminster, Colorado (City), embarked on an exciting process to transform the Westminster Mall, an auto-oriented shopping mall, into a vibrant, mixed-use urban downtown with exceptional access to a variety of public spaces. The result of this process is a long-term development vision that will guide the redevelopment of this 105-acre site into an urban center and focal point in the city.

In October of 2013, the City approved the Downtown Westminster Framework Plan. This initial framework plan set forth a framework of streets, public spaces, and land use that serves as the basis for this Downtown Specific Plan.

1.2 SPECIFIC PLAN PURPOSE AND SCOPE

This document, the Westminster Downtown Specific Plan (Plan or Specific Plan) guides new development as well as redevelopment within the Plan area. This Plan establishes the design vision, the intended character, and the development regulations that shape and implement the City's vision for its new downtown. Furthermore, this Plan describes the infrastructure and utilities that will serve the downtown area and provides a regulatory framework for implementation.

The Specific Plan provides a set of comprehensive policy objectives, standards, and guidelines governing land use, circulation and streetscapes, built form, green space, utilities and services, and Plan implementation. These policy objectives, standards, and guidelines

cover both the development of the public realm and private development and investments. Policy objectives are provided at the outset of each chapter. These objectives are meant to establish the intent of each element of the Plan and will be the basis for rulings of consistency where variances to standards or guidelines are pursued (refer to Section 6.3 for the variance process). Standards are objective criteria that provide specific direction based on the related policy objectives. Standards are used to define issues considered critical to achieving these objectives. Throughout the Plan, standards use the term "shall" to indicate compliance is required. Guidelines supplement the standards and policy objectives of the Plan. Guidelines use the term "should" or "may" to denote that they are considered pertinent to achieving the stated intent but allow discretion based on site and project conditions.

1.3 PLAN ADMINISTRATION

The Downtown Specific Plan is a regulatory document that establishes and defines the Downtown Specific Plan District; development in the Plan area must comply with the policy objectives, standards, and guidelines of this Plan. The Planning Manager shall have the discretion to determine whether alternative interpretations of these regulatory elements shall be permitted or will require a request for a variance, as outlined in Section 6.3: Development Process. The latter section also defines the development review and approval process for all improvements and development within the Plan area.

Westminster Boulevard

To the right: Artist's rendering of Westminster Boulevard at the heart of the mixed-use downtown.



1.4 PLANNING BACKGROUND AND PROCESS

Planning for a new downtown in Westminster has encompassed several visioning and design efforts. In 2009, the Westminster Economic Development Authority (WEDA) adopted the Westminster Center Urban Reinvestment Plan, an urban renewal plan for the site that set out City objectives to achieve a new transit-oriented mixed-use neighborhood that would provide the City with the unique opportunity to create a new downtown for the community. Initial plans for the new downtown envisioned a new street grid and mix of uses over the site, including residential, office and retail development. Acquisition of portions of the Westminster Mall by WEDA also began in 2009, with the majority of the site under WEDA ownership by early 2012. Since then, the majority of the mall structures and parking areas have been demolished to ready the land for new development.

In order to implement the vision for downtown, in 2012, the City embarked on an inclusive, citywide visioning and planning process to reinforce and develop a regulatory framework with which to establish this new downtown. The input garnered through this process—from community and City Council input to planning charrettes and consultant studies—was fundamental in the creation of the framework plan and vision set forth in this document. Beginning in March, 2012, three rounds of community outreach have been conducted. The initial round included a visioning and preference survey to obtain input on the community's physical, social and emotional definition of a new downtown for the City. City Council also participated in this visioning and survey process. An online

platform provided through the project's website mirrored the interactive survey and information. Approximately 250 participated in this first round.

Planning for the site framework—the streets and public realm of the new downtown—began in earnest in 2013 with a planning charrette with City staff and the Specific Plan consultant team. This iterative design process took place over several days and established the initial site framework presented to the public in the second round of outreach in September 2013. A final site framework with streets, public spaces and land use direction was approved as a preliminary development plan in late October 2013.

The Downtown Specific Plan, the first Specific Plan to be developed for the City, establishes the regulatory framework for implementing this preliminary site framework. Input into the development of this plan has included extensive analysis of site infrastructure, traffic, and site and market conditions as well as input from additional citywide surveys including the 2013 Parks, Recreation and Libraries Survey and consultation with Project for Public Spaces for specific programming and public realm amenities within downtown. A final round of public outreach was held in September 2014 on the plan framework, public realm and uses envisioned for the site. This Plan represents the final step in the planning process.



Community Workshop

Community members review information stations at a community workshop.



Community Workshop

Community members engage with planning staff at a station about the downtown vision.

88th Avenue

To the right: Artist's rendering of 88th Avenue looking west. The Allen Ditch flows through the south park.



1.5 PROJECT LOCATION AND CONTEXT

The Downtown Specific Plan Area (Plan area) is located in the heart of Westminster, Colorado, immediately adjacent to US 36 (also known as the Boulder Turnpike). The location is regionally well-connected and lies approximately half-way between Denver and Boulder, as shown in Figure 1-1. City Hall is less than half a mile to the east on 92nd Avenue as is the Westminster Center Park, which is home to a very popular children's playground. A little over a mile and a half to the north along Westminster Boulevard are the Westminster Promenade, Butterfly Pavilion, and 205-acre City Park facility.

The 105-acre Plan area is the former site of the Westminster Mall, once a primary social gathering space within the city. The Plan area is bounded by 88th Avenue to the south, 92nd Avenue to the north, Harlan Street to the west and US 36 and Sheridan Boulevard on the east. As shown in Figure 1-2, the area is adjacent to the 92nd Avenue/Sheridan Boulevard interchange. This strategic access and the site's location within the center of the city reinforce its potential as the heart of Westminster and key destination for the surrounding region. Additionally, the RTD Bus US 36 and Sheridan Park-n-Ride – one of the busiest stations within the entire Denver Metro area – is situated immediately to the east at Sheridan Boulevard and 88th Avenue.

Residential neighborhoods border the site to the north, and a mix of primarily office and commercial uses border the area to the west and south. Additionally, several buildings remain on the site, including two businesses on non-City-owned land – Brunswick Bowling

and a professional dental office. Other remaining buildings are located on City-owned property and include a restaurant, bank and department store. These existing uses are integrated into the plan framework with anticipation for future street connections and other public infrastructure if and when these sites redevelop.

The existing context of the Plan area also includes several infrastructure improvements underway within the vicinity of the site. These include reconstruction of the Sheridan Boulevard Bridge over US 36 and expansion of water and sewer infrastructure that will serve the Plan area as well as surrounding development with improved water pressure and capacity. The Sheridan Boulevard bridge, currently under construction (as of 2014), is a joint effort with CDOT and the City – with City enhancement funds providing an improved bridge design and landscaping. Planning for the utility improvements is also underway – these improvements will be vital in facilitating the intensity and scale of development anticipated for the Plan area.



Aerial Image of Westminster Mall

View of Westminster Mall in 2010 looking northeast. The intersection of Harlan Street and 88th Avenue is in the foreground.

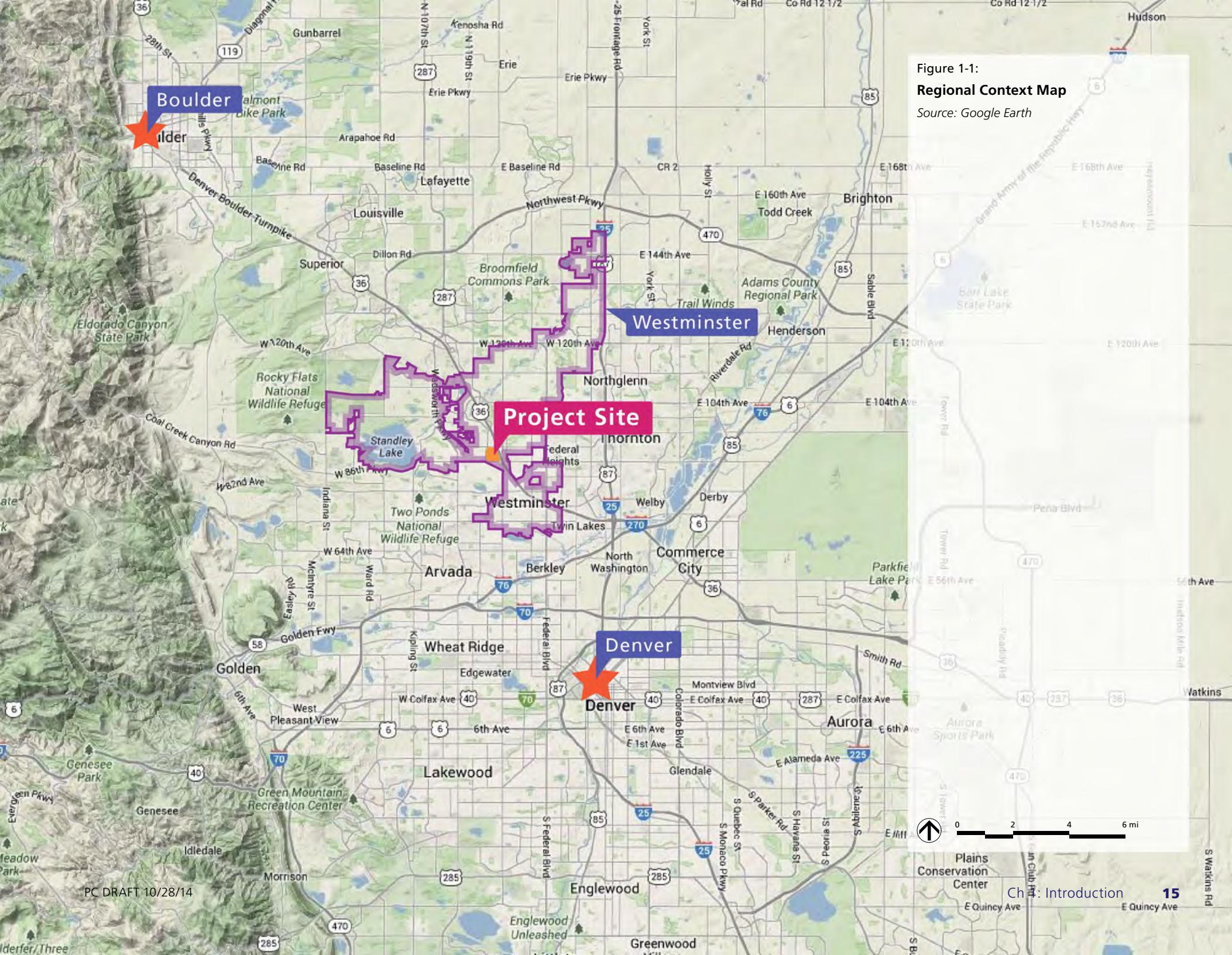


Figure 1-1:
Regional Context Map

Source: Google Earth

PC DRAFT 10/28/14

Ch 1: Introduction

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Figure 1-2

Site Aerial

Source: Google Earth

Key

City-owned property

Plan area boundary

0 200 400 600 ft

1.6 SPECIFIC PLAN VISION

The spirit of the Plan vision has its roots in the former Westminster Mall, which for many decades fulfilled the role of Westminster's primary social activity and gathering space. The mall's closure created a void in the social and emotional composition of the city that this Plan intends to fill through the creation of a new downtown.

The Westminster Downtown Specific Plan intends to realize the vision of a high density, urban scale, mixed-use development that will be a regional and community-wide destination in the heart of the city as expressed in the Westminster Urban Center Reinvestment Plan, adopted April 13, 2009. The project is intended to create a vibrant public realm with a high intensity mix of uses to include retail, office, hotel, civic, and residential uses, and a bustling active environment during both day and evening hours. Numerous new public spaces, both hardscaped squares and landscaped greener park spaces, will be located throughout the Plan area to provide a variety of environments that will serve residents and downtown visitors alike. Figure 1-3 illustrates the envisioned public realm and character of this Plan.

1.6.1 Specific Plan Goals

This Plan establishes the following goals that will guide the development of Westminster's new downtown.

1. Visual and Physical Center of Westminster

Urban form, streetscape design, and civic spaces will define the site's visual and physical prominence within the City – establishing it

as a cultural and social "hub." Likewise, these elements will establish a strong relationship with the Westminster community, with a well-defined public realm, inviting urban edges, and provision of key public amenities. Taller, strategically located buildings will further enhance the physical prominence of the new downtown. Enhanced streetscapes will provide a hierarchy of circulation, wayfinding, and views to key focal points and activity nodes. Civic spaces and plazas, located both at the edge of the site as well as in the interior, will provide a sense of place and identity, becoming community-wide destinations.

Key elements of the site's presence and visual prominence within the City of Westminster include:

- Taller buildings that establish the site's physical and visual prominence - with well-spaced towers and building massing that establish a skyline and emphasize access to views;
- An urban edge to the north along 92nd Avenue that defines the site's character and frames gateways and views into downtown;
- An improved recreational amenity along the Allen Ditch north of 88th Avenue as well as along US 36 that acts as an attractive community destination and inviting edge to the site;
- Building design, massing, and orientation that shape and activate gateways and activity nodes;
- Streetscapes and plazas that define an active, engaging public realm - defining the site's role as a cultural and community destination;



Conceptual Plan Sketch

An early site plan sketch lays out the fundamental elements of the Specific Plan vision. This sketch was developed during the preliminary design charrette.

functions will occur away from public view in alleys or well-screened loading areas. Within this framework, activity within the site will be dispersed: no single development or destination will define the full extent of pedestrian-oriented activity. While specific areas and streets may be defined as key activity centers, opportunities for retail and neighborhood services will extend to many locations throughout the mixed-use, urban fabric of the site.

2. Urban District with Active Frontages

The built environment of the site will establish a cohesive public realm where all development maintains an active frontage. This active frontage will be defined by a continuous street wall with building entries and fenestration oriented to streets, plazas, and green spaces. Access, loading, and "back-of-house"

3. Pedestrian-Oriented Environment

The design of development within the site will establish a building-to-street relationship that fosters an active, engaging pedestrian realm. At the building level, massing and articulation of building forms will reflect a pedestrian scale. Design of the ground floor will

emphasize pedestrian comfort, visual interest, and opportunities for interaction and activity. Additionally, streetscape elements, such as lighting, seating, landscaping, paving, and crosswalk design will be scaled and oriented to the pedestrian to enhance safety, comfort, and walkability.

4. Interconnected Circulation Network

The street network on the site will provide an interconnected system of vehicular, bicycle, and pedestrian circulation. Vehicular circulation and access to downtown will be balanced with other modes of travel. Bicycle and pedestrian movement will be emphasized, as well as opportunities for enhanced landscaping along key corridors. Wide sidewalks, slow traffic speeds, and off-street paths will establish a multi-layered network of connectivity throughout the site, maximizing circulation options and flexibility. Likewise, block sizes will be scaled to the pedestrian, providing a short walk from end to end and visual variety and interest with more frequent breaks in the street wall. Connections at the interior of blocks will ensure that larger blocks in commercial areas will maintain a high level of choice for pedestrian movement.

5. Multi-Faceted Green Space and Park Network

Like the circulation network, the green space network within the site will have varying concepts of functionality and use. The framework of green space in the site, illustrated in Figure 1-4, will be a connected series of linear spaces extending along 88th Avenue, US 36, Central Parkway, and a north-south “green boulevard” along Eaton Street. Complementing this recreational connection will be several

parks that will serve as focal points for new residential, mixed-use, and office development. These parks are critical, as they will serve a new population of at least 3,000 new residents – a population that expects, as all Coloradans do, safe access to ample recreational opportunities and spaces for both physical and emotional wellness. Finally, civic-oriented spaces within the heart of mixed-use and commercial development will provide opportunity for community-wide gathering and events. These spaces will be designed and sized to accommodate civic uses, farmers markets, and events that will serve the entire Westminster community and beyond.

6. Direct, Convenient Access to Transit

Opportunities to access and utilize transit will be emphasized by the location and intensity of land uses as well as the provision of key infrastructure and facilities. Higher intensity mixed-use and commercial development will be able to access transit by a grade-separated connection to the east of Sheridan Boulevard and an at-grade crossing of 88th Avenue to the future Fastracks commuter rail station. Location of high-intensity employment uses and a new high-density residential neighborhood adjacent to transit will further support ridership.



Illustrative Model

View looking east with Harlan Street in the foreground and city hall with its tower in the background.



Illustrative Model

View looking south along the new Eaton Street “green boulevard.” On the left-hand side of the image, US 36 leads towards Denver.

Figure 1-3:
Illustrative Master Plan



Figure 1-4:
Illustrative Green Space Plan



1.7 SPECIFIC PLAN DOCUMENT ORGANIZATION

As described in the Plan's Scope and Purpose, the Specific Plan regulates and guides development within the Plan area boundaries. In doing so it takes a decidedly "form-based" approach, which means the standards and guidelines of this Plan intentionally shape the public realm, green spaces, and building forms to ensure an urban fabric is established throughout downtown. Therefore, this Plan's standards and guidelines' primary focus is good city form.

To ensure compatibility of land uses within the Plan area and adjacent neighborhoods, this Plan also provides basic regulations for land uses and development intensity. Finally, the Plan's implementation chapter provides a framework with which to implement the Plan vision.

The Specific Plan regulations are organized in chapters, each of which addresses regulations that focus on different aspects of the downtown.

Chapter 2: Regulating Plan

This chapter sets forth the overall plan framework with the location of rights-of-way, designation of public spaces and provisions for land use for the entire Plan area. It lists permitted uses, prohibited uses, and uses that are permitted under certain circumstances. Additional use-related requirements, such as location of active retail frontages at the ground level are also delineated. Furthermore, this chapter regulates the allowable development capacity on each site.

Chapter 3: Circulation and Streetscape Plan

This chapter encompasses the circulation plan for downtown, with presentation of the overall street network and hierarchy, transit access and bicycle and pedestrian movement. Specific focus on streetscape regulations address the design of the space between the buildings, including both the public rights-of-way and the private yards that adjoin them. The streetscape standards provide street designs (street sections) for all public rights-of-way within the Plan boundaries. Private development must follow the setback standards and take particular note of the transitions between streets and yards.

Chapter 4: Built Form

Chapter 4 regulates development on development *blocks* defined by the property lines that separate them from the public rights-of-way. The first three sections of this chapter provide built form standards for (1) the *block*, (2) *building types*, and (3) *building frontage types*. These sets of standards are highly interrelated: therefore, it is recommended that these sections be reviewed in sequence. While the built form standards provide a great deal of development flexibility, proposed projects must comply with the regulations of this chapter. The introduction to Chapter 4 provides additional guidance.

The remaining sections of the chapter cover development standards and guidelines that are more general in nature and apply to all developments. These include various additional development standards, parking standards, and sign regulations unique to the Specific Plan Area.

Chapter 5: Green Space Plan

This chapter provides guidance for the major public green spaces envisioned in this Specific Plan and their significance within the new downtown's urban design framework. The role of each public space is described in conjunction with conceptual programming elements that will best activate the space and surrounding development as well as serve downtown's and Westminster's populations. Note: Private green space requirements are contained in the building type standards in Section 4.3 with additional regulations in Section 4.5.7.

Chapter 6: Implementation

This chapter provides provisions for the implementation of the Specific Plan, including the development review process, how infrastructure will be provided to serve new development, management of public facilities and infrastructure, and phasing for initial improvements.

Chapter 7: Glossary of Terms

This document uses a variety of terms that are specific to the standards and guidelines presented herein. Throughout this Plan these terms are *italicized* and *colored* for clarity. They are defined in Chapter 7.

1.7.1 Document Numbering

Within the Plan's chapters, sections are numbered according to the following convention: Sections are identified by the chapter number followed by the section number (e.g. 3.2). Subsections are identified by the chapter number, section number, and the subsection number (e.g. 3.2.2). Standards and guidelines may be further identified by capital letters (e.g. 3.2.2. B.) and the by lower case roman numerals (e.g. 3.2.2 B.i.).

1.7.2 Illustrative Images and Photos

This Plan creates a framework for design and development that will happen over many years. To aid in understanding the practical application of the requirements of the Specific Plan, the Standards and Design Guidelines include illustrative renderings and photographs to show the intent of various requirements and provisions. These illustrative renderings and photographic images should not be interpreted as requiring a specific mix, use or type of development of the specific style of design elements; they are simply a prototypical depiction of possible arrangements and types of conforming development.



88th Avenue

Artist's rendering of 88th Avenue looking northwest. A variety of building types line the South Park with its wide greens and mature Cottonwood trees.

2

REGULATING PLAN

2.1 OVERALL REGULATING PLAN INTENT

This chapter of the Specific Plan sets forth the overall framework and use of land within the Plan area. The regulating plan establishes public rights-of-way, dedicated public spaces, development *blocks*, and land use for all land within the Plan boundaries. In keeping with the vision of a vibrant, mixed-use downtown, the land-use regulations of this Plan provide a large degree of flexibility. Nonetheless, in order to ensure the compatibility between various uses and the compatibility of individual uses with the overall Plan vision, this chapter regulates uses that are permitted, not permitted, and permitted under special circumstances.

Complementing these land use regulations are permitted development intensity and capacity requirements that underline the urban vision for the downtown while also maintaining consistency with citywide policy for water consumption.

Policy Objectives

1. Establish a vibrant, mixed-use downtown district that acts as a community and regional destination.
2. Foster a synergistic mix of land uses that includes commercial, residential, employment and civic uses.
3. Encourage land uses to be vertically mixed to provide a range of activities and a diverse population throughout downtown, and particularly around key civic and pedestrian-oriented destinations.
4. Reinforce activity in key areas in downtown with active, ground floor retail

uses. Similarly, activate the edges of major public spaces with active uses at the ground floor to better integrate these areas into the public realm and experience of downtown.

5. Encourage restaurants to provide outdoor dining along public plazas and green spaces.
6. Provide neighborhood retail and services that meet the everyday needs of downtown's residents and workers and reduce car dependence.
7. Foster a diverse commercial environment that supports a range of affordability and businesses.
8. Provide a diversity of housing types and affordability, including townhomes, stacked flats or apartments, and live/work units. It is an important City Council policy objective that meaningful affordable housing opportunities to be negotiated and implemented in future development approvals.

2.2 FRAMEWORK PLAN

The Specific Plan establishes an overall framework for public and private use within the downtown. Figure 2-1: Land Use and Framework Plan delineates public rights-of-way and development *blocks* for public and private use. The rights-of-way are based on a street network that establishes a fine grain street and block system to emphasize circulation for all modes of travel through downtown (see Chapter 3 for more detail on Plan circulation). The development *blocks* are sized to not only promote this ease of circulation but to also accommodate a wide variety of land uses and associated building types.

The Plan Framework is designed to integrate existing uses and parcels into the downtown street network and block system. Future street connections and development *blocks* shall follow the rights-of-way and block system established in this Plan as redevelopment of existing uses occurs and allows for completion of the street network. Additional future street connections may also be aligned through larger *blocks* defined in the Framework Plan. Directions for how these *blocks* should be divided are in the Block Development Standards in Chapter 4.

Ground-floor retail spaces shall be provided along street frontages where indicated in Figure 2-2: Ground-Floor Retail Standards. Where indicated, ground-floor retail space is strongly encouraged. Storefronts shall have a minimum depth of 25 feet measured perpendicular to the property line from the exterior face of the building facing the street to the back of the *habitable space*. See Section 4.4 for storefront standards for retail *frontages*.

2.3 LAND USE

2.3.1 Permitted Land Uses

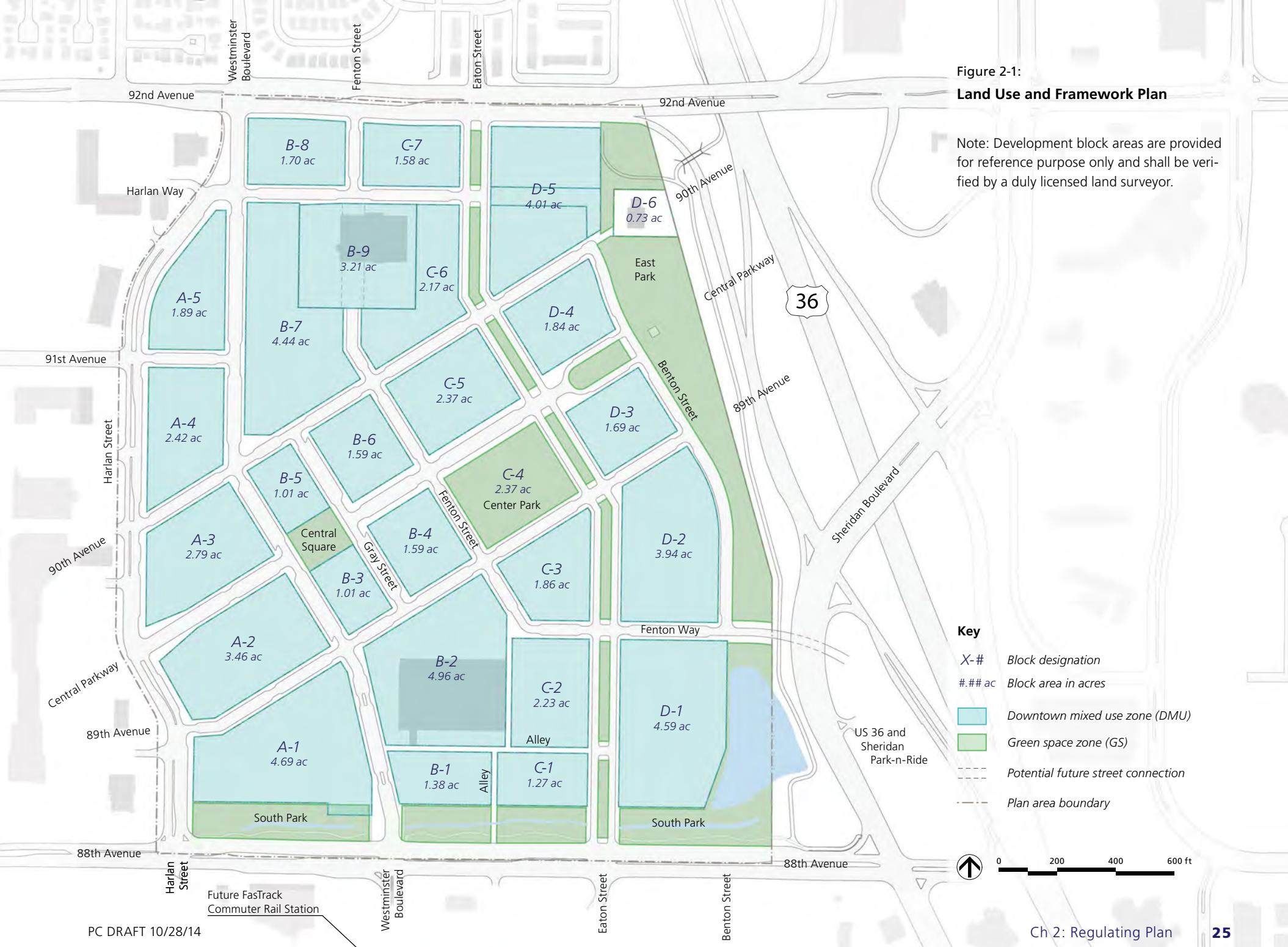
Development *blocks* within the Plan area shall have the land-use designations per Figure 2-1: Land Use and Framework Plan. *Blocks* designated "Downtown Mixed Use" shall permit the uses listed in Table 2.3.1.

2.3.2 Retail Use Requirements

Downtown Westminster is envisioned as having a highly active public realm with city streets that are designed for substantial pedestrian activity. In order to support this vision, it is imperative that ground-floor uses in certain Plan areas provide retail spaces that activate and engage residents and visitors alike. Hence, this Plan identifies ground-floor *frontages* on which retail uses are required. The Plan also identifies locations where such retail *frontages* are strongly encouraged to further the goals of this Plan.

Figure 2-1:
Land Use and Framework Plan

Note: Development block areas are provided for reference purpose only and shall be verified by a duly licensed land surveyor.



| Table 2.3.1: Permitted Land Uses | DMU |
|--|-----|
| Residential Uses | |
| Single-Family Attached Dwelling Units | P |
| Multi-Family Dwelling Units | P |
| Boarding & Rooming Houses | P |
| Nursing Home/Facilities | P |
| Group Homes | C |
| Group Care Facility | S |
| Institutional Care Facility | S |
| General Uses | |
| Public Utilities | P |
| Temporary Construction & Real Estate Buildings | P |
| "Radio and Television Towers & Microwave Transmission" | P |
| Public Schools | P |
| Office and Similar Uses | |
| Accounting, Bookkeeping | P |
| Addressing/Mailing Service | P |
| Administrative Office | P |
| Adoption Agency | P |
| Advertising Office | P |
| Aerobics, Ballet, Dance, Exercise Instruction, and Classes Studios | P |
| Appraisal Service | P |
| Architecture, Landscape Architecture, Planning, Design Office | P |
| Bank & Financial Institution | P |
| Counseling/Consulting Service | P |
| Credit/Collection Agency | P |
| Data Processing Service | P |
| Detective Agency | P |
| Employment Agency | P |
| Engineering & Technical Office | P |
| Entertainment Services Office | P |
| Fraternal & Service Club | P |

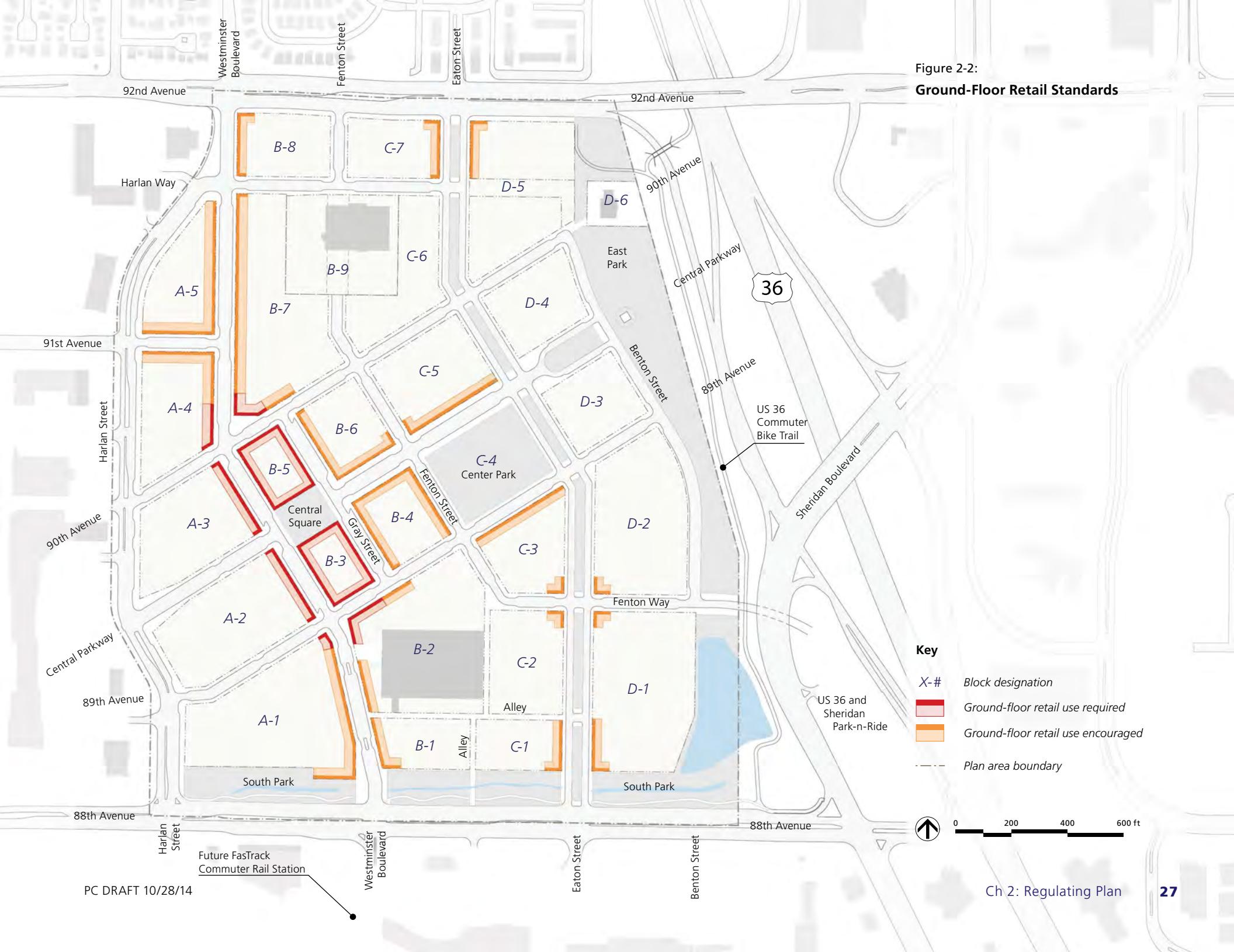
| Table 2.3.1: Continued | DMU |
|---|-----|
| Insurance Office, Sales & Adjustors | P |
| Legal Service | P |
| Medical/Dental Office and Clinic | P |
| Military Recruiting | P |
| News Office | P |
| Real Estate Office | P |
| Professional Office | P |
| Radio/TV/Recording Studio | P |
| Research & Development | P |
| Training Service | P |
| Veterinary Office and Clinic, Indoor | P |
| Veterinary Office and Clinic, Outdoor | S |
| Business and Commercial Uses | |
| Animal Day Care, Indoor | P |
| Antique Shop | P |
| Apparel & Accessory Store | P |
| Art Galleries/Art Sales | P |
| Arts & Crafts/Drafting Supply | P |
| Assembly Halls, Event Centers, & Churches, includes private functions, such as weddings, receptions, conferences and meetings | P |
| "Audio/Visual and Consumer Electronics Sales, Service & Parts Store" | P |
| Automobile Accessory Store | P |
| Automotive Rental Office 1)limited to 1.5 vehicles per 100 square feet of lease space with a maximum of 20 vehicles 2) vehicles must be in good condition (mechanically & exterior) 3) no car wash, maintenance or repair facilities 4) limited to 1 office per shopping center | P |
| Bakeries | P |
| Bar/Nightclub/Tavern | P |
| Barber & Beauty Shop | P |
| Beauty Supply Sales | P |

| Table 2.3.1: Continued | DMU |
|---|-----|
| Bed & Bath Shop | P |
| Book/Magazine/News Dealer, Excluding Dealers Selling Goods Not Available To All Ages | P |
| Brewery/Distillery | S |
| Brewpub | P |
| Camera & Photographic Supply | P |
| Carpet & Rug Store | P |
| China & Glassware | P |
| Cleaning/Laundry/Tailor/Fur Storage | P |
| Computer Hardware, Software, and Accessories | P |
| Consignment Shop (under 3,000 sf gross floor area) | P |
| Costume Sales & Rental | P |
| Custom Crafts/Ceramics/Stained Glass | P |
| Day Care Facility | P |
| Department/Variety/Catalog Store | P |
| Draperys & Window Coverings | P |
| Drug Store | P |
| Electronic Appliance Repair | P |
| Fabric Store | P |
| Fast Food Restaurant/Snacks | P |
| Florist & Plant Shop | P |
| Food/Grocery Store | P |
| Furniture Store | P |
| Furniture/Equipment Rental for Home Use Only | P |
| Gifts/Novelties/Souvenirs, Excluding Dealers Selling Goods Not Available to All Ages | P |
| Hardware | P |
| Hotel/Resort | P |
| Indoor Entertainment Establishments, including Amusement Centers, Bowling, Billiards, Movie Theaters & Similar Uses | P |

| Table 2.3.1: Continued | DMU |
|---|-----|
| Jewelry/Watch & Clock/Watch & Clock Repair Store | P |
| Kitchen, Cookware Store | P |
| Lawn & Garden Store | P |
| Leather Goods & Luggage Store | P |
| Liquor Store | P |
| Massage Therapist | P |
| Medical Equipment | P |
| Music, Records, Tapes, Video Sales & Rental | P |
| Office Furnishings & Supply/Type-writer Sales & Service | P |
| Optical Store | P |
| Packaging & Postal Substation | P |
| Paint & Wallpaper Store | P |
| Pet Store/Pet Grooming | P |
| Photography/Processing Studio | P |
| Print Shop | P |
| Private Schools | P |
| Restaurants | P |
| Saddle & Tack Store | P |
| Shoe Sales/Repair | P |
| Sporting Goods | P |
| Stationery & Card Shop | P |
| Tanning Salon | P |
| Tattoo Parlor/Body Piercing Parlor | S |
| Toy/Hobby Store | P |
| Travel Agency | P |
| Thrift Store (under 5,000 sf gross floor area) | C |

Table key: P – Permitted uses, allowed as of right; C – Conditional uses, are allowed upon a determination that they meet the conditions specified in Section 11-4-9, W.M.C.; S – Special uses, may be allowed if they receive a Special Use Permit under Section 11-4-8, W.M.C.

Figure 2-2:
Ground-Floor Retail Standards



2.4 DEVELOPMENT CAPACITY

Development capacity within the Plan area is determined by multiple measures including site-specific development regulations, minimum development intensities and overall Plan capacity for residential development. On any one site, the primary limitation of development capacity is the Built Form regulations of Chapter 4. Minimum development intensities, as established in this section, define the lower limitation of development that shall be achieved on any one site. Finally, overall residential development capacity for the downtown area is defined and shall potentially limit residential development capacity on any one site if the overall capacity has been achieved.

2.4.1 Minimum Required Site Development

A minimum amount of development is required on each site to ensure that the intensity of new development supports the overall Plan vision of a vibrant downtown. For non-residential and mixed-use developments, this minimum level of intensity is defined by a minimum Floor Area Ratio (FAR). An FAR is the ratio of total building area to total site area, where for example, a 40,000 square-foot building on a 40,000 square-foot lot would have an FAR of 1.0. Within the Plan area, the minimum FAR for non-residential and mixed-use developments on any one site shall be 0.5. The Planning Manager shall have the discretion to allow for phased development that would meet the minimum FAR.

Residential development intensity is expressed by density, the ratio of total dwelling units to

total site acres. For example, a development with 60 dwelling units on a 1.5-acre site would have a density of 40 units per acre. In the Plan area, the minimum density for residential developments on any one site shall be 16 units per acre.

2.4.2 Maximum Residential Development Capacity

The Specific Plan limits the total number of residential development that can be achieved in downtown. This limitation ensures that the anticipated water use of future development in the downtown is in balance with water resource availability and infrastructure capacity of the City.

The total number of residential dwelling units within the Plan area shall not exceed the water availability for the site. Water availability is based on service commitments. One service commitment is equivalent to 140,000 gallons of water use per year, which is based on one single family detached home. Service commitments are calculated and issued based on the dwelling unit type, as specified in Table 2.4.1. Total residential development in the Plan area shall not exceed 1,350 service commitments. Once all 1,350 residential service commitments are issued, no additional residential development will be permitted and the residential development capacity on each block will become zero dwelling units per acre.

Should residential dwelling units be demolished and not replaced as part of a new development on the same site, the unused service commitments will be returned to the overall residential development water avail-

ability. The service commitments will then be available for development on any site on a first-come, first-served basis.

Table 2.4.1:
Service Commitments Equivalence

| Dwelling Unit Type | Service Commitments |
|------------------------|---------------------|
| Single Family Detached | 1.0 |
| Single Family Attached | 0.7 |
| Multifamily | 0.5 |
| Senior Housing | 0.35 |

CIRCULATION & STREETSCAPE DESIGN

3

3.1 OVERALL CIRCULATION AND STREETSCAPE INTENT

While residents and visitors may get to downtown Westminster by many different means, once they arrive there, everyone becomes a pedestrian. This fact informs design strategy for both the overall planning of the street network, as well as the composition of the street spaces themselves: their proportions and their detail. At the network level, the layout of downtown Westminster recalls the grid-like patterns of traditional towns, in which a tightly woven grid of streets provides multiple routes to any destination. This traditional pattern (as evidenced in places like Boulder and downtown Denver, among others) not only provides enhanced connectivity within the Plan area, it also ensures that no one street gets so wide as to be unwelcoming to pedestrians. In fact, each street within the downtown has been considered not only for its vehicle carrying capacity, but also for its ability to promote walking and biking. At the detail level, the Plan provides for standards and guidelines for new, multi-modal streets that promote access and mobility whether one is on foot, on a bike, a bus, or in a motor vehicle.

The intent of this strategy goes even further than the mere promotion of multi-modality. Recognizing that, when designed properly, a city's streets become an integral part of its green space network, this Plan provides a vibrant environment of street spaces that encourages activity. Moreover, streets designed for walking can reduce reliance on the automobile and improve public health.

Policy Objectives

1. Highlight connections and foster access to transit throughout the downtown area.
2. Ensure bicycle and pedestrian mobility throughout downtown is safe, connected, and easy to navigate.
3. Utilize creative solutions and accommodations to support bike use in downtown, particularly in relation to the US 36 Commuter Bike Trail.
4. Foster multi-modal connectivity between key destinations and activity areas, civic spaces, parks and transit through clearly-marked connections and wayfinding.
5. Facilitate connections to surrounding neighborhoods and developments with enhanced crossings and street connections.
6. Ensure the street network maximizes internal connections and circulation options, and that block sizes support the urban form and character of downtown.
7. Design streets to foster an active, engaging pedestrian environment.
8. Employ technologies that assist in wayfinding, parking access, and transit ridership.



Urbane Streetscape

A well-designed streetscape creates a public realm that safely accommodates pedestrians, cyclists, as well as automobiles.



Existing Crosswalk at 88th Avenue

Long crossing distances across multiple lanes disadvantage pedestrians.

3.2 TRANSIT ACCESS

The provision of and access to transit is an essential component of an urban, multi-modal environment. While accommodation of bicycle and pedestrian movement within downtown's street network will serve to reduce internal traffic, residents, workers, and visitors will still be connected and dependent on access to the larger Denver Metro region. As a result, maximizing access to existing transit and planning for connectivity to future transit is integrated into the overall Plan Framework.

Existing transit service to the downtown area is provided by the Denver Regional Transit District (RTD) and includes 14 bus lines. The primary bus station that serves the Plan area is the US 36 and Sheridan Park-n-Ride. The station is one of the busiest park-and-ride stations in the entire RTD bus network with almost 1,000 boardings a day. Regional bus lines that are accessed at the Park-and-Ride primarily run along US 36 between Boulder and Denver and include the AB, B, DD, DM, S, T and 86X. The AB line provides direct access to the Denver International Airport. Local bus lines that access the Park-and-Ride and downtown area include the 31, 51, 92, 100, and 104. Currently, five local bus stops serve downtown, including two along 88th Avenue, two along Harlan Street, and one along 92nd Avenue. As the downtown area develops and the street network is introduced within the site, additional local bus stops internal to downtown will be identified.

In addition to integrating local bus access into the site, the Specific Plan identifies a key connection to the Park-and-Ride. Currently, Sheridan Boulevard blocks direct access to the Park-and-Ride. Therefore, this Plan proposes

a new underpass that will allow pedestrians, bikes, and potentially transit vehicles to access the Park-and-Ride. This underpass will extend Fenton Way to the east and provide a critical link to the region's public transit network.

Future transit service to the Plan area includes a planned extension of the FasTracks Northwest Commuter Rail Line and potential shuttle service that could be either publicly or privately provided to either the US 36 and Sheridan Park-n-Ride or the future commuter rail station. As shown in Figure 3-1, the planned commuter rail station is located just south of 88th Avenue in general alignment with Westminster Boulevard. Completion of the line is not projected to occur for another 25 to 30 years; however, the Specific Plan does recognize that connectivity to this future transit will be essential when it is provided. Thus, the streetscape design of 88th Avenue does contemplate a future analysis of reducing travel lanes and the overall pedestrian crossing length to facilitate pedestrian and bicycle access across the street. Finally, shuttle service may also provide additional transit access into the Plan area. This service could incorporate other key destinations nearby downtown, including the Promenade and Butterfly Pavilion to the north on Westminster Boulevard and City Park to the north along Sheridan Boulevard.



RTD Bus Rapid Transit

RTD's US 36 bus rapid transit will connect Denver with Boulder with a stop at the US 36 and Sheridan Boulevard.

Source: RTD



US 36 and Sheridan Park-n-Ride

The park-n-ride lot is located immediately adjacent to the plan area. An underpass underneath Sheridan Boulevard will provide a direct connection.

3.3 BICYCLE AND PEDESTRIAN NETWORK

The Downtown Specific Plan provides pedestrian and bicycle connections throughout the Plan area, as shown in Figure 3-1. They connect to downtown's public spaces and parks as well as to surrounding neighborhoods, destinations and trails. This section describes these connections.

Bicycle Movement

This Plan seeks to create bicycle connections between the Plan area and existing and proposed bicycle routes, paths, trails, and lanes in Westminster, consistent with the 2010 Bicycle Master Plan. The US 36 Commuter Bike Trail, connecting Denver with Boulder, will pass along the eastern edge of the site in the Colorado Department of Transportation (CDOT) right-of-way. This Plan makes provisions for feeder connections from downtown and the surrounding neighborhoods with a network of bike lanes and bicycle-friendly streets as well as direct connections from 88th and 92nd avenues.

In order to facilitate biking in downtown, new streets are designed as multi-modal; slow design traffic speeds allow bicyclists and automobiles to share the road. Along Eaton Street, the "Green Boulevard," and Central Parkway, on-street bike lanes provide enhanced north-south and east-west bike facilities. Along Harlan Street, new on-street bike lanes connect 88th Avenue to 92nd Avenue. These lanes could connect north to planned bicycle lanes along Westminster Boulevard and south to bicycle trails and commuter ways in the City of Arvada.

The City of Westminster's 2010 Bicycle Master Plan includes a grade-separated Class I Bikeway along 88th Avenue. This bikeway will be evaluated in conjunction with a road diet of 88th Avenue. This road diet would reduce the number of travel lanes, widen sidewalks, improve crosswalks, and provide enhanced bicycling facilities (see the discussion in multi-modal access below). Once bike lanes or a bike trail is installed on 88th Avenue, bike lanes within the Specific Plan area should connect to this route.

Pedestrian Movement

The Plan provides an extensive network of pedestrian-friendly streets. All streets within the downtown are designed for slow-moving vehicular traffic, provide short crossing distances across travel lanes, and short distances between crosswalks.

Universal Design

Streets and sidewalks are vital in providing access for people of all ages and varying physical abilities. Therefore, new streets should be designed to meet the needs of all users. These may include older people, children, people in wheelchairs, parents with strollers, people with vision or hearing impairments, and those needing other assistive devices. To accommodate this broad range of users, streets should be designed with the intent to reduce barriers and provide assistive devices where appropriate. Street designs shall comply with the most recent State and federal accessibility guidelines and design practices.

Pedestrian Safety

Downtown's new streets are designed for slow traffic speeds with the intent of making them more pedestrian-friendly and safer

to cross. Design features include narrow traffic lanes, parallel on-street parking and curb bulb-outs at street corners. Beyond the street design, the design of each intersection and crosswalk will play an important role in making the crossing of travel lanes safe. In designing and locating crosswalks, the following criteria should be considered: visibility, sight lines, mid-block crossings in strategic locations, and marked crosswalks.

Enhanced Trail Loop

Downtown provides a variety of green spaces that encourage physical activity and recreation. To encourage walking and running, this Plan designates a trail loop that connects several green spaces and is easily accessible from anywhere within the Plan area. The trail loop is outlined in Figure 3-1. Where the trail loop runs along a street, a widened sidewalk serves as the pedestrian trail.

Eaton Street

On Eaton Street a wide median provides a linear green space. While this green space will accommodate a variety of activities, it also serves to enhance pedestrian connections connecting from one end of the site to the other.

Multi-Modal Access

Currently, the design of 88th and 92nd avenues reflects a focus on accommodating high volumes of vehicular traffic. Bicycle facilities are absent and pedestrian crossings are few and far between. Pedestrians must cross seven to eight traffic lanes with a total curb-to-curb distance of one hundred feet or more. As the urban downtown develops, demand for pedestrian and bike access to the site will increase. Strategies to improve this access at

88th and 92nd avenues include consideration of a "road diet" for both streets.

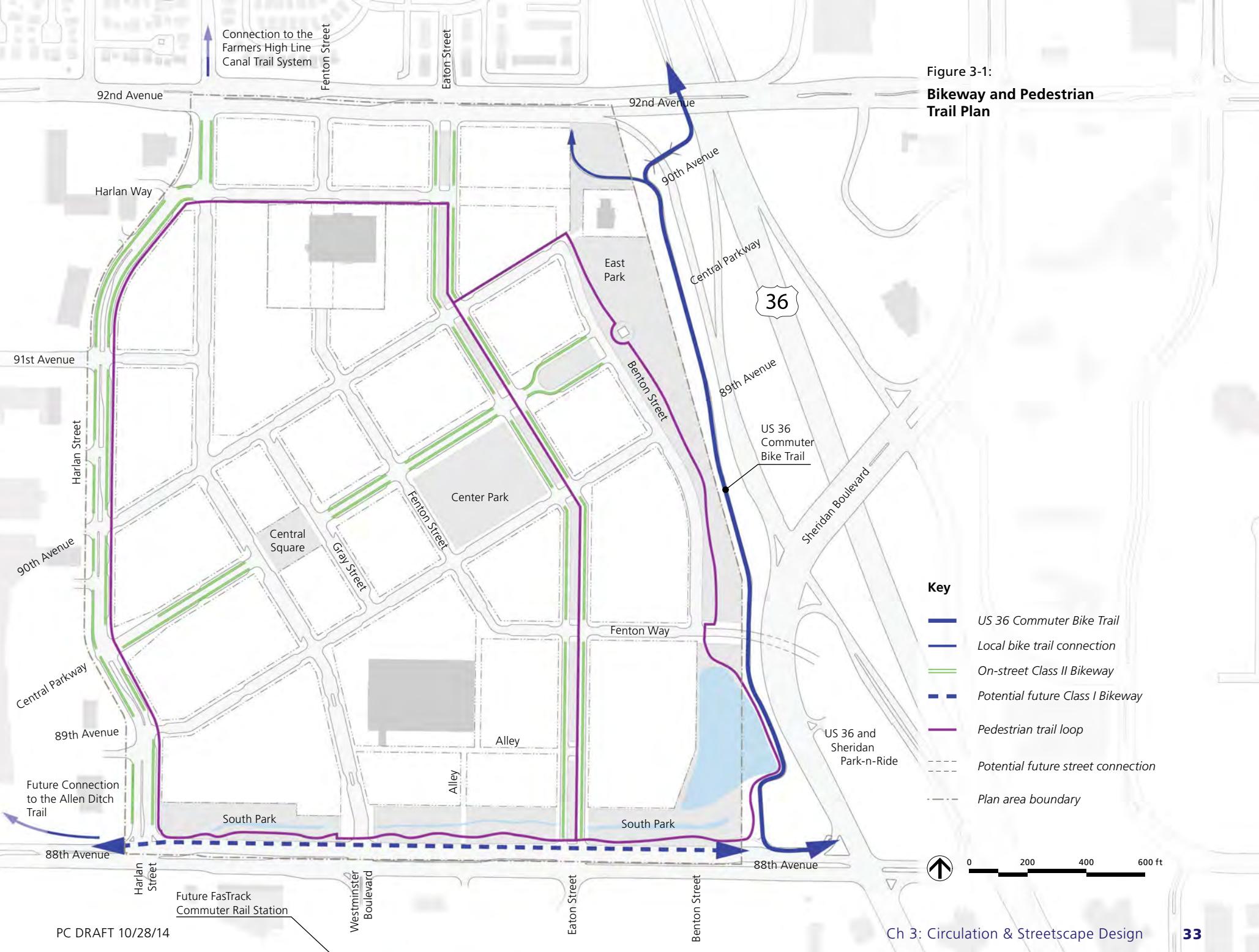
"Road diets" are strategic changes to the street cross section that reduce the area of the street devoted to vehicle travel. A road diet can be implemented after an analysis of traffic patterns identifies less-utilized vehicle lanes in a roadway that can be converted into bicycle and pedestrian facilities. Typical measures employed by a "road diet" include reduction or narrowing of travel lanes, addition of raised medians to provide mid-street pedestrian refuges, introduction of on-street bike lanes or parallel parking, and expansion of existing sidewalks. All of these measures serve to reduce crossing distances and enhance bicycle and pedestrian safety.

The City will evaluate opportunities for a road diet on both 88th and 92nd avenues. Any such measures will be weighed against the continued capacity of these streets to accommodate future vehicular traffic. Potential road diet street improvements could include:

- Reduction or elimination of right turn and acceleration lanes on both sides of 92nd Avenue, thereby creating the opportunity for improved sidewalks on the north side as well as improved landscaping and identity on both street sides.
- Opportunity for bike lanes on 88th Avenue as well as a wider median that would provide pedestrian refuges at crossings and enhance pedestrian safety by reducing the crossing distance.

Additional measures and improvements may also be explored.

Figure 3-1:
**Bikeway and Pedestrian
Trail Plan**



3.4 STREET NETWORK

This Plan provides a hierarchy of street types that creates distinct environments. The existing arterial streets, 88th and 92nd avenues, border the Plan area to the south and north, respectively. Westminster Boulevard, which currently terminates at the north edge, will be extended through the site and together with Eaton Street will accommodate north-south movement. Local streets and public alleys complete the street network; special design provisions are made for Gray Street where higher levels of pedestrian activity are anticipated, for Benton Street that fronts a major green space, and for Central Parkway that is envisioned as an enhanced green connection from East Park to the retail core.

The street design strategy anticipates that a mix of uses will line the streets though it does not prescribe or predict exactly what uses those will be. Instead, it provides positive, human-scaled environments, the success of which is largely independent of the uses fronting a particular street. Street design will also contribute to downtown's identity as a decidedly urban space. Wide sidewalks provide ample space for pedestrian activity; curb extensions ease roadway crossings; street trees and landscaping enhance downtown's beauty; and dedicated amenity zones, streetlights, ample seating, and other street furniture ensure functionality of the street environments.

Street Types and Design

This section depicts the proposed street and sidewalk sections within the Plan area. Figure 3-2 provides a key to the individual street type sub-sections. The street types and

sections are designed to accommodate the expected volumes of traffic associated with new development in downtown. A traffic analysis was prepared as part of the development of the Specific Plan and is included in the Appendix.

88th Avenue and 92nd Avenue

At 88th Avenue only the northern portion of the street and at 92nd Avenue only the southern portion of the street lies within the Plan boundary. This Plan only proposes changes to their sidewalks, but not the roadways. New sidewalk designs will improve the pedestrian environment and sidewalk sections are provided for these two streets. Enhanced pedestrian crossings should be placed where Westminster Boulevard and Eaton Street meet 88th Avenue as well as at the intersection of Westminster Boulevard with 92nd Street.

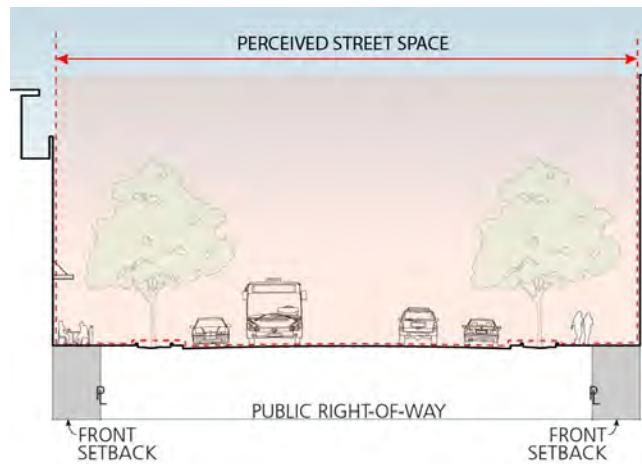
Private Development

When considering the design of public streets, it is important to recognize that the design of private front setbacks significantly contributes to the success of the overall street design. This is because the perceived street space is the area between the building faces on either side of the street (see the Perceived Street Space illustration). Hence, the street types provide the basis for frontages, which encompass the dimension of front setbacks as well as the character of the setbacks themselves. Private development shall adhere to this section's provisions for front setbacks.

Bicycling in Downtown

This Plan proses a simple approach to bicycling in downtown: every street is designed to safely accommodate bike traffic. The majority of the new streets are designed for

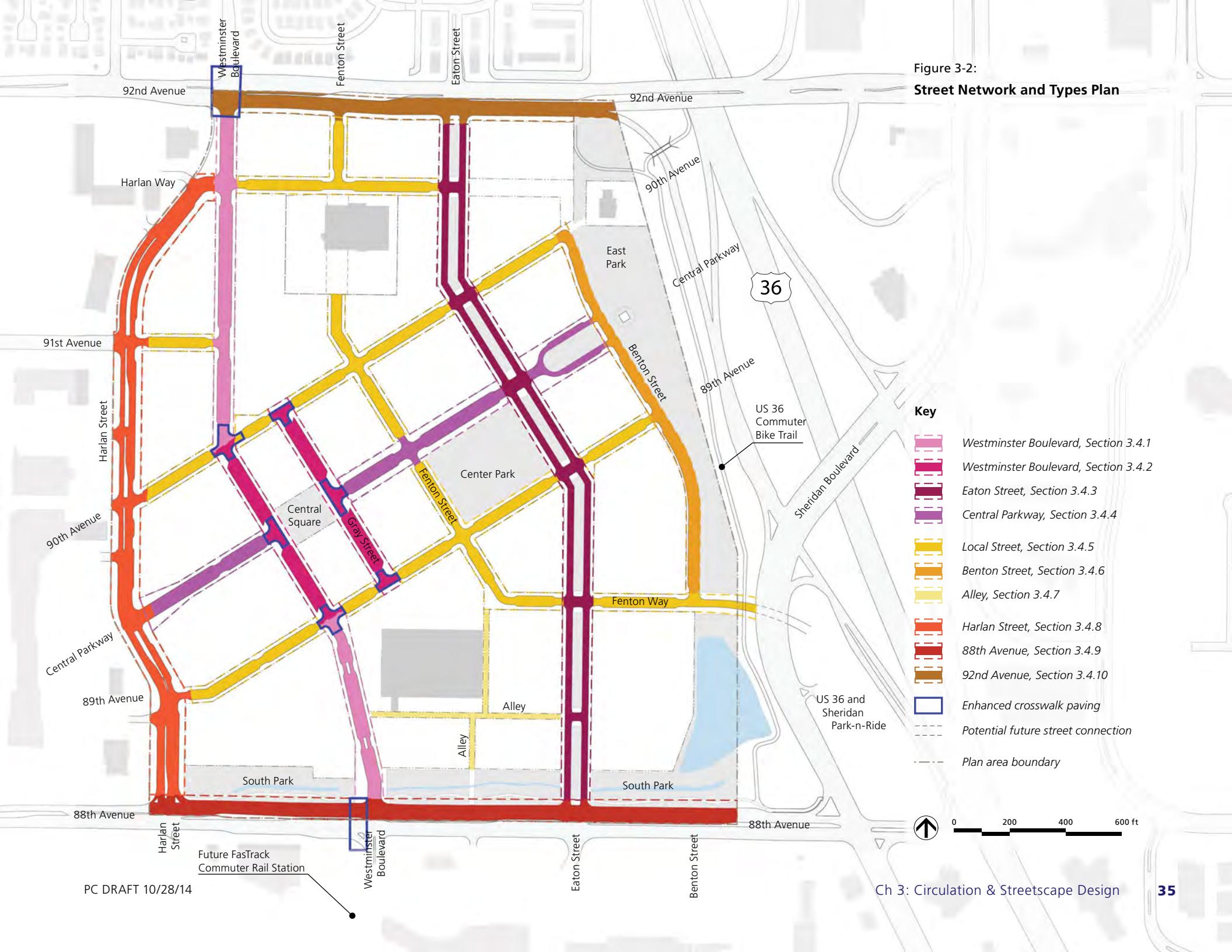
slow-moving traffic with one travel lane in each direction. Bicycle lanes are also provided on key streets including Eaton Street, Harlan Street and Central Parkway. Along all other streets in the downtown, bicycles and vehicles will share the roadway.



Perceived Street Space

Front setbacks are part of the overall perceived street space.

Figure 3-2:
Street Network and Types Plan



3.4.1 Westminster Boulevard Outside the Retail Core

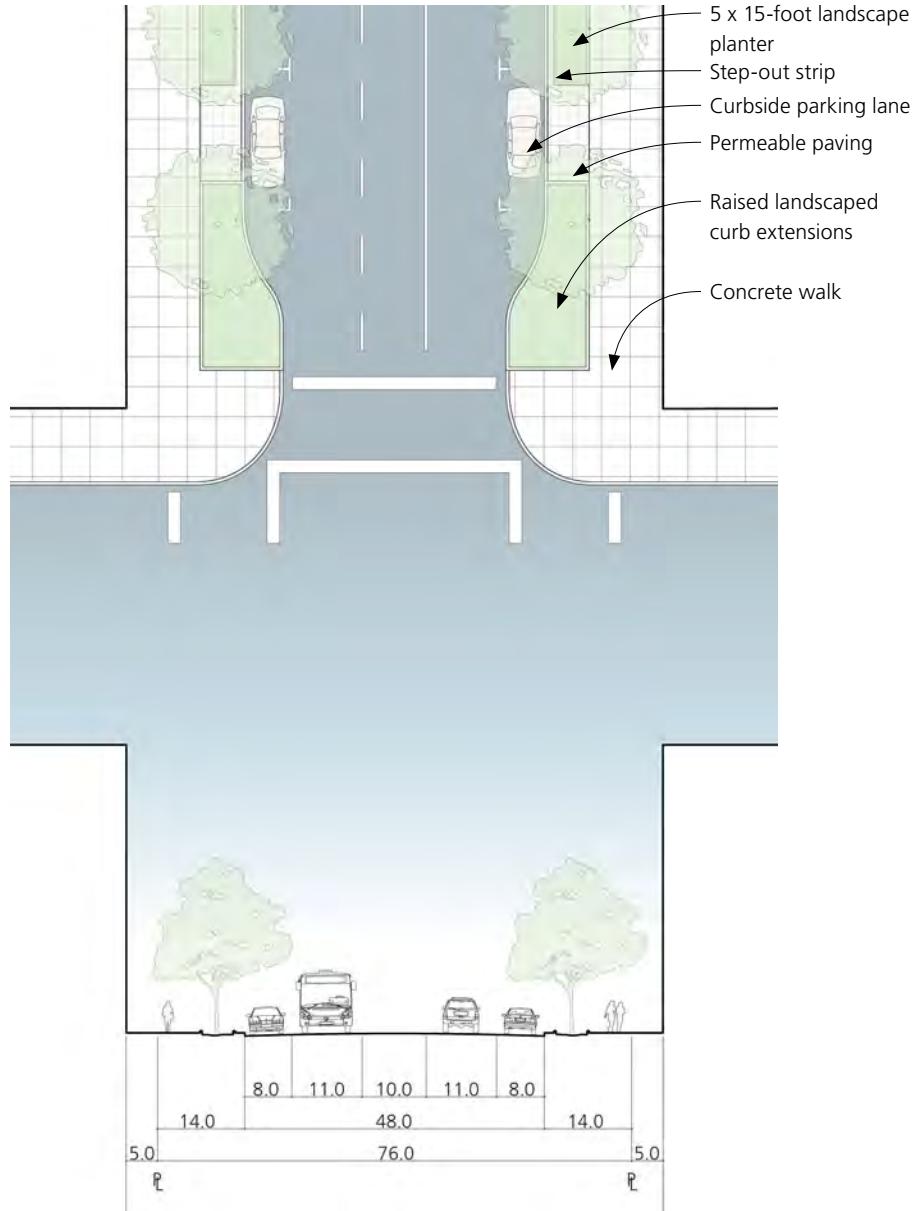
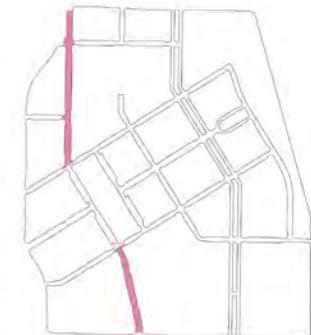


Figure 3-3: Westminster Boulevard Street Design Diagram

SW: sidewalk incl. parkway; P: parking lane; L: travel lane; TL: turning lane



Key Plan

A. Design Intent

As the primary north-south connections in the new downtown's street grid, this street type anticipates higher volumes of pedestrians and vehicular traffic than on other streets within the Plan area. The design provides for a street environment with slow traffic speeds that are safe for pedestrians, drivers, and bicyclists alike. The roadway has one shared use travel lane in each direction that accommodates bicycles and a center turning lane. Wide sidewalks provide room for pedestrians and outdoor dining. Curb extensions reduce the crossing distance for pedestrians at intersections and provide room for sidewalk amenity areas. Landscaped planters with street trees and seasonal plantings enrich the identity of this important new street.

B. Street Design

Street design shall be in conformance with Figure 3-3.

C. Sidewalk Paving

The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1). Step-out strips and sidewalk areas located in between landscape planters shall be paved with permeable pavers (see Section 3.5.1).

D. Landscape

1. **Street Trees.** Street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. **Landscape Planters.** Landscape planters shall be five feet wide and 15 feet long and enclosed by a raised concrete curb, four inches wide and four inches high. Landscape planters shall be placed so that they match the street tree spacing, typically 35 feet on center.
3. **Curb Extensions.** Raised landscape planters at seat wall height shall extend into curb extensions and separate sidewalk amenity zones from the roadway (see Section 3.5.4). Planters shall incorporate benches or seating into the design.



Landscaped Curb Extensions

Seasonal plantings brighten the streetscape experience.



Landscaped Curb Extensions

Curb extensions are planted with colorful flowers and ornamental trees.



Amenity Areas in Front Setbacks

Dining and other outdoor furniture is allowed in front setbacks.

E. Streetlights

Streetlights shall be per Section 3.5.3.

F. Street Furniture

Street furniture within the public right of way shall be per Section 3.5.2. Curb extensions should be furnished with pedestrian or bicycle amenities or both (see Section 3.5.4).

G. Front Setbacks

1. Paving. Front setbacks shall be paved with poured, scored concrete to match the public sidewalk (see Section 3.5.1).
2. Landscaping. Small shrubs and trees in movable pots are permitted. Landscaped planters or yards are not permitted.
3. Furniture. Movable signs and outdoor merchandise displays in conformance with sign standards and guidelines of Section 4.7 are permitted. All such furniture shall be approved by the City. Outside of business hours, furniture shall be removed from the setback and stored.

H. Outdoor Dining

Outdoor dining is permitted within the front setback adjacent to the operating ground-floor use. Outdoor dining areas shall be located entirely within the front setback. They shall be enclosed by removable barriers when barriers are required by State licensing regulations.

Furniture for outdoor dining shall be approved by the City. Outside of business hours furniture should be stored indoors. Alternatively, it may be stacked and secured at the back of the setback area.

Outdoor dining may encroach up to one foot into the public right-of-way.

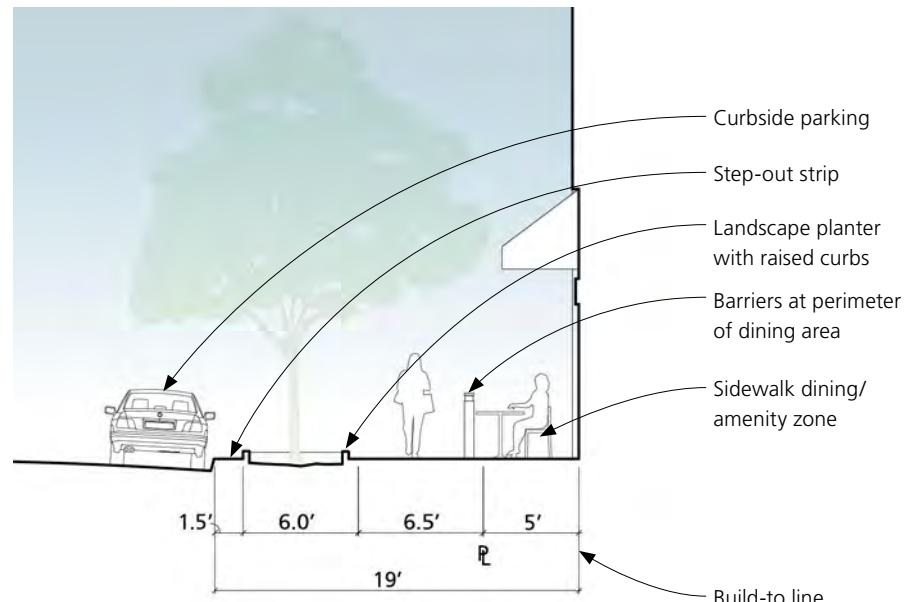


Figure 3-4: Westminster Boulevard Sidewalk

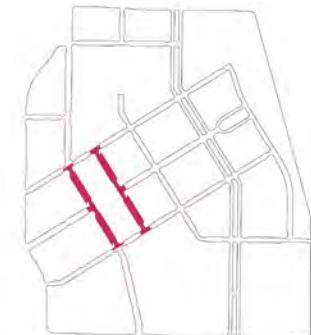
The sidewalk dining zone is located in line with landscape planters leaving room for additional furnishings at the building front.

3.4.2 Westminster Boulevard and Gray Street



Figure 3-5: Westminster Boulevard and Gray Street Street Design Diagram

SW: sidewalk incl. parkway; P: parking lane; L: travel lane; TL: turning lane



Key Plan

A. Design Intent

This street type modifies the Westminster Boulevard type at the retail core where a high volume of pedestrians is anticipated. The roadway is designed for slow traffic speeds with bikes in mixed flow traffic lanes. It has one travel lane in each direction. Curbside parking is provided on both sides of the street with one side arranged as angled parking for added convenience. Wide sidewalks provide room for pedestrians, amenity areas, shop displays, and outdoor dining. Curb extensions reduce the crossing distance at intersections and provide room for amenity areas.

B. Street Design

Street design shall be in conformance with Figure 3-5.

C. Decorative Street Paving

Gray Street between 90th and 91st Avenues and the intersections of Westminster Boulevard with 90th Avenue, Central Parkway, and 91st Avenue shall be paved in scored integral

color concrete. Pedestrian crosswalks shall be emphasized with a variation in concrete color or pattern.

D. Sidewalk Paving

The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1). Step-out strips and sidewalk areas located in between landscape planters shall be paved with permeable pavers (see Section 3.5.1).

E. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. Landscape Planters. Tree planters shall be five feet wide and 15 feet long inground planters located below a suspended pavement system. Treeplanters shall be placed so that they match the street tree spacing.
3. Curb Extensions. Landscape planters shall extend into curb extensions and separate sidewalk amenity zones from the roadway (see Section 3.5.4).



Wide, Active Sidewalks

Wide sidewalks and paved front setbacks provide ample space for pedestrian activity.



Inground Planter Under Construction

*A 5x15-foot tree planter sits below a suspended pavement system that will support sidewalk paving once construction is complete.
Photo location: Denver, CO*



Inground Planter with Paving Installed

In this image, the pervious paving has been installed above the pavement suspension system. The usable sidewalk area has increased significantly.

F. Streetlights

Streetlights shall be per Section 3.5.3.

G. Street Furniture

Street furniture shall be per Section 3.5.2. Curb extensions should be furnished with pedestrian or bicycle amenities or both (see Section 3.5.4).

H. Front Setbacks

1. Paving. Front setbacks shall be paved with poured, scored concrete to match the public sidewalk (see Section 3.5.1).
2. Landscaping. Small shrubs and trees in movable pots are permitted. Landscaped planters or yards are not permitted.
3. Furniture. Movable signs and outdoor merchandise displays in conformance with sign standards and guidelines of Section 4.7 are permitted. All such furniture shall be approved by the City. Outside of business hours, furniture shall be removed from the setback and stored.

I. Outdoor Dining

Outdoor dining is permitted within the front setback adjacent to the operating ground-floor use. Outdoor dining areas shall be located entirely within the front setback. They shall be enclosed by removable barriers when barriers are required by State licensing regulations.

Furniture for outdoor dining shall be approved by the City. Outside of business hours furniture should be stored indoors. Alternatively, it may be stacked and secured at the back of the setback area.

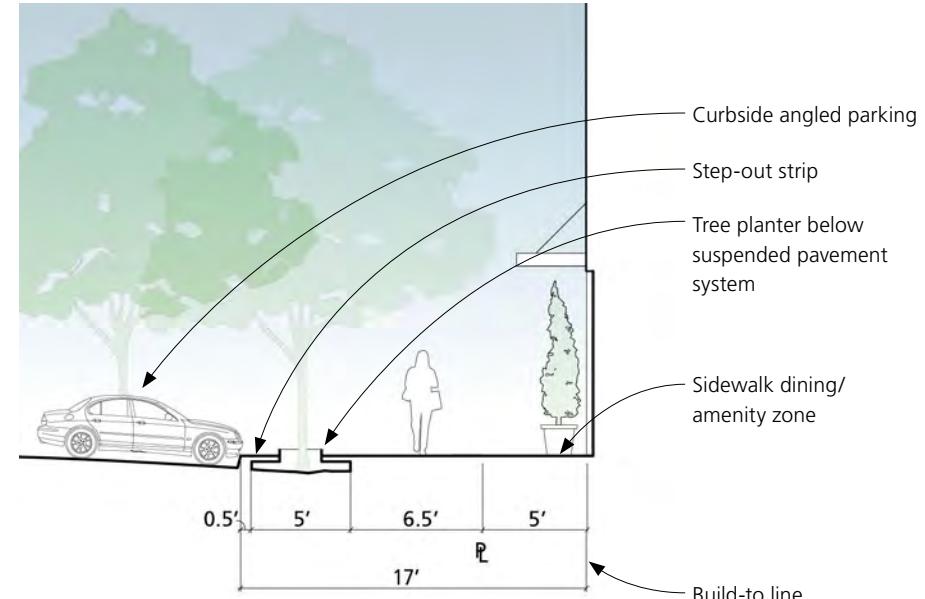


Figure 3-6: Westminster Boulevard and Gray Street Sidewalk at Angled Parking

In areas with convenient angled parking the sidewalk amenity zone is reduced by two feet in depth. At sidewalks with parallel parking the sidewalk design is the same as Section 3.2.1.

3.4.3 Eaton Street "Green Boulevard"

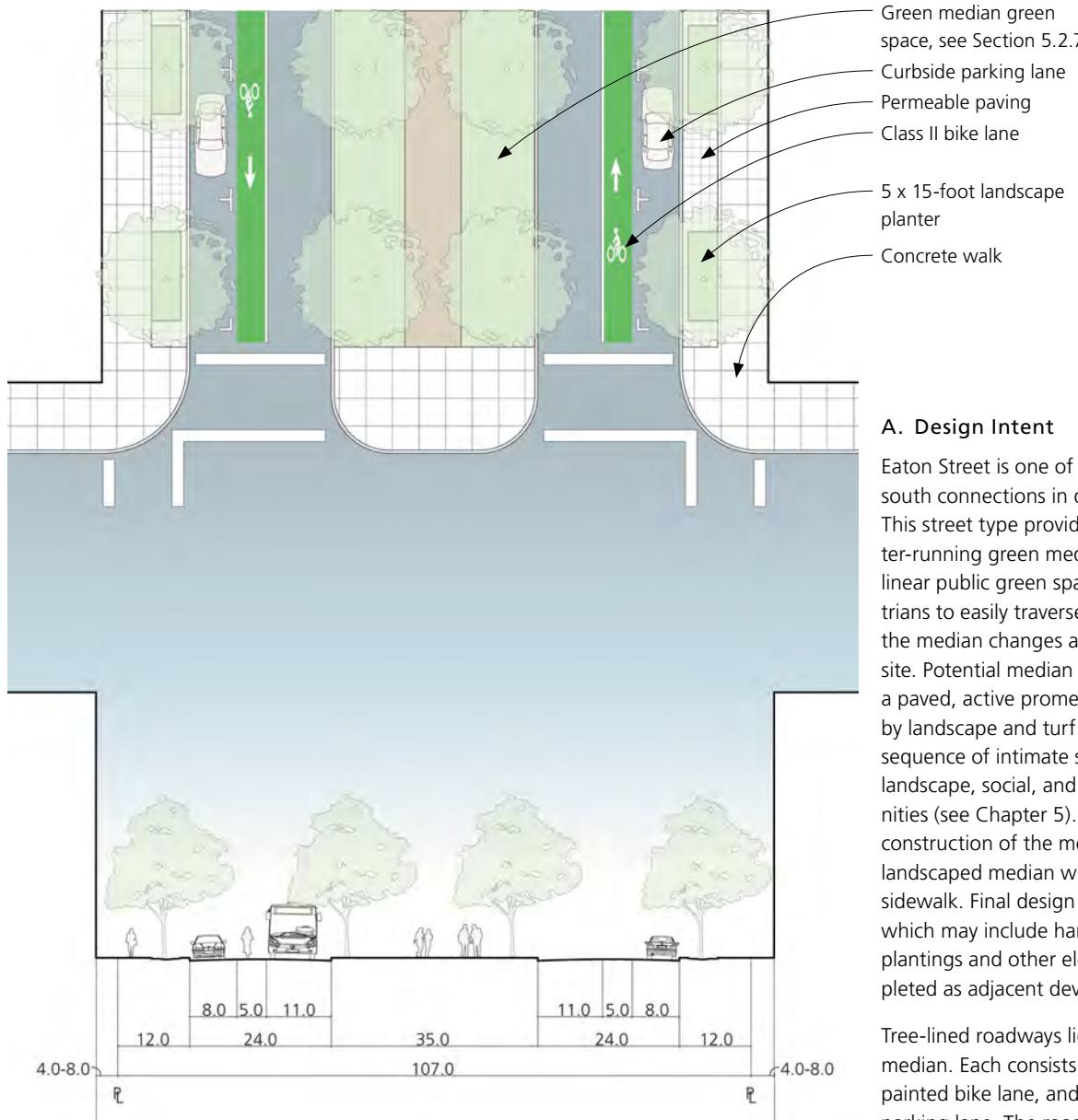
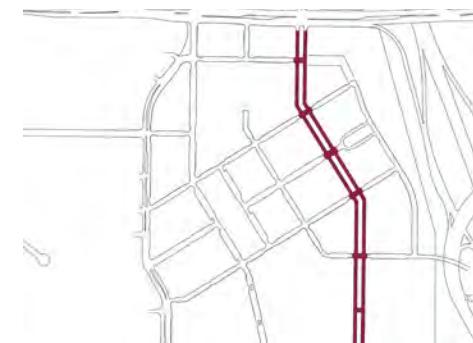


Figure 3-7: Eaton Street Design Diagram

SW: sidewalk incl. parkway; P: parking lane; B: bike lane; L: travel lane; M: median



Key Plan

A. Design Intent

Eaton Street is one of two primary north-south connections in downtown's street grid. This street type provides for a wide, center-running green median that functions as a linear public green space and allows pedestrians to easily traverse the site. The design of the median changes as it passes through the site. Potential median designs could include a paved, active promenade; a walk framed by landscape and turf on either side; and a sequence of intimate spaces with varying landscape, social, and recreational opportunities (see Chapter 5). The initial design and construction of the median will comprise a landscaped median with turf, trees and a sidewalk. Final design of the median spaces, which may include hardscape, additional plantings and other elements, will be completed as adjacent development occurs.

Tree-lined roadways lie on either side of the median. Each consists of one travel lane, a painted bike lane, and an on-street parallel parking lane. The roadways are intended for slow traffic speeds on a very pedestrian-friendly street. Landscaped planters with street trees and seasonal plantings enrich the

identity of this important street.

B. Street Design

Street design shall be per Figure 3-7.

C. Sidewalk Paving

The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1). Step-out strips and sidewalk areas located in between landscape planters shall be paved with permeable pavers (see Section 3.5.1).

D. Median

Median design shall be per green space standards (see Chapter 5).

E. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19). Whenever possible, street trees at the sidewalks and the median shall be placed four abreast.
2. Landscape Planters. Planters shall be five feet wide by 15 feet long and flush with the finished sidewalk. Landscape planters



Green Space Median

Urban green spaces for strolling, meeting, and other activities.



Bike Lanes

A split roadway has a travel lane, a bike lane, and curb-side parking.



Landscape Planters

Landscape planters line the roadway. Low, sturdy tree-pit guards can protect trees and plants.

shall be placed to match the street tree spacing, typically 35 feet on center.

3. Plantings. Landscape planters shall be planted with robust grasses or low shrubs or hedges.

G. Streetlights.

Streetlights shall be per Section 3.5.3. Additional pedestrian lights shall be placed in the green median (see Section 5.2.7).

H. Street Furniture

Street furniture shall be per Section 3.5.2.

I. Front Setbacks

1. Paving. Notwithstanding the *frontage type* standards of Section 4.3, front setbacks at ground-floor retail or commercial uses shall be paved with poured, scored concrete to match the public sidewalk (see Section 3.5.1). Front setbacks at ground-floor residential uses shall be paved or landscaped.
2. Landscaping. Small shrubs and trees in movable pots are permitted. *Stoops* and

similar encroachments may extend into the front yard.

3. Furniture. Movable signs and outdoor merchandise displays in conformance with sign standards and guidelines of Section 4.7 are permitted. All such furniture shall be approved by the City. Outside of business hours, furniture shall be removed from the setback and stored.

J. Outdoor Dining

Outdoor dining is permitted within the front setback adjacent to the operating ground-floor use. Outdoor dining areas shall be located entirely within the front setback. They shall be enclosed by removable barriers when barriers are required by State licensing regulations.

Furniture for outdoor dining shall be approved by the City. Outside of business hours furniture should be stored indoors. Alternatively, it may be stacked and secured at the back of the setback area.

Outdoor dining may also be permitted in the green median with City approval.

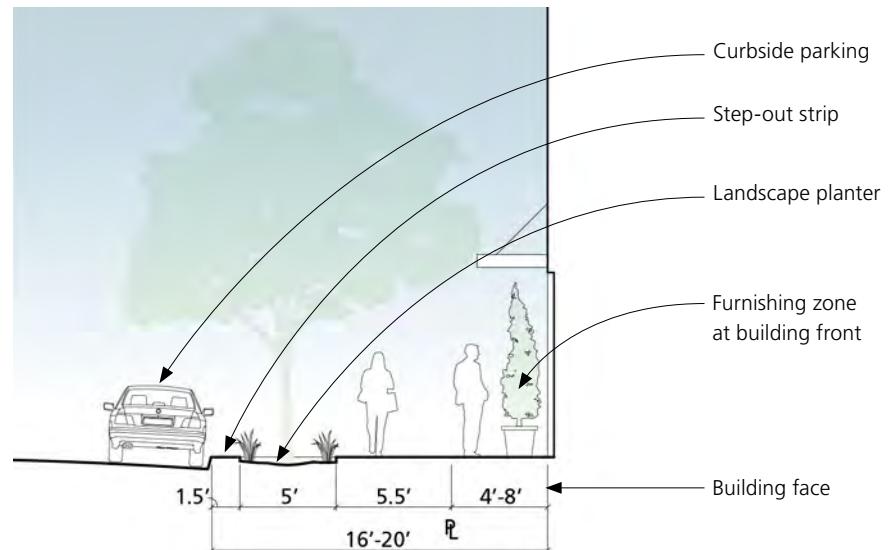


Figure 3-8: Typical Eaton Street Sidewalk

At ground-floor retail and commercial uses the building furnishing zone is paved and increases the effective width of the pedestrian walk. At residential uses, the setback can be paved, landscaped, or both.

3.4.4 Central Parkway

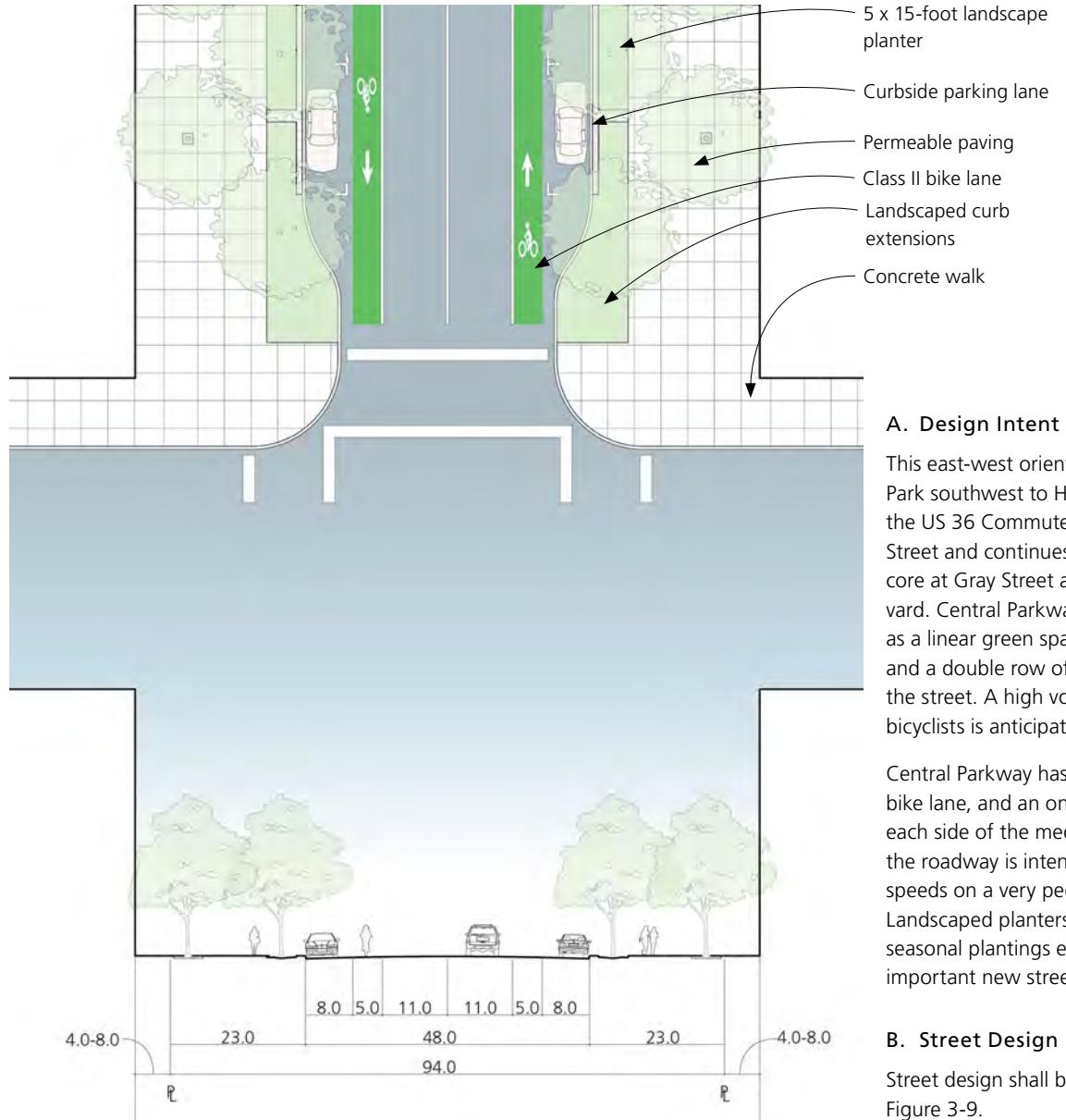


Figure 3-9: Central Parkway Design Diagram

SW: sidewalk incl. parkway; P: parking lane; L: travel lane

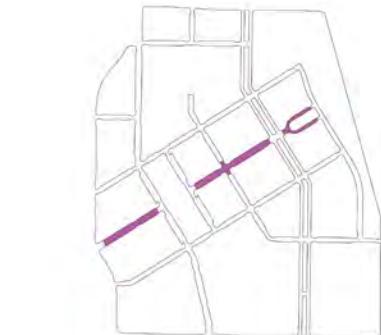
A. Design Intent

This east-west oriented street runs from East Park southwest to Harlan Street. It connects the US 36 Commuter Bike Trail with Eaton Street and continues directly into the retail core at Gray Street and Westminster Boulevard. Central Parkway's sidewalks function as a linear green space with wide sidewalks and a double row of trees on either side of the street. A high volume of pedestrians and bicyclists is anticipated.

Central Parkway has one travel lane, a painted bike lane, and an on-street parking lane on each side of the median. Like Eaton Street, the roadway is intended for slow traffic speeds on a very pedestrian-friendly street. Landscaped planters with street trees and seasonal plantings enrich the identity of this important new street.

B. Street Design

Street design shall be in conformance with Figure 3-9.



Key Plan

C. Sidewalk Paving

The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1).

D. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. Landscape Planters. Planters at the curbside shall be five feet wide by 15 feet long and flush with the finished sidewalk. Tree planters adjoining the property line shall be five feet wide and 15 feet long inground planters located below a suspended pavement system. Where adjoining front yards are landscaped, the City may approve trees in open planters that are integrated and maintained with front yard landscaping. Landscape planters shall be placed to match the street tree spacing, typically 35 feet on center.
3. Plantings. Landscape planters shall be planted with robust grasses or low shrubs or hedges.

E. Streetlights

Streetlights shall be per Section 3.5.3.

F. Street Furniture

Street furniture shall be per Section 3.5.2.

G. Front Setbacks

1. Paving. Notwithstanding the *frontage type* standards of Section 4.3, front setbacks at ground-floor retail or commercial uses shall be paved with poured, scored concrete to match the public sidewalk (see Section 3.5.1). Front setbacks at ground-floor residential uses shall be paved or landscaped.
2. Landscaping. Small shrubs and trees in movable pots are permitted. *Stoops* and similar encroachments may extend into the front yard.
3. Furniture. Movable signs and outdoor merchandise displays in conformance with sign standards and guidelines of Section 4.7 are permitted. All such furniture

shall be approved by the City. Outside of business hours, furniture shall be removed from the setback and stored.

H. Outdoor Dining

Outdoor dining is permitted within the front setback adjacent to the operating ground-floor use. Outdoor dining areas shall be located entirely within the front setback. They shall be enclosed by removable barriers when barriers are required by State licensing regulations.

Furniture for outdoor dining shall be approved by the City. Outside of business hours furniture should be stored indoors. Alternatively, it may be stacked and secured at the back of the setback area.



Pedestrian-Oriented Median

A pedestrian path in the median connects East Park to the retail core.



Bike Lanes

A split roadway has a travel lane, a bike lane, and curb-side parking.

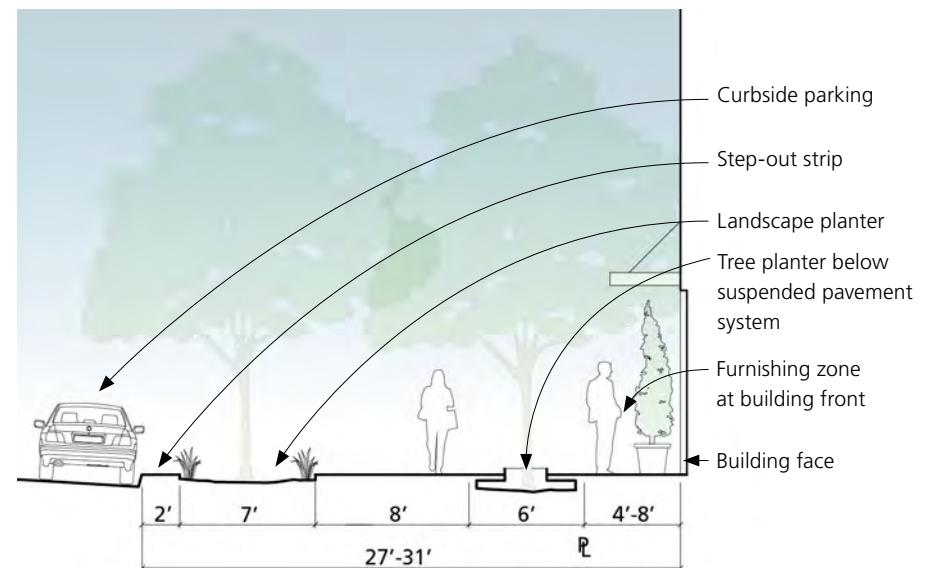


Figure 3-10: Typical Central Parkway Sidewalk

At ground-floor retail and commercial uses the building furnishing zone is paved and increases the effective width of the pedestrian walk. At residential uses the setback can be paved, landscaped, or both.

3.4.5 Local Street

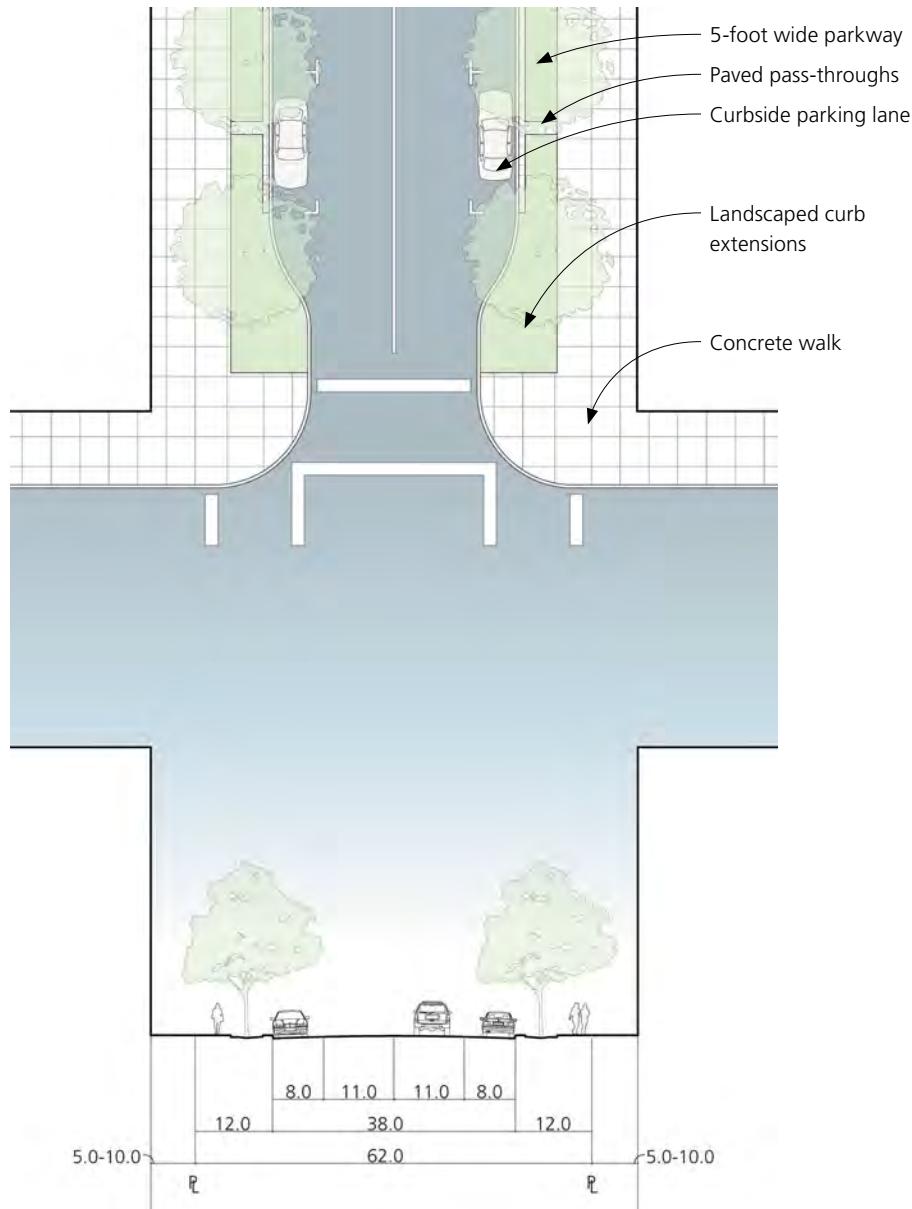


Figure 3-11: Local Street Design Diagram

SW: sidewalk incl. parkway; P: parking lane; L: travel lane;

A. Design Intent

The local street type serves development throughout the downtown Plan area. It is intended for pedestrians, bicycles, and slow-moving vehicles to access various uses and destinations. The roadway is designed for slow traffic speeds with shared use traffic lanes that accommodate bicycles. It has one travel lane in each direction and curbside parking lanes on both sides. Sidewalks provide ample room for pedestrians. Streets are landscaped with street trees and continuous parkways with paved pass-throughs to the sidewalk.

Setback standards allow buildings to be set between five and ten feet from the property line. This variation makes for a livelier street frontage. The setback areas are paved or landscaped per the building *frontage type* standards.

B. Street Design

Street design shall be in conformance with Figure 3-11.



Key Plan

C. Sidewalk Paving

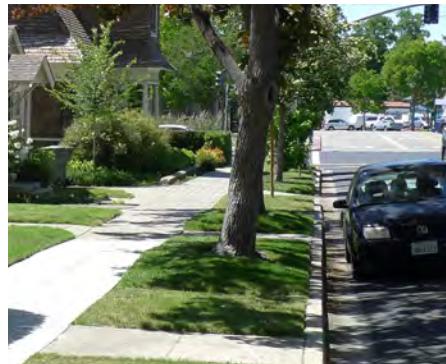
The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1). Step-out strips and walks in parkways shall be paved with permeable pavers (see Section 3.5.1).

D. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. Parkways. Parkways shall be five feet wide continuous planters and flush with the finished sidewalk. Where determined appropriate by the City, parkways shall be designed as infiltration planters and appropriate plant material shall be selected (see Section 3.5.9). Where infiltration planters are not feasible parkways shall be landscaped with irrigated turf. Paved walks shall provide access from the sidewalk to step-out strips and shall be placed at regular intervals not to exceed 40 feet.

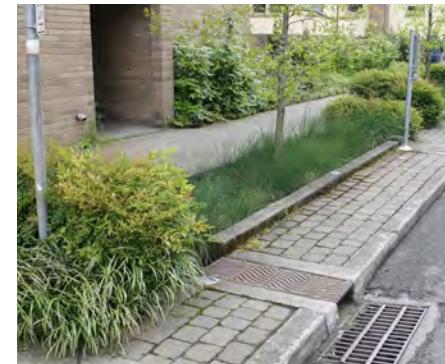
E. Streetlights

Streetlights shall be per Section 3.5.3.



Parkway with Turf

Option 1 - parkways are planted with turf and irrigated.



Parkway with Infiltration

Option 2 - parkways are designed as infiltration planters and collect stormwater runoff.

F. Street Furniture

Street furniture shall be per Section 3.5.2.

G. Front Setbacks

Front setbacks shall be paved or landscaped in conformance with the building *frontage type* standards (see Section 4.4).

H. Outdoor Dining

Outdoor dining may be permitted with City approval. The outdoor dining area shall immediately adjoin a *storefront cafe* frontage and shall be located entirely within the front setback. It shall be enclosed by removable barriers when barriers are required by State licensing regulations.

Furniture for outdoor dining shall be approved by the City. Outside of business hours furniture should be stored indoors. Alternatively, it may be stacked and secured at the back of the setback area.

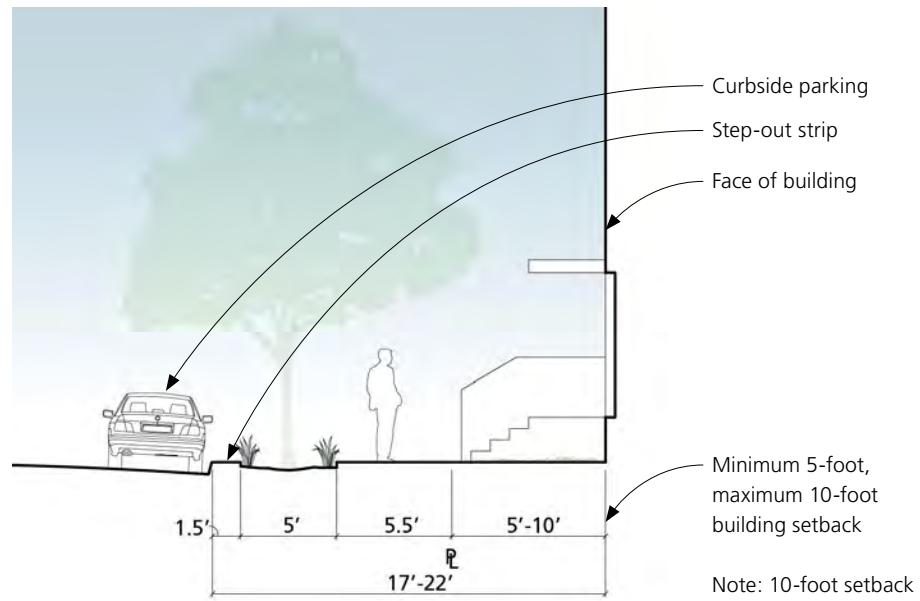


Figure 3-12: Local Street Sidewalk Section

A deeper setback allows stoops or similar permitted building elements that enliven the sidewalk experience.

3.4.6 Benton Street

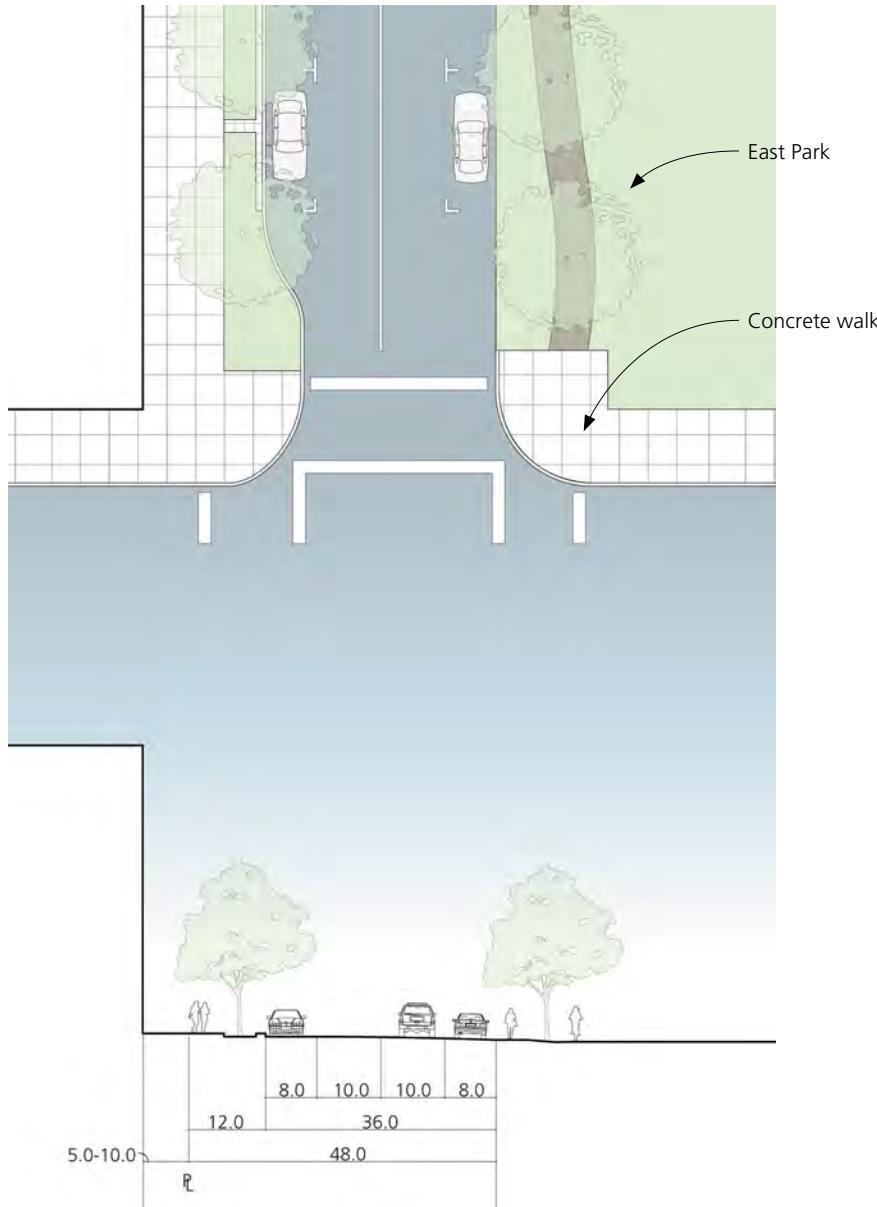


Figure 3-13: Benton Street Design Diagram

SW: sidewalk incl. parkway; P: parking lane; L: travel lane



Key Plan

A. Design Intent

Benton Street has a continuous park front along East Park. The street design anticipates frequent pedestrian and bike crossing of the roadway. Therefore, the roadway is designed for slow traffic speeds with bikes in shared use lanes. Benton Street has one travel lane in either direction and curb-side parking lanes on both sides. Building-side sidewalks provide ample room for pedestrians. Streets are landscaped with street trees and continuous parkways with paved pass-throughs to the sidewalk.

At the park there is the opportunity to drain stormwater runoff from the road to drain into a bioswale. In the bioswale, the water infiltrates into the ground. This option should be evaluated in the park design for the East Park.

B. Street Design

Street design shall be in conformance with Figure 3-13.

C. Sidewalk Paving

Building-side sidewalks shall be paved with poured, scored concrete (see Section 3.5.1). Step-out strips and walks in parkways shall be paved with permeable pavers (see Section 3.5.1). Park-side sidewalks shall be paved with poured, scored concrete (see Section 3.5.1). Curbs shall be flush type.

D. Landscape

1. Street Trees. At the building-side sidewalk street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. Parkways. At the building-side sidewalk parkways shall be five feet wide continuous planters and flush with the finished sidewalk. Where determined appropriate by the City, parkways shall be designed as infiltration planters and appropriate plant material shall be selected. Where infiltration planters are not feasible parkways shall be landscaped with irrigated turf. Paved walks shall provide access from the sidewalk to step-out strips and shall be



Bioswale at Park Edge

A bioswale captures stormwater runoff, filters it, and then allows it to infiltrate into the ground.

- placed at regular intervals not to exceed 40 feet.
- 3. Bioswale (option). A continuous sidewalk adjacent bioswale could be located in East Park. Paved or soft surface walks shall provide access across the bioswale. They should be placed at regular intervals not to exceed 60 feet, at intersections, and at key crossings.

E. Streetlights

Streetlights shall be per Section 3.5.3.

F. Street Furniture

Street furniture shall be per Section 3.5.2. Bollards should be considered for the east side of the street to prevent vehicles from entering the sidewalk.

G. Front Setbacks

Building-side front setbacks shall be paved or landscaped in conformance with the building *frontage type* standards (see Section 4.4).

3.4.7 Alley (Public or Private)

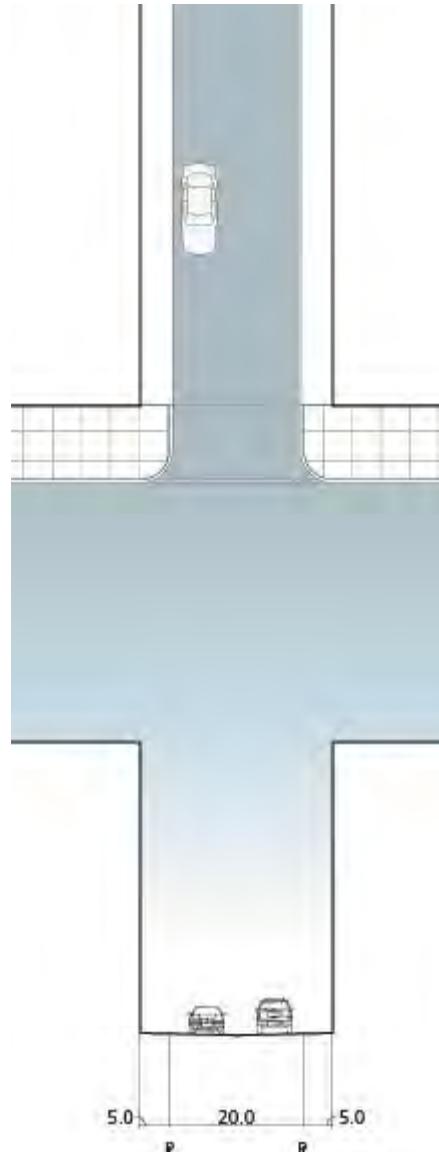


Figure 3-14: 20-Foot Alley Design Diagram



Key Plan

A. Design Intent

While the alley street type primarily provides access to the interior of larger blocks, it is also intended for opportunities for active uses along alley fronts. These uses could include restaurants, gallery spaces, or similar storefront uses. Alley widths provide a two-way drive lane for very slow moving traffic mixing with pedestrians and bicyclists. A five-foot wide, raised sidewalk provides additional safety for pedestrians. Alleys shall be concrete.

B. Street Design

Street design shall be in conformance with Figure 3-14.

C. Setback Paving

5-foot setbacks shall be paved with poured concrete.

D. Outdoor Dining

Outdoor dining is not permitted.

3.4.8 Harlan Street

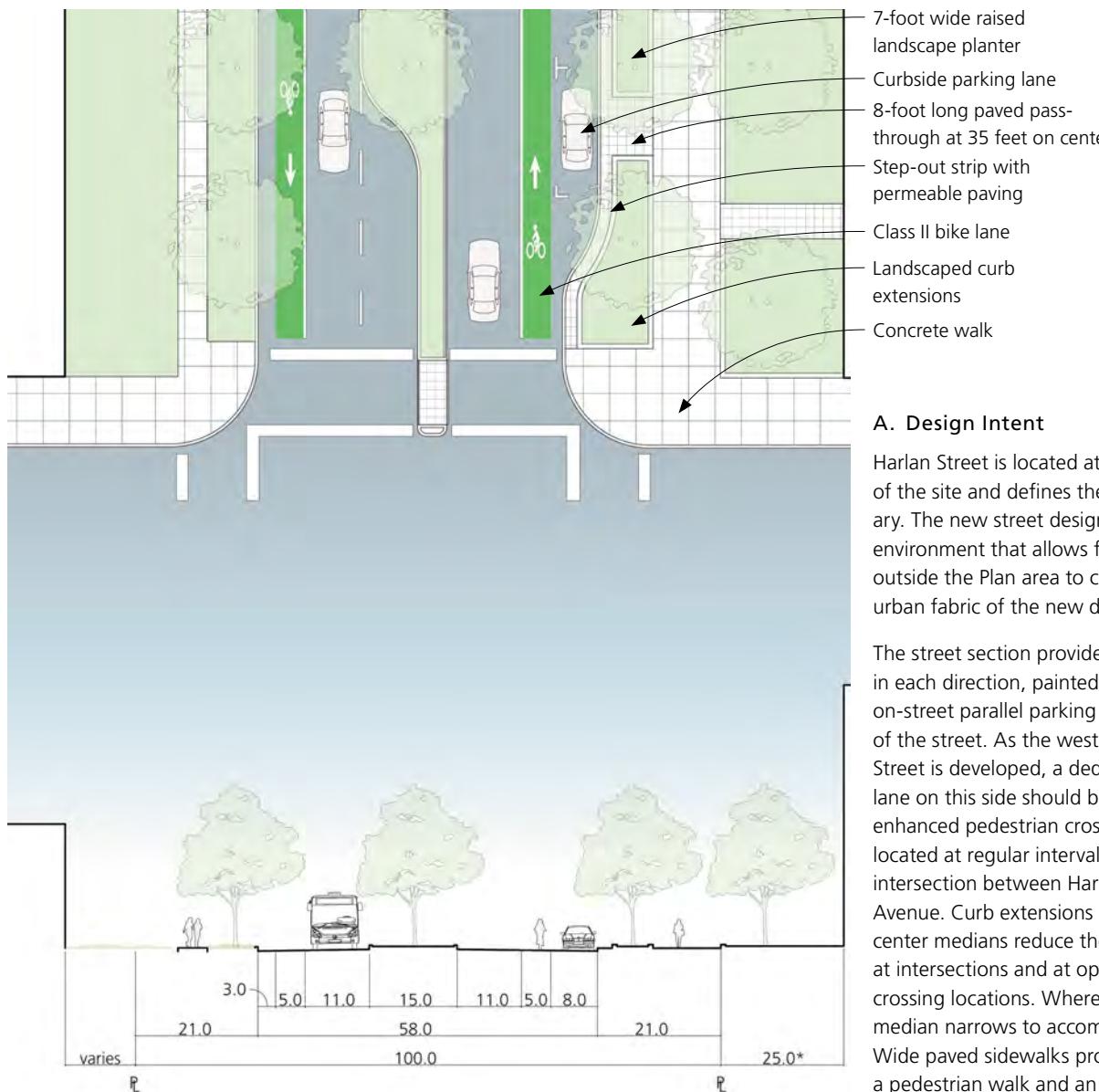


Figure 3-15: Harlan Street Design Diagram

SW: sidewalk incl. parkway; P: parking lane; L: travel lane



Key Plan

A. Design Intent

Harlan Street is located at the western edge of the site and defines the Plan area boundary. The new street design creates a street environment that allows future development outside the Plan area to connect with the urban fabric of the new downtown.

The street section provides one travel lane in each direction, painted bike lanes, and on-street parallel parking on the eastern side of the street. As the western side of Harlan Street is developed, a dedication for a parking lane on this side should be evaluated. New enhanced pedestrian crosswalks should be located at regular intervals as well as the intersection between Harlan Street and 91st Avenue. Curb extensions and landscaped center medians reduce the crossing distance at intersections and at opportune mid-block crossing locations. Where appropriate, the median narrows to accommodate left-turns. Wide paved sidewalks provide room for a pedestrian walk and an active running trail. Street trees are placed in continuous parkways.

A wide 25-foot deep front setback on the east side of Harlan Street preserves existing mature trees. This setback should be increased between 90th and 91st avenues so that an extensive cluster of existing trees may be retained as new development fills in the site. The front setback design, addition of street trees, and the location of building entrances should accommodate existing trees. Front yard setbacks are planted; a raised curb at the property line separates them from the sidewalk.

B. Street Design

Street design shall be in conformance with Figure 3-15.

C. Sidewalk Paving

The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1). The eastern sidewalk accommodates the Enhanced Pedestrian Trail Loop identified in Figure 3-20 with a wider sidewalk. Step-out strips and walks in parkways shall be paved with permeable pavers (see Section 3.5.1).



Existing Trees

Existing trees on the east side of Harlan Street should be preserved.

D. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19). Placement should be modified to accommodate existing trees.
2. Parkways. Parkways shall be seven-foot-wide continuous planters and flush with the finished sidewalk. Where determined appropriate by the City, parkways shall be designed as infiltration planters and appropriate plant material shall be selected. Paved walks shall provide access from the sidewalk to step-out strips and shall be placed at regular intervals not to exceed 40 feet.
3. Curb Extensions. Parkways shall extend into curb extensions. Where sidewalk amenity zones are located in curb extensions landscape planters should be placed between the roadway and the amenity zone to provide a barrier to traffic (see Section 3.5.4).

E. Streetlights

Streetlights shall be per Section 3.5.3.

F. Street Furniture

Street furniture shall be per Section 3.5.2. Wherever appropriate, curb extensions should be furnished with pedestrian or bicycle amenities or both (see Section 3.5.4).

G. Front Setbacks

Front setbacks shall be landscape planters bounded by a raised curb. Raised landscape planters enclosed by a wall no more than 24 inches in height, measured from the adjacent sidewalk grade, are encouraged. Planters shall be planted with decorative plants which may include small trees and low shrubs. Walks to building entries shall be paved (see Section 3.5.1). A service walk no more than three feet in width may be located in between the building face and the landscape planter. Existing mature trees located in the front setback shall be preserved to the extent possible; the setback design may vary from Figure 3-16 as necessary to preserve the trees.

H. Outdoor Dining

Outdoor dining is not permitted.

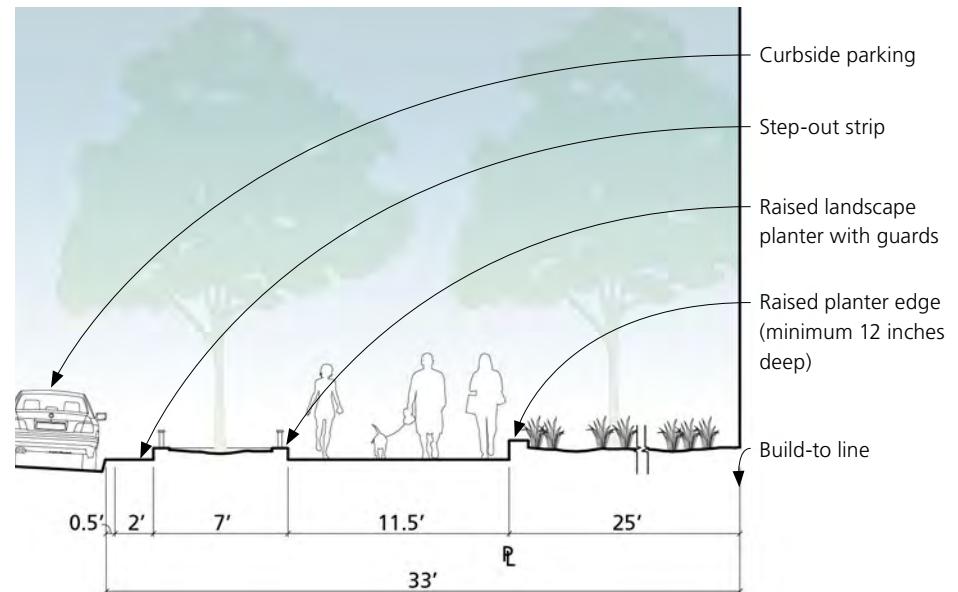


Figure 3-16: Harlan Street Sidewalk with Raised Planters and Landscaped Setback

A wide pedestrian walk serves to complete the pedestrian trail loop that circumvents the Plan area.

3.4.9 88th Avenue Sidewalk Design



Key Plan

A. Design Intent

The northern street edge of 88th Avenue is the southern face of the new downtown. Along 88th Avenue the street design retains the existing meandering eight-foot-wide sidewalk. The roadway design remains unchanged, but the possibility for a "road diet" (reduction of the roadway width) could be explored (see Section 3.3).

An existing tree-lined green is expanded to comprise South Park, which separates the roadway and sidewalk from the development *blocks*. The historic Allen Ditch runs within the 125-foot-wide park, which is lined by mature cottonwood trees. The design retains the existing trees, ditch and sidewalk along 88th Avenue.

In South Park a new pedestrian walk frames the northern edge of the green space. The walk varies in width and adjoins the property lines of the development parcels to the north. Here, permitted setbacks provide the opportunity for a series of outdoor dining areas, terraces, and landscaped areas lining the park promenade.

B. Sidewalk Design

Northern sidewalk design shall be in conformance with Figure 3-17.

C. Sidewalk Paving

The existing sidewalk shall remain. The northern sidewalk shall be paved with scored concrete.

D. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. Parkway. The existing parkway and green space shall remain. Where existing parking lots are removed and the green space area is expanded, these areas shall be landscaped.
3. Existing Trees. Existing cottonwood trees shall be evaluated for their health and replaced where necessary to ensure the tree canopy is maintained throughout the parkway as older trees reach the end of their lifespan.

E. Streetlights

Streetlights shall be per Section 3.5.3.

F. Street Furniture

Street furniture shall be per Section 3.5.2.

G. Front Setbacks

1. Landscaping and Paving. Front setbacks shall be paved or landscaped in conformance with the building *frontage type* standards (see Section 4.4). Raised terraces are permitted.
2. Terraces. Raised terraces located between the publicly accessible walk and the building front are permitted. Raised terraces shall be no more than 30 inches in height, measured from the adjacent walk, and shall be accessible from the walk.
3. Furniture. Movable signs and outdoor merchandise displays in conformance with sign standards and guidelines of Section 4.7 are permitted. All such furniture shall be approved by the City. Outside of business hours, furniture shall be removed from the setback and stored.

4. Outdoor Lighting. Outdoor lighting shall be located along the property line and shall be per Section 3.5.3.

H. Outdoor Dining

Outdoor dining is permitted in active use zones located between the publicly accessible walk and the building front. Outdoor dining shall immediately adjoin the operating ground-floor space. They shall be enclosed by movable barriers when required by State licensing.



Existing Sidewalk

An existing 8-foot wide sidewalk meanders along the north side of 88th Avenue.



Existing Allen Ditch

The historical Allen Ditch is lined with mature cottonwood trees.



Outdoor Dining on Terrace

Terraces overlooking the green space can enhance active ground-floor uses.

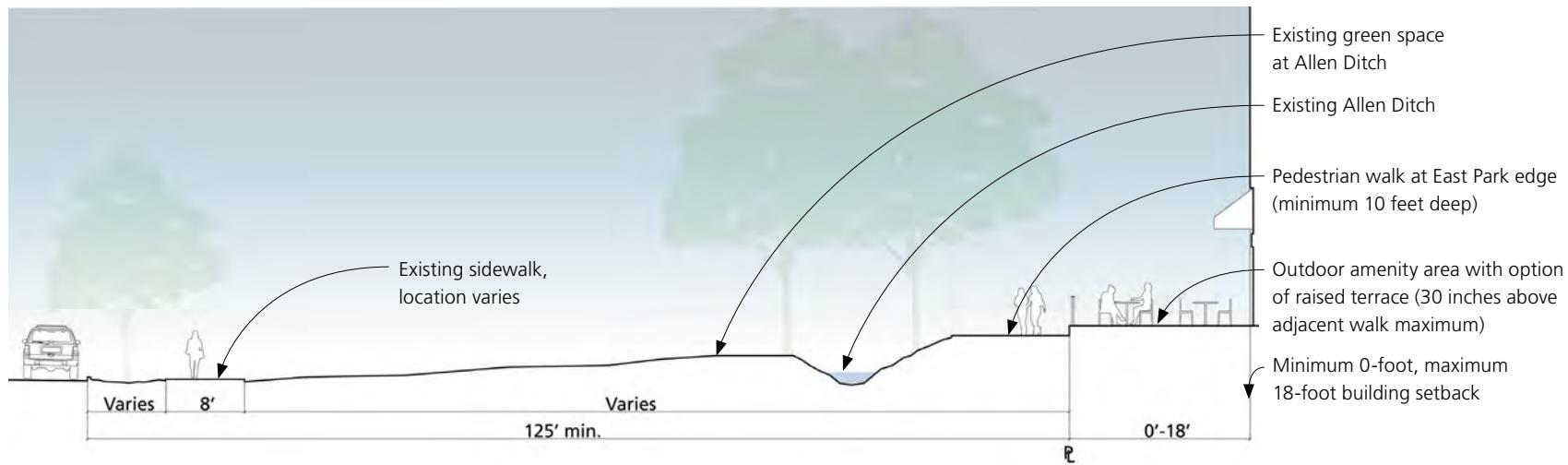


Figure 3-17: 88th Avenue Sidewalk Section

The 88th Avenue sidewalk runs through South Park.

3.4.10 92nd Avenue



Key Plan

A. Design Intent

The southern street edge of 92nd Avenue, a multi-lane arterial with fast-moving traffic, is the northern face of the new downtown. The existing roadway configuration provides significant challenges for designing an urban edge. The sidewalk design creates a safe pedestrian-oriented environment at frontages lining 92nd Avenue. A continuous parkway with street trees separates a wide sidewalk from the curbside travel lane. Additionally, improvements to the northern edge of the street should be pursued, as mentioned in Section 3.3. Finally, a 15-foot landscaped setback buffers ground-floor uses facing this busy street.

The northern street edge of 92nd Avenue, although outside of the immediate Plan area, will play an integral part in accessing downtown and the US 36 commuter bike trail from the north. Potential modifications to the street right-of-way, as discussed in Section 3.3, will improve sidewalk and streetscape conditions on this northern edge. Improvements should include addition of a planted

edge with consistent street trees, landscaping, lighting, and wayfinding elements to underline 92nd Avenue as a gateway and to improve pedestrian and bicycle safety along the northern edge of the street.

B. Sidewalk Design

Southern sidewalk design shall be in conformance with Figure 3-18.

C. Sidewalk Paving

The sidewalk shall be paved with poured, scored concrete (see Section 3.5.1). A 2.5-foot-wide area behind the curb shall be paved with poured, scored concrete.

D. Landscape

1. Street Trees. Street trees shall be planted in conformance with the street tree plan (see Figure 3-19).
2. Parkways. Parkways shall be continuous planters, at minimum the same width as existing which is nine to 12 feet—and flush with the finished sidewalk. Wherever

possible, parkways shall be designed as infiltration planters and appropriate plant material shall be selected.

E. Streetlights

Streetlights shall be per Section 3.5.3.

F. Street Furniture

Street furniture shall be per Section 3.5.2.

G. Front Setbacks

Front setbacks shall be at-grade or raised landscape planters enclosed by a wall no more than 18 inches in height, measured from the adjacent sidewalk grade. Planters shall be planted with decorative plants which may include small trees and low shrubs. Walks to building entries and outdoor dining areas shall be paved (see Section 3.5.1). A service walk no more than three feet in width may be located in between the building face and the landscape planter.

H. Outdoor Dining

Outdoor dining is permitted in front setbacks in conjunction with *storefront café* frontages. Outdoor dining areas shall not occupy more than 50 percent of any building front. They shall be enclosed by movable or fixed barriers when required by State licensing.



Landscape Planters

A raised landscape planter provides a subtle edge between the public and private realms.



Vertical Green

Medium-height shrubs placed at intervals create a buffer between ground-floor uses and the busy street.

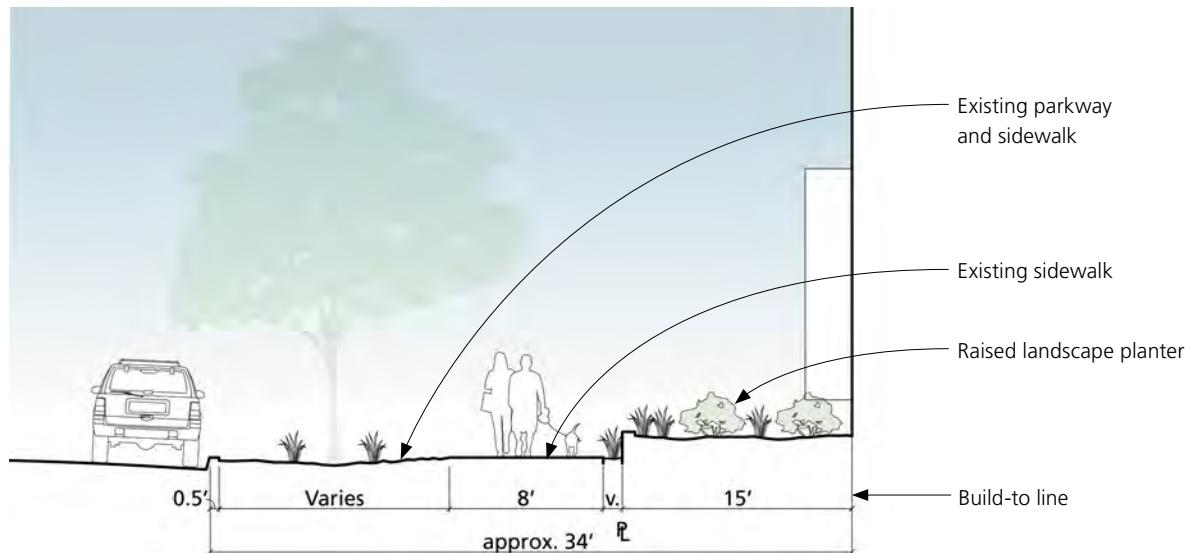


Figure 3-18: 92nd Avenue Sidewalk Section With Raised Landscape Planter

This diagram shows a raised landscape planter occupying the 15-foot front setback.
The raised planter is optional.

3.5 STREETSCAPE DESIGN ELEMENTS

While the street types lay out the dimensional and functional requirements for downtown's streets, this section provides a series of material, street furniture, and palettes that inform the street design. These standards and guidelines function much like standard details and specifications. This section promotes a design unity that supports the Plan area identity while allowing for options and variety responsive to location-specific needs. Palettes presented in this section provide an overall design intent and may be added to or modified based on City direction. The streetscape design elements place a particular emphasis on elements that enhance the pedestrian's and cyclist's experience in the downtown.

This section covers the following sub-sections:

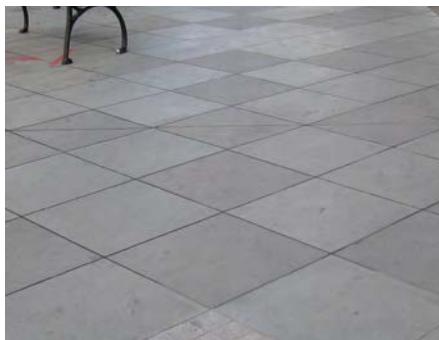
- Section 3.5.1: Paving palette
- Section 3.5.2: Street furniture palette
- Section 3.5.3: Streetlighting palette
- Section 3.5.4: Sidewalk amenity area configurations
- Section 3.5.5: Outdoor dining guidelines
- Section 3.5.6: Parkway and landscape planter types
- Section 3.5.7: Street tree plan and palette

3.5.1 Paving Standards

Paving materials shall be consistent with the intent of this paving palette.

A. Private Development

Where required by the street type standards of Section 3.4 paved areas in front setback shall conform to this section.



Poured, Scored Concrete

Natural gray concrete with saw-cut score lines



Decorative Concrete Crosswalk

Aggregate, color, and saw-cut lines create a durable decorative crosswalk.



Permeable Pavers Option 1

8x8 square pavers



Permeable Pavers Option 1

Pavers set in herringbone pattern



Decomposed Granite

Decomposed granite area enclosed by concrete.

3.5.2 Street Furniture

Street furniture, seating, waste receptacles, lighting, bike racks, bollards, and similar devices, significantly enhance the usability of the public realm. A consistent theme of materials and design language in street furniture selections enhances the sense of identity throughout the downtown area.

The street furniture presented in this section provides an initial palette of appropriate street furniture selections. The selections are based on a clean aesthetic with a high degree of functionality that maintains a respect for the human scale. The City may approve additional items that complement this selection and expand the palette.

A. Furniture as Public Art

The integration of public art into the street furniture is highly encouraged. For public art elements there shall be flexibility in regard to the design language, materials, textures, shapes, and colors.

B. Private Development

Private development shall follow the guidance and design intent provided in this section, in particular where furniture is placed within front setbacks and on on-site open space that is accessible from the public realm.



Bench

LandscapeForms Parc Vue 72" bench, backed with end arms, silver metallic



Waste Receptacle

LandscapeForms Parc Vue side-opening receptacle, silver metallic



Recycling Receptacle

LandscapeForms Parc Vue top-opening receptacle with blue recycling top



Bike Rack

LandscapeForms Flo bike rack



Bollard Option A

City Squared semi-dome top bollard



Bollard Option B

LandscapeForms Annapolis bollard

3.5.3 Streetlight Palette

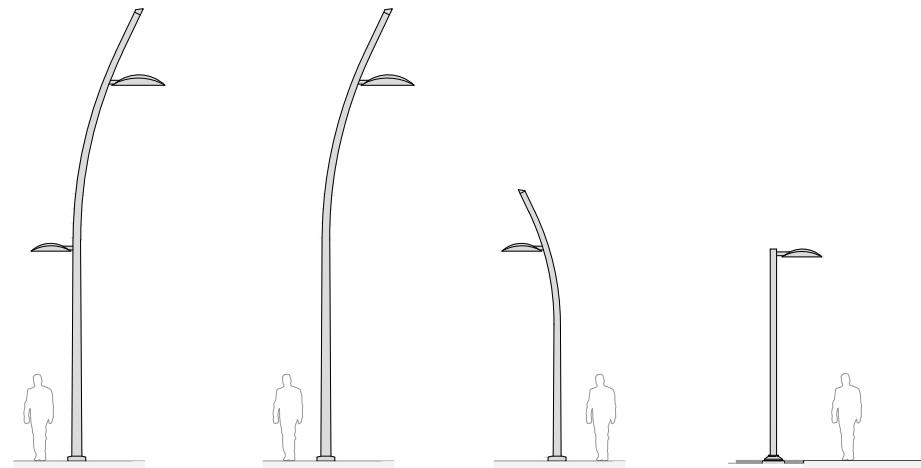
The streetlights presented in this section provides an initial palette for street lighting and is subject to change. The City may approve additional or alternate items that complement and expand this selection.

Street lighting levels shall meet City standards.



Street Light

High-quality aluminum construction.



Street Light Options

Curved or straight pole types available.



Tandem Street Light

Street lighting and pedestrian lighting in one.



Street Light Sizes

Two different luminaire sizes are available.



Full cut-off

Full cut-off optics protect the night sky.

3.5.4 Sidewalk Amenity Area Guidelines

Sidewalk amenity areas are publicly accessible areas, typically located within the public right-of-way, that enhance the enjoyment of the public realm. Sidewalk amenity areas cater to both cyclists and pedestrians and provide features such as benches, bike racks, or locations for waste receptacles.

Amenity areas in private developments shall follow the guidelines of this section.

A. Seating Areas

1. Purpose. Seating areas are furnished areas that allow pedestrians to rest, casually interact with others, or enjoy their surroundings. Various seating areas with ample seating should be located throughout the Plan area.
2. Furniture. Seating areas should include one or more benches. Wherever possible, trash receptacles should be located in close proximity to or within seating areas.
3. Location. Seating areas should be located outside the primary walk areas either in line with landscape planters or in curb extension areas.
4. Configuration. Seating placed in line with landscape planters or tree wells should face the sidewalk; where multiple benches are provided, benches may face each other. Seating in curb extension areas should be separated from traffic lanes with a landscape planter or a raised barrier. Seats should face the sidewalk or other seats and be incorporated into raised planters. Generally seats should not face traffic or parking lanes. Trash receptacles in seating

areas should be located conveniently to both seating and the sidewalk.

B. Bike Parking Areas

1. Purpose. Bike rack areas are a point of transition from bicycle to pedestrian movement. Bike racks should provide a visible and therefore safe place for temporary bicycle parking.
2. Furniture. Bike rack areas as well as more secure bike parking areas should include a number of bike racks for safe attachments of bikes.
3. Location. Bike rack areas should be located in line with landscape planters or in curb extensions. Secure parking should be located in concert with other storage or parking services or areas, such as in a parking garage. Locations should be chosen convenient to various destinations within the Plan area.
4. Configuration. Bike racks should be positioned to provide maneuvering room and with sufficient clearance to traffic lanes, parked cars, and sidewalks. Wherever possible, bike racks should be placed perpendicular to the street to maximize bike storage space. Where less space is available, bike racks can be mounted at an angle or parallel to traffic lanes. In curb extensions, landscape planters or similar buffers should separate bike racks from moving traffic.

C. Trash Receptacle Areas

1. Purpose. Well-placed trash receptacle areas reduce the amount of litter discarded in streets.

2. Furniture. Wherever possible both a general waste and a recycling bin should be provided.
3. Location. Locations near intersections, seating areas, and areas with high volumes of foot traffic are preferable.
4. Configuration. Trash receptacle areas should be located convenient to pedestrian traffic just outside the main walk area.



Seating Area

Benches and landscaping transform curb extensions into amenity zones along the sidewalk.



Bike Racks Area

Curb extensions can also accommodate bike racks and trash receptacles providing additional convenience to pedestrians and cyclists.



Seating and Landscape Area

A bench is attached to a raised landscape planter.

3.5.5 Outdoor Dining Guidelines

Outdoor dining may be regulated by State and City licensing requirements and codes, depending on the type of beverages served and location. This section provides additional guidelines for outdoor dining areas located in public rights-of-way or in private front setbacks. These guidelines supplement the provisions of the street type standards of this chapter.

A. Purpose

Outdoor dining areas allow patrons of restaurants, cafés, or similar establishments to enjoy the outdoor environment. These guidelines ensure that the design of outdoor dining areas supports the overall vision for the downtown.

B. Design

The design materials and colors used for chairs, tables, lighting and other fixtures including umbrellas and awnings shall be generally consistent both with the architectural style and colors used on the building facade.

C. Furniture

Furniture should be of durable materials that withstand the effects of weathering. Powder-coated or vinyl-coated metal furniture is encouraged; the use of light-weight plastics and wood (other than teak) are not permitted.

D. Dining Area Enclosures

When provided, outdoor dining enclosures should complement the overall building and streetscape design. Enclosures should be

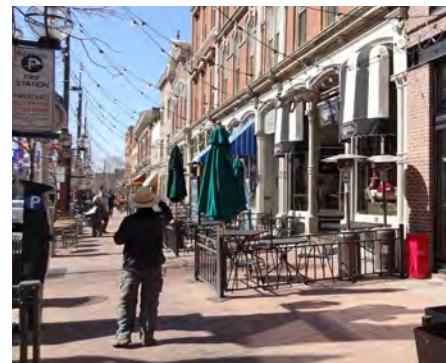
designed as semi-permanent barriers and be removable, as by use of recessed sleeves and posts or by wheels which can be locked into place. Enclosures should be easy to clean and maintain.

The maximum height of opaque enclosures shall be three foot six inches, measured from the adjacent sidewalk. Transparent wind-screen attachments may extend the enclosure height by two additional feet. Connections or elements between dining area enclosures and overhead awnings or similar structures are not permitted.

Where State licensing does not require dining area enclosures and the establishment limits outdoor seating to a single row of tables and seat abutting the wall of the establishment, no barrier shall be required.

E. Umbrellas

The use of removable umbrellas in outdoor dining areas is permitted. Umbrellas shall maintain a minimum clearance of seven feet above the adjacent floor level.



Sidewalk Dining at the Building Front

Outdoor dining area with high-quality enclosure.



Sidewalk Cafe Seating

A small building-side outdoor seating area at a storefront café.

3.5.6 Parkways And Landscape Planter Palette

Plantings and street trees bring green into the cityscape. This section identifies five types of landscape planters that could be appropriate in the Plan area:

1. Parkway with turf or other ground cover
2. Parkway with stormwater infiltration
3. Flush landscape planter
4. Landscape planter with raised curbs
5. Landscape planter with tree pit guards

Refer to the street section design diagrams in Section 3.4 to determine appropriate locations for each planter type.



Parkway with Turf

A continuous parkway is planted with turf. Step-out strips and paved walks at regular intervals allow pedestrians to cross the parkway without stepping into the plantings.



Flush Landscape Planter

A landscape planter is set flush with the adjacent sidewalk. Grasses or low hedges visually bound the planter and protect the soils from pedestrian traffic.



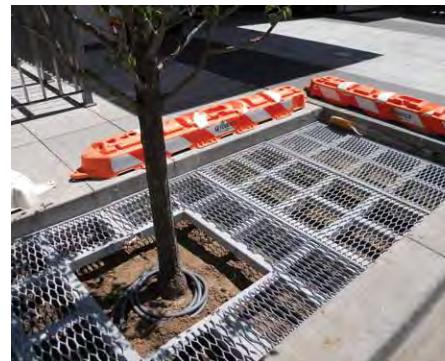
Parkway with Infiltration

A parkway set flush with the sidewalk allows stormwater runoff to collect in the planter area and infiltrate into the ground. Appropriate landscape material must be selected and overflow outlets allow excess water to drain into the city sewer.



Tree Pit Guards

Low, sturdy fence-like structures protect trees and surrounding plants from damage, soil compaction, and pets.



Inground Planter Under Construction

A 5x15-foot tree planter sits below a suspended pavement system that will support sidewalk paving once construction is complete. (Photo location: Denver, CO)



Inground Planter with Paving Installed

In this image, the pervious paving has been installed above the pavement suspension system. The usable sidewalk area has increased significantly.

3.6 STREET TREE PLAN

Throughout the Plan area, street trees enhance the streetscapes. They provide highly visible green in the public realm, typically separating the sidewalk from parking and drive lanes. In summer, trees provide shade, reduce the heat island effect, and aid in storm water mitigation through interception.

Generally, the street trees are selected for several features including higher canopies to provide visibility at the street level, ornamental or seasonal aesthetic value, or shade and density.

Along the major streets of the downtown, Westminster Boulevard, Gray Street, Eaton Street, and Central Parkway, special tree species underline the streets' significance within the hierarchy of the street network. Furthermore, flowering accent trees are located at street intersections and other important locations. Accent trees are located in landscape planters situated in curb extensions at street intersections. Here, curb extensions provide additional space that can help buffer and protect the smaller accent trees from passing vehicular traffic.

On Eaton Street and Central Parkway, honey locust trees line the green medians and sidewalks. The honey locust's dappled foliage allows sunlight to filter through the canopy allowing plants on the ground plane to flourish. The option of planting different species of honey locust on Eaton Street and Central Parkway should be evaluated.

3.6.1 Street Tree Plan

Within the Plan area, street trees shall conform to Figure 3-19: Street Tree Plan.

3.6.2 Street Tree Typical Planting Detail

To promote variety along the streetscape, street trees shall be planted such that specimens of one tree species are clustered in groups of three or five trees and are staggered.

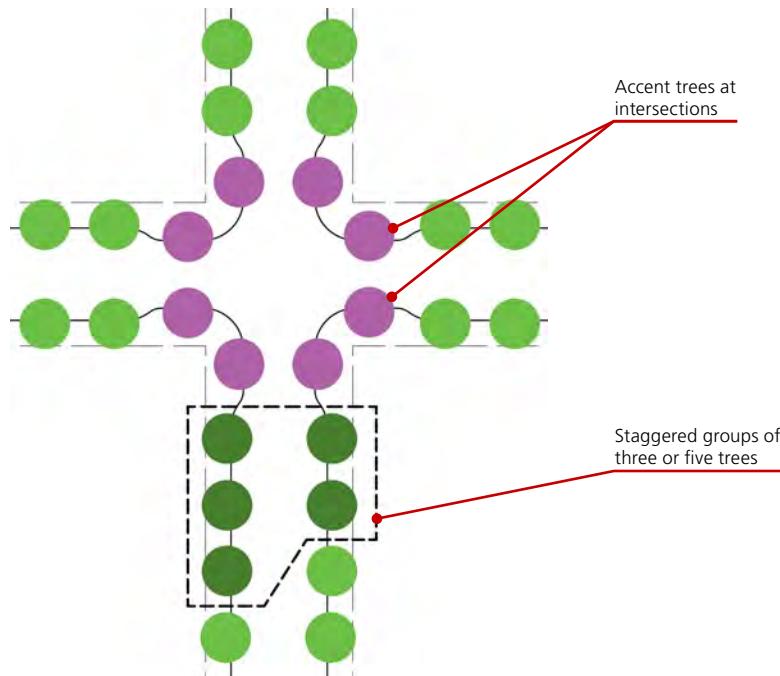
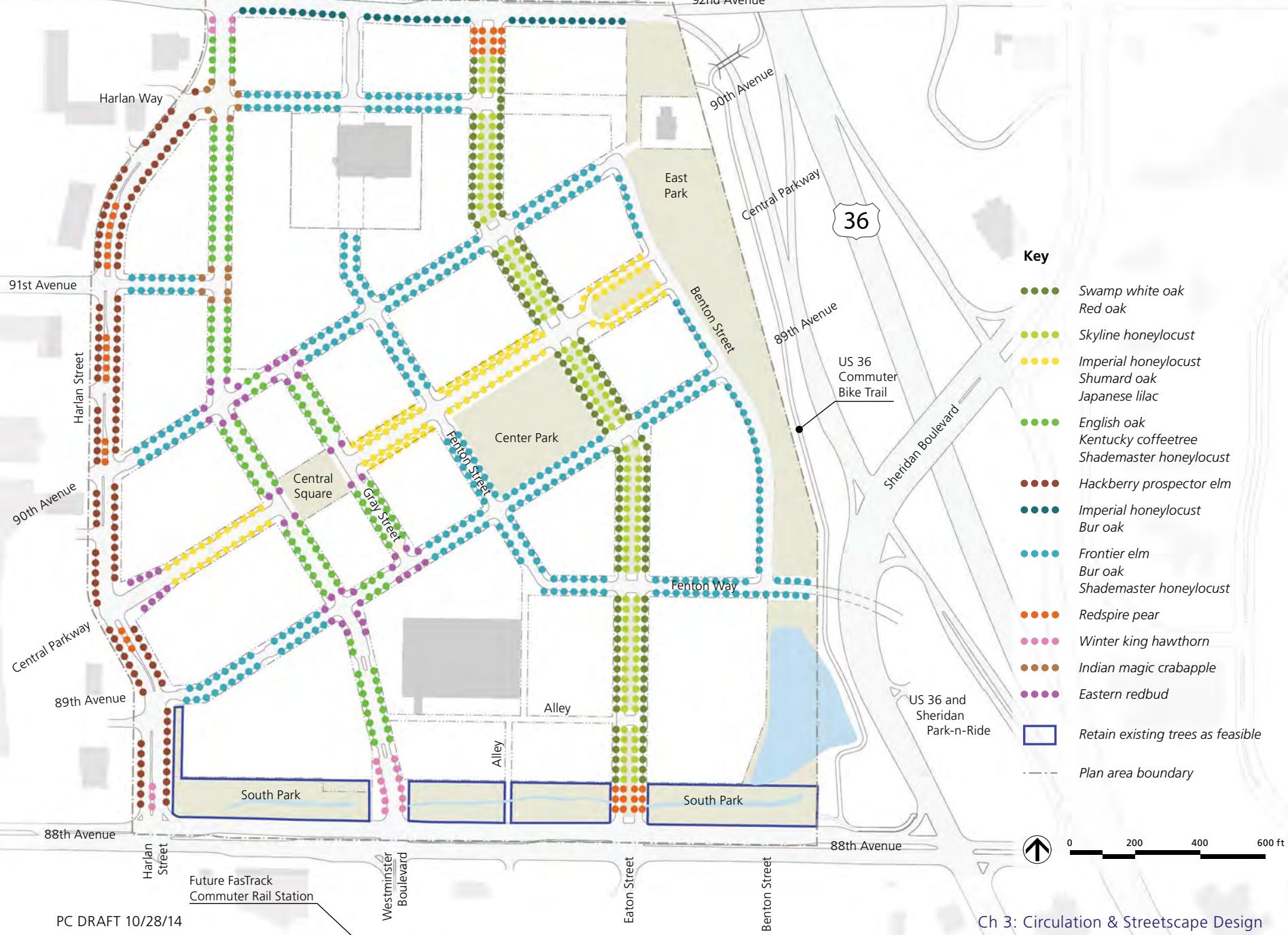


Figure 3-19: Street Tree Typical Planting Detail

Trees of one species are planted in staggered groups of three or five.

Figure 3-20:
Street Tree Plan



3.6.3 Street Tree Palette

Street trees within the Plan areas shall conform to tree selections defined in this palette.



Honey Locust
Street Tree & Median Tree



Honey Locust
Street Tree & Median Tree



English Oak
Street Tree



Bur Oak
Street Tree



Red Oak
Street Tree



Shumard Oak
Street Tree



Swamp White Oak
Street Tree



Kentucky Coffeetree
Street Tree



Japanese Lilac
Street Tree



Prospector Elm
Street Tree



Frontier Elm
Street Tree



Eastern Redbud
Accent Tree



Redspire Pear
Median Tree & Accent Tree



Winter King Hawthorn
Accent Tree



Indian Magic Crabapple
Accent Tree

3.7 SPECIAL EVENT AREAS AND ROUTES

Special event locations and potential street closures are outlined in Figure 3-20.

Central Square

The Central Square is located at the heart of the downtown. It is ideally positioned to host a variety of events that may include regular farmers markets, fairs, or special seasonal events. For events with space requirements that may exceed the dimensions of the square or anticipate very high attendance, Gray Street, which is immediately adjacent to the Central Square, can be closed. Coordination of hardscape materials between the Central Square, Gray Street, and the Central Parkway a block east could further unite and enlarge the usable space for larger events.

Eaton Street Median

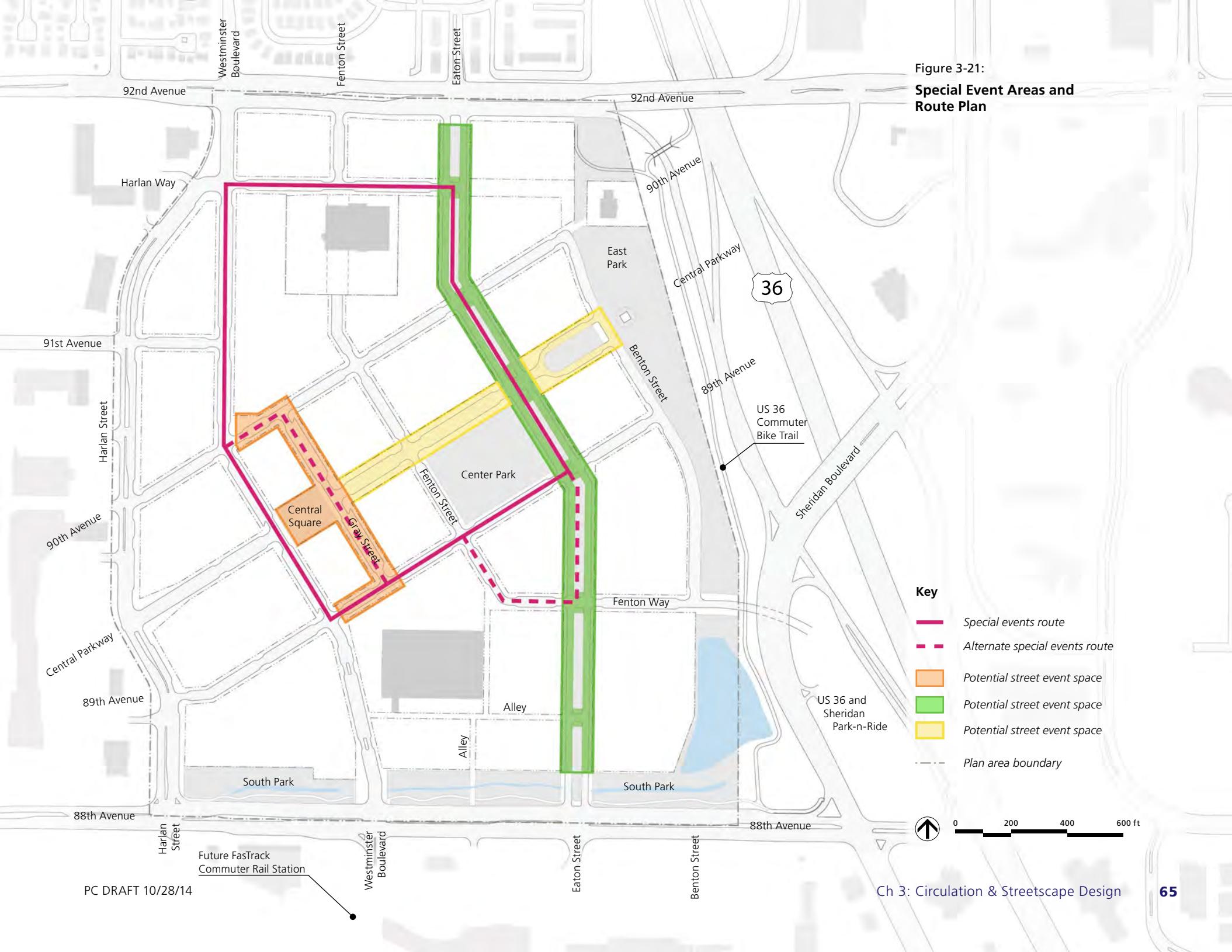
Eaton Street's green median is designed as a linear green space spanning the length of the site. Together with its 24-foot wide roadways on either side, Eaton Street lends itself to a temporary street fair. Numerous intersections to local and arterial streets provide convenient access from within the new downtown and from the city as a whole.

For special events, either the whole length of Eaton Street or shorter segments could be temporarily closed. Eaton Street's configuration also allows just one side of the street to be closed providing continued access on the other.

Parade Route

In the future, Westminster may have parade celebrations that would require a designated parade route. The parade could be routed wholly within the interior of the site so as not to impede traffic on 88th Avenue or 92nd Avenue. This route would follow Westminster Boulevard south to 89th Avenue, 89th Avenue east to Eaton Street, Eaton Street north to Harlan Street, and return west to Westminster Boulevard. This route is outlined in Figure 3-20.

Figure 3-21:
Special Event Areas and
Route Plan



3.8 WAYFINDING AND IDENTITY

The intent of a new wayfinding and environmental graphics system is to create a sense of place for the new downtown. It will provide a distinct identity and make it easy to navigate the Plan area. Beginning with the arrival in downtown, wayfinding signs will direct those coming by car to parking garages that are part of a park-once concept. These garages are primary transition points from the automobile to pedestrian movement. Similarly, arrivals from public transit or bike will be directed to destinations within the new downtown. In particular, wayfinding signs will focus on the new retail and activity centers around Westminster Boulevard and Gray Street.

The wayfinding concept could also direct to other destinations such as office and business locations, residential neighborhoods, and park, recreation and other amenity areas. Additionally, the wayfinding design and scheme for the downtown should incorporate technology with the use of phone applications, social media and the like.

This Plan provides conceptual cornerstones that should be developed into a full wayfinding and identity program in a future planning phase.

Relationship to Other Plan Components

The wayfinding concept should build upon the streetscape standards in Section 3.4. Use of similar colors, materials, or design aesthetic between furnishings and wayfinding elements would provide a cohesive identity along major downtown corridors.

RTD Coordination

The wayfinding concept should be coordinated with RTD's existing and future transit facilities to ensure compatibility between the two programs.

Downtown Gateways

The intersections at 88th Avenue and Westminster Boulevard and Eaton Street and 92nd Avenue and Westminster Boulevard and Eaton Street are the most visible and therefore the Primary Gateways to downtown. These locations provide opportunities to shape the identity of the downtown and will set the tone for the overall experience.

While signage, plantings, paving, and other similar features will help shape the gateway experience, the building framing these entry points will make the most significant statement regarding the character of the downtown. Therefore, buildings framing the Primary Gateway locations should exemplify the urban, mixed-use, and space-framing characteristics identified in the Plan goals. The architecture at these entry points should reflect the ambitions of the downtown in their design language, scale, massing, and articulation.

Secondary Gateways to downtown are called out in Figure 3-24: Conceptual Wayfinding and Identity Plan. Similar to Primary Gateways, these secondary entries also have the ability to shape the downtown identity, but will do so to a lesser extent.

Identity Corridors

Westminster Boulevard, Eaton Street, and Fenton Street/Way, from the Park-and-Ride

to Central Parkway, are downtown's primary identity corridors. Like the gateways, these streets shape downtown's identity as an integral part of the urban experience. Beginning at the gateways, street and accent trees, landscaping, lighting, pedestrian and bike amenity areas, and the intricate design for an active street realm create a rich street experience.

Parking District Navigation

For the downtown's park-once parking district concept to be successful, finding parking should be effortless. A parking district "smart" navigation system should direct visitors to parking structures with vacant stalls. Signage and wayfinding elements should clearly identify in a memorable way the different parking structures within the district.

Once drivers and passengers have become pedestrians, wayfinding should navigate to various downtown destinations and back to the parking structures.



Directional Signage

Directional signage mounted to a light pole.



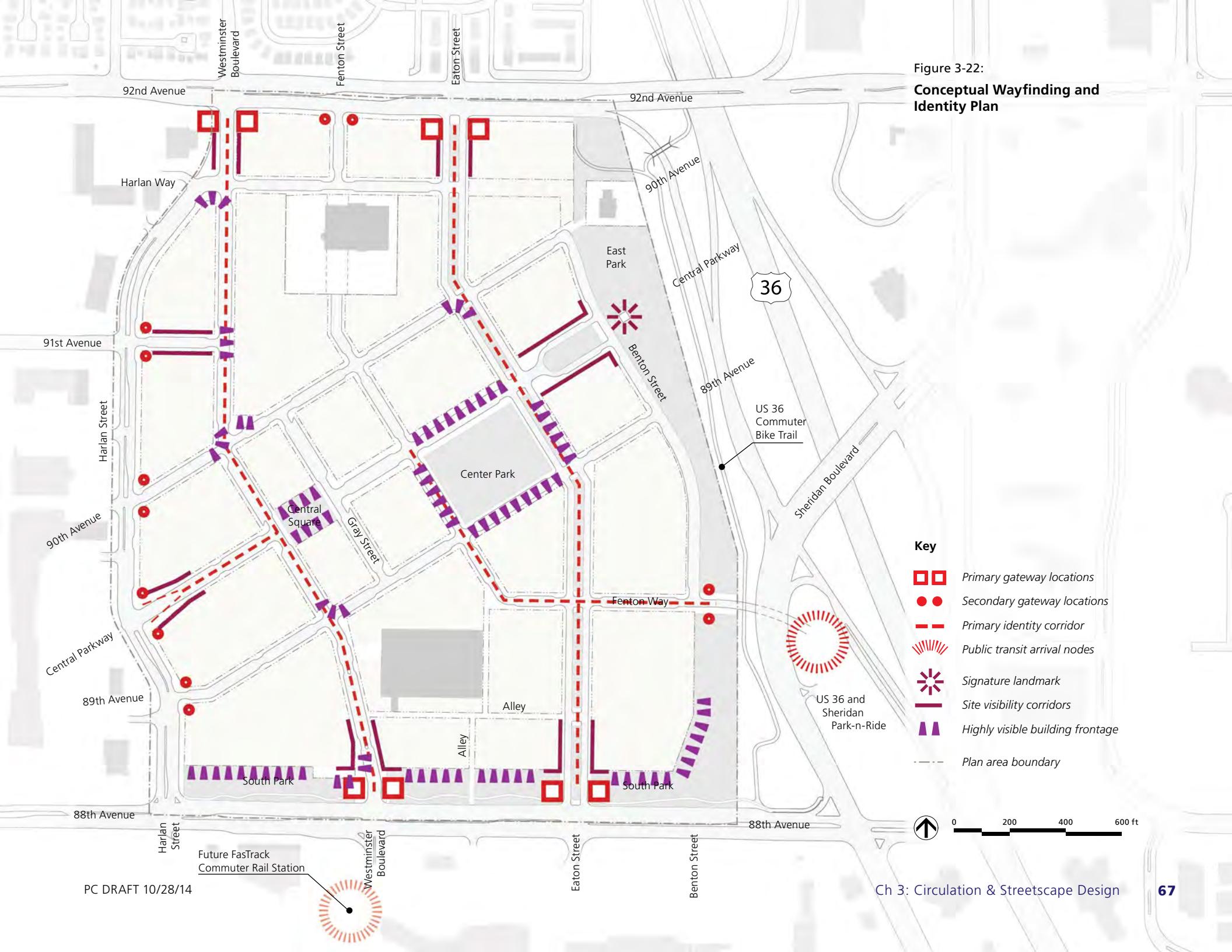
Banner Signage

Banner signs attached to a special pole.



Monument Sign

Figure 3-22:
Conceptual Wayfinding and
Identity Plan



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4

BUILT FORM

4.1 OVERALL BUILT FORM DESIGN INTENT

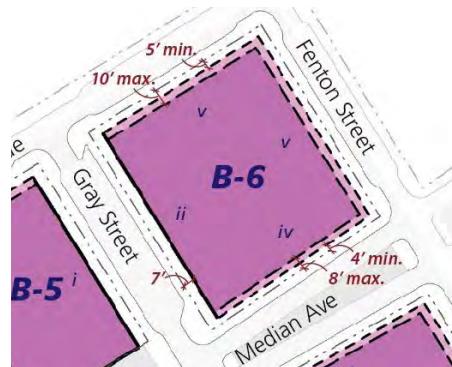
The Plan's development standards follow a fundamentally urban approach. The development regulations of this chapter guide the design of buildings that will line streets, overlook outdoor spaces, and create a ground-floor environment that is decidedly human-scaled and pedestrian-oriented.

To achieve this goal, this chapter provides standards on the level of the individual city block, the building, and the ground-floor frontages. The block development standards are location-specific and address each individual development block in the Plan area. The building type standards define a menu of building types and standards that are specific to each type. The frontage type standards provide standards for six prototypical pedestrian-oriented ground-floor building frontage type designs.

The additional building standards and guidelines, parking and loading design standards and guidelines, and sign regulations towards the end of this Chapter are common to all areas of the Plan.

Policy Objectives

1. Ensure building placement and frontage along the street reflects an urban downtown character.
2. Maintain a consistent street frontage or "street wall" throughout the downtown area.
3. Utilize building architecture to announce gateways, key intersections and public spaces.
4. Create architectural variation along a



Block Standards

Block standards provide building placement standards, alley and block access point locations, and allowed building and frontage types.

5. Create a built environment that emphasizes pedestrian scale and variety by activating ground floor frontages, using ample fenestration, awnings and frequent building entries.
6. Ensure that streets and spaces with high volumes of pedestrian traffic are comfortable, protected from the sun, and visually and physically engaging at the ground level.
7. Design parking structures so they do not dominate the built environment.
8. Encourage a variety of building and development types throughout the site.

Design Review Process and Variations from Standards

Chapter 6: Implementation describes the City design review process as well as procedures for variations from the standards of this Chapter.



Building Type Standards

Building type standards include facade, massing, and green space requirements as well as type-specific frontage and height standards.



Frontage Standards

Frontages are the interface between new downtown's public space network and private development.

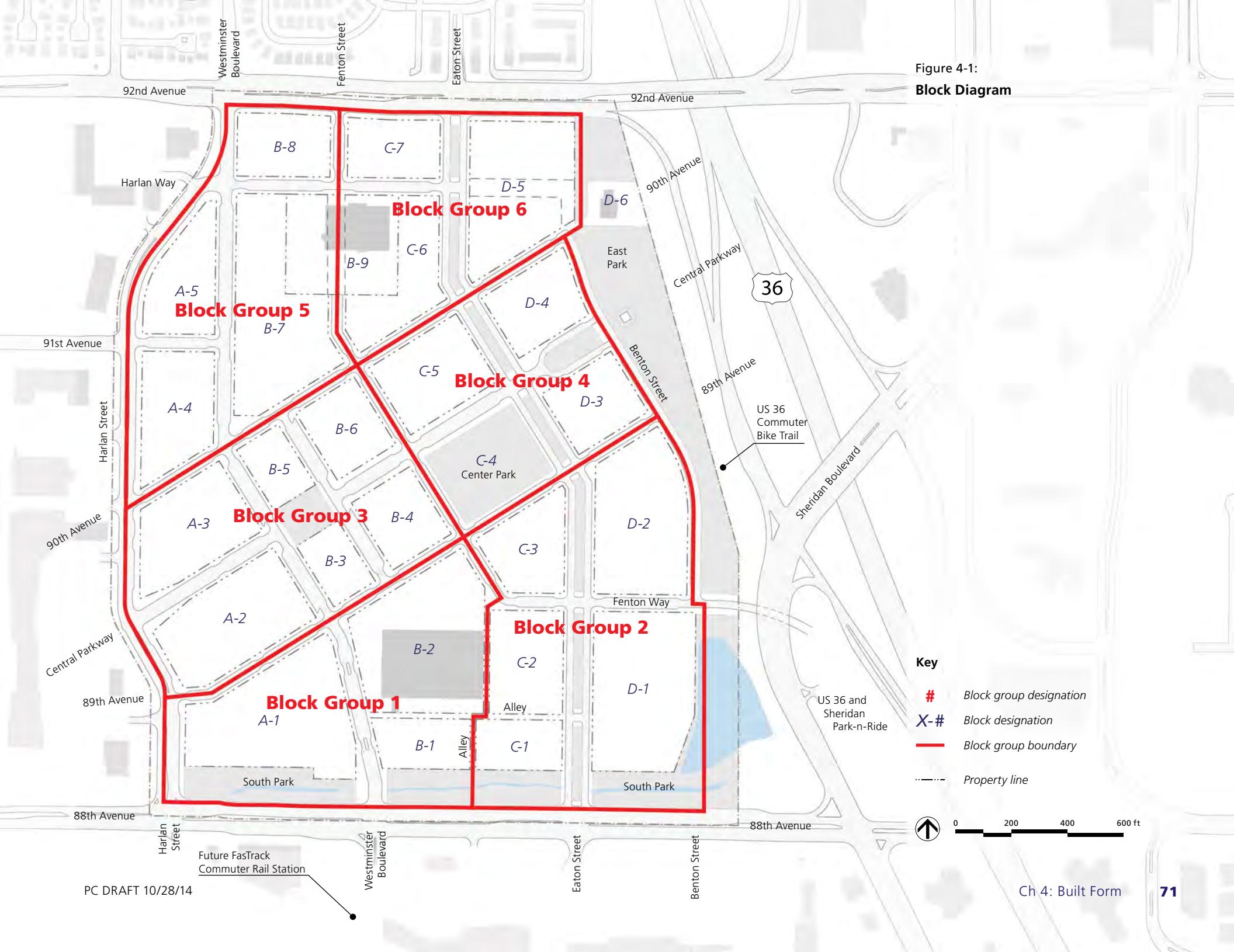
4.2 BLOCK DEVELOPMENT STANDARDS

The block development standards regulate development within the Plan area. In order to respond to a number of unique conditions throughout downtown, standards for each development block and every *blockfront* are provided.

The Master Plan area is subdivided into 24 development blocks in six geographic groups, as shown in Figure 4-1.

The following pages depict the applicable development standards for each block. All new development must adhere to the standards presented on these pages. Standards for public outdoor space blocks are covered in Chapter 5: Outdoor Space.

Figure 4-1:
Block Diagram



4.2.1 Explanation of Standards

The block development standards cover the following:

A. Block Intent Statement

This statement describes the development intent for the respective block group and points out specific design opportunities.

B. Building Placement and Frontage Standards

Building placement standards describe where on the property buildings shall be located and include build-to lines, setbacks, minimum frontage occupancy, and service and access points.

Build-to and setback lines are measured from the property line at street frontages. Setbacks may include minimum setbacks and maximum setbacks from the property line. Building fronts may be placed at the minimum setback, the maximum setback, or anywhere in between. For additional clarity, build-to and setback line requirements are presented in the block diagram and in the block frontage standards table.

Where a build-to line is specified, the building front may be placed at or within a line located ten inches behind the build-to line.

Minimum frontage occupancy is the minimum percentage of a blockfront at which a building frontage is set either at or within ten inches of the build-to line or within the minimum and maximum setback lines, as required by the block development standards. As shown in Figure 4-2, the minimum frontage occupancy shall be measured as a

linear distance parallel to the property line. The remaining frontage length may be set behind the build-to or setback lines or may be left unoccupied.

Service and access point standards regulate curb cut locations for each blockfront.

C. Maximum Building Height Standards

Height standards regulate the maximum building height. Building height shall be defined pursuant to the W.M.C.

D. Street & Alley Connections

Block development standards may encourage or require streets or alleys in designated locations. Locations are indicated in the individual block development diagrams. It is anticipated that redevelopment of existing uses in block groups 1, 2, 5, and 6 will result in a reconsideration of the street and alley network to create finer grain blocks in those locations. Final alignments shall be approved through the development review process. Where possible, entrances to alleys should line up across streets.

E. Permitted Frontage Types

The permitted frontage types table outlines which frontage types are permitted at each blockfront. Developments must also comply with the permitted frontage types of the selected building type.

F. Permitted Building Types and Minimum Number of Building Types Per Block

This standard provides a table of permitted building types for each development block. Furthermore, certain blocks require develop-

ment to utilize two or more different building types.

For development blocks less than 2.5 acres in size for which the block development standards require the utilization of two or more different building types the Planning Manager shall have discretion to allow a variance to this requirement subject to the finding that its intent has been met.

Figure 4-3 explains the elements of the Block Development Standards provided for each block group.

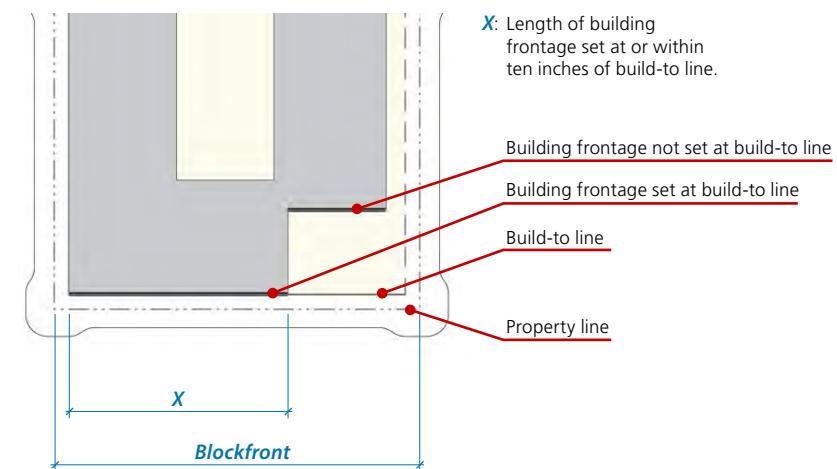
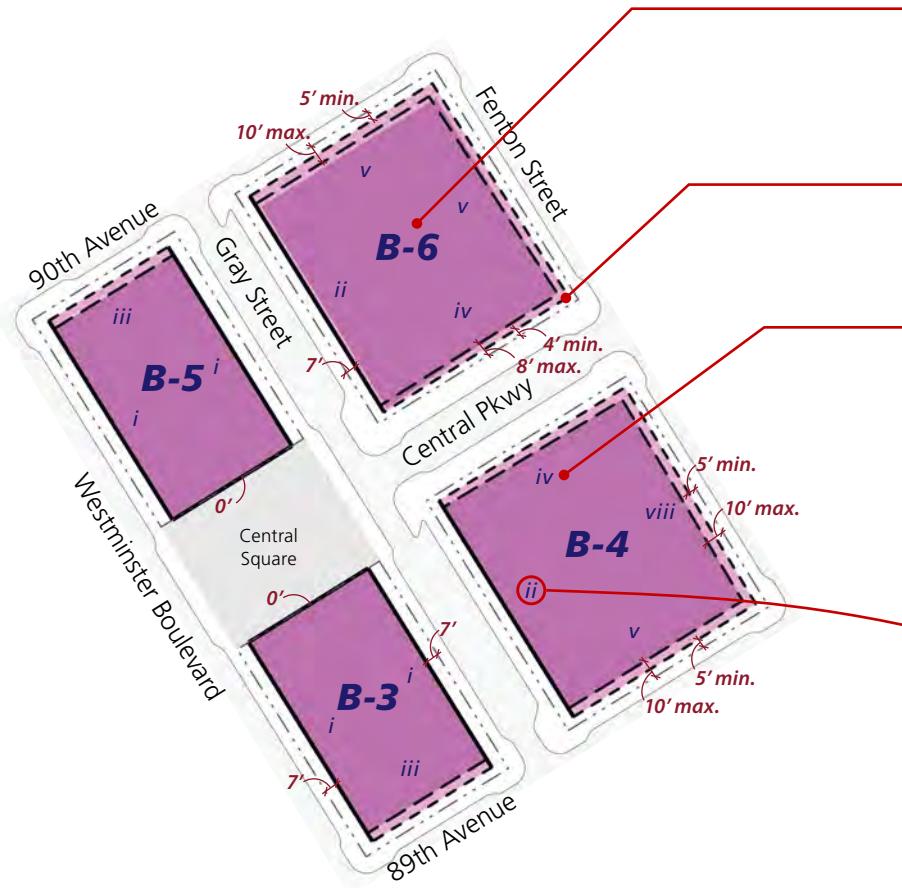


Figure 4-2: Minimum Building Frontage Occupancy

This diagram illustrates the relationship between the building frontage and the build-to line. The blockfront standards require a minimum length of the building frontage to be set at or within ten inches of the build-to line (X). The remainder of the building frontage may be set any distance behind the build-to line.

Similarly, at blockfronts with maximum and minimum setbacks, a minimum percentage of the building frontage shall be set between the maximum and minimum setback lines (X). The remainder of the building frontage may be set any distance behind the minimum setback line.

The minimum building frontage occupancy varies by blockfront and is regulated by the block standards.



Key

| | | | |
|--|--|---|---------------------------|
| | Developable area | | Property line |
| | Developable area between minimum and maximum setback | | Build-to line |
| X-# | Block designation | | Minimum setback line |
| ii | Blockfront designation | | Maximum setback line |
| X' | Distance in feet | | Alley, suggested location |

Block Designation:

These designations identify the individual downtown blocks and are numbered A-1 through D-6.

Property Line:

The property line is shown in relationship to the setback or build-to lines.

Blockfront Designation:

These numbers identify the different blockfront types within a group of blocks. The standards for each blockfront designation are consistent within one block group but may be different in another block group.

Figure 4-3:

Typical Block Development Standards Diagram & Table

The block development standards are represented graphically and in tables. Information such as setbacks and build-to lines can be found in both the plan graphic and the table. Other standards, such as frontage occupancy requirements, are only presented in tabular form.

Block designations (alphabetical letter and number) and frontage designations (lower case Roman numerals) link the plan elements to the tables.

| Table 4.2.1: Block Frontage Standards | Blockfront | | | | | | | |
|--|------------|-----|-----|-----|-----|-----|-----|------|
| | i | ii | iii | iv | v | vi | vii | viii |
| Build-To Line (from R.O.W.) | 7' | 7' | N/A | N/A | N/A | N/A | 25' | N/A |
| Min. Setback | N/A | N/A | 5' | 4' | 5' | 5' | N/A | 5' |
| Max. Setback | N/A | N/A | 10' | 8' | 10' | 10' | N/A | 10' |
| Min. Frontage Occupancy | 90% | 90% | 75% | 75% | 60% | 60% | 75% | 90% |
| Service & Access Points | NP | NP | P-1 | NP | P-1 | P-2 | P-1 | NP |

Table key: X – permitted; N/A – not applicable; NP – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

4.2.2 Block Group 1

A. Block Intent Statement

This block group at the southwest of the site frames both sides of Westminster Boulevard, the primary north-south axis of the downtown. The blocks are characterized by a mix of uses with active ground-floor uses along Westminster Boulevard and 89th Avenue frontages.

An existing department store building is located on block B-2. New retail uses should line the existing building along the Westminster Boulevard and 89th Avenue frontages.

The southern edges of blocks A-1 and B-1 front South Park that runs along 88th Avenue. Ground-floor frontages along the park shall incorporate active uses such as restaurants (see Section 2.3 B.) or active frontage types, such as *urban frontages* or *stoops* for homes, office or retail uses.

B. Building Placement & Frontages

Buildings shall be located in conformance with the build-to and setback lines depicted in the block development diagram. Buildings shall also conform to the block frontage standards (see block frontage standards table).

C. Maximum Building Height

Buildings shall conform to the height limits of the building type standards (see Section 4.3).

D. Street & Alley Connections

Developments may provide streets or alleys on each block. Alleys are encouraged where indicated in the block development diagram. The City shall approve final locations.

E. Permitted Frontage Types

The frontage types listed in the frontage type table shall be permitted on each designated blockfront. See section 4.4 for frontage standards.

F. Permitted Building Types

Building types shall conform to the types listed in the permitted building types table. See Section 4.3 for building type standards.

| Table 4.2.2.1: Block Frontage Standards | Blockfront | | | | |
|--|------------|-----|--------|-----|-----|
| | i | ii | iii | iv | v |
| Build-To Line (from R.O.W.) | 7' | N/A | N/A | N/A | 25' |
| Min. Setback | N/A | 0' | 5' | 5' | N/A |
| Max. Setback | N/A | 18' | 10' | 10' | N/A |
| Min. Frontage Occupancy | 90%(1) | 75% | 75%(1) | 60% | 75% |
| Service & Access Points | NP | NP | P-1 | P-2 | NP |

| Table 4.2.2.2: Permitted Frontage Types | Blockfront | | | | |
|--|------------|----|-----|----|---|
| | i | ii | iii | iv | v |
| Storefront | X | X | X | X | X |
| Storefront Cafe | X | X | X | X | X |
| Urban Frontage | X | X | X | X | X |
| Forecourt | | | X | X | |
| Dooryard | | | | | X |
| Stoop | | X | | X | X |

| Table 4.2.2.3: Permitted Building Types | Block | | |
|--|-------|-----|-----|
| | A-1 | B-1 | B-2 |
| Row House | X | X | |
| Flex/Loft | X | | |
| Courtyard | X | | X |
| Urban Block | X | X | X |
| Liner with Garage | X | X | X |
| Exposed Garage | X (2) | | |
| Podium High-Rise | X | | |
| Urban Anchor | X | | X |
| Urban Supermarket | X | | X |
| Min. # of Types | 2 | 1 | 2 |

(1) Where not encumbered by access requirements to existing buildings on Block B-2.

(2) May only be exposed on block front iv and then only above the ground floor.

Table key: X – permitted; N/A – not applicable; NP or “blank” – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

Figure 4-4:
Block Group 1 Development Diagram



4.2.3 Block Group 2

A. Block Intent Statement

Blocks front both sides of Eaton Street, a outdoor boulevard with a wide median for recreational activities. Blocks are characterized by a mix of uses. Block D-1 is highly visible from the 88th Avenue and Sheridan Boulevard. Development here has the opportunity for a gateway statement.

Blocks C-1 and D-1 front South Park that runs along 88th Avenue. Ground-floor fronts along the park should incorporate active uses such as restaurants or active frontage types. An existing stormwater retention pond is relocated adjacent to Block D-1. Outdoor activity areas and water features that activate the pond as an outdoor amenity are encouraged.

B. Building Placement & Frontages

Buildings shall be located in conformance with the build-to and setback lines depicted in the block development diagram. Buildings shall also conform to the block frontage standards (see block frontage standards table).

C. Maximum Building Height

Buildings shall conform to the height limits of the building type standards (see Section 4.3).

D. Street & Alley Connections

Developments may provide streets or alleys on each block. Street or alley connections are encouraged where indicated in the block development diagram. The City shall approve final locations.

E. Permitted Frontage Types

The frontage types listed in the frontage type table shall be permitted on each designated blockfront. See section 4.4 for frontage standards.

F. Permitted Building Types

Building types shall conform to the types listed in the permitted building types table. See Section 4.3 for building type standards.

| Table 4.2.3.1: Block Frontage Standards | Blockfront | | | | | | |
|--|------------|-----|-----|-----|-----|-----|-----|
| | i | ii | iii | iv | v | vi | vii |
| Build-To Line (from R.O.W.) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Min. Setback | 4' | 4' | 0' | 5' | 5' | 10' | 5' |
| Max. Setback | 8' | 8' | 18' | 10' | 10' | N/A | 10' |
| Min. Frontage Occupancy | 90% | 90% | 75% | 60% | 75% | 60% | 75% |
| Service & Access Points | P-1 | NP | NP | P-1 | P-2 | NP | P-1 |

| Table 4.2.3.2: Permitted Frontage Types | Blockfront | | | | | | |
|--|------------|----|-----|----|---|----|-----|
| | i | ii | iii | iv | v | vi | vii |
| Storefront | X | X | X | X | X | X | X |
| Storefront Cafe | X | X | X | X | X | X | X |
| Urban Frontage | X | X | X | X | X | X | X |
| Forecourt | | | | X | X | | |
| Dooryard | | | | X | X | X | |
| Stoop | X | X | X | X | X | X | X |

| Table 4.2.3.3: Permitted Building Types | Block | | | | |
|--|-------|-------|-----|-------|-----|
| | C-1 | C-2 | C-3 | D-1 | D-2 |
| Row House | X | X | | X | X |
| Flex/Loft | X | X | | X | X |
| Courtyard | X | X | X | X | X |
| Urban Block | X | X | X | X | X |
| Liner with Garage | X | X | | X | X |
| Exposed Garage | | X (1) | | X (2) | X |
| Podium High-Rise | | X | | X | X |
| Urban Anchor | | | | X | X |
| Urban Supermarket | | X | X | X | X |
| Min. # of Types | 1 | 1 | 1 | 3 | 2 |

(1) May only be exposed on block front iv and then only above the ground floor.

(2) May only be exposed on block fronts iv and vi. On block front iv they may be exposed only above the ground floor.

Table key: X – permitted; N/A – not applicable; NP or “blank” – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

Figure 4-5:
Block Group 2 Development Diagram



4.2.4 Block Group 3

A. Block Intent Statement

This block group is the active core of the Plan area and straddles Westminster Boulevard. The blocks can accommodate a mix of different uses while ground-floor retail lines Westminster Boulevard and Gray Street. The Central Square, the new downtown's central public space, sits between blocks B-3 and B-5. Buildings on this block house ground-floor retail that activates and frames this urban square. Likewise, development leading to the Center Park along Central Parkway and fronting the park will provide an active frontage and uses.

B. Building Placement & Frontages

Buildings shall be located in conformance with the build-to and setback lines depicted in the block development diagram. Buildings shall also conform to the block frontage standards (see block frontage standards table).

C. Maximum Building Height

Buildings shall conform to the height limits of the building type standards (see Section 4.3).

D. Street & Alley Connections

Developments may provide streets or alleys on each block. Street or alley connections are encouraged where indicated in the block development diagram. The City shall approve final locations.

E. Permitted Frontage Types

The frontage types listed in the frontage type table shall be permitted on each designated blockfront. See section 4.4 for frontage standards.

F. Permitted Building Types

Building types shall conform to the types listed in the permitted building types table. See Section 4.3 for building type standards.

| Table 4.2.4.1: Block Frontage Standards | Blockfront | | | | | | | |
|--|------------|-----|-----|-----|-----|-----|-----|------|
| | i | ii | iii | iv | v | vi | vii | viii |
| Build-To Line (from R.O.W.) | 7' | 0' | N/A | N/A | N/A | N/A | 25' | N/A |
| Min. Setback | N/A | N/A | 5' | 4' | 5' | 5' | N/A | 5' |
| Max. Setback | N/A | N/A | 10' | 8' | 10' | 10' | N/A | 10' |
| Min. Frontage Occupancy | 90% | 90% | 75% | 75% | 60% | 60% | 75% | 90% |
| Service & Access Points | NP | NP | P-1 | NP | P-1 | P-2 | P-1 | NP |

| Table 4.2.4.2: Permitted Frontage Types | Blockfront | | | | | | | |
|--|------------|----|-----|----|---|----|-----|------|
| | i | ii | iii | iv | v | vi | vii | viii |
| Storefront | X | X | X | X | X | X | X | X |
| Storefront Cafe | X | X | X | X | X | X | X | X |
| Urban Frontage | | | | X | X | X | X | X |
| Forecourt | | | | X | X | X | X | |
| Dooryard | | | | X | X | X | X | |
| Stoop | | | | X | X | X | X | X |

| Table 4.2.4.3: Permitted Building Types | Block | | | | | |
|--|-------|-------|-----|-------|-----|-------|
| | A-2 | A-3 | B-3 | B-4 | B-5 | B-6 |
| Row House | X | X | | X | | X |
| Flex/Loft | X | X | | X | | X |
| Courtyard | X | X | | X | | X |
| Urban Block | X | X | X | X | X | X |
| Liner with Garage | X | X | | | | X |
| Exposed Garage | X (1) | X (1) | | X (1) | | X (1) |
| Podium High-Rise | X | X | X | X (2) | X | X |
| Urban Anchor | X | X | | | | |
| Urban Supermarket | X | X | | X | | X |
| Min. # of Types | 2 | 2 | 1 | 1 | 1 | 1 |

(1) May only be exposed on block fronts v and vi and then only above the ground floor.

(2) Permitted with City approval and requires shadow study to minimize shading of Center Park.

Table key: X – permitted; N/A – not applicable; NP or “blank” – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

Figure 4-6:
Block Group 3 Development Diagram



4.2.5 Block Group 4

A. Block Intent Statement

These four blocks are grouped around the intersection of Eaton Street and Central Parkway. Buildings on these blocks will overlook two prominent attractive outdoor spaces in the street medians and the Center Park outdoor space. Building facades lining the outdoor spaces play an important part in spatially defining these public spaces.

Blocks D-3 and D-4 front Benton Street and form the eastern edge of downtown along East Park. Development on these blocks can take advantage of the visibility from US 36.

B. Building Placement & Frontages

Buildings shall be located in conformance with the build-to and setback lines depicted in the block development diagram. Buildings shall also conform to the block frontage standards (see block frontage standards table).

C. Maximum Building Height

Buildings shall conform to the height limits of the building type standards (see Section 4.3).

D. Street & Alley Connections

Developments may provide streets or alleys on each block. Streets or alleys are encouraged where indicated in the block development diagram. The City shall approve final locations.

E. Permitted Frontage Types

The frontage types listed in the frontage type table shall be permitted on each designated blockfront. See section 4.4 for frontage standards.

F. Permitted Building Types

Building types shall conform to the types listed in the permitted building types table. See Section 4.3 for building type standards.

| Table 4.2.5.1: Block Frontage Standards | Blockfront | | | |
|--|------------|-----|-----|-----|
| | i | ii | iii | iv |
| Build-To Line (from R.O.W.) | N/A | N/A | N/A | N/A |
| Min. Setback | 4' | 4' | 5' | 5' |
| Max. Setback | 8' | 8' | 10' | 10' |
| Min. Frontage Occupancy | 90% | 75% | 60% | 60% |
| Service & Access Points | NP | P-1 | NP | P-1 |

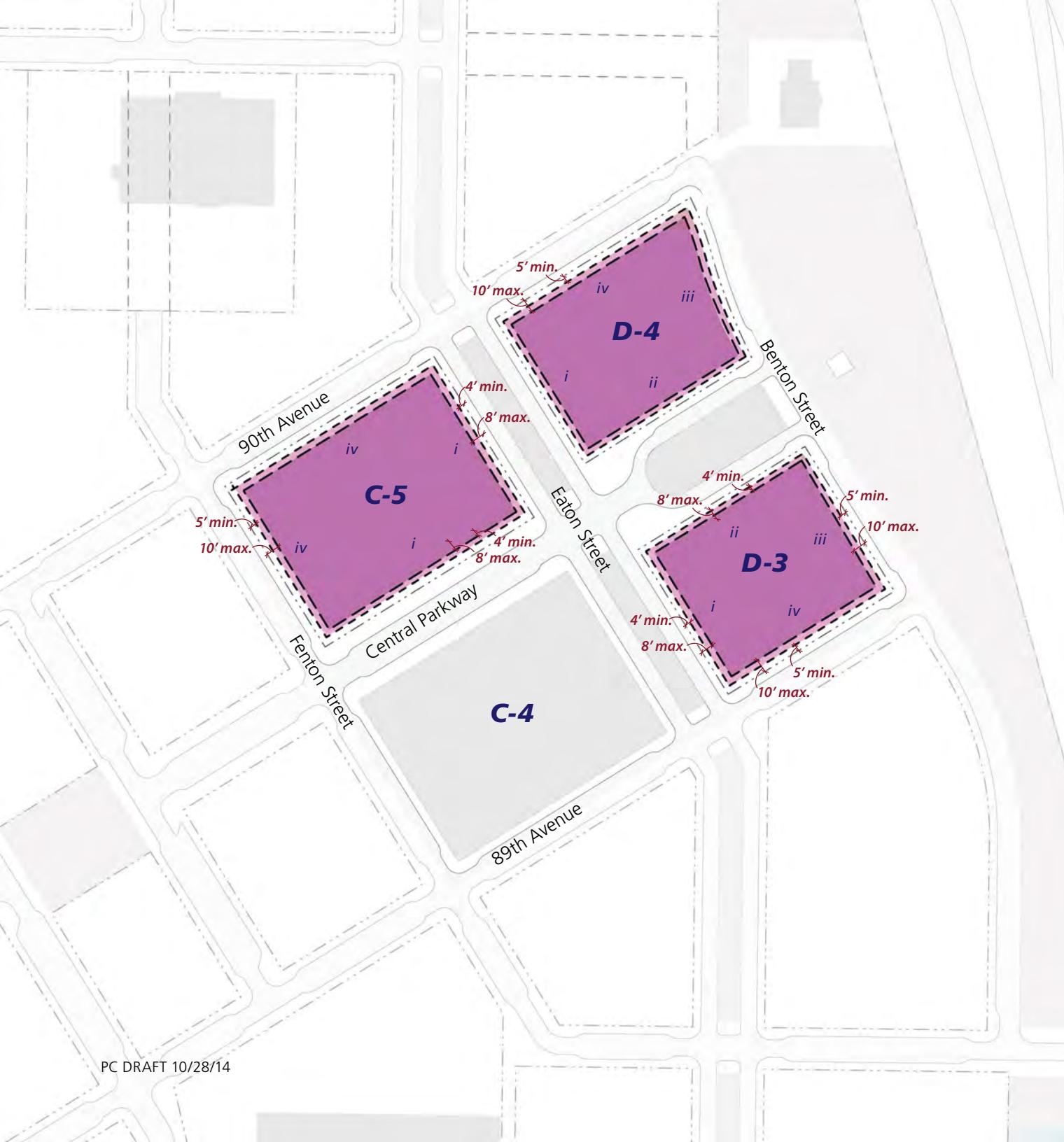
| Table 4.2.5.2: Permitted Frontage Types | Blockfront | | | |
|--|------------|----|-----|----|
| | i | ii | iii | iv |
| Storefront | X | X | X | X |
| Storefront Cafe | X | X | X | X |
| Urban Frontage | X | X | X | X |
| Forecourt | | | X | X |
| Dooryard | | | X | X |
| Stoop | X | X | X | X |

| Table 4.2.5.3: Permitted Building Types | Block | | |
|--|-------|-------|-------|
| | C-5 | D-3 | D-4 |
| Row House | X | X | X |
| Flex/Loft | X | X | X |
| Courtyard | X | X | X |
| Urban Block | X | X | X |
| Liner with Garage | X | X | X |
| Exposed Garage | X (1) | X (1) | X (1) |
| Podium High-Rise | X | | |
| Urban Anchor | | | |
| Urban Supermarket | | | |
| Min. # of Types | 2 | 1 | 1 |

(1) May only be exposed on block fronts iii and iv and then only above the ground floor.

Table key: X – permitted; N/A – not applicable; NP or “blank” – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

Figure 4-7:
Block Group 4 Development Diagram

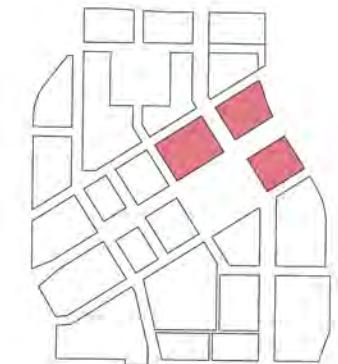


Key

- Developable area
- Developable area between minimum and maximum setback
- X-#** Block designation
- ii** Blockfront designation
- X'** Distance in feet
- Property line
- Build-to line
- Minimum setback line
- Maximum setback line
- Alley, suggested location



Key Plan



4.2.6 Block Group 5

A. Block Intent Statement

These development blocks straddle the northern portion of Westminster Boulevard. The blocks can accommodate a variety of uses that could include multi-family mixed-use buildings or campus office types.

Blocks A-4 and B-7 are the northern edge of the retail core. Given their size and location, they are well suited for an urban retail anchor building. Block B-8 occupies a prominent location at the intersection of Westminster Boulevard and 92nd Avenue. Development on this site will have a significant impact on the identity of the downtown and the location is well suited for mixed-use buildings that form the city's fabric.

B. Building Placement & Frontages

Buildings shall be located in conformance with the build-to and setback lines depicted in the block development diagram. Buildings shall also conform to the block frontage standards (see block frontage standards table) and shall be located to maximize preservation of existing trees on blocks A-4 and A-5.

C. Maximum Building Height

Buildings shall conform to the height limits of the building type standards (see Section 4.3).

D. Street & Alley Connections

Developments may provide streets or alleys on each block. Streets or alleys are encouraged where indicated in the block development diagram. The City shall approve final locations.

E. Permitted Frontage Types

The frontage types listed in the frontage type table shall be permitted on each designated blockfront. See section 4.4 for frontage standards.

F. Permitted Building Types

Building types shall conform to the types listed in the permitted building types table. See Section 4.3 for building type standards.

| Table 4.2.6.1: Block Frontage Standards | Blockfront | | | | | |
|--|------------|-----|-----|-----|-----|-----|
| | i | ii | iii | iv | v | vi |
| Build-To Line (from R.O.W.) | 7' | 7' | 7' | 25' | 15' | N/A |
| Min. Setback | N/A | N/A | N/A | N/A | N/A | 5' |
| Max. Setback | N/A | N/A | N/A | N/A | N/A | 10' |
| Min. Frontage Occupancy | 90% | 80% | 80% | 75% | 75% | 60% |
| Service & Access Points | NP | P-1 | P-1 | P-1 | NP | P-1 |

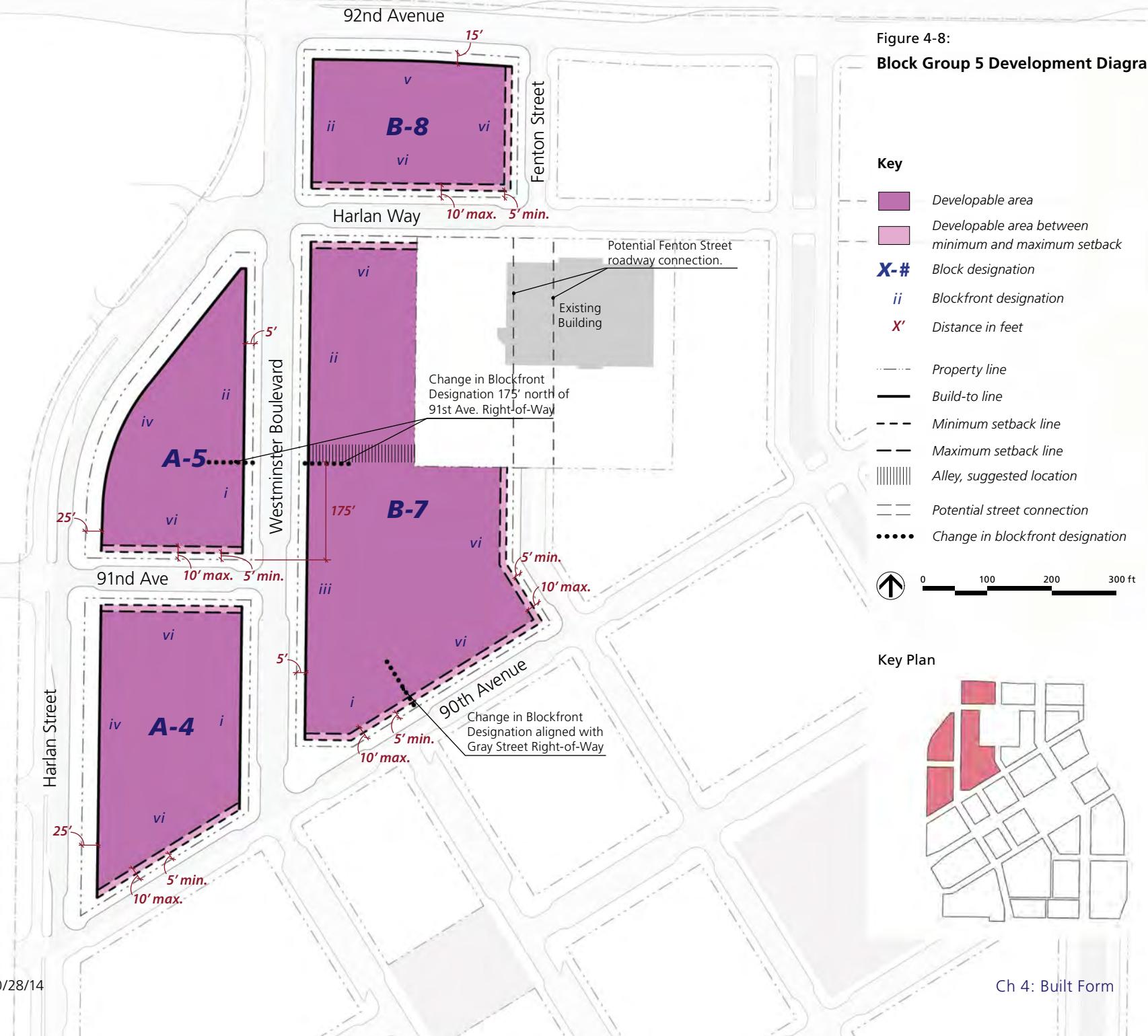
| Table 4.2.6.2: Permitted Frontage Types | Blockfront | | | | | |
|--|------------|----|-----|----|---|----|
| | i | ii | iii | iv | v | vi |
| Storefront | X | X | X | X | X | X |
| Storefront Cafe | X | X | X | X | X | X |
| Urban Frontage | X | X | X | X | X | X |
| Forecourt | | | | X | X | X |
| Dooryard | | | | X | X | X |
| Stoop | | | X | X | X | X |

| Table 4.2.6.3: Permitted Building Types | Block | | | |
|--|-------|-------|-------|-------|
| | A-4 | A-5 | B-7 | B-8 |
| Row House | X | X | X | X |
| Flex/Loft | X | X | X | X |
| Courtyard | X | X | X | X |
| Urban Block | X | X | X | X |
| Liner with Garage | X | X | X | X |
| Exposed Garage | | X (1) | X (1) | X (1) |
| Podium High-Rise | X | X | X | |
| Urban Anchor | X | X | X | |
| Urban Supermarket | X | X | X | X |
| Min. # of Types | 2 | 1 | 2 | 1 |

(1) May only be exposed on block front vi and then only above the ground floor.

Table key: X – permitted; N/A – not applicable; NP or “blank” – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

Figure 4-8:
Block Group 5 Development Diagram



4.2.7 Block Group 6

A. Block Intent Statement

These three development blocks are located at the northeastern corner of the new downtown. Blocks C-7 and D-5 prominently overlook 92nd Avenue, with block D-5 also overlooking East Park with views down the US 36 corridor towards Denver's skyline.

While buildings on these blocks are highly visible they must also contend with a decidedly automobile-oriented street environment and related noise.

An existing commercial parcel is located adjacent to block C-6. It houses the Brunswick bowling alley and associated parking. Street improvements bringing Fenton Street through the site will be implemented when it is redeveloped. Future development phases on the Brunswick parcel should anticipate filling in the remaining street fronts.

B. Building Placement & Frontages

Buildings shall be located in conformance with the build-to and setback lines depicted in the block development diagram. Buildings shall also conform to the block frontage standards (see block frontage standards table).

C. Maximum Building Height

Buildings shall conform to the height limits of the building type standards (see Section 4.3).

D. Street & Alley Connections

Developments may provide streets or alleys on each block. Streets or alleys are encouraged where indicated in the block development diagram. The City shall approve final locations.

E. Permitted Frontage Types

The frontage types listed in the frontage type table shall be permitted on each designated blockfront. See section 4.4 for frontage standards.

F. Permitted Building Types

Building types shall conform to the types listed in the permitted building types table. See Section 4.3 for building type standards.

| Table 4.2.7.1: Block Frontage Standards | Blockfront | | | | |
|--|------------|--------|-----|-----|-----|
| | i | ii | iii | iv | v |
| Build-To Line (from R.O.W.) | N/A | N/A | 15' | N/A | 0 |
| Min. Setback | 4' | 4' | N/A | 5' | N/A |
| Max. Setback | 8' | 8' | N/A | 10' | N/A |
| Min. Frontage Occupancy | 90% | 90%(1) | 75% | 60% | 60% |
| Service & Access Points | NP | P-1 | NP | P-1 | NP |

| Table 4.2.7.2: Permitted Frontage Types | Blockfront | | | | |
|--|------------|----|-----|----|---|
| | i | ii | iii | iv | v |
| Storefront | X | X | X | X | |
| Storefront Cafe | X | X | | X | X |
| Urban Frontage | X | X | X | X | X |
| Forecourt | | | | X | |
| Dooryard | | | | X | X |
| Stoop | X | X | X | X | X |

| Table 4.2.7.3: Permitted Building Types | Block | | |
|--|-------|-------|-------|
| | C-6 | C-7 | D-5 |
| Row House | X | X | X |
| Flex/Loft | X | X | X |
| Courtyard | X | X | X |
| Urban Block | X | X | X |
| Liner with Garage | X | X | X |
| Exposed Garage | | X (2) | X (2) |
| Podium High-Rise | | | X |
| Urban Anchor | | | |
| Urban Supermarket | | X | X |
| Min. # of Types | 1 | 1 | 2 |

(1) Minimum frontage occupancy excludes length of frontage allocated for potential roadway connection.

(2) May only be exposed on block fronts iv and v. On block front v they may only be exposed above the ground floor.

Table key: X – permitted; N/A – not applicable; NP or “blank” – not permitted or none permitted; P-1 – permitted with a limit of one per blockfront; P-2 – permitted with a limit of two per blockfront.

Figure 4-9:
Block Group 6 Development Diagram



4.3 BUILDING TYPE STANDARDS AND GUIDELINES

In order to provide for a variety of household types and to create a varied and complex urban environment, this Plan provides for a diversity of building types, from row houses, flex/lofts, and courtyard buildings to urban block buildings, liner buildings with garages, and podium high-rises. The standards for each block mandate a minimum number of building types to be located on each block. Once a particular building type is selected, development must adhere to the type-specific standards and guidelines. These include maximum facade width, lot width, pedestrian access, parking, outdoor space, landscape, frontage types, and building massing (see Figure 4-10).

All building types should be designed to encourage activation of the public realm and provide private outdoor spaces, such as gardens, courtyards, and porches for residents.

The selected building types for each block will be chosen at the time of development of a particular block. The building types provided in this Plan define the standards and guidelines that are applicable to the development. While there is flexibility within the choice of building types for each block, only certain building types may be appropriate for a particular block given adjacent uses and other requirements. Each block's block development diagram specifies if there is such a limit (see Section 4.2).

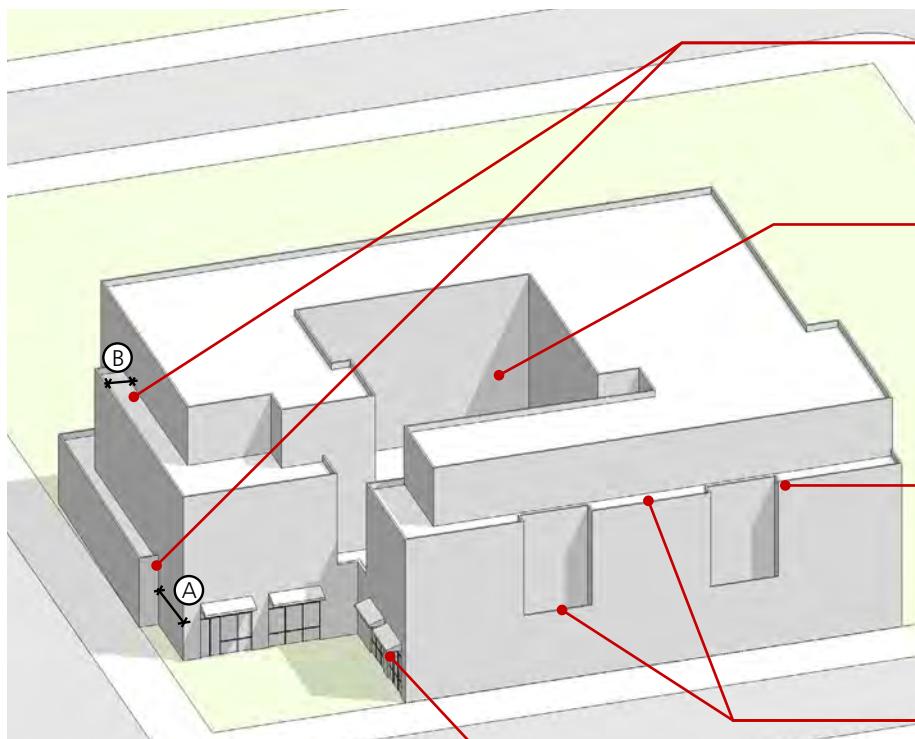


Figure 4-10: Key Building Type Elements

Note: See also definitions, Chapter 7

Plane Break:

The area of the building where the plane of the facade varies in depth, represents a plane break. *Plane breaks* can be horizontal (see **A** left) or vertical (see **B** left).

Green Space:

Each building type requires the lot area to be occupied by a certain percentage of green space area, which can be accommodated in a variety of ways, for instance through gardens, yards, patios, courtyards, etc. as described on each building type page.

Maximum Footprint per Story:

The floor area of upper stories shall be less than the area of the building footprint at grade as indicated by the maximum allowed footprint per story charts on each building type page.

Maximum Upper Level Building Frontage Occupancy:

Some building types have limitations on the percentage of the building front that can be occupied above 45 feet in height. A standard may limit upper levels to 80% of a frontage, requiring either a break in frontage or a setback of the building face by a minimum of 8 feet.

Frontage Type:

Each building has certain facade conditions that are called frontage types. Each frontage interacts differently with the street and therefore is appropriate for different areas and building types (see Section 4.4).

4.3.1 Explanation of Standards

The building type standards and guidelines cover the following:

A. Intent Statement

This statement describes the development intent and typical characteristics for the respective building type.

B. Facade Width

Facade width standards regulate the maximum width of a building facade. If the frontage length exceeds the maximum facade width the facade must be broken by providing a change in building type.

Alternatively, any two of the following techniques may be employed:

- Provide a horizontal plane break with one facade set behind the other by at least two feet.
- Provide a material change.
- Provide a change in the overall type, size, spacing, or proportion of windows or fenestration system or change in sill heights and head conditions. This option is applicable only to vertically proportioned windows.
- Provide a change in facade compositional strategy including roof heights, and roof types. For example, a symmetrical facade may be placed next to a facade with a repetitive bay system that is not symmetrical.
- Provide separate and additional primary entries from the street.

B. Building Height and Massing

Height standards regulate the maximum building height. Building height shall be defined pursuant to the W.M.C.

Some building types require horizontal or vertical plane breaks or both (see also Figure 4-10). Horizontal plane breaks shall not alleviate the minimum building frontage occupancy requirements from Section 4.2. Building facades facing build-to lines shall provide plane breaks in a manner such that the overall building frontage meets the minimum building frontage occupancy requirements (see Section 4.2.1 B.). Plane breaks are only required at street-facing facades.

Furthermore, a maximum allowed footprint per story is presented for certain building types. The maximum allowable footprint per story limits the percentage of occupiable space per building story in relationship to the building's ground-floor footprint (see Figure 4-10). For example, a four-story building that limits the maximum allowable footprint of the fourth story to 60 percent may satisfy this requirement by providing stepbacks, decks, patios, building articulation, or similar massing strategies that assure that the fourth story occupies no more than 60 percent of the building. Balconies shall count toward the maximum allowable footprint unless they are open to the sky or at least 18 feet in height.

These standards intend to articulate new development and avoid monotonous, block-like building designs in favor of more varied building designs with reduced bulk at the upper stories.

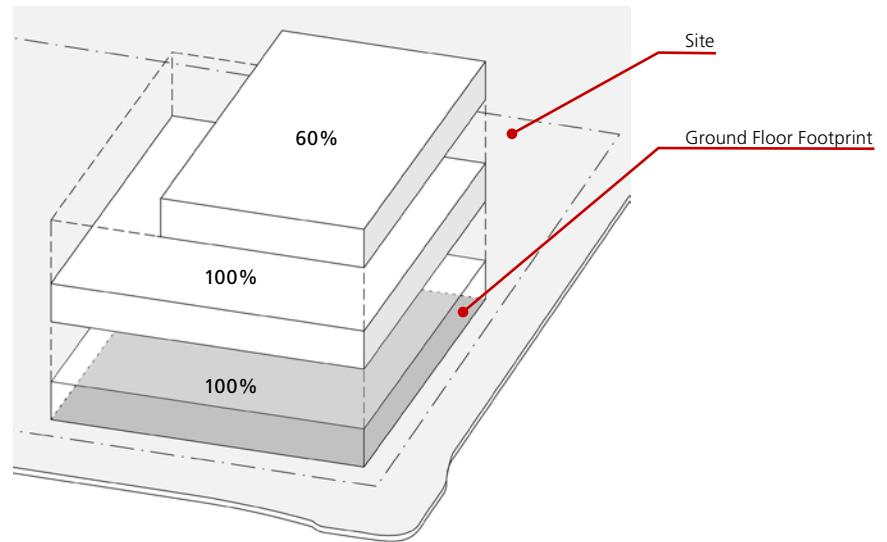


Figure 4-11: Maximum Footprint Per Story Diagram

The maximum footprint per story is computed based on the building's ground floor footprint, not the overall site area.

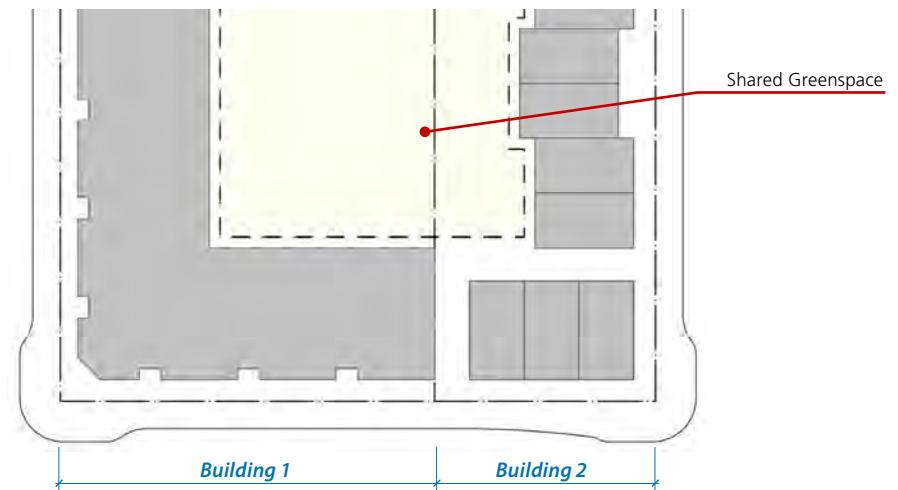


Figure 4-12: Shared Outdoor Space Diagram

Adjacent buildings may combine the required outdoor spaces into one shared space provided the cumulative minimum requirements for each building is met.

D. Maximum Upper Level Frontage Occupancy

Certain building types have limitations on the percentage of the building frontage that can be occupied above 45 feet in height. These standards are included in order to provide more variety and visual interest at the upper levels. The upper level frontage occupancy is based on the ground-floor plan. Facade portions that are set back at least eight feet from the ground-floor building face are considered as not occupying the upper level frontage.

depth shall not count towards fulfilling the required amount.

Required outdoor space can be shared between adjacent building types, as long as the cumulative minimum requirements for each type are satisfied (see Figure 4-12).

I. Landscape

The landscape standards regulate the design of outdoor space including the amount of outdoor space that is required to be planted with vegetation.

E. Frontage Types

This standard lists which frontage types are permitted for each building type. Developments must also comply with the permitted frontage type standards of the applicable block development standards.

F. Pedestrian Access and Entries

This standard regulates the location and orientation of building entries.

G. Parking

Building type parking standards provide parking design regulations that are specific to each building type.

E. Outdoor Space

Each building type requires a specific amount of outdoor space to be designated on site. Such outdoor space may either be private, only accessible to the occupants, or open to the general public. Outdoor space may be located at grade, atop a podium or at the rooftop unless the location is restricted by the selected building type. Regardless of location, the design of outdoor space shall maximize solar access. Setbacks less than 15 feet in

4.3.2 Row House



Row House Diagram

Houses with common walls line a street front.



Row House Illustrative Photo

A. Intent Statement

A structure that consists of at least three primary residences with common walls, side by side along the building frontage. The structure has individual garages for each unit, accessed from an alley, or may have a shared structure with dedicated spaces. Row houses may also wrap the podium of a high-rise building type.

B. Facade Width

1. Maximum of 26 feet for each row house unit, except that the facade width of a row house on block corners may be up to 30 feet.
2. The maximum number of attached row houses allowed is 10 townhouses per facade string.

C. Building Height & Massing

1. Maximum height shall be 45 feet.
2. Facade strings shall have at least one *encroachment* per 100 linear feet, such as a porch, balcony, or plane break. The combined length of plane breaks shall occupy at least 10 percent of the facade length.
3. Building faces abutting side streets or yards shall provide at least one horizontal plane break of at least three feet, and one vertical plane break of at least two feet.
4. In a three-story building, a two-story row house can be stacked over a separate ground-floor unit.

5. The maximum allowed footprint per story shall be determined by the following table:

| Table 4.3.2.1: Height in Stories | Maximum Allowed Footprint per Story | | | |
|--|--|------|------|-----|
| | 1 | 2 | 3 | 4 |
| 2 | 100% | 100% | – | – |
| 3 | 100% | 100% | 100% | – |
| 4 | 100% | 100% | 100% | 60% |

D. Maximum Upper Level Frontage Occupancy

Not applicable.

E. Frontage Types

Permitted frontage types: dooryard and stoop (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

The primary entrance shall be accessible directly from the street, through the frontage.

G. Parking

1. Garages shall accommodate no more than two cars and shall be integrated into the back of the row house.
2. Podium parking is permitted, in which case a unit may also be accessed from the parking area or internal building corridor, and no individual garage parking is required.
3. Above-ground garage structures shall be concealed from view along the street behind the row houses.

4. Parking stalls shall meet the construction and maintenance standards of the W.M.C.

H. Outdoor Space

1. Amount required. At least 10 percent of the lot area shall be provided as outdoor space.
2. Types. Permitted outdoor space types that count toward the satisfaction of the required amount of outdoor space are: elevated terraces, patios, verandas, balconies, yards, decks, and roof gardens.
3. Design. The outdoor space area must be open to the sky, except for any allowable *encroachments* (see Section 4.5.9) and any shade structures within the space.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving and planters is encouraged.
2. At least 25 percent of the required on-site outdoor space shall be planted with ground cover, shrubs, trees, or a combination thereof.

4.3.3 Flex/Loft Building



Flex/Loft Building Diagram

Flex/loft units arranged side by side



Flex/Loft Building Illustrative Photo

Note: Paseos permitted for access to residential units above

A. Intent Statement

An integrated residence and work space, occupied by a single unit. Often two or more such units shall be arranged side by side along the Principal Frontage that has been designed or structurally modified to accommodate joint residential and work occupancy. Flex/loft buildings may also wrap the podium of a high-rise building type.

B. Facade Width

1. Maximum of 30 feet for each flex/loft unit.
2. The maximum number of attached flex/loft units is 10 per facade string.

C. Building Height & Massing

1. Maximum height shall be 50 feet.
2. Facade strings shall have at least one *encroachment* per 100 linear feet, such as a porch, balcony, or plane break. The combined length of plane breaks shall occupy at least 15 percent of the facade length.
3. Building faces abutting side yards shall provide at least one horizontal plane break of at least three feet, and one vertical plane break of at least two feet.
4. The maximum allowed footprint per story shall be determined by the following table:

| Table 4.3.3.1: Height in Stories | Maximum Allowed Footprint per Story | | | |
|--|--|------|------|-----|
| | 1 | 2 | 3 | 4 |
| 2 | 100% | 100% | - | - |
| 3 | 100% | 100% | 100% | - |
| 4 | 100% | 100% | 100% | 80% |

D. Maximum Upper Level Frontage Occupancy

Not applicable.

E. Frontage Types

Permitted frontage types are: storefront, *storefront café*, and dooryard (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

The primary entrance shall be accessible directly from the street, through the frontage, except that primary residential entries may be accessed through work space, through a paseo between units, or from the rear.

G. Parking

1. Individual garage parking may be integrated into the back of the flex/loft building.
2. Podium parking is permitted, in which case a unit may also be accessed from the parking area, and no individual garage parking is required.
3. Above-ground garage structures shall be concealed from view along the street behind the flex/loft building.
4. Parking stalls shall meet the construction and maintenance standards of the W.M.C.

H. Outdoor Space

1. Amount Required. At least 15 percent of the lot area shall be provided as outdoor space.

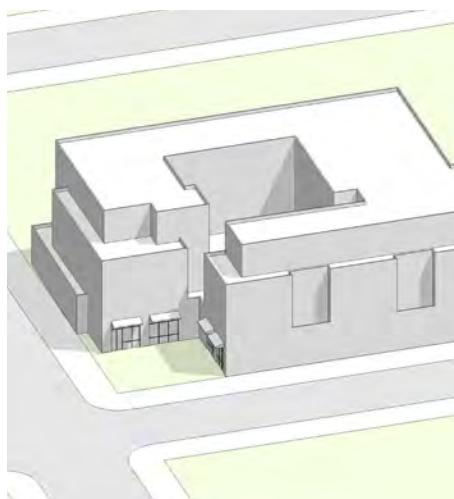
2. Types. Permitted outdoor space types that count toward the satisfaction of the required amount of outdoor space are: elevated terraces, patios, verandas, balconies, decks, and roof gardens.

3. Design. The outdoor space area must be open to the sky, except for any allowable *encroachments* (see Section 4.5.9) and any shade structures within the space.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving and planters is encouraged.
2. At least 25 percent of the required on-site outdoor space shall be planted with ground cover, shrubs, trees, or a combination thereof.

4.3.4 Courtyard Building



Courtyard Building Diagram

A grouping of units around central courtyards.



Courtyard Building Illustrative Photo

Courtyard view of a courtyard building.

A. Intent Statement

A grouping of townhouses or multi-family units arranged around a central courtyard or series of courtyards at grade or above a parking podium. The building may contain residential or commercial uses, and parking is below ground or accommodated in up to two above-grade podium levels.

B. Facade Width

Maximum 200 feet.

C. Building Height & Massing

1. Maximum height shall be 65 feet.
2. The maximum allowed footprint per story shall be determined by the following table:

| Height in Stories | Maximum Allowed Footprint per Story | | | |
|-------------------|-------------------------------------|------|-----|-----|
| | 1-2 | 3 | 4 | >5 |
| 2 | 100% | – | – | – |
| 3 | 100% | 80% | – | – |
| 4 | 100% | 100% | 80% | – |
| >5 | 100% | 100% | 80% | 80% |

D. Maximum Upper Level Frontage Occupancy

Portions of facades above 45 feet in height and greater than 150 feet in length shall occupy no more than 80% of the primary facade plane established on the ground floor.

E. Frontage Types

Permitted frontage types are: *forecourt*, storefront, *storefront café*, *urban frontage*, and dooryard (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

1. The internal courtyard shall be accessible from the street, through the frontage. Where the internal courtyard is located above the ground plane, a grand public stair is encouraged. Access may be gated.
2. The primary entrance to each ground-floor unit shall be directly from the street or courtyard. Entrances shall occur at a maximum interval of 60 feet.
3. Primary access to units above the ground floor shall be through a lobby accessed from the street or the courtyard.

G. Parking

1. Parking may be accommodated in up to two levels of above-ground podium, below ground, or both.
2. A liner of habitable space shall conceal above-ground podium parking garages from view.
3. Residential parking shall be separate from retail parking, except for any residential guest parking.
4. Parking stalls shall meet the construction and maintenance standards of the W.M.C.

H. Outdoor Space

1. Amount Required. At least 15 percent of the lot area shall be provided as outdoor space.
2. Types. Permitted outdoor space types that count toward the satisfaction of the required amount of outdoor space are: patios, verandas, and courtyards.
3. Dimensions. The minimum courtyard dimension shall be 30 feet on one side for buildings. If the courtyard is surrounded by 3 or more sides or if the building is three or more stories, the minimum dimension on one side shall be 40 feet.
4. *Encroachments*. Encroachments into the outdoor space are permitted on all sides, provided that the minimum 30-foot dimension is maintained, exclusive of the *encroachments*.
5. Design. The outdoor space area must be open to the sky, except for any allowable *encroachments* (see Section 4.5.9) and any shade structures within the space. Communal outdoor spaces shall provide high quality amenity and be easily accessible for all residents.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving and planters is encouraged.
2. At least 25 percent of the required on-site outdoor space shall be planted with ground cover, shrubs, trees, or a combination of thereof.

4.3.5 Urban Block Building



Urban Block Building Diagram

A building type that can accommodate a variety of uses



Urban Block Building Illustrative Photo

A. Intent Statement

A building designed for occupancy by retail, service, office, and/or residential uses on the ground floor, with upper floors also configured for office and/or residential uses, however two-story retail is permitted. Parking is accommodated below ground.

B. Facade Width

Maximum 225 feet. Facades greater than 175 feet in length must have at least one facade break of at least 20 feet in length and 10 feet in depth.

C. Building Height & Massing

1. Maximum height shall be 65 feet.
2. The maximum allowed footprint per story shall be determined by the following table:

| Height in Stories | Maximum Allowed Footprint per Story | | | |
|-------------------|-------------------------------------|------|-----|-----|
| | 1-3 | 4 | 5 | >5 |
| 2-3 | 100% | — | — | — |
| 4-5 | 100% | 85% | 75% | — |
| >5 | 100% | 100% | 85% | 75% |

D. Maximum Upper Level Building Frontage Occupancy

Portions of facades above 45 feet in height and greater than 150 feet in length shall occupy no more than 80% of the primary facade plane established on the ground floor.

E. Frontage Types

Permitted frontage types are: *forecourt*, storefront, *storefront café*, *urban frontage*, stoop, and dooryard (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

1. Primary entrances to upper floors shall be accessed through: 1. an interior courtyard or 2. a lobby, which is accessed directly from the street.
2. Primary access to the ground-floor space shall be directly from the street and shall occur at a maximum interval of 60 feet. For urban block buildings in the retail core fronting Westminster Boulevard and Gray Street see entrance standards in Section 4.5.3 A.2.
3. Primary retail entrances shall remain accessible and unlocked during regular business hours.

G. Parking

1. Parking may be accommodated in up to two levels of above-ground podium, below ground, or both.
2. A liner of habitable space shall conceal above-ground podium parking garages from view.
3. Parking stalls shall meet the construction and maintenance standards of the W.M.C.

H. Outdoor Space

1. Amount Required. At least 15 percent of the lot area shall be provided as outdoor space

2. Types. Permitted outdoor space types that count toward the satisfaction of the required amount of outdoor space are: patios, verandas, courtyards, and roof gardens.

3. Dimensions. Each outdoor space shall have a minimum dimension of 20 feet on each side.

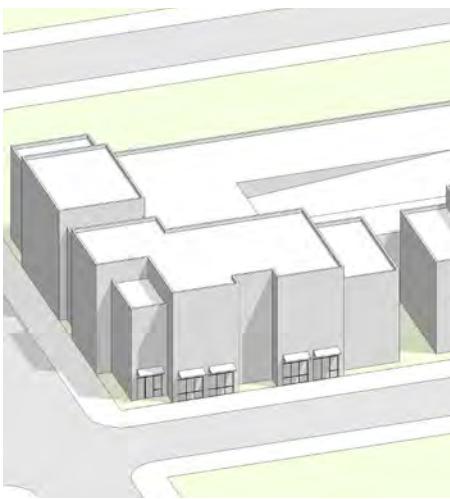
4. *Encroachments*. Encroachments into the outdoor space are permitted on all sides of the space, provided that the minimum 20-foot dimension is maintained, exclusive of the *encroachments*.

5. Design. The outdoor space area must be open to the sky, except for any allowable *encroachments* (see Section 4.5.9) and any shade structures within the space.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving and planters is encouraged.
2. At least 25 percent of the required on-site outdoor space shall be planted with ground cover, shrubs, trees, or a combination of thereof. Landscaping in pots or planters may be included in computing the total landscaped area.

4.3.6 Liner Building with Garage



Liner Building Diagram

A building suitable for a variety of uses wraps a parking structure



Liner Building Illustrative Photo

Street view of a liner building. The facade does not reveal the parking use behind.

A. Intent Statement

A building and garage ensemble where the building directly fronts the street and wraps around an above-ground garage. The building is designed for occupancy by a mixture of uses. The garage can either be attached or detached to the building.

B. Facade Width

1. Maximum 225 feet. Facades greater than 175 feet in length must have at least one facade break of at least 20 feet in length and 10 feet in depth.
2. Where the garage length exceeds 225 feet, a second similar building type may be attached and interconnected, but it must appear as a separate building and have its own entrance from the street. In this situation a facade break is not required.

C. Building Height & Massing

1. Maximum height shall be 65 feet. The building shall be no less than 35 feet tall. The maximum garage height shall be 45 feet.
2. The maximum allowed footprint per story shall be determined by the following table:

| Height in Stories | Maximum Allowed Footprint per Story | | | |
|-------------------|-------------------------------------|------|-----|-----|
| | 1-3 | 4 | 5 | >5 |
| 2-3 | 100% | — | — | — |
| 4 | 100% | 90% | — | — |
| 5 | 100% | 90% | 75% | — |
| >5 | 100% | 100% | 85% | 75% |

D. Maximum Upper Level Building Frontage Occupancy

Portions of facades above 45 feet in height and greater than 150 feet in length shall occupy no more than 80% of the primary facade plane established on the ground floor.

E. Frontage Types

Permitted frontage types are: *forecourt*, storefront, *storefront café*, *urban frontage*, stoop, and dooryard (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

1. Primary entrances to upper floors shall be accessed through an interior courtyard or lobby, accessed directly from the street.
2. Primary access to each ground-floor space shall be directly from the street and shall occur at a maximum interval of 60 feet. For liner buildings in the retail core fronting Westminster Boulevard and Gray Street see entrance standards in Section 4.5.3 A 2.
3. All retail spaces should be accessed from a ground-floor, single-tenant entry along a street, courtyard, or Paseo.
4. Primary retail entrances shall remain accessible and unlocked during regular business hours.
5. In addition to the building's required primary entrances, there may be ancillary entrances to the building from parking garages.

G. Parking

Parking stalls shall meet the construction and maintenance standards of the W.M.C.

H. Outdoor Space

1. Amount Required. At least 10 percent of the lot area shall be provided as outdoor space.
2. Types. Permitted outdoor space types that count toward the satisfaction of the required amount of outdoor space are: patios, verandas, courtyards, and roof gardens.
3. Dimensions. Each outdoor space shall have a minimum dimension of 20 feet on each side.
4. Encroachments. *Encroachments* into the outdoor space are permitted on all sides of the space, provided that the minimum 30-foot dimension is maintained, exclusive of the *encroachments*.
5. Design. The outdoor space area must be open to the sky, except for any allowable *encroachments* (see Section 4.5.9) and any shade structures within the space.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving and planters is encouraged.
2. At least 25 percent of the required on-site outdoor space shall be planted with ground cover, shrubs, trees, or a combination of thereof. Landscaping in pots or planters may be included in computing the total landscaped area.

4.3.7 Exposed Garage Building



Exposed Garage Building Diagram

Active ground-floor uses line the exposed parking structure.



Exposed Garage Building Illustrative Photo

Ground-floor uses line the exposed garage building.

A. Intent Statement

A garage building type that provides space for active ground-floor uses along street frontages. Exposed garage levels are architecturally treated.

B. Facade Width

Maximum 240 feet may be exposed at frontage.

C. Building Height & Massing

Maximum height shall be 55 feet.

D. Maximum Upper Level Frontage Occupancy

Not applicable.

E. Frontage Types

Permitted frontage types are: storefront, *storefront café, urban frontage, forecourt* (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

- Primary access to each ground-floor space shall be directly from the street and shall occur at a maximum interval of 60 feet.
- All retail spaces should be accessed from a ground-floor, single-tenant entry along a street, courtyard, or alley.
- Primary retail entrances shall remain accessible and unlocked during regular business hours.

G. Parking

- All parking facades visible from a public right of way shall be architecturally

treated. The total opening area shall not exceed 60 percent of the facade area and shall not be less than 40 percent of the facade area. Continuous ribbon openings are not permitted.

- Along street frontages, habitable uses shall line the ground floor unless otherwise permitted in the block standards (see Section 4.2.). Habitable spaces shall have a minimum depth of 20 feet measured perpendicular to the property line from the exterior face of the building facing the street to the back of the habitable space
- Parking stalls shall meet the construction and maintenance standards of the W.M.C.

H. Outdoor Space

Amount Required. None.

I. Landscape

All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving and planters is encouraged.

4.3.8 Podium High-Rise Building



Podium High-Rise Diagram

A tower building mass may exceed the base height limit of 65 feet.



Podium High-Rise Illustrative Photo

A. Intent Statement

A multi-level building organized around a central core with the first 2-5 floors expressed as a Podium. The building is composed as a Tower and a podium (the base), which may contain a parking garage.

B. Façade Width

Maximum 300 feet.

C. Building Height & Massing

1. Maximum podium height is 65 feet; minimum height is 35 feet.
2. A high-rise tower may exceed the podium height. The length to width ratio for the tower shall be no greater than 2:1. The maximum floor plate of the tower shall be 20,000 SF.
3. The tower shall step back from the face of the podium a minimum of 10 feet, measured perpendicular to the property line.

D. Maximum Upper Level Building Frontage Occupancy

1. Portions of facades above 45 feet in height and greater than 150 feet in length shall occupy no more than 80% of the primary facade plane established on the ground floor.
2. Portions of facades above 65 feet in height:
 - if less than 100 feet in length shall occupy no more than 90% of the primary facade plane established on the lower floors,
 - if between 100 and 150 feet in length shall occupy no more than 80% of the primary facade plane established on the lower floors, and

- if greater than 150 feet in length shall occupy no more than 70% of the primary facade plane established on the lower floors

E. Frontage Types

Permitted frontage types are: *forecourt*, storefront, *storefront café*, *urban frontage*, stoop, and dooryard (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

1. Primary entrances to upper floors shall be accessed through an interior courtyard or lobby, accessed directly from the street.
2. Ground floors shall contain habitable building space and access to each ground-floor space shall be directly from the street and shall occur at a maximum interval of 60 feet. For podium high-rise buildings in the retail core fronting Westminster Boulevard and Gray Street see entrance standards in Section 4.5.3 A 2.
3. All retail spaces shall have their primary access from a ground-floor, single-tenant entry along a street, courtyard, or paseo.
4. The primary retail entrances shall remain accessible and unlocked during regular business hours.
5. In addition to the building's required primary entrances, there may be ancillary entrances to the building from parking garages and areas.

G. Parking

1. If accommodated in an above-ground garage, parking shall be concealed from view along the street for the first 21 feet

of height through a liner of habitable space.

2. Above 21 feet, above-ground garages shall be screened from view along the street by habitable space or by landscaping, outdoor screens, cladding, or the appearance of architectural features, such as windows, or a combination thereof.
3. Parking stalls shall meet the construction and maintenance standards of W.M.C. 11-7-4 (B).

H. Outdoor Space

1. Amount Required. At least 30 percent of the lot area shall be provided as outdoor space.
2. Types. Permitted outdoor space types that count toward the satisfaction of the required amount of outdoor space are: patios, verandas, courtyards, and roof gardens. At least one half of the required outdoor space must be common, usable by all residents of the building.
3. Dimensions. Each common outdoor space shall have a minimum dimension of 30 feet on each side. Each private outdoor space shall have a minimum dimension of six feet on one side.
4. Encroachments. *Encroachments* into the common outdoor space are permitted on all sides of the space, provided that the minimum 30-foot dimension is maintained, exclusive of the *encroachments*.

5. Design. The outdoor space area must be open to the sky, except for any allowable *encroachments* (see Section 4.5.9) and any shade structures within the space.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving is encouraged.
2. At least 25 percent of the required on-site outdoor space shall be planted with ground cover, shrubs, trees, or a combination of thereof. Landscaping in pots or planters may be included in computing the total landscaped area.

4.3.9 Urban Anchor Building



Urban Anchor Building Diagram



Urban Anchor Building Illustrative Photo

A. Intent Statement

The urban anchor building type accommodates the need for large-footprint anchor retailers or movie theaters while providing active uses at secondary frontages. Ground-floor storefronts or other liner uses avoid exposing blank walls on street fronts.

B. Facade Width

No limit, except that a maximum of 150 feet of the anchor use may be exposed to a building frontage line. Anchor buildings that are longer than 150 feet must be lined with other uses for the portion of the frontage exceeding 150 feet.

C. Building Height & Massing

1. Maximum height shall be 65 feet.
2. Minimum height is 35 feet.
3. The maximum anchor floor plate is 60,000 SF. The City may grant an exception for cinemas, concert halls, or other live performance spaces.
4. The maximum allowed footprint per story shall be determined by the following table:

| Height in Stories | Maximum Allowed Footprint per Story | | | |
|-------------------|-------------------------------------|-----|-----|--|
| | 1-3 | 4 | 5 | |
| 2-3 | 100% | – | – | |
| 4 | 100% | 90% | – | |
| 5 | 100% | 75% | 75% | |

D. Maximum Upper Level Building Frontage Occupancy

Portions of facades above 45 feet in height and greater than 150 feet in length shall occupy no more than 80% of the primary facade plane established on the ground floor.

E. Frontage Types

Permitted frontage types are: *forecourt*, storefront, *storefront café*, *urban frontage*, and stoop (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

1. Primary entrances to upper floors shall be accessed through an interior courtyard or lobby, accessed directly from the street.
2. Primary access to each ground-floor anchor shall be directly from the street and shall occur at a maximum interval of 200 feet. Liner buildings shall be accessible directly from the street and shall occur at a maximum interval of 60 feet. All retail spaces should be accessed from a ground-floor, single-tenant entry along a street, courtyard, or alley. For anchors in the retail core fronting Westminster Boulevard and Gray Street see entrance standards in Section 4.5.3 A.2.
3. Primary retail entrances shall remain accessible and unlocked during regular business hours.
4. In addition to the building's required primary entrances, there may be ancillary entrances to the building from parking garages and areas.

G. Parking

1. Above-ground garages shall be concealed from view along the street for the first 21 feet of height through a liner of habitable space.
2. Above 21 feet, above-ground garages shall be screened from view along the street by habitable space or by landscaping, outdoor screens, or cladding.
3. Parking stalls shall meet the construction and maintenance standards of W.M.C. 11-7-4 (B).

H. Outdoor Space

Amount Required. None.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas, the use of permeable paving is encouraged.

4.3.10 Urban Supermarket



Urban Supermarket Diagram



Urban Supermarket Illustrative Photo

A. Intent Statement

This building type provides additional flexibility for developments incorporating a supermarket use while ensuring compatibility with the new downtown's urban, mixed-use environment. Housing or office space may be built above.

B. Facade Width

Maximum 300 feet.

C. Building Height & Massing

1. Maximum height shall be 65 feet. 110 feet shall be permitted where blocks allow the podium high-rise building type. In such cases the podium high-rise building type height and massing and outdoor space standards apply (see Section 4.3.7).
2. Minimum height shall be 35 feet.
3. The maximum supermarket floor plate is 65,000 SF.
4. The maximum allowed footprint per story shall be determined by the following table:

| Height in Stories | Maximum Allowed Footprint per Story | | | |
|-------------------|-------------------------------------|-----|-----|--|
| | 1-3 | 4 | 5 | |
| 1-3 | 100% | – | – | |
| 4 | 100% | 90% | – | |
| 5 | 100% | 75% | 75% | |

D. Maximum Upper Level Building Frontage Occupancy

Portions of facades above 45 feet in height and greater than 150 feet in length shall occupy no more than 80% of the primary facade plane established on the ground floor.

E. Frontage Types

Permitted frontage types are: *forecourt*, storefront, *storefront café*, *urban frontage*, stoop, and dooryard (see Section 4.4). Developments must also comply with the permitted frontage types of the block development standards (see Section 4.2).

F. Pedestrian Access & Entries

1. Primary entrances to upper floors shall be accessed through an interior courtyard or lobby, accessed directly from the street.
2. Primary access to each ground-floor space shall be directly from the street and shall occur at a maximum interval of 60 feet. A supermarket use may reduce the entry frequency to 150 feet on one blockfront. For urban supermarkets in the retail core fronting Westminster Boulevard and Gray Street see entrance standards in Section 4.5.3 A.2.
3. All retail spaces should be accessed from a ground-floor, single-tenant entry along a street, courtyard, or alley.
4. Primary retail entrances shall remain accessible and unlocked during regular business hours.
5. In addition to the building's required primary entrances, there may be ancillary entrances to the building from parking garages and areas.

G. Parking

1. Above-ground garages shall be concealed from view along the street for the first 21 feet of height through a liner of habitable space.
2. Above 21 feet, above-ground garages shall be screened from view along the street by habitable space or by landscaping, outdoor screens, or cladding.
3. Parking stalls shall meet the construction and maintenance standards of W.M.C. 11-7-4 (B).

H. Outdoor Space

Amount Required. None.

I. Landscape

1. All outdoor space shall be landscaped or hardscaped. In hardscaped areas the use of permeable paving is encouraged.

4.4 FRONTOGE TYPE STANDARDS AND GUIDELINES

A building's frontage is the interface between the public realm and private development. This Plan recognizes that the successful design of this interface significantly contributes to the realization of an active and engaging urban environment.

Buildings within the Plan area have ground-floor frontages that are human-scaled, provide visual interest, and access to ground-floor uses. This section provides a palette of prototypical frontage types that are permitted. Standards include dimensional criteria, criteria for openings, as well as criteria for the ground plane immediately adjacent to the frontage, such as minimum glazing (see Figure 4-13).

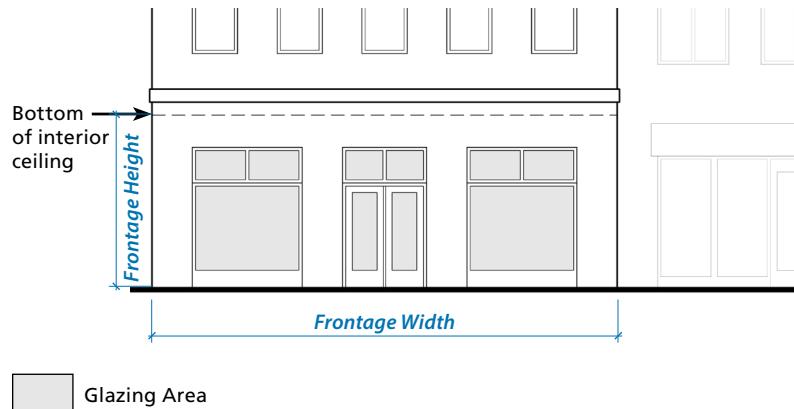


Figure 4-13 : Minimum Frontage Glazing Diagram

The frontage glazing area shall be measured from the finished floor to the bottom of ceiling of the ground floor.

4.4.1 Explanation of Standards

A. Frontage Intent Statement

This statement describes the building-to-street relationship that each frontage type is meant to achieve.

B. Entries

These standards address entries at the block-fronts, not those that are internal to the site.

C. Dimensions

Specific dimensions of features like massing, entry height, openings, and setbacks are delineated here.

D. Paving and Landscaping

This standard addresses the area between the property line and building face.

E. Furnishing Zone

This standard addresses furnishing within front setbacks.

F. Additional Standards and Guidelines

These standards and guidelines provide additional direction in shaping the appropriate building-to-street relationship. They address glazing at the ground floor, frontages, and entries.

G. Storefront Guidelines

This standard addresses the design of building frontages, such as maximum length of a blank wall.

4.4.2 Storefront



Storefront Illustrative Section

Ground floor uses open directly to the sidewalk.



Storefront Illustrative Photo

A. Intent Statement

Storefront frontages provide direct access to ground-floor spaces that are located adjacent to the sidewalk. Storefronts are typically associated with retail uses but may accommodate other uses as permitted by the regulating plan (see Section 3). Where permitted, storefront frontages may provide outdoor seating areas or outdoor displays or both.

B. Entries

Entries should be set at the adjacent sidewalk or within an alcove that is adjacent to a sidewalk.

C. Dimensions

Storefronts shall be between 12 to 25 feet high, measured from the finished floor to the bottom of ceiling of the storefront space. Storefront spaces shall be set no more than twelve inches above the adjacent sidewalk at the primary entrance.

D. Paving and Landscaping

The area between the property line and the building face shall be paved per Section 3.5.1.

E. Furnishing Zone

Where permitted, outdoor seating may be provided either in front setbacks (see Section 3.2). Product displays (e.g. flowers, food, merchandise displays) are encouraged near storefront entries.

F. Additional Standards

- At least 60 percent of the storefront facade area at the ground floor shall be glazed (see Section 4.4). Glazing shall be transparent and clear. Opaque,

highly reflective, and dark tinting are not permitted. The sill height of a storefront window shall be no more than 30 inches high measured from the adjacent finished sidewalk.

- Unoccupied storefronts may be temporarily covered from the inside with white or light color paper, fabric or film, which may contain a graphic image or otherwise permitted signs.

G. Storefront Guidelines

The maximum length of blank walls facing the street is limited to 15 horizontal feet for any one stretch.

4.4.3 Storefront Café



Storefront Café Illustrative Section

Outdoor seating is located immediately adjacent to a ground-floor use.



Storefront Café Illustrative Photo

A. Intent Statement

Storefront cafés provide ground-floor café and restaurant spaces directly accessible from the adjacent sidewalk. *Storefront café* frontages are similar to storefront frontages but provide specific provisions for outdoor seating.

B. Entries

Entries should be set at the adjacent sidewalk. *Storefront cafés* facing 88th Avenue and overlooking the South Park may provide outdoor seating areas on raised terraces.

C. Dimensions

Storefront cafés shall be between 12 to 25 feet high, measured from the finished floor to the bottom of ceiling of the storefront space. Storefront spaces shall be set no more than twelve inches above the adjacent sidewalk or terrace.

D. Paving and Landscaping

The area between the property line and the building face shall be paved per Section 3.5.1.

E. Furnishing Zone

Where permitted, outdoor seating may be provided either in front setbacks (see Section 3.4). Product displays (e.g. flowers, food, merchandise displays) are encouraged near storefront entries.

F. Additional Standard and Guidelines

Same as storefront frontage type (see Section 4.4.1 F.).

4.4.4 Dooryard



Dooryard Illustrative Section

A small landscaped yard separates the building from the sidewalk. The building entry may be raised, but need not be.



Dooryard Illustrative Photo

A. Intent Statement

Dooryard fronts are located in front setbacks and provide small landscaped and paved yards at building entrances. Dooryards are often enclosed by low walls, fences, or hedges.

B. Entries

Attached single-family buildings (row houses) should have primary entries accessible directly from the street.

Ground-floor units in multi-family buildings with corridors may have the primary entry from a corridor accessible from a common building lobby, directly from the sidewalk via a dooryard, or both.

C. Dimensions

Not applicable.

D. Paving and Landscaping

Dooryards should be planted with grass, shrubs, or other ground cover. Walks shall be paved. Low retaining walls, fences, or hedges may enclose a dooryard. Walls and hedges shall not exceed three feet in height measured from the adjacent sidewalk.

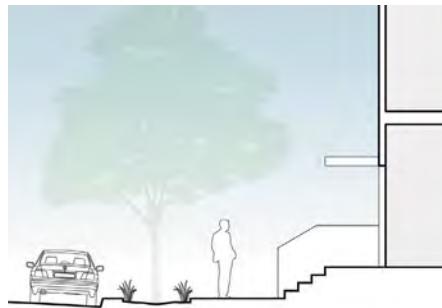
E. Furnishing Zone

Loose furniture is permitted in dooryards.

F. Additional Standard and Guidelines

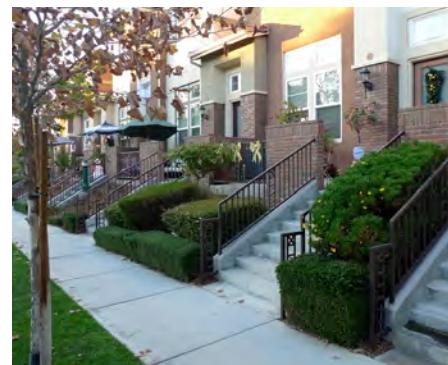
Where block development standards permit dooryard frontages and stoop frontages, frontage elements of these frontage types may be combined.

4.4.5 Stoop



Stoop Illustrative Section

The entry to a building is raised above the sidewalk.



Stoop Illustrative Photo

A. Intent Statement

Stoops are small staircases leading to the entrance of a building. The stoop elevation provides some privacy between the sidewalk and ground-floor uses. *Stoops* may be covered.

B. Entries

Entries fronting on public streets shall face the public sidewalk.

C. Dimensions

Stoops shall be at least four feet deep and four feet wide. The stoop entry should not be raised more than three feet above the adjacent sidewalk.

D. Paving and Landscaping

Yards should be planted with grass, shrubs, or other ground cover. Walks shall be paved.

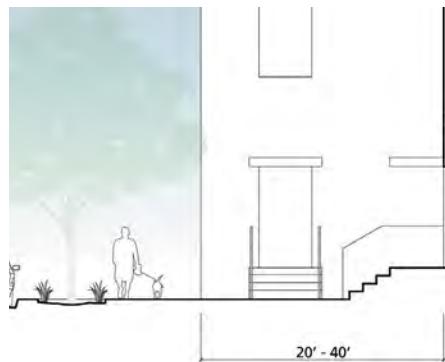
E. Furnishing Zone

None permitted.

F. Additional Standards

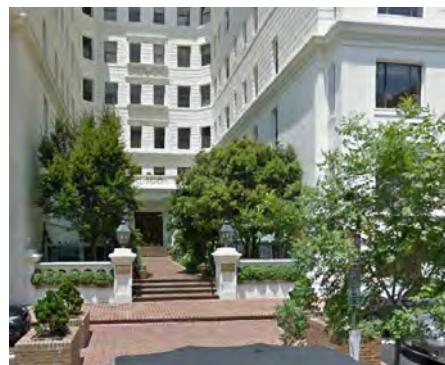
1. Awnings or canopies may cover *stoops*.
2. Where block development standards permit dooryard frontages and stoop frontages, frontage elements of these frontage types may be combined.

4.4.6 Forecourt



Forecourt Illustrative Section

The building entry is located off a forecourt. The entry may or may not be raised above the sidewalk level.



Forecourt Illustrative Photo

A. Intent Statement

Forecourts are open areas located at primary building entrances. They may be designed as gardens or as paved courtyards. Frontages utilizing a *forecourt* must comply with minimum frontage occupancy standards (see Section 4.2).

B. Entries

The *forecourt* shall enter from the adjacent sidewalk. Building entries opening onto the *forecourt* shall be at the finished floor of the *forecourt* or may be raised up to three feet above the *forecourt*.

C. Dimensions

1. *Forecourts* shall be set at grade or may be elevated up to 18 inches above the adjacent sidewalk.
2. Depth of the *forecourt* shall be between 10 and 40 feet.
3. Width of the *forecourt* shall be between 20 to 40 feet.

D. Paving and Landscaping

Forecourts may be planted with grass, shrubs, or other ground cover or be paved. All walks shall be paved.

E. Furnishing Zone

Outdoor furniture is permitted in *forecourts*. High quality, durable fixed benches and planter pots are encouraged. Water features are permitted.

F. Additional Standards and Guidelines

1. *Forecourts* should be open to the sky. Porches are not permitted.
2. *Forecourts* may be gated.

4.4.7 Urban Frontage



Urban Frontage Illustrative Section

An *urban frontage* type for residential or commercial ground-floor uses.



Urban Frontage Illustrative Photo

A. Intent Statement

An *urban frontage* is suitable for residential lobbies or commercial/office uses. It provides access to ground-floor uses, but is primarily characterized by windows facing the sidewalk.

Unlike storefronts, there is no minimum ground floor height.

B. Entries

Urban frontages shall enter from the sidewalk. Entries should be articulated by canopies or awnings.

C. Dimensions

Urban frontages shall be set at grade or may be elevated up to 12 inches above the adjacent sidewalk.

D. Paving and Landscaping

Urban frontages are characterized by hardscape and may include landscaping where permitted by the street standards (see Chapter 3).

4.5 ADDITIONAL BUILDING DESIGN STANDARDS AND GUIDELINES

The additional standards and guidelines of this section apply to all development in the Plan area. They address the composition of buildings as well as functional aspects of building, parking, and outdoor space design. The goal of this section is to ensure that development within the new downtown is consistent with the goal of human-scale mixed-use environment in which each individual building furthers the overall Plan vision.

4.5.1 Building Massing, Scale, and Architecture

The specific criteria included throughout these design standards and guidelines have been included to achieve a design that is consistent with the general massing, scale and architectural criteria articulated in this section 4.5.1, such that a building that is consistent with the specific criteria and standards will also be consistent with the overall massing, scale and architectural vision.

A. Standards

1. Massing and Scale Variation. The massing, scale, and architectural style of proposed buildings in the Plan area shall be varied to create a unique, attractive project and avoid a uniform and monotonous urban form. Employ techniques to break the building mass through interlocking volumes of differing heights and widths to avoid monolithic building. Incorporate a diversity of building scales and massing, such that the resulting design appears as a

- neighborhood that has grown over time.
2. Minor Facade Plane Breaks. Facade plane breaks create a visual rhythm along the street through offsets, recesses, stepped facades, varying materials or colors, and architectural features such as balconies, awnings, *projections* or similar elements. The facade plane shall be broken by a minor break at least every 45 feet.
 3. Blank Walls. Blank walls (defined as having no active use, glazing or doorway) shall be limited to 20% or 40 feet of the Building Facade, whichever is greater.
 4. Corner buildings shall have architectural treatments such as increased height and building mass or entry designs such as angled or curvilinear form to help “anchor” corner buildings and further define the street.
- B. Guidelines
1. Variety. Buildings should be composed of a variety of forms and contrasting shapes and should employ attractive and complementary building materials and architectural features.
 2. Scale. In general, the overall scale, massing, roof form, materials, and architectural style of new structures shall provide a variety of forms, depth and texture, and encourage a cohesive neighborhood character by building new structures at a scale that is appropriate to the human-scaled environment of the new downtown.
 3. Wall planes. Building massing should include a variation in wall planes and height as well as roof forms to reduce the perceived scale of the building.



Building Massing (4.5.1)

Large windows break the rhythm of balconies and accentuates the building corner.



Varied Building Massing (4.5.1)

Bays, recesses, roof variations visually break the building mass.



Facade Plane Breaks (4.5.1)

A series of vertical breaks in the facade plane enriches a long building facade.

2. Maximum Facade Length. Building facades longer than 175 feet, measured along the property line, shall vary the facade such that the resulting facade segments appear to be individual building facades. Facade segments shall be separated by continuous vertical datum lines on either side of which the facade appearance differs. Facade segments can be differentiated by variations in fenestration size and rhythm, facade material, texture, color, pattern, or a combination thereof. Facade segments should generally correspond to interior uses and relate to ground-floor entries.

B. Guidelines

1. Human Scale. Human scale proportions and architectural building details that emphasize and reflect the presence and importance of people are encouraged.
2. Building Design. The design of all buildings should be of a high quality and character appropriate to development in the new downtown.
3. Façade Massing. Massing offsets, fenestration, varied textures, openings, recesses, and design accents are strongly encouraged to ensure there are no unarticulated walls and monolithic roof forms.
4. Architectural elements such as stepbacks, overhangs, balconies, verandas, and porches that add architectural character are encouraged.
5. Shade and Shadow. Employing shade and shadow by reveals, surface changes, overhangs and/or sunshades to provide visual interest on facades exposed to the sun is encouraged.

6. One-Story Elements. One-story architectural elements and massing should be incorporated into two and three-story building designs to the greatest extent possible.

4.5.3 Entrances

A. Standards

1. Primary Entrance. The primary entrance to buildings shall be oriented to the street front, rather than to the parking lot or garage, alley, or interior of lot.
2. Frequency at Retail Core. At buildings fronting Westminster Boulevard and Gray Street between 89th and 90th Avenues, entrances shall occur at a maximum interval of 45 feet.

B. Guidelines

1. Secondary Entrances. Side or rear building entrances should always be accompanied by a front, street-facing entrance.
2. Entrance Articulation. Special paving, lighting, and landscaping should be included at primary entrances to clearly identify the entrance and to enhance the overall building design.

4.5.4 Passageways

A. Standards

1. Width. Pedestrian passageways shall be no less than 15 feet wide.
2. Height where Covered. If pedestrian passageways are covered, they require a floor to ceiling height of at least two times their width, but no greater than three times their width.

3. Design. Passageways shall be lighted and designed to be safe and inviting.

B. Guidelines

1. Pedestrian Access. Pedestrian passageways should be introduced to increase access within and across blocks.
2. Location. Pedestrian passageways may be open or roofed, and may go between or through buildings, to courtyards, parking areas, or civic spaces.



Human-Scale Architecture (4.5.2)

Variation in form and color create an enlivened block frontage.



Entrances (4.5.3)

A canopy, lighting, and a slight recess accentuate the primary entrance.



Windows (4.5.5)

Windows are recessed from the exterior wall surface.

3. Exterior Shutters. If exterior shutters are used, they should be sized and mounted appropriately to fit the window (with appropriate hardware even if actually non-operable).
4. Ribbon Windows. Continuous horizontal bands of windows with little or no articulation between adjacent window units, or ribbon windows, are strongly discouraged.

4.5.6 Ventilation

A. Standards

1. Orientation. Windows, vents, and courtyards shall be placed and oriented to enhance cross-ventilation and cooling.

B. Guidelines

1. Air Quality. Air ventilation from outdoors is encouraged to improve indoor air quality for occupant comfort and wellbeing.

4.5.7 Private Outdoor Space

A. Guidelines

1. Design. Design common open spaces with attractive landscaping, materials and amenities that provide a variety of opportunities for interaction, gathering and unstructured or informal play and use
2. Location. Ensure that private outdoor spaces are provided as an integral element of the development. Outdoor space amenities should not be placed in "leftover" spaces.
3. Community Rooms. Where community rooms are planned, locate them adjacent to outdoor spaces.

4. Landscaping. Utilize plantings that are in scale with the space; e.g. smaller ornamental trees and perennials are more appropriate for a courtyard space. Select plants that tolerate extreme hot and cold temperatures and require minimal irrigation.
5. Irrigation. Use automatic irrigation with the understanding that winter hand-watering will be required. Quick couplers and hose bibs should be provided.

6. Amenities. Incorporate site furnishing such as benches, trash receptacles, bike racks, and lighting. Where canopy trees are not feasible, provide other forms of shade, such as pergolas, trellises, sun shades or arbors. At designated dog areas or lawn areas, dog stations must be provided.
7. Lighting. Provide lower-height pedestrian lighting consistent with Section 4.5.9
8. Maintenance. Ensure that design of the outdoor space factors in maintenance of planters, watering and snow removal and storage.

9. Drainage. Direct drainage from private outdoor spaces via underground systems or an alternative system that is integrated with the overall storm drainage system of the development and consistent with the Drainage Plan in the Appendix of this Plan.

4.5.8 Interior Courtyards

Required outdoor space may be accommodated in interior courtyards located on the ground plane or on a podium, as allowed by the relevant building type (see Section 4.3).

A. Standards

1. When provided, interior courtyards shall adhere to the following standards:
2. Design. Interior courtyards shall include ample seating and planting areas. Low walls and steps may be used as alternative forms of seating.
3. Shade Trees. Interior courtyard landscaping shall include shade trees or shading devices. At least one 3 inch specimen tree is required per 1,000 SF of courtyard area.
4. Lighting. Lighting shall be provided that illuminates the courtyard, but does not negatively impact surrounding buildings, consistent with Section 4.5.9.

5. Dimensions. Minimum courtyard dimension shall be 30 feet on one side (exclusive of *encroachments*) unless indicated otherwise in the building types. If the courtyard is surrounded by 3 or more building frontages, the minimum dimension on one side shall be 40 feet.

B. Guidelines

1. Blank Walls. Blank walls should be avoided inside the perimeter of the courtyard.



Interior Courtyard (4.5.8)

Landscape and hardscape create intimate spaces in this courtyard.



Encroaching Habitable Space (4.5.9)

Illustrative image of encroaching bays and stoops.



Projecting Canopies (4.5.9)

Canopies create a rhythm along the streetfront and accentuate the building entrances.

A. Awning and Canopy Encroachment and Projection Standards

1. The following standards apply to awnings and canopies that encroach into front setbacks or public rights-of-way:
2. Projection. May project up to the property line or 33 percent of the distance between the building face and the curb, whichever is less.
3. Support. Awnings and canopies shall be attached to the building. Support structures that connect to the ground are not permitted.
4. Clearance. Minimum vertical clearance for awnings and canopies is eight feet if it is removable or retractable and 12 feet if is fixed or permanent. Awnings shall not obscure storefront signs.
5. Materials. Canvas and high-quality fabric shall be used; vinyl or similar materials are not permitted.

B. Habitable Projecting or Encroaching Space Standards

1. Allowable Projection. *Habitable projecting* or *encroaching spaces* are a portion of the building enclosed by walls and a roof that extends beyond the building face (i.e. bay windows and other architectural *projections*). They may project up to three feet from the building face, but shall not extend beyond the property line.
2. Length Along Building Face. No individual habitable projecting or encroaching space may exceed 15 feet in horizontal length.
3. Clearance. Minimum vertical clearance of projecting spaces is 21 feet from the adjacent sidewalk grade on storefront or *storefront café* frontages and nine feet on

other frontage types (see Section 4.3 for frontage types).

4. Encroaching habitable spaces are not permitted along Westminster Boulevard, Gray Street, Eaton Street, and Central Parkway.

C. Non-Habitable Projecting or Encroaching Space Standards

1. Balconies. *Non-habitable projecting* or *encroaching spaces* are spaces used by occupants that are not enclosed by walls and a roof, such as balconies. They shall not extend more than six feet from the building face, or beyond the property line.
2. Clearance. All *projections* shall have a minimum vertical clearance of nine feet from the adjacent sidewalk.
3. Balconies facing Westminster Boulevard, Gray Street, Eaton Street, and Central Parkway shall not project more than four feet from the *building face*.

D. Projecting Habitable and Non-Habitable Space Standards

1. Total Horizontal Length of Projecting Spaces. The total combined length of habitable and non-*habitable projecting spaces* along the building face shall not exceed 67 percent of the total length of the building face to which they are attached.
2. Total Horizontal Length of Encroaching Spaces. The total combined length of habitable and non-*habitable encroaching spaces* along the building face shall not exceed 50 percent of the total length of the building face to which they are attached.

E. Stoops

1. *Encroachment. Stoops* may encroach up to eight feet from a building face, but shall not extend beyond the property line.

F. Outdoor Furnishing Zones

1. General. Outdoor furnishings such as seating or merchandise displays shall comply with Chapter 3: Circulation & Streetscape Design.

G. Subterranean Parking in Front Setbacks

1. Location in Setbacks & Alleys. Subterranean parking may extend into the front setback, up to the property line (See Figure 4-14). Subterranean parking may also be located under alleys that are located within a development block if utilities servicing the block are not interrupted.

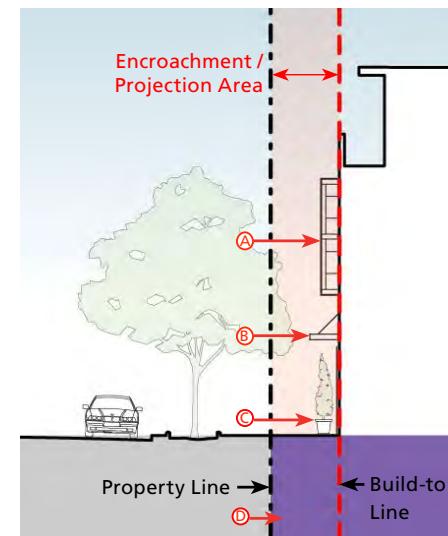


Figure 4-14: Encroachment and Projections Diagram

A. Projecting habitable space

B. Projecting canopy

C. Encroaching street furniture

D. Subterranean parking (purple area)

*The encroachment/projection area will depend on whether there is optimal minimum clearance between the structure and dry utilities in the sidewalk.



Projecting Balconies (4.5.11)

Projecting balconies used sparingly accent, but do not dominate.



Recessed Balconies (4.5.11)

Balconies are set back from the primary building face.



Wood Fence (4.5.12)

Fences and walls may delineate property lines between adjoining private properties.



Hedge Screening Service Area (4.5.12)

A hedge and other plantings effectively screens a service area from view.

4.5.10 Awnings and Shade Devices

The following standards and guidelines apply to awnings and shade devices that are not located at front setbacks or build-to lines.

A. Standards

1. Clearance. Awnings and shade devices shall maintain a minimum clearance of eight feet above the adjacent floor level.
2. Materials. Materials for awnings and shade devices shall be durable.

B. Guidelines

1. Placement. Limit placement to over windows and doors, not walls in between.
2. Place awnings and other shading devices so as not to interfere with pedestrian signage for shops and businesses. Design awning heights on a building to be consistent along the facade or frontage line so as to maintain a consistent street edge.

3. Aim to provide continuous awnings or shade devices at southern and western exposures above storefronts and storefront cafés.
4. Mountings. Use mountings that respect and enhance moldings that may be found above storefronts or sign panels.
5. Materials & Colors. Use materials that complement other materials on the building. Use colors that complement building colors and design.

4.5.11 Balconies

A. Standards

1. Design. All balconies shall be accessible from inside the building and shall not be completely enclosed.
2. Minimum Depth. Balconies shall be no less than six feet in depth.
3. Decorative Railings. Decorative railings attached to the building facade that do not create occupiable balconies are permitted.

B. Guidelines

1. Location. Balconies are encouraged on projects facing major public spaces such as parks, playgrounds, and plazas. Balconies are permitted on internal courtyard spaces.
 2. Recessed Balconies. Recessed balconies are acceptable.
- ### 4.5.12 Walls, Hedges, and Fences
- Garden walls, retaining walls, hedges and fences may be used to define the edge between adjoining private properties. Walls, hedges, and fences facing the public street shall also comply with the frontage type standards (see Section 4.4).
- #### A. Standards
1. Height. No fence, wall, or hedge shall exceed six feet in height. The top of a fence shall remain level in stepped conditions.

B. Guidelines

1. Design. In general, fences, walls, and hedges should complement the architecture of the building that they enclose and be compatible with the land use intensity. For example, residential uses should incorporate a softer texture of enclosure such as wood fences and landscaped hedges, whereas commercial buildings may use masonry or concrete walls.
2. Walls and fences should be architecturally enhanced and complemented by adjoining landscaping. Tiered planting should be provided adjacent to perimeter walls to soften their appearance from surrounding areas.

4.5.13 Architectural and On-Site Lighting

Architectural lighting should encourage a pedestrian-friendly environment and enhance both community safety and business exposure. The following standards and guidelines apply to private development.

A. Standards

1. Building Lighting. Lighting on buildings shall be oriented to pedestrians in terms of scale, design, and location.
2. Building lighting may include low-level exterior lights adjacent to buildings and along pathways for security and wayfinding purposes and low-level accent lighting to highlight architectural features and landscape elements.
3. Light Trespass. Lighting shall be arranged to focus on the property from which it originates or on adjoining sidewalks and

alleys. Outside of the Special Sign District (see Figure 4-15) lighting shall not trespass upon adjacent properties. All exterior lighting shall utilize full cut-off fixtures to limit light trespass onto off-site uses or light pollution into the night sky. The City may approve other special-purpose fixtures (e.g. building uplighting) on a case by case basis.

4. Tube Lighting & Projected Light Displays. Any exposed tube lighting, such as neon, or projected light display on the exterior of a building, or any such lighting element or display which is visible from a public street or alley shall be subject to City review.
5. Alley Lighting. Alleys shall have lights mounted on outbuildings or garages.

B. Guidelines

1. Design. Light quality should not be harsh, glaring, blinking, or shed beyond property boundaries.
2. Integrate lighting into the design of the site and buildings. The design, color and finish of light standards and fixtures should complement the architecture, color and materials on site.
3. Ensure that all building lighting fixtures, whether exposed or concealed, do not have exposed conduit runs, junction boxes or other unfinished elements.
4. Entries and Parking. Increase lighting at entries to buildings and parking areas and structures to improve wayfinding and security.
5. Lighting Levels. Avoid creation of bright spots or uneven lighting along the sidewalk edge. Ensure building lighting, both internal and external including

lighting of architectural features, supports a pleasant, evenly distributed nighttime ambience.

6. Energy Efficiency. Lights should use LED and other technologies to maximize energy efficiency. Use an appropriate level of light intensity for security and visibility to reduce unnecessary lighting of the night sky and residential dwellings. House-side shields and automatic controllers could be utilized to further reduce unnecessary lighting and energy consumption.

7. Outdoor Spaces and Plazas. In outdoor spaces and plazas, illuminate primary walking paths and focal points such as trellises, water features or art installations to enhance evening use and safety. Low-level illumination sources are encouraged, including bollard, step and pathway fixtures.



Architectural Lighting (4.5.13)

Architectural lighting is restricted to the lower floors and light sources generally pointed downward.



Shielded Lighting (4.5.13)

This light at the exterior of a building is shielded to limit spill-over lighting.

4.5.14 Building Materials and Color

A. Standards

1. Building Materials. Building materials shall be high-quality and durable.

B. Guidelines

1. Materials. Use high quality craftsmanship and materials at the ground level, with ample use of texture, articulation and use of natural materials like brick, wood, and stone. Natural materials and tones are encouraged; metals should primarily be used as accents or roofing.
2. Colors. Light, natural tones are encouraged for expansive wall surfaces. Strong, bright colors should be used as accent colors.
3. Branding. Building colors that turn a building into an extension of a brand are strongly discouraged.

4.5.15 Sustainability

Passive sustainability practices are woven into this Plan through the standards and guidelines. In addition, new development is encouraged to be certified under Leadership in Energy and Environmental Design (LEED), Energy Star, or other recognized sustainability rating programs. The goal is to assure that all new development considers sustainable building practices and strives to minimally impact the natural environment.

A. Standards

1. All new development shall be designed with a commitment to sustainability at both the site and the building level.

areas within buildings, wherever possible. Landscaping should be provided adjacent to the enclosure to screen them and deter graffiti.

2. Trash enclosures and retail loading areas should be sited to minimize nuisance to adjacent properties.
3. The location of trash enclosures should be easily accessible for trash collection and should not impede general site circulation patterns during loading operations.
4. Mechanical equipment should vent to an alley wherever possible.
5. Roof-vent penetrations and mechanical equipment should be located at least ten feet from any exterior building face.
6. Gutters and downspouts should be made of galvanized steel, copper (not copper coated), or aluminum.

4.5.16 Service and Utilities

A. Standards

1. Location. Service, utility, and mechanical functions, including retail loading, shall be located in alleys whenever present. When alleys are not present, service functions shall be placed behind buildings and provisions for access shall be made.
2. Screening. Service, utility, and mechanical equipment that is visible from the street shall be screened from view with landscaping or enclosures. Backflow preventers and fire standpipes, along with utility box transformers shall be screened.
3. Screening Design. All screening devices shall be compatible with the architecture, materials and colors of adjacent buildings.
4. Trash Enclosures. Walls Required. Trash areas that are visible from public streets or other properties shall be enclosed by masonry walls. Entrances shall be enclosed by an opaque metal door.
5. Trash Enclosure Dimensions. Trash enclosure walls shall be six feet high.

B. Guidelines

1. Trash and storage enclosures should be architecturally compatible with the project design and incorporated into service

4.6 PARKING AND LOADING DESIGN STANDARDS

The following parking and loading design standards shall apply to all parking provided in the Plan area.

Parking areas and landscaping, driveways, service access and facilities shall not qualify as outdoor space.

4.6.1 Parking Location

1. Parking shall be located in parking garages or structures. Surface parking lots are not permitted except as temporary parking lots (see Section 4.6.5 below).
2. At blockfronts facing public streets, at-grade or above-ground parking shall be screened by a habitable space no less than 20 feet deep, except when utilizing the exposed garage building type (see Section 4.3.6). Subterranean parking may extend to the property line (see Section 4.5.8 G.).

4.6.2 Parking Access

1. Parking shall be accessed from a public or private alley when present. If no alley is present and parking access must be from the street, driveways shall not be located within 60 feet of an intersection, measured the distance perpendicular from the property line closest to the intersection. Driveways shall not be located at the terminus of a street.
2. In no case shall the total number of access driveways on a blockfront exceed the number specified in the service and access

- point standards for the applicable block development standards (see Section 4.2).
3. Pedestrian entrances to all parking shall be directly from the street, except that underground parking garages may be entered directly from a building.

4.6.3 Parking Dimensions

1. Parking design shall conform to City of Westminster's off-street parking construction and maintenance standards, handicapped parking space standards, and bicycle parking standards (see W.M.C. 11-7-4 (C)-(E)). Notwithstanding the W.M.C. parking standards, off-street parking spaces shall not be less than nine feet wide and 18 feet long.
2. Tandem parking spaces are permitted in attended parking facilities for commercial and retail and are permitted in unattended residential parking facilities.
3. Hydraulic lifts are permitted in attended parking facilities and key operated unattended lifts are permitted in unattended residential parking facilities.
4. Robotic parking is permitted subject to City approval.
5. Parking garages that primarily serve residential buildings may have multiple entries to take advantage of multiple site grades. The different garage levels need not be internally connected.

4.6.4 Parking Design

1. Bike parking, car-share parking, and other alternative ride vehicles shall be given priority placement within parking structures.
2. On-street loading spaces will only be provided if off-street loading is not available. A vehicle may occupy a loading space for a maximum of 30 minutes whilst actively engaging in picking up or delivering goods.

4.6.5 Temporary Parking Lots

1. Temporary parking lots are defined as parking lots that are in place for less than 24 months. Temporary parking lots shall be exempt from parking location and parking design and landscaping standards.
2. Temporary parking lots fronting Westminster Boulevard, Gray Street, Eaton Street, or Central Parkway shall provide a 20-foot deep landscape buffer at blockfronts facing any of these streets.
3. Temporary parking lots shall be paved.
4. Temporary parking lots need not comply with block development standards including minimum building frontage occupancy.

4.6.8 Parking Required

1. The minimum number of vehicle parking spaces required shall be determined by the following table:

| Table 4.6.1: Required Parking | Minimum Number of Parking Stalls Required |
|---|--|
| Office, commercial, business, and similar uses. | Three parking stalls per 1,000 SF |
| Residential | 1.5 per dwelling unit |

2. Reductions to required parking may be applicable for affordable and age-restricted residential uses, as per the W.M.C.

4.6.6 Driveways

1. The maximum width for a one-way driveway is 12 feet and for a two-way driveway is 22 feet.

4.6.7 Loading Areas

1. Service and loading areas shall be located away from public streets whenever possible. Entrances to loading areas shall be no more than 18 feet wide. Entrances

fronting public streets shall be enclosed by an opaque gate covering the entire entrance. Such gates shall be of high-quality and durable materials that complement the architecture of the building. Loading areas must accommodate both trash and recycling.

4.7 SIGN STANDARDS AND GUIDELINES

4.7.1 Intent Statement

Chapter 11: Sign Regulations of the Westminster Municipal Code regulates signs within the City of Westminster. The standards of this Section provide supplemental regulations and special allowances to ensure the successful design of signs in a pedestrian-oriented downtown environment.

The standards intent is to enhance the pedestrian experience in the new downtown, prevent visual clutter, and promote successful sign design that contributes to new downtown's economic health.

4.7.2 Relationship to the Westminster Municipal Code

All signs shall comply with the W.M.C. Title XI, Chapter 11: Sign Regulations except for signs permitted within the boundaries of the special sign districts as described below.

4.7.3 Special Sign District

This Plan recognizes that the urban environment envisioned for new downtown is unique with the context of Westminster. In order to accommodate signs that are not appropriate for Westminster as a whole, but may be appropriate for portions of the new downtown this Plan provides provisions for a special sign district.

The special sign district allows specific signage otherwise prohibited in the W.M.C. Title

XI, Chapter 11 and prohibits signs otherwise allowed. These special allowances, restrictions and supplemental regulations are defined below.

All provisions of the W.M.C. Title XI, Chapter 11 not specifically mentioned or differentiated in this section shall remain in effect.

A. Additional Permitted Signs in the Special Sign District

Within the boundaries of the special sign district the following signs shall be permitted:

- Projecting blade signs projecting no more than four feet from the building face.
- Awning signs printed on or mounted to building awnings. Awning signage shall be counted towards the total allowable signage area.
- Portable signs no more than 48 inches in height. These signs shall be not handheld, have no permanent attachments and not be located in planter beds.
- Exposed neon wall signs. Neon signs must comply with the wall sign regulations detailed in Section 4.7.4.
- Pedestrian scale electronic signs for public purposes only. The maximum size of an electronic sign shall not exceed two feet by four feet. The intensity of illumination shall not exceed on-street pedestrian light levels.
- String lights used for public or commercial purposes.
- Back-lit awnings with low levels of illumination.

B. Prohibited Signs & Compliance

- Monument signs are not permitted within the Plan area boundary.
- Signs designed to be primarily viewed from the highway are prohibited (excluding wall signs).

Directional/informational sign controls will be developed as part of the Wayfinding Master Plan and are not subject to the restrictions detailed in W.M.C. 11-11-11-7(C).

4.7.4 Supplemental Regulations

The following additional regulations and allowances apply to signs within the Special Sign District.

A. Wall Signs

1. All signs must be comprised of individual channel letters with the exception of cabinet-style logos which are not to exceed nine square feet. Combinations of individual letters, cabinet logos, and taglines are permitted. The tagline must be secondary to the main sign. The height of the tagline may not exceed one quarter of the height of the individual letter sign.
2. Limitation in Number. One sign per street frontage not to exceed two frontages
3. Maximum Area. The greater of 30 square feet or two square feet of sign area for each lineal foot of building or tenant frontage, not to exceed 300 square feet in area. This criteria shall not apply to signs for individual tenants in buildings that are primarily multi-tenant office buildings.

4. Restrictions, Additions, Clarifications and Exceptions. Pendant fixtures may be used for direct illumination of signs. The following restrictions, additions, clarifications and exceptions as listed in the W.M.C. Title XI, Chapter 11 do not apply: 11-11-7(B)(7) g,h,i,k,l

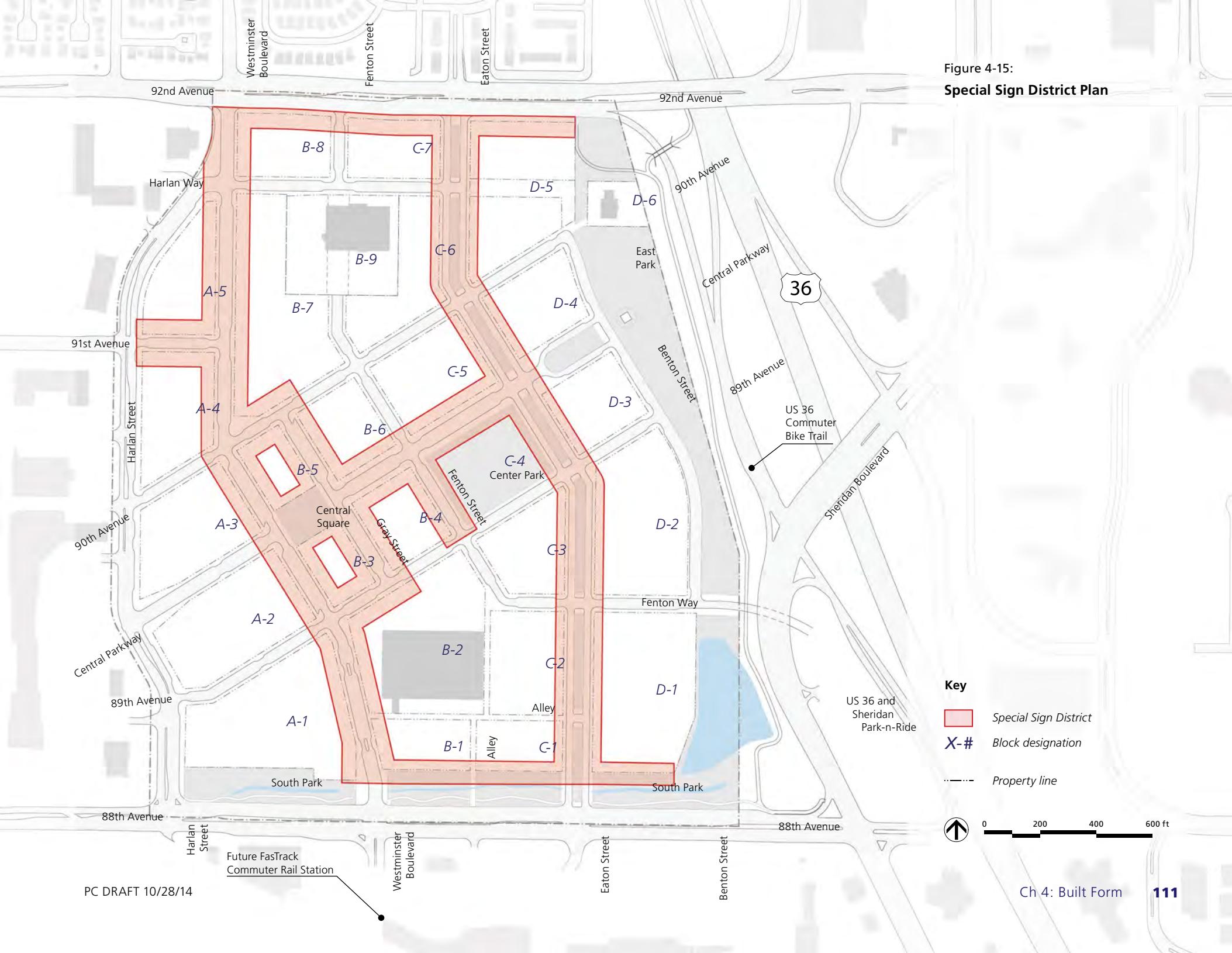
B. Second-Floor Tenants

1. Limitation in Number. One projecting blade sign is permitted for each second-floor tenant.
2. Restrictions, Additions, Clarifications and Exceptions. Blade signs located on the second-floor must project off the building at a 90-degree angle.

C. Residential Signage.

1. Limitation in Number. One non-illuminated identification sign located above the building entrance is permitted for residential complexes.
2. Maximum Area. Identification signs may not exceed 40 square feet in area.
3. Restrictions, Additions, Clarifications and Exceptions. The sign may not project above the roof line of the building to which the sign is attached.

Figure 4-15:
Special Sign District Plan



4.7.5 Sign Guidelines

The following guidelines supplement the provisions of W.M.C. Chapter 11 and the Downtown Specific Plan Sign District, and relate specifically to the downtown area.

A. General

1. Signs should be of a character and scale that relates to the pedestrian.
2. Signs should be conceived as an integral part of the design so as not to appear as an afterthought application.
3. The location, size, and appearance of building identification signs should complement the building and overall character of the district.
4. Signs should be located and designed for maximum visibility and legibility.
5. Signs shall generally face the centerline of the street or the direction of pedestrian traffic.
6. Signs should exhibit quality and contribute to the character of the Specific Plan Area.
7. Illuminated Signs should limit glare upon adjacent properties, sensitive uses, and roadways.

B. Color and Material

1. Select colors that enhance sign legibility taking into consideration the color of the building wall or awning to which the sign is to be attached. Dark letters on light colored background and light colored letters on dark backgrounds work best.
2. Select sign colors that complement the colors of the building and related accoutrements. Sign colors and finishes should be compatible with the development as a whole.

C. Guidelines for Ground-Floor Tenants

1. Place signs in locations that complement the building's architectural design. The rhythm of storefronts and openings should be considered.
2. Reserve primary signing opportunities on a building, awning, and canopy for the identification of the business name, logo, or both.
3. Reserve secondary signing opportunities on a building and shop windows for identification of business products and services offered on the premise, when such identification is desired; make such service and product identification a smaller font than the primary business identification signing.
4. Add hours of operation and other operational information important to shoppers on entry door or near entry door, scaled for viewing by pedestrians, not motorists.

D. Illumination

1. Reduce the level of brightness of sign lighting on developments that include a residential component by limiting externally illumination to shielded or full-cutoff fixtures such as goose-neck fixtures and recessed under canopy lighting.
2. Place exterior sign lighting above the sign and in a manner that it does not obscure the text and graphics. Use only as many fixtures as are needed to adequately light the sign.
3. Direct exterior lights onto signs so as not to create off-site glare or hot spots.
4. Indirectly illuminated signs, which do not produce light from within, but are illuminated by spotlights, are preferred.

Self-illuminated signs that emit light from within themselves are discouraged.

5. No sign shall be permitted which, by virtue of the intensity, direction, or color of its lighting or illumination, interferes with or causes confusion to traffic in public streets.

E. Materials and Workmanship

1. Signs should convey professionalism and high-quality workmanship, and should be crafted by a professional.
2. Select high-quality, durable, and low maintenance materials such as aluminum, brass, copper, stainless steel, and finished wood. If wood is used, it should be properly sealed to keep moisture from soaking into the wood and causing the sign's lettering to deteriorate.
3. Use materials that complement the design of the building, the type of business being promoted and the building material on which they are placed.
4. Select materials, colors, graphic style, and lighting fixtures that contribute to sign legibility.

4.7.6 Illustrative Sign Images

The following images illustrate the sign guidelines of section 4.7.5



Shingle Sign

A shingle sign of high-quality materials is designed to complement the building design.



Building Sign

A building sign located near the top of a building.



Suspended Sign

A suspended sign in an entry alcove.



Window Graphics

Window graphics identify products and services without obscuring the window.



Wall Sign

A wall sign utilizes neon tubes. The tubes are shielded to contain light spill-over.



Awning Sign

A high-quality durable screen print on a storefront awning.



Wall Sign

A wall sign with individual channel letters.

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**GREEN SPACE &
PUBLIC ART**

5 |

5.1 OVERALL DESIGN INTENT

The Downtown Specific Plan recognizes that access to public green space significantly contributes to the quality of life in a city. This is particularly the case in urban development where individual access to private green space may be limited.

This plan sets aside 18.2 acres for public green space – that is approximately 17 percent of the overall Plan area. This is in addition to the public rights-of-way that are treated as an integral part of the public space network (see Chapter 3).

It is this Plan's goal to provide public green spaces that vary in size, character, and the activities they facilitate, and that are easily and conveniently accessible from all parts of the new downtown.

Policy Objectives

1. Provide a network of public spaces and parks that serves the needs of residents, workers and visitors to the downtown area.
2. Ensure that public spaces foster and encourage civic and social gatherings and a sense of ownership for all Westminster residents.
3. Employ the "Power of 10" principle in each public space, where each destination provides ten things to do – activities and smaller-scale experiences that establish the space as a must-visit, beloved destination.
4. Cluster activities together to create a busy, dynamic place for many different types of people at different times of the day.

5. Foster connectivity and interaction between surrounding uses and public spaces, allowing activities to spill onto plazas from adjacent uses.
6. Incorporate flexibility into the design of public spaces in order to maximize opportunities and uses, particularly in relation to seasonal changes.
7. Incorporate the themes of health and fitness, food and gardening, tech-oriented amenities and activities, dynamic, interactive art, community celebrations and gatherings and spontaneity.
8. Incorporate public art as an integral part of the public realm expedience throughout the downtown.

5.2 PUBLIC GREEN SPACES

While the final design and programming of the downtown's public green spaces will occur in future planning phases, this Plan provides basic conceptual cornerstones for the envisioned spaces. These cornerstones focus primarily on each space's spatial relationship with the Plan as a whole, basic features, edges, transitions, and connections between other public and green spaces as well as integration of proposed bike and pedestrian trails. Additional detail about park and public space programming is addressed in the Project for Public Spaces Report in the Appendix.

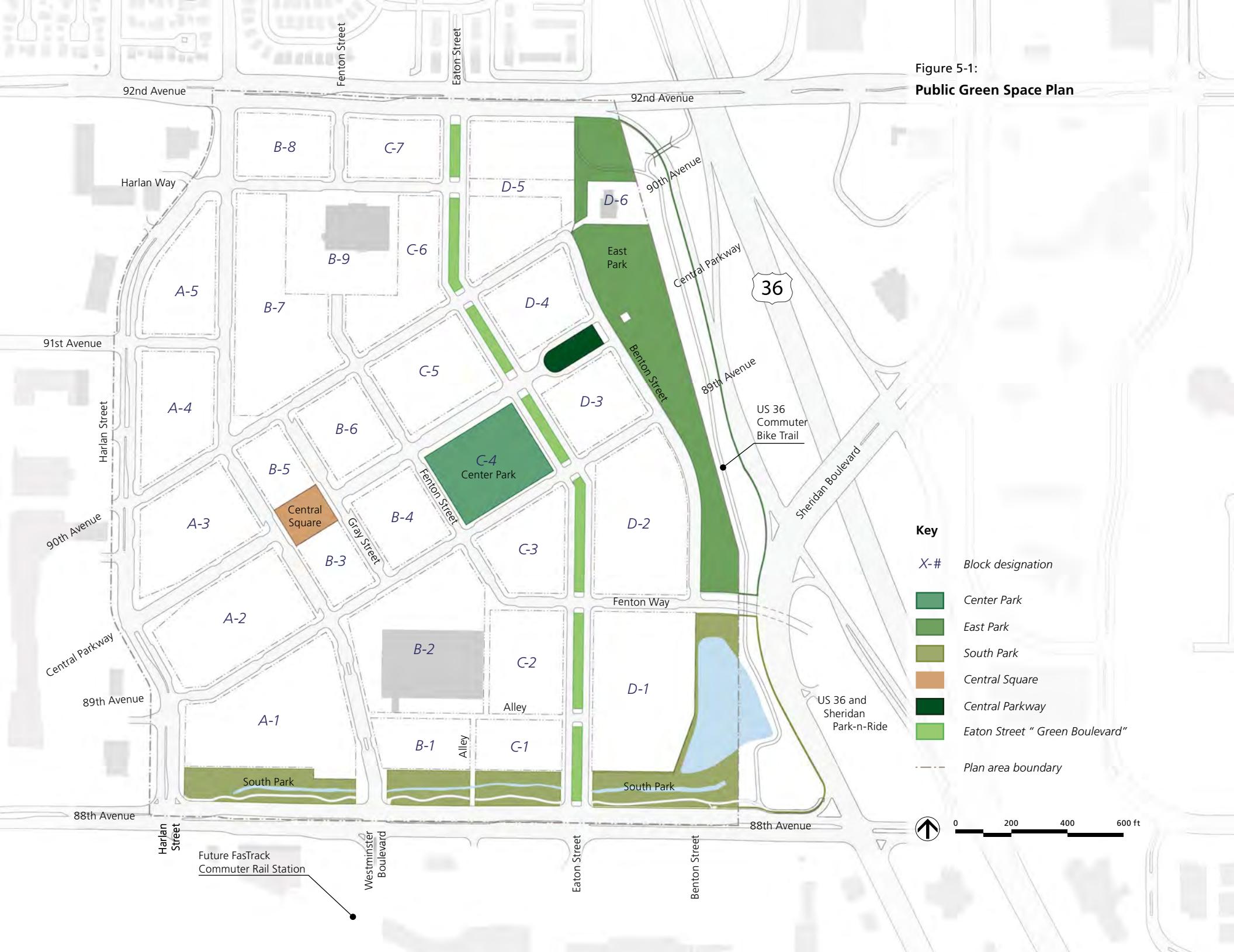
The green space network shown in Figure 5-1 includes two urban squares or plazas and a linear median park on Eaton Street. Additionally, two linear parks shape the edges of the Plan area, and a well-sized neighborhood park, Center Park, sits near the center of the Plan area.



Eaton Street Green Boulevard

Artist's rendering of the green boulevard, a linear green space spanning from 88th Avenue to 92nd Avenue.

Figure 5-1:
Public Green Space Plan



5.2.1 Center Park

A. Intent Statement

Center Park is located at the heart of the Plan area. Given its location, this park provides the opportunity to create a shared destination between various uses and developments all around the park edges. At 2.4 acres (2.9 acres including the park-adjoining sidewalks) Center Park is the largest contiguous park within the Plan area and provides space for a broad range of activities.

Along its northwestern edge, Central Parkway passes by Center Park. At the northwestern edge the Eaton Street “green boulevard” passes by. Crosswalks should connect these parks at intersections and mid-block. Additionally opportunities to design these median parks as potential programmatic and design extensions of Center Park should be explored.

B. Green Space Opportunities

Given its size and location, Center Park should become the major community gathering place in downtown. Potential uses in Center Park should include a variety of formal and informal elements to accommodate a variety of activities and attract a wide variety of users. Potential program elements are identified in Figure 5-2.

While four streets shape the park’s edges, the special experience of the green space should be thought of as spanning to the faces of the buildings on the far sides of the streets. Lining these park edges with a mix of active uses and frontages will help to define both its edge and its function as a place for the general public and not just a residential park.

A café, a book kiosk, bike rental, or similar uses can help activate the park and comple-

ment green space programming. A limited amount of commercial uses may be permitted with City approval.

C. Green Space Edges

Center Park is bounded by streets on all sides.

1. Eaton Street. A green street with narrow roadways provides for easy crossings to the median park with opportunities for synergies between the two green spaces.
2. Central Parkway. This street connects to East Park and Central Square. High volumes of pedestrians and bicyclists are anticipated here. Visibility, common materials, and accentuated pedestrian crossings into Center Park would visually and physically connect the two spaces.
3. Fenton Street and 89th Avenue. Two local streets make up the remaining park edges. A mix of commercial and residential uses will frame the park space to the southwest and southeast.



Community Connections

Paths link through the park space.



Park Edge

A fluid park edge draws the sidewalk into the green space.



Destination for Families

Center Park is a destination for residents and visitors alike.



Informal Lawn Spaces

Lawn spaces allow for informal activities

Figure 5-2:
Center Park Conceptual Diagram



This Plan is for Illustrative Purposes Only
Actual Park Design May Vary



5.2.2 East Park

A. Intent Statement

East Park lies between Benton Street and US 36. While the park proper reaches the Plan area's eastern boundary, there is the opportunity to extend the green space into CDOT's right-of-way up to the commuter bike trail. The US 36 bike trail connects Boulder with Denver. It will run the length of East Park beginning at the 92nd Avenue bridge underpass and across Fenton Street where it will continue southward.

Generally linear in shape, East Park lends itself to walking, running, and biking. Wider portions of the park could accommodate additional programming as well as plantings and changes in topography. However, the presence of existing underground utilities may limit landscape design in some areas.

To the north, the park terminates at 92nd Avenue, the Plan area's high point. A gradual landscaped transition to this high point provides interesting topography and a vista point overlooking the downtown with the Front Range forming the backdrop.

B. Green Space Opportunities

Programming for this park is constrained by grade transitions, existing underground utilities beneath the park that will remain, and a freeway edge. The primary opportunity for this park space is to capitalize on the site's topography and create a functional park for a variety of activities that also serve as a physical and visual buffer between the freeway and new development. Potential program elements are identified in Figure 5-3.

C. Green Space Edges

1. Benton Street. The Benton Street design in conjunction with the park provides an opportunity for a green stormwater management measure. Street runoff can flow across the roadway and into the park where it will drain into a bioswale. The bio-swale along the park edge will allow the runoff to filter and then infiltrate into the ground and replenish the aquifer.
2. 92nd Street. The topography gradually rises to meet the high point. The resulting hill provides access into the park and an overlook over the entire site.
3. Fenton Street. At the southern edge of East Park Fenton Street passes under Sheridan Boulevard to provide access to the US 36 and Sheridan Park-n-Ride. A pedestrian and bike crossing then connects this park to South Park. Together, these two parks are the primary green spaces that make up the pedestrian trail loop that circumvents the new downtown.



Visible Topography

Green spaces with topography are visually interesting. In this example, the green rises above adjacent buildings.



Elevation Transition

The green space gently slopes up to meet West 92nd Avenue.



Walking and Biking Trails

Walking trails augment the US 36 bike trail that runs from Boulder to Denver.



Park Benches

Benches along sidewalks encourage social interaction.

Figure 5-3:
East Park Conceptual Diagram

This Plan is for Illustrative
Purposes Only
Actual Park Design May Vary



5.2.3 South Park

A. Intent Statement

The Allen Ditch is a historic irrigation ditch that has shaped much of the agricultural development in Westminster. The ditch runs the length of South Park and was constructed in 1884 by William Allen, a Canadian immigrant to the United States. Originating at Clear Creek, the Allen Ditch brings water to farms and crop fields in the high countryside.

Lined with tall mature cottonwood trees and grasses on either side, the Allen Ditch has long defined a green edge along 88th Avenue. This Plan intends to preserve this green edge, create a usable green space by increasing its size in some areas, and make it accessible from the adjoining development parcels. Near the intersection of 88th Avenue and Sheridan Boulevard, the existing stormwater detention pond will be expanded and relocated to the west. The pond expansion could provide an opportunity to design an amenity that will be a visual attraction in this park. Westminster Boulevard, Eaton Street, and an alley cross this green space. At each crossing, access into the downtown is paired with access to and views of the park.

B. Green Space Opportunities

In many ways South Park is already established as a green space. Towards the west, the park can be expanded and covered sections of the Allen Ditch can be daylighted and exposed all the way to Harlan Street. At the eastern edge, near Sheridan Boulevard, the park is expanded and a new stormwater detention pond will create the opportunity for an amenity area. Terraces, outdoor dining, and a pedestrian promenade could line the northern edge of this park.

Potential programmatic elements are highlighted in Figure 5-4.

C. Green Space Edges

1. 88th Avenue. The existing eight-foot sidewalk spans the site east to west and serves as a pedestrian trail. This configuration should be preserved.
2. Northern Park Edge. Along the northern edges of the park a new pedestrian promenade will provide views of and access to the park. Here, the streetscape design standards allow for outdoor dining terraces that would overlook the park (see Section 3.2.11).
3. Existing Trees. Plant new and replace older, less healthy Cottonwood trees in order to maintain a robust tree canopy along the ditch.



Allen Ditch

Majestic cottonwood trees line the historic Allen Ditch irrigation channel.

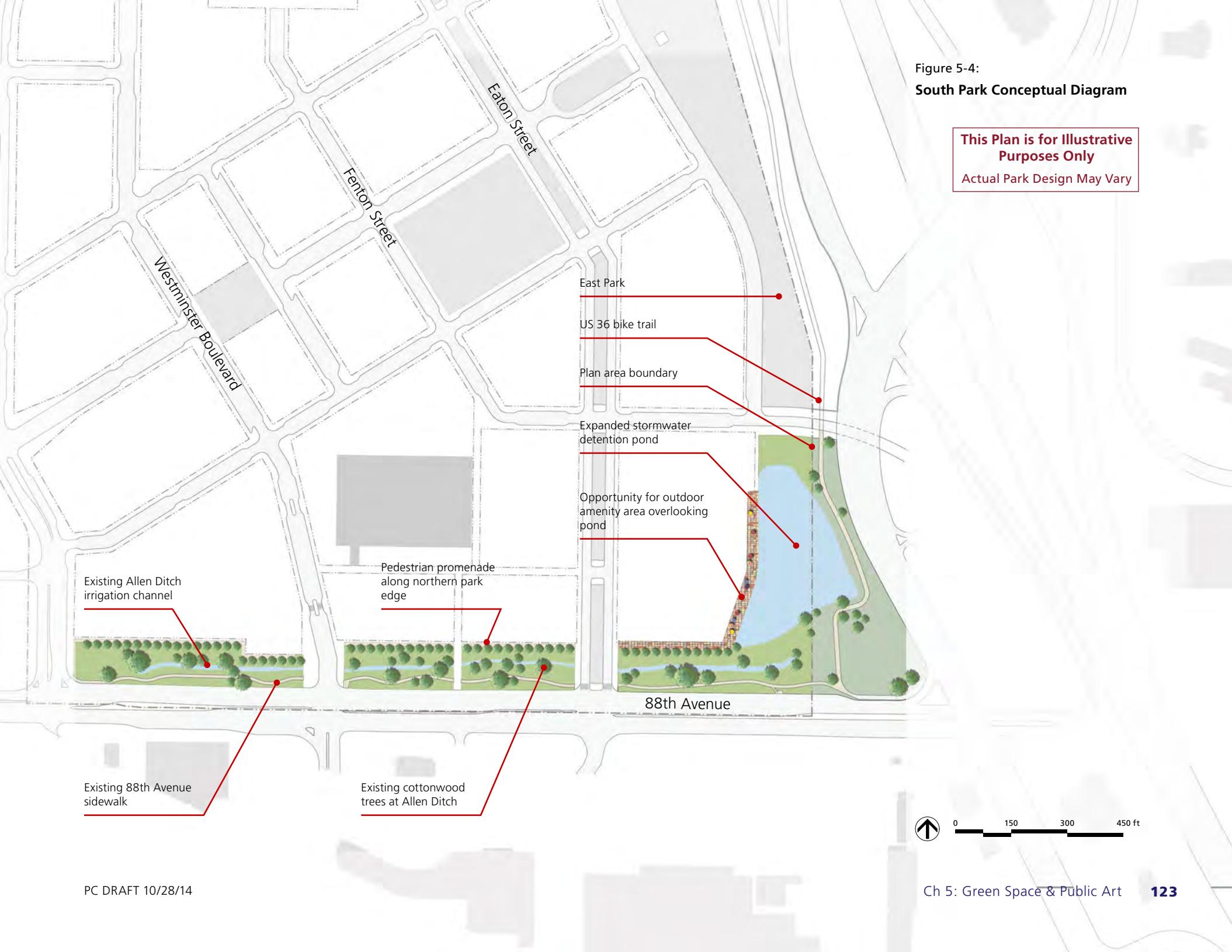


Walking and Biking Trails

South Park's linear geometry lends itself to walking and biking trails.

Figure 5-4:
South Park Conceptual Diagram

This Plan is for Illustrative Purposes Only
Actual Park Design May Vary



5.2.4 Central Square

A. Intent Statement

Central Square is a central gathering and activity space in the heart of downtown. It serves residents, locals, and visitors alike and is located at the center of activity in the retail core. The square is framed by buildings on all sides with ground-floor retail uses lining its edges.

Development directly abuts the square to the north and south, while Westminster Boulevard and Gray Street from the east and west edges of the plaza. To the southwest, the square has views of the Front Range and Mt. Evans in the distance. To the northeast, Central Parkway slopes up towards East Park where a landmark is located in the view axis.

In conjunction with special events, temporary street closures can increase the size of the square (see Section 3.4.3).

B. Green Space Opportunities

Central Square is conveniently accessible from all directions and should be programmed with active events that draw the local community as well as visitors. Ground-floor retail uses should be encouraged to spill into the square to provide activity and interest at different times of the day.

Potential programmatic elements are highlighted in Figure 5-5.

C. Green Space Edges

1. Northern and Southern Building Edges. Buildings abut the northern and southern edges of the square. Here ground-floor retail, restaurant, and café uses should be encouraged to activate the space's edges.

2. Westminster Boulevard. Westminster Boulevard is the primary thoroughfare passing Central Square. The square's design should allow passersby to see activity on the square. Westminster Boulevard's landscaping and identity design should be continued along the plaza edge.
3. Gray Street. As one of downtown's primary retail streets, it should be anticipated that large numbers of pedestrians will cross from Gray Street sidewalks to the square. Enhanced crosswalks should provide safe crossings at intersections.



Central Gathering Space

A public green space at the center of the downtown.



Seasonal Activities

An ice rink is set up in the winter.

Figure 5-5:
Central Square Conceptual Diagram



5.2.5 Central Parkway

A. Intent Statement

Central Parkway is a civic boulevard for pedestrians, cyclists, and vehicles alike. It connects from East Park to the Central Square and creates a view corridor from US 36 into the site.

Between the Central Square and Eaton Street the boulevard has wide sidewalks and landscape areas; northeast of Eaton Street the roadway splits around Eaton Square, an intimate square formed by two city blocks.

B. Green Space Opportunities

Central Parkway connects three areas that are anticipated to be major destinations in the new downtown: the US 36 bike trail, Center Park, and the Central Square. From one end to the other, it is less than a quarter of a mile, or a five-minute walk.

The site topography generally slopes down in a southwestern direction. A tall and visible landmark located in East Park will visually anchor the park on one end. The Front Range and Mt. Evans will be visible to the southwest.

Central Parkway can serve as an extension to Central Square. For events, the roadway can be closed and, together with its tree-lined sidewalks, the Parkway becomes a linear pedestrian square.

Potential programmatic elements are highlighted in Figure 5-6.

C. Green Space Edges

The sidewalks are the primary

component of the Central Parkway green space. Trees stand in five by 15-foot landscape planters between the primary walkway and the roadway. A second row of trees is located at the property lines.

Eaton Square is located at the center of Central Parkway. Given that this street has one travel lane and a bike lane on each side, connections to and from the park will be easily accommodated. Nonetheless, pedestrian crossings should be designed with care to allow pedestrians to safely cross to the sidewalks.



Pedestrian Connection

A pedestrian path connects East Park to the retail core.

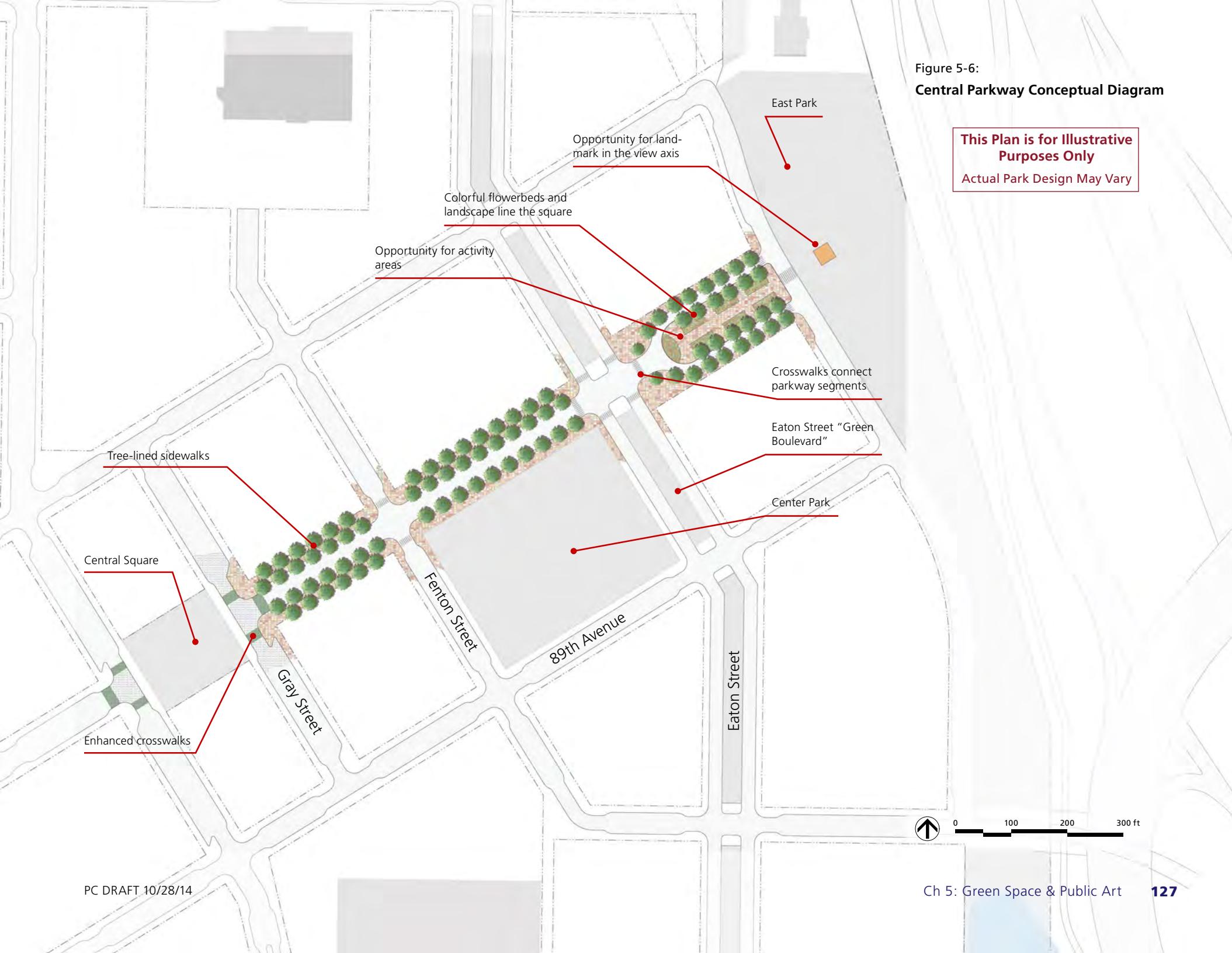


Activity Areas

The wider median portions accommodate activity areas.

Figure 5-6:
Central Parkway Conceptual Diagram

This Plan is for Illustrative Purposes Only
Actual Park Design May Vary



5.2.6 Eaton Street Green Median

A. Intent Statement

The Eaton Street green median is a linear green space that spans the entire Plan area. As Eaton Street passes through the site, its median serves as a green connection between different parts of downtown. The median allows pedestrians to traverse the site from north to south. The design of the green median will vary between segments. Common to all segments is the formal arrangement of trees along the edges of the median and the adjacent sidewalks.

The median will need to accommodate turn lanes where Eaton Street intersects 88th and 92nd Avenues. Here the median segments will reduce in width.

B. Green Space Opportunities

The Eaton Street green median provides a linear green space in the middle of a decidedly green street. The design should respond to the anticipated levels of activity within each segment of the median. Three prototypical designs include: 1. a formal promenade with a wide paved area for strolling, people-watching, and market booths; 2. a walking path between lawn areas that allow for sitting, strolling, and similar casual areas; and 3. landscaped segments with intimate spaces and paths that allow the enjoyment and observation of a variety of plantings. These prototypical designs should be refined in future design phases.

C. Green Space Edges

This green space is flanked by roadway on all sides and roadways dissect it at intersections.

The green space design should accommodate safe pedestrian crossings into and out of the park. At park edges where there are no crosswalks the design should discourage crossings. Crosswalks should directly connect one park segment to the next wherever possible. Raised tables could further enhance connectivity along the park median at crosswalks.

Eaton Street's roadway accommodates bike lanes on both sides. Hence, the median green space areas should be exclusively for pedestrians.



Type 1 - Formal Promenade

Urban green spaces for strolling, meeting, and occasional booths.



Cafe Pavilion at Intersection

In particular at intersections, the median can serve as a social meeting point for residents.



Type 2 - Greens and Paths

Paths connect informal lawn areas.



Type 2 - Informal Activities

Even small spaces allow for a range of informal and social activities.



Type 3 - Intimate Spaces

Paths weave through landscaped planters and create intimate sitting areas.

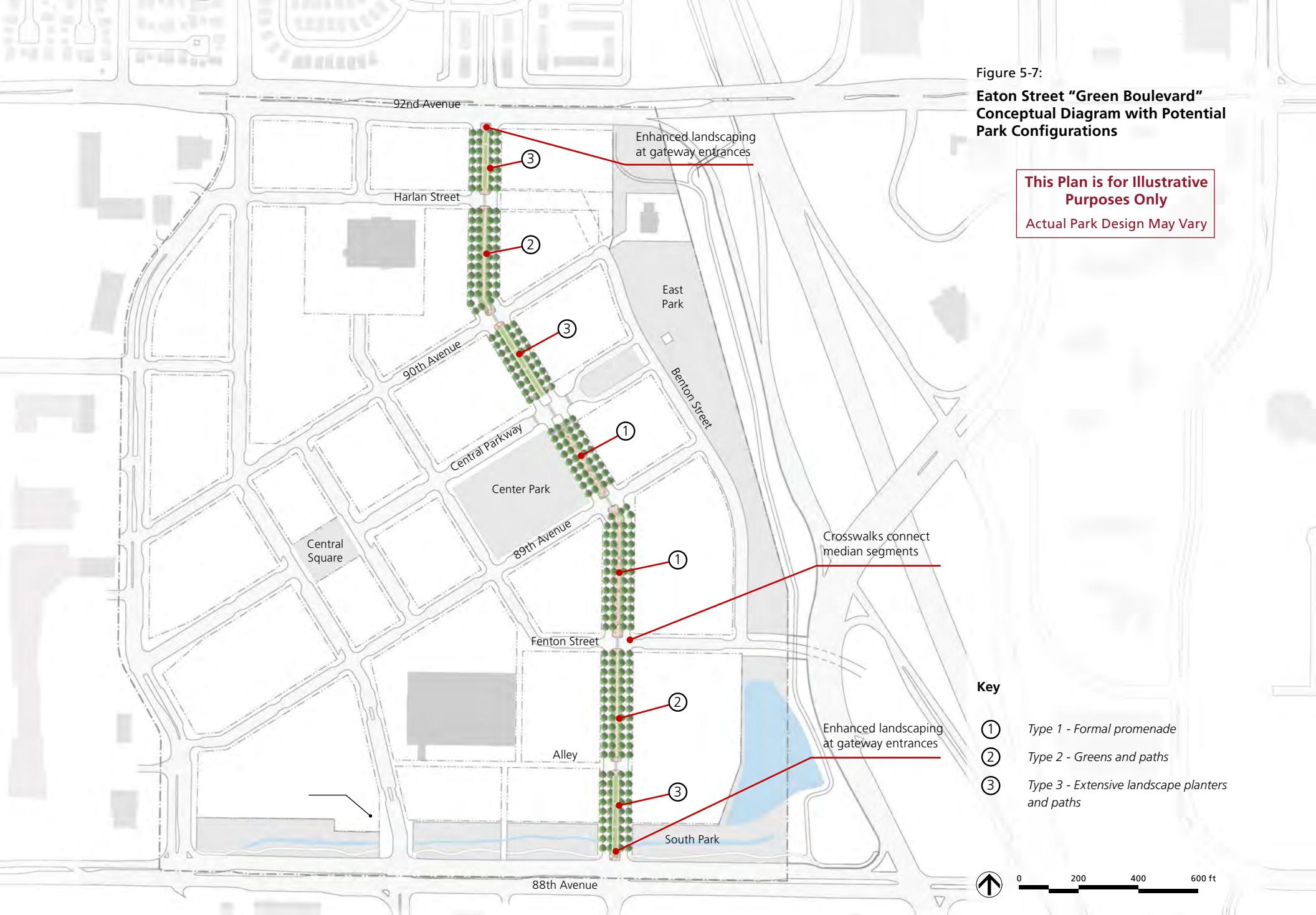


Type 3 - Landscape

Landscape and flowers can be enjoyed from the median itself or from across the street.

Figure 5-7:
Eaton Street "Green Boulevard"
Conceptual Diagram with Potential
Park Configurations

This Plan is for Illustrative
Purposes Only
Actual Park Design May Vary



Key

- ① Type 1 - Formal promenade
- ② Type 2 - Greens and paths
- ③ Type 3 - Extensive landscape planters and paths



5.3 PUBLIC ART

Public art will be an integral component in the design of the public realm in the downtown. The City has already established a robust public art program. More than one hundred pieces of art have been installed in public locations throughout the city. The development in the new downtown, with its extensive network of public open spaces, provides a unique opportunity to continue this successful program and to establish the downtown as a cultural and public art hub.

The downtown public art strategy may include one or several approaches: the City may work with local and regional cultural and arts institutions to locate new facilities or satellite locations in downtown. Also, individual pieces of art that stand on their own can be located at appropriate locations and contribute to the downtown's identity.

However, public art in the Plan area should not be limited to one theme or a particular formal language. Rather, it should be varied such as by having various physical forms or appearances, vary in the degree of interactivity, or vary in how it is placed in the public realm. Public art could be overtly placed or embedded into the everyday function of the city (e.g. bike racks or paving). Other pieces could be placed as surprising destinations that need to be found.

Finally, public art in the downtown should allow for change, whether that is by making certain pieces temporary installations or allowing for art that can evolve over time.

Public art requirements are detailed in Chapter 6.4.



Interactive Public Art

Public art invites play in a public open space.



Temporary Public Art

A temporary installation engages the streetscape, crosswalks, and even the adjacent buildings.

6 | **IMPLEMENTATION**

6.1 PLAN IMPLEMENTATION

The Westminster Downtown Specific Plan is intended to guide and regulate development within the Specific Plan Area. The Plan anticipates new development in the area facilitated by a significant investment in infrastructure and public amenities. This chapter provides the framework for implementation, including a detailed implementation program.

6.2 RELATIONSHIP TO OTHER PLANS

Comprehensive Plan

The Downtown Specific Plan is consistent with the goals and policies of the Comprehensive Plan, including those specifically addressing the Westminster Downtown Focus Area. The Focus Area goals for the site include:

- F-G-1 Establish the Downtown Westminster Focus Area as the City's new downtown.
- F-G-2 Create a vibrant destination that serves as a cultural center for the community and as a regional hub and destination.

The Comprehensive Plan will be amended to reference the Downtown Specific Plan as the regulatory document for all properties located within this Plan's boundaries. The Comprehensive Plan will designate the Downtown Specific Plan area with the Focus Area land use designation. Updates to other sections in the Comprehensive Plan will include changes or additions to implementing policies and maps for Land Use, Multi-modal Circulation and Parks, Open Space and Recreation.

Municipal Code

The Westminster Municipal Code (W.M.C.) prescribes standards, rules and procedures for all development within the city. The Downtown Specific Plan sets forth land use and development regulations for the Downtown Westminster area and will be incorporated by reference in the W.M.C. Where there is conflict with the W.M.C., the Specific Plan shall prevail. Where the Specific Plan is silent, the W.M.C. shall apply.

Westminster Center Urban Renewal Plan

The Westminster Center Urban Renewal Plan (WCURP) envisions the Plan area as a "new transit-oriented mixed-use neighborhood including residential, retail, entertainment and employment uses, all adjacent to a new multi-modal transit station." This Specific Plan carries out the vision of the WCURP and is consistent with its objectives and implementation policies. No amendment to the WCURP is necessary.

6.3 DEVELOPMENT PROCESS

This section outlines the development review and approval process for all development within the Downtown Specific Plan District. All general improvements to a site within the Downtown Specific Plan District will require submittal of an Official Development Plan (ODP) for review. The development review process for projects proposed within the Downtown Specific Plan District is streamlined based on required consistency with the policies, standards and guidelines established by the Plan. Conformance with the Specific

Plan and related utility and infrastructure plans in the Appendix ensures that the proposed project concept is consistent with the vision and intent of the Plan. As such, the development review process allows applicants to begin at the technical level of review..

Review Process

The review process for projects within the Downtown Specific Plan District shall be consistent with W.M.C. 11-5-10 with the exception of submittal of a concept plan for review. An Official Development Plan (ODP) and Development Application shall be submitted for all proposed projects. The format and required elements of the ODP submittal are provided in the ODP Checklist for Specific Plan Districts, a copy of which is available in the Planning Division office or online through the Planning Division website. The ODP shall include phasing and associated timeliness if applicable.

Approval Process

Approval of a project is contingent upon the proposed project meeting the standards of approval of an ODP as described in W.M.C. 11-5-16. The plan must also demonstrate conformance with the standards and requirements set forth in this Plan.

Variances

Property owners may apply for a variance from the standards and requirements set forth in this Plan of up to 10 percent of the standard. The Planning Manager may approve the variance subject to finding that the intent of the standard or requirement in question is met and surrounding development and the public realm are not negatively impacted.

For variances that exceed 10 percent of any standard or requirement in this Plan, refer to W.M.C. 2-2-8.

Impact Fees and Recovery Costs

Fees for development within the City apply to projects within the Downtown Specific Plan District. These fees include:

- Public Art
- Public Land Dedication
- Park Development Fee
- School Land Dedication
- Water and Sewer Tap Fees
- Potable Irrigation

Impact fees specific to each development project will be calculated as part of the ODP process and project approval. Likewise, recovery costs for infrastructure may also apply, and will be addressed through the ODP process.

6.4 IMPLEMENTATION MEASURES

The implementation program presented in this chapter provides information about the infrastructure needed for the development of the downtown area.

Infrastructure Improvements

The infrastructure required for the development of the Downtown area includes streets, utilities, parks and public spaces, and shared public parking facilities for non-residential development. The Specific Plan is designed to allow infrastructure to be built incrementally over time as the area develops. Certain major streets, park facilities and utility mains that serve the entire planning area will be constructed by the City and repaid through assessments or taxes over time.

Streets

The Downtown Specific Plan introduces a new street grid over the 105-acre site. With most of the former mall structure and parking lots demolished, all of the internal streets within the Plan boundaries will be reconstructed. Several key streets will be constructed by the City in order to establish the framework of the street grid and facilitate the first phases of development on the site. These streets include Westminster Boulevard, Eaton Street, 89th Avenue, 90th Avenue, 91st Avenue and a portion of Fenton Street that will connect via underpass to the Westminster Center RTD Bus Park-and-Ride. The remainder of the street grid, including sidewalks and landscaping within the site will be constructed as development occurs. It is assumed that these elements will be constructed as part of private development projects and be main-

tained as City rights-of-way.

Street improvements are also anticipated for all of the streets bordering the Plan area. The Sheridan Boulevard bridge and street are currently under construction to accommodate three travel lanes in each direction. To the west, the Harlan Street alignment will be modified at the northwest portion of the site to accommodate Westminster Boulevard improvements. Additional improvements to the street will occur over time as funds are available as part of the City's Capital Improvements Program (CIP). These include intersection improvements at 88th Avenue, bike lanes along the length of the street, on-street parking, and reduction of lanes from four to two with a shared turn lane/landscaped median.

Defining the northern and southern boundaries of the Plan Area, 88th Avenue and 92nd Avenue will be analyzed for potential road diets. The intent of these road diets will be to facilitate safer pedestrian and bicycle access into Downtown across these streets, and in the future to and from the planned RTD commuter rail station just south of 88th Avenue. Improvements to these streets will be identified as part of the City's Transportation Master Plan and CIP.

Water and Sanitary Sewer

The projected demand for water and sanitary sewer use surpass the site's existing infrastructure capacity. Several major citywide improvements are planned or underway as of 2014 that will expand and improve infrastructure capacity for the Plan area as well as a much larger area of the City to the north and south of the site. These improvements are planned for completion by 2017. Within the site, water and sanitary sewer lines will be constructed in concert with new

street construction, including the initial street framework to be constructed by the City. Additional water sanitary sewer lines will be constructed in concert with new streets. Main line stub-outs from the initial utility infrastructure will be installed at planned street and alley connections. It is anticipated that utilities along these streets will be the responsibility of private development projects with a recovery or other financial mechanism for sharing the cost of line extensions under streets that will serve multiple properties.

Storm Water Retention

Storm water retention and detention requirements for the Plan area are based on a 100-year storm event. The site is currently served by an existing retention pond at the southeast portion of the site at the corner of Sheridan Boulevard and 88th Avenue. This retention pond will be expanded and relocated slightly west and north to serve development on the eastern half of the site. Retention for the development areas for the west half of the site will be served by the existing retention pond located to the south of the Lowe's Shopping Center south of 88th Avenue.

Electric, Gas and Telecommunications Utilities

Existing electric and gas lines that serve the site will need to be relocated within the planned street rights-of-way. As streets are constructed, these utilities will be added concurrently. The City will be responsible for a portion of these utilities as part of initial street construction in downtown, and will coordinate with Xcel Energy and private developers to lay utilities and locate transformers on the remainder of the street network. Cable and fiber optic lines will be installed by private providers.

Parks and Plazas

Over 18 acres of parks and plazas are proposed within the Specific Plan Area, which will result in approximately 3.0 to 3.6 acres of park space per 1,000 residents. Green space within the Plan area is comprised of linear parks on the eastern and southern edges of the site, a central park at Eaton Street and 89th Avenue, two linear park medians along Eaton Street and Central Parkway, and a central Plaza off of Westminster Boulevard. An additional two acres of park space is anticipated within the Plan area, the location for which will be identified as part of future development.

All of the parks and green space within the Plan area will serve as public space and will be programmed to serve a wide range of activities and users. Design, development and management of these spaces will be City-led, with the expectation that all developments in the Plan area will pay a fair share financial contribution towards park construction and management. Additional development impact fees for public land dedication will apply to projects with residential uses.

Management and Maintenance of the Public Realm

One or more maintenance districts may be established to manage, fund, maintain and program public facilities within downtown. Well-maintained, high quality and actively programmed public facilities are essential elements of a vibrant, attractive downtown. As such, the maintenance district(s) will comprise all public streets, plazas, parks and other public infrastructure in downtown.

Public Art

Public art is an important aspect of the identity and character of Westminster's new downtown. As part of the City's public art program, all commercial and multi-family residential development projects are required to contribute to the program. In the Plan area, all development projects shall contribute \$2,000 per 1.0 acre to the public art program. The City will develop a plan for public art within the Downtown area, which may include working with other local and Denver Metro arts districts and programs to expand and highlight public art in Downtown.

Parking Program

The Downtown Specific Plan District will establish a Parking District to serve all non-residential uses within the Plan area. The intent of the Parking Program is to maximize efficiency of parking within the Plan area. The Parking District will be comprised of on-street parking and off-street shared-use parking structures.

All development in the Plan area will be required to meet the prescribed parking ratios within the Specific Plan District. Non-residential parking demand can be met fully on-site, fully off-site within the Parking District, or a combination of on-site and Parking District spaces. If the Parking District is utilized to meet non-residential parking spaces for a project, spaces shall be purchased at the time of development approval by a fee-in-lieu per space.

The Parking District shall be holistically managed and monitored to ensure that parking demand and supply are in balance, new parking spaces are added as necessary to meet demand, and parking facilities are safe,

well-maintained, and easy to access and find throughout the Parking District.

6.5 IMPLEMENTATION PROGRAM

Implementation of the vision for a new downtown will be achieved through regulatory actions and infrastructure improvements. Table 6.5-1 outlines the expected actions and improvements necessary to achieve build-out of downtown. These actions will occur incrementally, with expected timeliness noted in the table, and will be coordinated by the City or other public agencies. Specific infrastructure improvements will be implemented in concert and negotiation with private development as it occurs.

Table 6.5.1:
Implementation Program

| | <i>Improvement or Plan Component</i> | <i>Action</i> | <i>Coordinating City Department or Public Agency</i> | <i>Anticipated Timeframe</i> |
|--|---|---|--|------------------------------|
| Planning and Zoning Regulations | | | | |
| PHASE I | Comprehensive Plan | Amend to reference the Westminster Downtown Specific Plan, including maps and text | Planning | Early 2015 |
| | Westminster Municipal Code | Amend to reference the Westminster Downtown Specific Plan | Planning | |
| | Property Rezoning | Re-zone properties to Westminster Downtown Specific Plan District | Planning | |
| Site Preparation | | | | |
| PHASE I | Site overlot grading and site preparation | Complete demolition of existing site improvements; grading; site preparation | Engineering | Early 2015 |
| | | | | |
| Street and Traffic Improvements | | | | |
| PHASE I | Westminster Boulevard | Construct Westminster Boulevard from 88th Avenue to 92nd Avenue, curb to curb with temporary gravel trail | Engineering | 2015 |
| | Eaton Street | Construct Eaton Street from 88th Avenue to 92nd Avenue, curb to curb incl. median | Engineering | |
| | 89th Avenue | Construct 89th Avenue from Westminster Boulevard to Eaton Street | Engineering | |
| | 90th Avenue | Construct 90th Avenue from Harlan Street to Eaton Street | Engineering | |
| | 91st Avenue | Construct 91st Avenue from Harlan Street to Westminster Boulevard | Engineering | |
| | Fenton Street (partial) | Construct Fenton Street from Eaton Street to Sheridan Boulevard underpass | Engineering | |
| | Sheridan Boulevard Underpass | Construct Sheridan Boulevard underpass connecting the Plan area with the US 36 and Sheridan Park-n-Ride | Engineering | 2017 |
| | Remaining Street Improvements | Construct remaining rights-of-way as shown on Figure 2-1, including sidewalks on streets constructed as part of Phase I | Individual segments to proceed prior to building permit issuance for new buildings | Ongoing |

Table 6.5.1 Continued

| | <i>Improvement or Plan Component</i> | <i>Action</i> | <i>Coordinating City Department or Public Agency</i> | <i>Anticipated Timeframe</i> |
|------------------|---|---|--|------------------------------|
| Utilities | | | | |
| PHASE I | Dry Utilities | Construct dry utilities in coordination with Phase I street construction, including conduits for telecommunication utilities. Work with Xcel Energy to plan, design and locate facilities in concert with the urban design standards of this Plan * | Engineering | 2015 |
| | Stormwater Detention Pond | Expand and relocate existing stormwater detention pond per Figure 2-1 | Engineering | |
| | Storm Water Drainage | Construct in concert with new street construction | Engineering | |
| | Water | Relocate water main, in concert with construction of storm water detention pond/overlot grading | Engineering, Public Works | |
| | Sanitary Sewer | Relocate sanitary sewer main line in concert with construction of storm water detention pond/overlot grading | Engineering, Public Works | |
| | Remaining Dry Utilities | Construct dry utilities in coordination with new streets as they are constructed, including conduits for telecommunication utilities. Work with Xcel Energy to plan, design and locate facilities in concert with the urban design standards of this Plan | Developer, with City review by Engineering | Ongoing |
| | Storm Water Drainage | Construct in concert with new street construction | Engineering | |
| | Water and Sanitary Sewer Lines | Construct remaining water and sanitary sewer lines to serve new development as it occurs in concert with new street construction | Engineering, Public Works | |
| | LDCIS Sewer Improvements & Zone 3 Project | Complete improvements to the LDCIS and Zone 3 to accommodate the first phases of development | Public Works | |

Table 6.5.1 Continued

| | <i>Improvement or Plan Component</i> | <i>Action</i> | <i>Coordinating City Department or Public Agency</i> | <i>Anticipated Timeframe</i> |
|---------------------------------|--|--|---|------------------------------|
| Streetscape Improvements | | | | |
| | Streetscape Master Plan | Develop a streetscape master plan that provides detailed design and specifications for each streetscape project. The plan should address hardscape materials, location, spacing and species of street trees, crosswalk enhancements, variations in conditions along the street and relationships of street improvements to curb cuts, alleys, etc. | Community Development; Parks, Recreation and Libraries | 2015 |
| | Westminster Boulevard Streetscape Improvements | Work with individual property owners to complete Westminster Boulevard streetscape improvements including sidewalks, street trees, landscape planters, and street parking, pedestrian furnishings and amenities, lighting and public art installations consistent with the Plan and Streetscape Master Plan | Engineering, with input from Community Development | As development occurs |
| | Eaton Street Median Enhancements | Complete Eaton Street median streetscape/public green space | | |
| | Remaining Streetscape Improvements | Work with individual property owners to complete area-wide streetscape improvements as development occurs, including sidewalks, landscaping, lighting, lane reconfiguration, street parking, bicycle lanes, furnishings and amenities and public art and signage (where applicable) | Community Development; Individual segments to proceed prior to building permit issuance for new buildings | |
| | Harlan Street Streetscape Improvements | Design according to this Plan and the Streetscape Master Plan; add to the CIP | Engineering; Planning | |
| | 88th Avenue "Road Diet" and Streetscape Improvements | Design and add to the CIP | Engineering; Planning | |
| | 92nd Avenue "Road Diet" and Streetscape Improvements | Design and add to the CIP. Prioritize improvements to the north side of the street to enhance pedestrian and bicycle connectivity to the US 36 bike trail and downtown. | Engineering; Planning | |

Table 6.5.1 Continued

| | <i>Improvement or Plan Component</i> | Action | Coordinating City Department or Public Agency | Anticipated Timeframe |
|-----------------------------------|--------------------------------------|--|--|--|
| Public Green Spaces | | | | |
| | Public Green Space Master Plan | Vision, programming, design parameters | Parks, Recreation and Libraries; Planning | 2015 |
| | Individual Parks Design | Define park facilities, programming and design parameters for all new parks. | Parks, Recreation and Libraries; Planning; Engineering | Beginning 2015, ongoing as parks projects are funded |
| PHASE I | South Park (Allen Ditch) | Incorporate the construction on new parks into the City's Capital Improvement Program. | | 2016, construction completion 2017 |
| | Center Park | | | |
| | East Park | | | |
| | Central Square | | | |
| | Station Plaza | | | |
| | Identify Additional Park Location | | Parks, Recreation and Libraries; Planning | As development occurs |
| Bike and Pedestrian Trails | | | | |
| | US 36 Commuter Bike Trail | Complete regional bike route from 92nd Avenue bridge underpass to 88th Avenue | CDOT | Early 2015 |
| | Temporary Harlan Street Trail | | Community Development; Parks, Recreation and Libraries | 2015 |
| | Allen Ditch Trail | | | 2017 |
| Public Parking | | | | |
| | On-Street Parking | Install on-street time limit signs | Engineering | As development occurs |
| | Parking District Structures | Construct district-owned or joint venture parking structures | | |

Table 6.5.1 Continued

| | <i>Improvement or Plan Component</i> | Action | Coordinating City Department or Public Agency | Anticipated Timeframe |
|----------------------------------|--------------------------------------|--|--|-----------------------|
| Wayfinding and Public Art | | | | |
| | Wayfinding Master Plan | Design and identify locations for directional, gateway and navigation signage for destinations, parking and other locations within the Plan area | Community Development | 2017 |
| | Public Art Master Plan | Identify locations, artists, art installations and other regional partners to locate art within the public spaces in the Plan area | Community Development; Parks, Recreation and Libraries | |

7

GLOSSARY OF TERMS

A

Alley

A street type as illustrated in Section 3.4.7.

Access Point

A point of entry on a blockfront providing access to parking or service facility areas.

Apparent Face

The largest building face of the tower portion of a podium high-rise building.

B

Block

The primary bounded areas defined for the purpose of site organization used to regulate the land uses, heights, and design requirements of this Master Plan. The Plan area is divided into blocks designated as "A-1" through "D-6."

Blockfront

The plane of the edge of each side of a block or sub-area of a block facing a public right-of-way or open space.

Blockfront Designation

A term used in the block development standards to differentiate and identify each blockfront for the purpose of applying the development standards.

Build-to Line

A line, parallel to the property line, that must be occupied by a specified percentage of the

building facade. The build-to-line is measured as a distance from the property line. For example, a five-foot build-to line would be located five feet from the property line within the parcel.

Building Face

The exterior wall of a building.

Building Front

A generally vertical building plane facing a specific direction or looking out upon something, typically a public right of way or public space.

Building Type

A structure category determined by function, disposition on the lot, and configuration, including frontage and height. There are ten building types permitted in the plan area: rowhouse, flex/loft, courtyard, urban block, liner with garage, podium, podium high-rise, exposed garage, urban anchor, and urban supermarket.

C

City

Refers to the various Departments of the City of Westminster, Colorado

Courtyard Building

A low-density building type defined in Section 4.3.4.

D**Dooryard**

A frontage type as defined in Section 4.4.4.

Driveway

As defined in Section 4.6.6.

E**Elevation**

An exterior wall of a building not along a Frontage Line.

Encroachment

Any structural element (including architectural features) that extends from the Building Face into the public right-of-way or Setback. Permitted Encroachments are provided in Section 4.5.9.

Encroachment Area

The area of land between the Building Face and the back of the curb, where Encroachments may be located.

F**Facade**

A Building Face that is along a Frontage.

Facade String

A series of Row House or Flex/Loft units attached together in a single building.

Facade Width

The horizontal distance of a single building Facade.

Fenestration

The arrangement and design of windows and other openings on a building's Facade.

Flex/Loft Building

A low-density Building Type defined in Section 4.3.3

Foot Candle

A unit of illumination on a surface that is everywhere one foot from a uniform point source of one candela and equal to one lumen incident per square foot.

Forecourt

A Frontage Type as defined in Section 4.4.6.

Frontage

The extent of a building or of land along a public right-of-way or open space.

Frontage Occupancy

The minimum percentage of the Block Front that must contain a building. Frontage Occupancy requirements shall apply to the first three floors of a building.

Frontage Type

As defined in Section 4.4.

Front Yard

The area between the building and the front property line, typically landscaped or paved.

Full Cut-Off

Describes a luminaire that has no direct up-light (no light emitted above the horizontal) and complies with glare requirements as defined by the Illuminating Engineering Society of North America (IESNA).

Furnishing Area

A multi-purpose area that serves as a buffer between the pedestrian travel way and the vehicular travel way and parking on the street. It provides space for sidewalk appurtenances such as street trees, planting strips, street furniture, public art, sidewalk café seating, sign poles, signal and electrical cabinets, fire hydrants, bicycle racks and bus shelters.

G**Greenscreen**

A frame attached to a building wall built along the Build to Line, building edge, or on the same plane as the Facade that allows for vines and plant growth. It may mask a parking lot from the street, provide privacy to a side yard, and strengthen the special definition of the public realm.

Ground Plane

A horizontal plane of reference from which vertical measurements can be taken. Usually the ground plan refers to the adjacent grade at the sidewalk.

H**Habitable Space**

Space in a structure that is occupiable and is used primarily for living, sleeping, eating, selling of goods, or cooking. Bathrooms, closets, halls, storage areas and utility spaces are not considered habitable spaces.

Habitable Projecting Space

The portion of the building enclosed by walls and a roof that projects beyond the Building Face and is raised a minimum of nine feet from the sidewalk, such as bay windows.

Habitable Encroaching Space

The portion of the building enclosed by walls and a roof that projects beyond the Building Face along the ground floor.

L**Large-Scale Architectural Lighting**

Lighting elements placed on a significant portion of a building's facade to highlight or accentuate vertical, horizontal, or other elements of the structure's architecture.

LEED

Leadership in Energy and Environmental Design. A green building rating system developed by the US Green Building Council that provides a suite of standards for the environmentally sustainable design, construction and operation of buildings and neighborhoods.

Liner with Garage Building

A medium density Building Type defined in Section 4.3.6.

Lot Area

As defined in the Westminster Municipal Code.

Lot Width

The horizontal distance between side lot lines, measured at the Property Line at right angles to the lot depth at a point midway between the front and rear lot lines.

M

Maximum Height Ratios

The ratio (expressed as a percentage) of the floor area of the upper stories of a building to the building footprint at grade.

Minimum Frontage Occupancy

(also Minimum Building Frontage Occupancy) is the minimum percentage of a blockfront at which a building frontage is set either at or within ten inches of the build-to line or within the minimum and maximum setback lines, as required by the block development standards.

Maximum Upper Level Frontage Occupancy

Certain building types have limitations on the percentage of the building frontage that can be occupied above 45 feet in height. The upper level frontage occupancy is based on the ground-floor plan. Facade portions

that are set back at least eight feet from the ground-floor building face are considered as not occupying the upper level frontage

N

Non-Habitable Projecting Space

The portion of the building that extends beyond the Building Face, which is not enclosed by walls and a roof and raised a minimum of nine feet from the ground floor, such as a balcony.

Non-Habitable Encroaching Space

The portion of the building that extends beyond the Building Face along the ground floor, which is not enclosed by walls and a roof, such as a Stoop.

P

Plane Break

A vertical or horizontal offset in a Building Face used to create articulation and break up long wall planes.

Podium High-Rise Building

A high density Building Type defined in Section 4.3.8.

Primary Entrance or Principal Entrance

The main point of access for pedestrians into a building.

Principal Frontage

The Frontage designated to bear the addresses of and Principal Entrances to the individual units of a Row House or Flex/Loft Building, or other building.

Private Street

See definition of Street, Private.

Projection

An architectural element or portion of the building that extends beyond the Building Face into the public right-of-way or Setback that is raised a minimum of nine feet from the sidewalk or open space.

R

Row House

A low density Building Type defined in Section 4.3.2.

Roadway

The area in the right-of-way as measured from curb to curb intended for vehicular travel, as well as bicycle travel, in designated areas.

S

Side Yard

The private (or semi-private) open space located on the sides of a Row House or Flex/Loft Building Type.

Sidewalk Dining Zone

A portion of the public sidewalk or private front yard dedicated to outdoor dining.

Sidewalk Grade

A level plane along the top of the sidewalk pavement.

Sign

Any display board, wall, object, or any other material or medium used to announce, declare, demonstrate, display or otherwise present a message and attract the attention of the public. See Westminster Municipal Code.

Stoop

A Frontage Type as defined in Section 4.4.5.

Storefront

A Frontage Type as defined in Section 4.4.2.

Storefront Cafe

A Frontage Type as defined in Section 4.4.3.

Street

A public or private thoroughfare, which affords principal means of access to the abutting property. See Street Types in Section 3.4.

Street, Public

A public thoroughfare, which affords principal means of access to the abutting property. See Street Types in Section 3.4.

Street, Private

A private thoroughfare, which affords principal means of access to the abutting property.

Street Wall

A series of generally coplanar building faces that face and spatially frame a space, typically a public right-of-way or similar public space.

Sub-Block

A portion of a block created by public or private streets or rights-of-ways, or by legal subdivision of a block.

Swale

A low or slightly depressed natural area for drainage.

T

Tower

The portion of a Podium High-Rise over five stories in height (see Section 4.3.8).

U

Urban Block Building

A medium density Building Type defined in Section 4.3.5.

W

W.M.C.

Westminster Municipal Code, the Municipal Code of the City of Westminster, Colorado.

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prepared by:



Nelson\Nygaard

Martin/Martin Inc.

Communitas

Project for Public Spaces

8.1

PUBLIC SPACE STUDY



PLACEMAKING IN DOWNTOWN WESTMINSTER

Revised Final Report

October 2014



Prepared for
CITY OF WESTMINSTER

Prepared by
PROJECT FOR PUBLIC SPACES

REVISED FINAL REPORT
October 2014



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INTRODUCTION

“Great public spaces define the quality of life for all citizens. They are not a “luxury;” they are essential to community wellbeing.”

Project for Public Spaces

In creating a new city center, the City of Westminster has the remarkable opportunity to redefine itself as a 21st century city. The City and the Westminster Economic Development Authority had the foresight to purchase the 104 acre Westminster Mall site, strategically located in its center and adjacent to US 36, as the site for a new downtown. Along with a new residential and commercial core, the downtown can offer public spaces unlike any that the residents currently enjoy. These new streets, parks and plazas will provide opportunities that don't currently exist for community gatherings and neighborhood interaction, and where residents can informally socialize and connect with each other. In short, the new public spaces will draw residents from the surrounding city who are looking not just for the shopping experience that they can get at local lifestyle malls, but for an authentic sense of community and civic engagement.

The old Westminster Mall held a symbolic pride of place for residents of Westminster. It was the place where they played as children, took their families for dinner and a movie, had their first dates, learned to drive and hung out as teenagers. Without it, residents felt they had lost the heart of their community. Thus the new downtown Westminster must fill this missing void and at the same time provide the urban core that the city has always lacked. The City now has the chance to create new parks and plazas that reflect all we have learned about how great public spaces work; how they can become exciting destinations that build community and foster a sense of belonging.

Westminster has a special identity and attraction. People move here not just because of its convenient location between Denver and Boulder, but also because of its majestic views of the mountains and the skyline of Denver, its strong connection to the mountains and its great access to open space. It is viewed as a smaller and less urban place than Denver with great opportunities to be outdoors and engage in an active lifestyle. Westminster has had the benefit of a progressive leadership that has been working to support residents' desire for health, wellness and

outdoor recreation, while protecting open space and curtailing some of the worst effects of traditional suburban development.

While residents love the trails and open space, the City doesn't have many intimate, social spaces. Even the outdoor performance areas at City Park are better suited to 40,000 people than 2,000 people, let alone 200. Interviews and focus group meetings showed that there is a need and a desire for smaller public gathering spaces. Furthermore, people were looking for a smaller-scale urban experience, a suburban-urban place that is inviting, easy to access, comfortable and where commercial uses and dining establishments seamlessly intertwine with civic gatherings, public plazas and parks, streets and sidewalks as they do in most vibrant cities and towns.

Project for Public Spaces, Inc. was asked by the City of Westminster to help develop a vision for the new downtown's public spaces. We gathered information about the community and its needs through a number of focus groups in March 2014 with city staff, City Council and local stakeholders (see appendix for the meeting notes). In addition, we met with a number of institutions, creative thinkers, representatives from the Metro Arts Community, business people and non-profit leaders from both inside and outside Westminster to help us create concepts for the program as well as to identify future programming partners.

This report represents a vision for the new public spaces that we hope reflects the ideas and ideals of the citizens of Westminster, along with the adventurous spirit—and a sense of the unlimited possibilities—that we found in the people we met from the Denver area.



WHAT MAKES A GREAT PLACE?

PPS has distilled the qualities that make a great place into the following four basic ingredients:

Activities and Uses

A great place has a range of destinations and activities that attract a variety of community members. The activities keep the public space lively, inviting and safe at all times of day and throughout the year.

Access and Linkage

A great place is easy to reach by a variety of transportation modes and easy see into. Linkages and open sight lines should connect different destinations and help create a people-friendly environment.

Comfort and Image

Great public spaces are comfortable to use and help give a city a unique identity. Amenities, such as benches, movable tables and chairs, umbrellas, and shade trees are essential in any good public space.

Sociability

A sociable place is one where people want to go to meet friends and interact with a wide range of people who are different from themselves. It is also a place that can comfortably host a wide variety of community gatherings, and is inviting to a range of users.

PLACEMAKING PRINCIPLES

PPS's 37 years of history and experience with public spaces have led us to formulate some principles for creating successful places. To really succeed, a public space must offer a variety of activities to a wide range of users and take into account a host of factors that extend beyond its physical dimensions. Historically, squares and town greens were the centers of communities, and they traditionally helped shape the identity of entire cities. That is what the public spaces need to accomplish for the new city center in Westminster.

1. Plan for People and Places

If you plan for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places. Put people first, on foot and on the ground, not speeding by at 50 mph. Ask "What will the pedestrian experience be?" NOT, "How can we get cars through as quickly as possible?"

2. Start with a Program of Activities

Start with a clear understanding of the activities that are going to occur in the space. Design and management will then support those activities. Successful public spaces are lively, secure and distinctive places because they offer many things to do and reasons for people to be there. Plan for different audiences, so that groups can come together and engage in enjoyable, sociable ways.

3. Create Destinations

The Power of Ten. (*Details on following pages.*)

Every great district or downtown needs at least ten great destinations to create a critical mass of places where tourists and residents alike could become immersed for hours. Taking the next step, each destination needs ten things to do - activities and smaller scale experiences that make it a must-visit, beloved destination. Downtown Westminster

needs at least ten destinations, which each offer ten things to do.

4. Triangulate

Triangulation is the concept of clustering activities together to create a busy, dynamic place for many different types of people at different times of day. For example, in Paris's Luxembourg Gardens, the combination of a puppet theatre, carousel, café, bocce court, and basketball court around a children's play area makes a very exciting destination for all ages. A museum next to an outdoor restaurant and a retail street will be a far busier place than any one of those uses by itself.

5. Activate Edges

The area around a public space is as important to its success as the design and management of the space itself. A blank wall contributes nothing to the activity of the street. Successful plazas are usually surrounded by activities that spill outside.

The reason the Campo in Siena, Italy is a vibrant place while Boston City Hall Plaza is always deserted has a lot to do with the activities surrounding the plaza.

6. Flexible Design

The use of a great public space changes during the course of the day, week, and year. To respond to these natural fluctuations, flexibility needs to be built in. For example, instead of a permanent stage that might limit other uses in the square, a retractable or temporary stage could be used. Likewise, it is important to have on-site storage for movable chairs, tables, umbrellas, and games so they can be deployed or removed at a moment's notice.

7. A Seasonal Strategy

Every season brings with it an array of unique opportunities for public space activities. Changing the activity and planning with the season ensures year-

round vitality and use. Skating rinks, outdoor cafés, markets, horticulture displays, art and sculpture help adapt the use of the space from one season to the next.

8. Access

To be successful, a public space needs to be easy to get to. The best urban places are always easily accessible by foot: surrounding streets are narrow; crosswalks are well marked; lights are timed for pedestrians, not vehicles; traffic moves slowly; and transit stops are located nearby. A space surrounded by lanes of fast moving traffic will be cut off from pedestrians and deprived of its most essential element: people.

9. Reach Out Like an Octopus

Just as important as the edge of a public space is the way that streets, sidewalks, and ground floors of adjacent buildings lead into it. Like the tentacles of an

octopus extending into the surrounding neighborhood, the influence of a good square starts at least a block away. Vehicles slow down, walking becomes more enjoyable, and pedestrian traffic increases. Elements within the square are visible from a distance, and the ground floor activity of buildings entices pedestrians to move toward the square.

10. The Inner Square & the Outer Park

Visionary park planner Frederick Law Olmsted's idea of the "inner park" and the "outer park" is just as relevant today as it was over 100 years ago. The streets and sidewalks around a park or a square greatly affect its accessibility and use, as do the buildings that surround it, and the ground floor uses inside them. The active edge is not only about avoiding blank walls, it is about spilling activity, whether public or private, into the public space. For example, a community center or a library adjacent to a park can have a huge

impact on the use of the space: people can sit outside and read on the steps; the children's reading room can have an outdoor reading space; and a café can extend outside. Likewise, a restaurant on a square can help to activate the public space with outdoor dining. An active, welcoming outer park is essential to the wellbeing of the inner park.

10. The Central Role of Management

The best places are ones that people return to time and time again. The only way to achieve this is through a management plan that understands and promotes ways of keeping the space safe and lively. For example, a good manager understands existing and potential users and gears events to both types of people. Good managers create a feeling of comfort and safety in a square, fixing

and maintaining it so that people feel assured that someone is in charge. Good managers find creative funding strategies to keep rents low, attract a range of tenants and incentivize the presence of tenants who may not produce a lot of money for the site, but who bring a lot of foot traffic and are invested in the area.

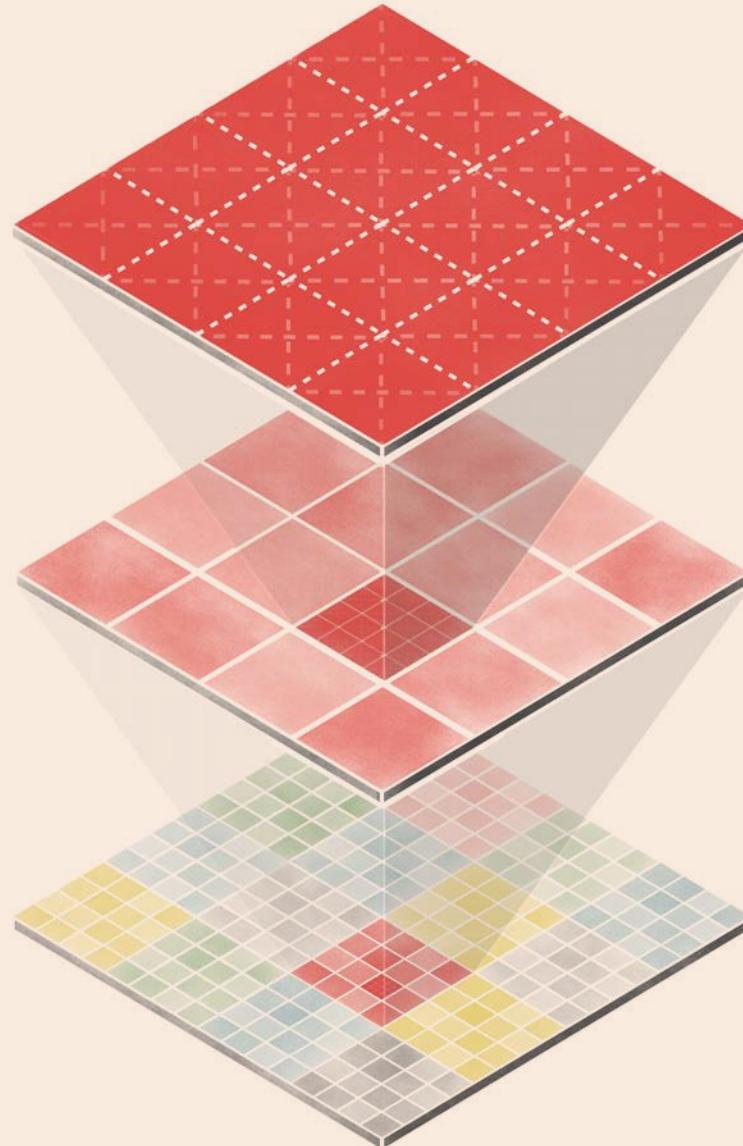
10. “Lighter, Quicker, Cheaper”

LQC describes a short-term development strategy that has produced some of the world's most successful public spaces — one that is lower risk and lower cost, capitalizing on the creative energy of the community to efficiently generate new uses and revenue for places in transition.

LQC can take many forms, requiring varying degrees of time, money, and effort, and the spectrum of interventions

should be seen as an iterative means to build lasting change. By championing use over design and capital-intensive construction, LQC interventions strike a balance between providing comfortable spaces for people to enjoy while generating the revenue necessary for maintenance and management.

PLACE



DESTINATION

CITY/REGION

POWER OF 10 IN DOWNTOWN WESTMINSTER

To be successful, cities need places. They need destinations that give an identity and image to their communities and that help attract new residents, businesses and investment, but they also need strong community places for people to go. A place might be a downtown square, a main street, a waterfront, a park, or a library. Cities of all sizes should have at least ten places or destinations where people want to be. What makes each destination successful is that it has sub places within it. For example, a park needs at least ten sub-places: a café, a children's play area, a place to bird-watch or to experience water, a place to sit, somewhere to meet friends, etc. Within each of the sub-places, there should be at least ten things to do. Cumulatively, these activities, places and destinations are what make a great city. This is a big idea that PPS calls the "Power of 10".

With the right planning and management, Downtown Westminster will certainly become one of the ten great destinations in the city. Using the Power of 10 concept as a framework, the new downtown should offer the places and activities what will draw people on a daily basis. They will be the attractions that locals and visitors will return to, again and again, where friends snf neighbors gather and where everyone will experience the unique qualities of great public spaces that build a sense of community in the heart of Westminster.

VISION

From the Power of Ten workshop, focus groups and interviews with stakeholders and city staff two things are clear in terms of placemaking for the public spaces of the new downtown Westminster. The first is timing. There is currently excitement and demand in Westminster for authentic downtown public spaces that reflect the character of the community and are different from the lifestyle mall spaces offered at The Orchard and other similar places. This suggests that there are opportunities to pursue short and medium-term strategies for creating interim public spaces and experiences on the site of the Westminster Mall as the downtown grows around core public spaces, using “lighter, quicker, cheaper” strategies and experimenting with events and activities.

The second is that authenticity will be key for the success of the public spaces of downtown Westminster. There is no one single theme that can express what is special and unique about Westminster and its new downtown. Unlike a “brand” which focuses on a single theme, and is by its nature “crafted,” an authentic downtown experience has a number of facets or themes that define it. Among the themes discussed

for the new downtown are health and fitness; food and gardening; tech-oriented amenities and activities; dynamic, interactive art; community celebrations and gatherings; flexibility; and spontaneous self-directed activities and experiences.

THEMES

Health and Fitness

The City of Westminster offers a wide array of recreational opportunities in its highly programmed recreational and park facilities. Health and fitness will be reflected in the new downtown not by duplicating programs that are better sustained elsewhere, but by supporting individual and small group health and exercise uses that are more urban and oriented towards sharing and community building outside of the team model. Such activities may include rock climbing and bouldering; parcour; slack-line walking; urban skateboarding and BMX biking; ice climbing basics; group and individual exercise through classes, personal training, peer training, and outdoor exercise stations, etc. The downtown would offer an environment for more urban, spontaneous and self-guided health and fitness experience that encourages people to gather, share and be active outdoors with others in their community.

Food and Gardening

Food is a major theme for most successful public spaces. As William H. Whyte, the mentor of PPS, put it: "If you want to seed a place with activity – put out

food." This observation is true today just as it was when he first made it in the 60's. In fact, mobile and outdoor food (food trucks, carts, market stalls) have become a major generator of activity and economic vitality for communities across the US, including Westminster. While portable food will certainly be available in one form or another in downtown Westminster, outdoor terraces attached to brick-and-mortar cafes and restaurants will also be an important use. What can give the downtown its special twist to offering food and drinks is not only the food/drink itself, but the way it was grown, brewed or produced.

The park spaces of the downtown can offer opportunities for gardening--decorative, as well as food-oriented. Especially in the short and medium-term, before the downtown has been fully developed, they can offer a great use for existing land that attracts community gardeners as well as foodies. Stakeholders participating in focus groups and interviews spoke of vegetable and kitchen gardens attached to food establishments as an activity that links consumption with growing food, and brings community members in contact with their food and good growing prac-

tices. The “suburban-urban” character of Downtown Westminster’s public spaces allows for not only gardens that grow food, but potentially for other food-related activities in a garden environment, such as bee-keeping (for example Paris’ Luxembourg Garden has an apiary where visitors can learn about apiculture); canning and pickling; wild edibles; water conservation and purification; composting; and so on.

Tech-Oriented Amenities And Activities

Today technology is all around us constantly, and public spaces can use it to help people feel more connected and better networked in the public realm. Downtown Westminster is looking to attract millennials as a major user group of people who not only work, play, relax, dine and shop here, but who also choose to live here. In addition, Westminster is already a significant hub for tech businesses in the area. Providing tech-oriented activities and amenities in the public spaces of downtown will help attract millennials and tech workers. While free public wifi has become a standard in successful public spaces, opportunities to use tech solutions to enhance social networks and interactions in connection to the space should also be pursued. Such opportunities may range from large screens projecting video, film, discussions,

news and other content, to light projections, to QR codes offering information and interaction and place-specific apps like Shake Shack’s in New York’s Madison Square Park which shows users how long the line is for burgers, etc.

Dynamic, Interactive Art

Art has been a major topic of discussion with stakeholders and city staff alike. While Westminster doesn’t seem to have a specific art theme, art can be present in the new downtown’s public realm in many different forms. Special organized events such as performances and exhibits involving local and regional artists and arts institutions are only one aspect of the arts and the way they could be present here. Arts festivals and fairs were also discussed with a focus on an event that would have a local flair and attract visitors from around the region, such as an Affordable Arts Fest or a site-specific themed art festival curated by the Cherry Creek Arts Festival. Public art should be present here with a general consensus to seek art that is interactive, engaging, flexible, and temporary or rotating. Site-specific installation art could also be commissioned here, and could serve as an attractor particularly in the short and medium-term. Interactive art was proposed as

a major element that would engage children and families with elements that invite spontaneous play, hands on activities, and generally stimulate children's imagination and creativity. Last but not least, art could present an opportunity to connect with technology in a variety of ways from QR codes providing information about specific installations or pieces, to engaging people in the creation of art by using their smart phones to take photos, and share them through social networks and interactive apps.

Community Celebrations And Gatherings

Downtown's public spaces are meant to, above all, provide the places for spontaneous and organized community gatherings and celebrations that are lacking in Westminster. While these uses are now served by some of the city's parks, a central gathering space, replacing what the mall used to be, is strongly desired. The spaces downtown will provide a more urban experience, as well as places that are more intimate in size and foster spontaneous gatherings and sharing.

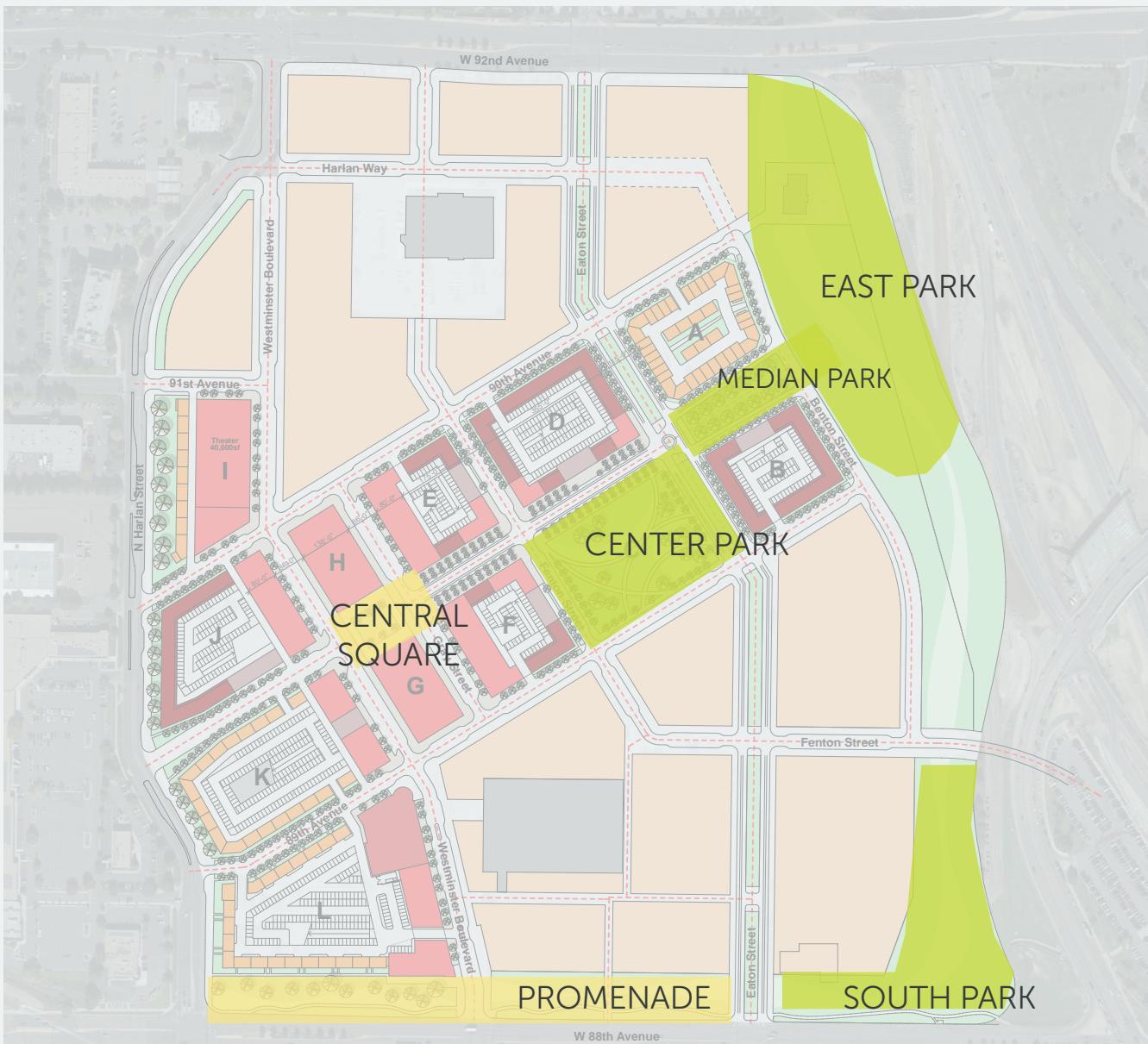
Flexibility

The design of downtown public spaces should allow them to change over the day, week, and year with the seasons, to accommodate larger gatherings as well

as spontaneous small group or individual activity. Above all, flexibility will ensure that the spaces could be sustained and evolve over time as experiments are conducted and needs and interests in the community change. This flexibility will be achieved not only through the use of lighter, potentially movable amenities, but also through careful and intentional programming that is re-evaluated and re-examined on a regular basis.

Spontaneity

This theme kept coming back in stakeholder discussions as something that is sorely needed in Westminster's public spaces, and a element that will set downtown apart from both lifestyle malls and highly programmed city parks. While planning for spontaneity may initially sound like a contradiction in terms, planning and designing to allow and encourage spontaneous activities is a very wise approach. City staff has already indicated their desire to create a "bureaucracy-free" zone downtown, where permitting and other regulations are relaxed, and are in fact encouraging community members to initiate activities. Additionally, security and other regulations could be redefined in order to encourage engagement, and physical elements can be used to help people use the public spaces downtown.



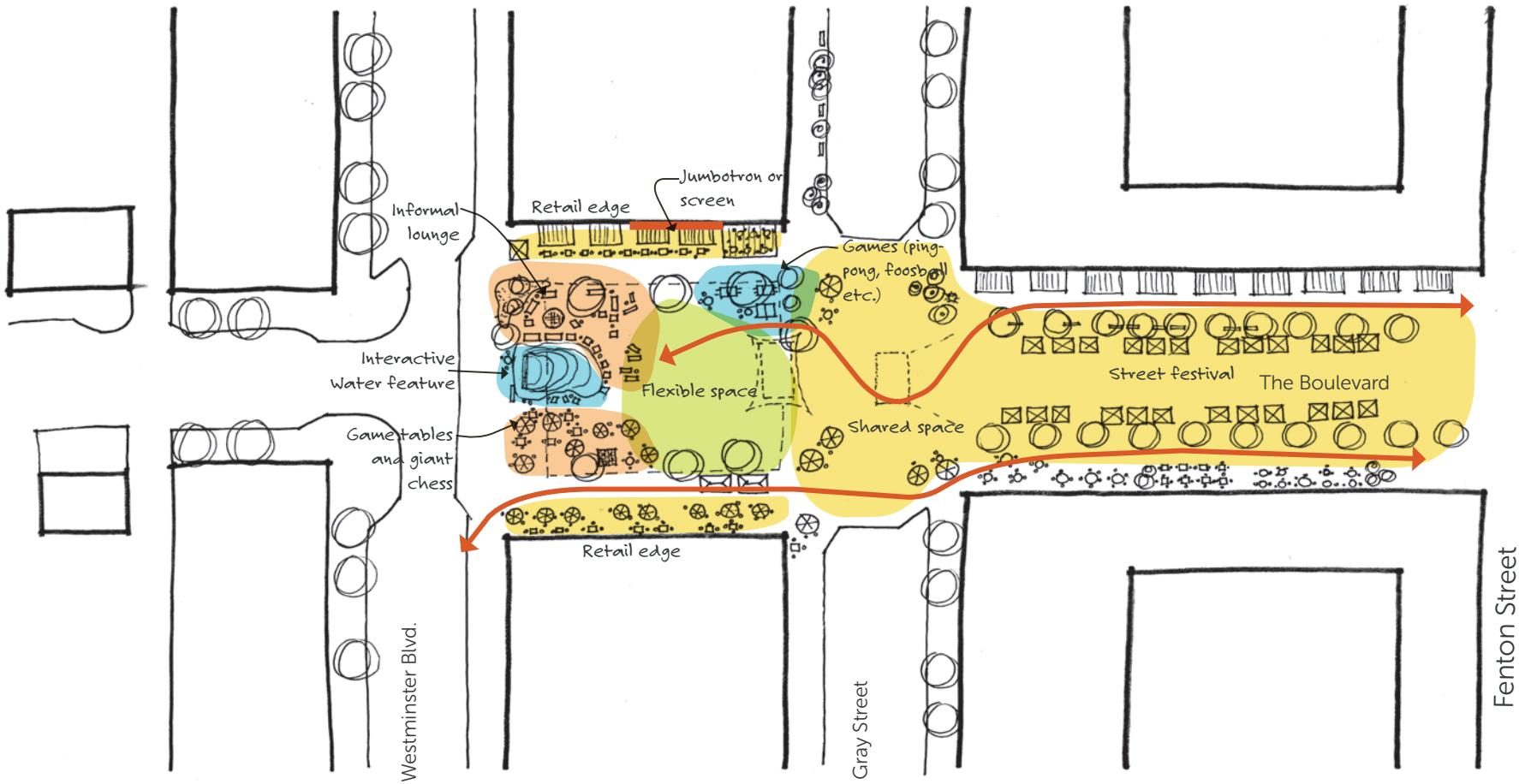
Westminster Center Block Plan

Scale: 1" = 300'

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TEN DESTINATIONS IN DOWNTOWN WESTMINSTER

The New Downtown Master Plan recognizes that access to public green space significantly contributes to the quality of life in a city. We would amend this statement by saying that the New Downtown will need great public spaces that are more than “green spaces” to define the quality of life for all citizens and because they are essential to community wellbeing.



CENTRAL SQUARE, DOWNTOWN WESTMINSTER
Placemaking Concept



CENTRAL SQUARE “THE PIAZZA”

Central Square should become not just a gathering space, but downtown’s living room, the way Italian piazzas are the heart of their communities. The master plan proposes a $\frac{1}{2}$ acre square that is framed by buildings to the north and south with restaurants and cafés spilling their outdoor dining terraces directly onto the square. This private use will help to activate the square on a daily basis, but the remaining space must remain public and be programmed in a variety of ways that will appeal to all the citizens of Westminster, not just shoppers or downtown residents. Creating a civic space for everyone in Westminster to gather in and enjoy was a critical goal for the public spaces in the new downtown as articulated by the stakeholders in the placemaking process. Equally important was the goal of creating a unique downtown environment, not replicating the spaces offered by existing lifestyle malls.

The Square, then, should be designed to be flexible, hosting a variety of small programs and offering a “Power of Ten” concentration of destinations and activities, such as community gatherings, small performances, celebrations, exhibits and markets. Larger events, such as holiday markets or arts festivals, can be accommodated by closing the next block (or two) of the boulevard temporarily (see Boulevard description below).

In addition to food, beverage and dining terraces on each side, the square should offer activities and attractions for families with children, millennials, seniors, and everyone in between. Its center

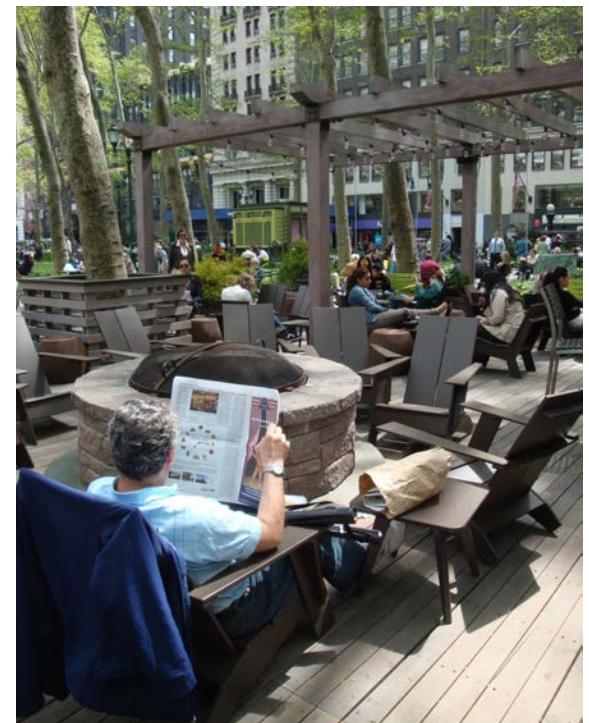


should be left open to allow for gatherings, markets, small performances, civic celebrations and even an ice rink in the winter. The edge facing Westminster Boulevard would offer an attractive entrance anchored by a strong focal element to attract people as they drive along the downtown's main spine. This element should be both attractive and interactive, such as a water feature or an interactive piece of art. We suggest rather than a spray pad, which is already found in many of the local malls, an interactive sculpture that spills water into a shallow pool would provide a play

element that could also be transformed into a hard paved area for other activities. This focal point, surrounded by flexible outdoor seating would allow people to be both comfortable and active here. Amenities could include movable tables and chairs, umbrellas for shade, perhaps a cart or stand offering coffee, newspapers and snacks.

We propose that the area south of the focal point/water feature offer table games such as chess, scrabble, dominoes and checkers. A giant chess set could also be

considered here as it will help attract people and clearly show the intended function of the area. Game sets could be made available either in one of the storefronts lining the square, or in a portable kiosk or cart. There may also be opportunities to introduce an outdoor electronic games component here such as a large screen to play video, xbox, or nintendo games etc. A large screen mounted on a building facade above the square could be used for game competitions, as well as for screening sports events and for outdoor movies.



To the north of the focal point we propose an urban lounge area with a distinct character. The lounge could include comfortable furniture like outdoor couches, chaises, deck or Adirondack chairs, swing benches, a fire pit, and possible table service from a nearby café or bar. Bryant Park's Southwest Porch is a great model for such an amenity including an outdoor bar.

At the eastern edge of the square, the space for a temporary stage could be equipped with lighting, sound and power hook-ups. A permanent platform at this location could provide seating or a small stage (approximately 8' x 12') for music, but space should be maintained for a larger temporary stage here (or in the intersection) when the Boulevard is closed for big events.



THE BOULEVARD

The Boulevard that extends to the east from the Central Square is an important pedestrian and bike connector between the commercial core, Center Park, Trail 36 and East Park. With retail activating the ground floors and sidewalks of at least on the first two blocks to the east, people will be naturally drawn to stroll its length. We propose that its wide sidewalks be curbless so that they merge seamlessly with the street. This will allow the Boulevard to

become an extension of both the Square and the Park when it is closed to traffic for special events. Movable planters, like those at Santana Row, can delineate the sidewalk edge. In addition, the Gray Street and Fenton Street intersections should be raised and paved differently from surrounding streets which will also help to extend the square when the street is closed to traffic and encourage pedestrians to walk eastward.

For special events the Boulevard can then be transformed into a plaza that can welcome large numbers of people.

The Boulevard is not a through street and could be scaled more intimately, with narrow 10' travel lanes and 8' parking lanes to reduce vehicle speed. The sidewalks (shown in the Master Plan at 30') may be too wide unless the street is lined with outdoor dining, which could be double-loaded with dining right at the curb, as shown in the photo of Santana Row. We suggest a single row of trees, rather than double rows, to allow for sidewalk programming. Other uses could include outdoor retail displays, food kiosks, pop-up tents with prepared food and food truck seating.

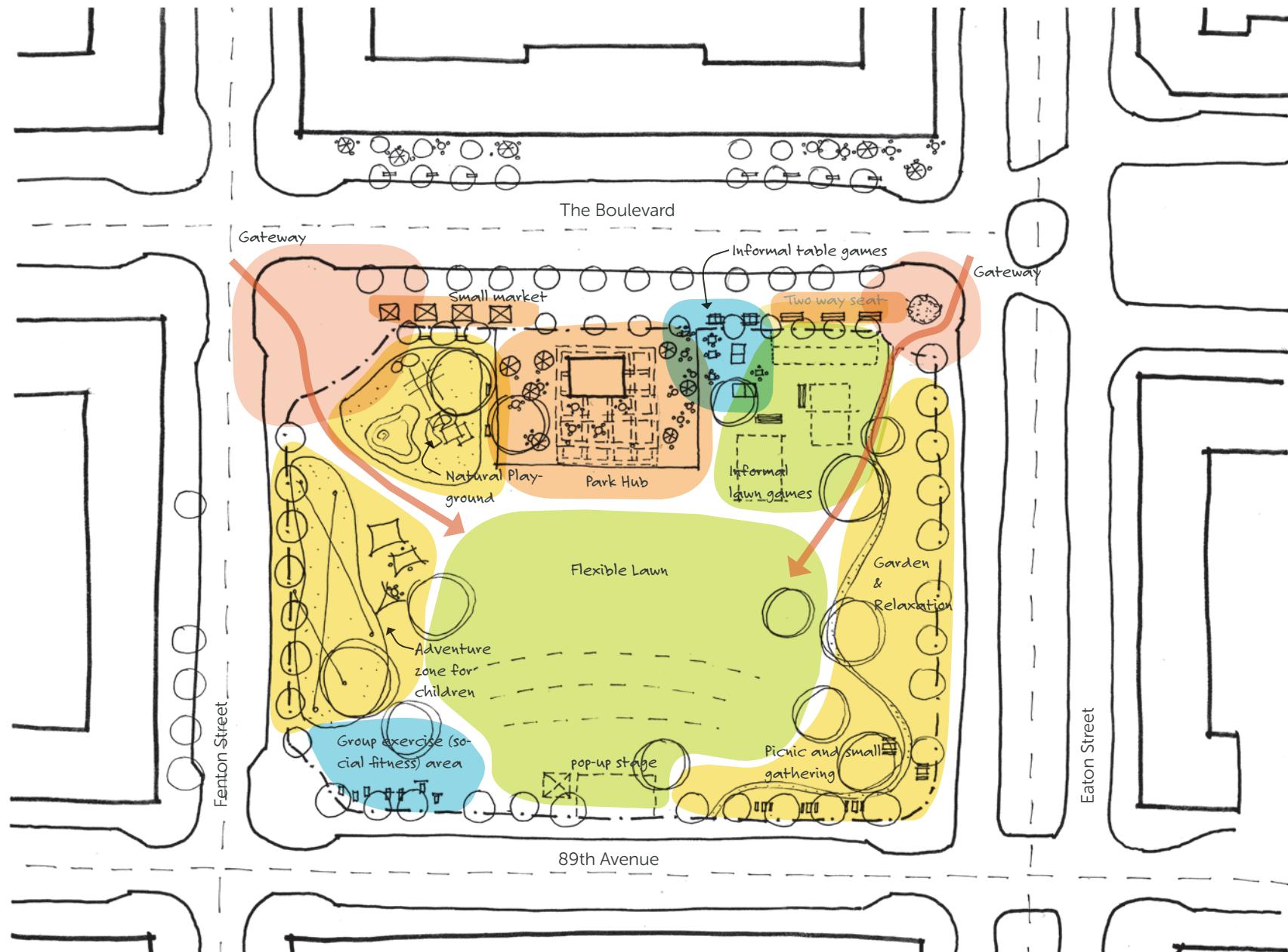


CENTER PARK

Center Park is intended to be the vibrant, multi-dimensional urban park people are expecting Downtown Westminster, the new downtown to offer. The Placemaking stakeholder meetings and interviews revealed that people in Westminster have a real desire and a need for a great urban park that is a community gathering place. Center Park's proposed footprint of almost 3 acres allows for it to become a real destination that can draw people not just from downtown and its immediate surroundings but from all of Westminster and beyond.

While located at the heart of Downtown Westminster, as its name suggests, the park is a block away from Westminster Plaza, and Westminster Boulevard, downtown's main public and shopping areas. It connects to these important public spaces via a street that has the aspect of a boulevard with ample sidewalks lined with active storefronts, outdoor displays, seating terraces and shade trees. The buildings across the street also





CENTER PARK, DOWNTOWN WESTMINSTER
Placemaking Concept



have active ground floors with dynamic corners that contribute to the ambiance of the boulevard and provide a lively edge to the park itself.

Center Park will be different from the other parks in Westminster – instead of formal sports fields it should have a flexible lawn that could host a vast array of activities like Frisbee, volleyball, pick-up soccer, badminton, and other social games. The lawn would also be used as a venue for performances, concerts, outdoor movies, parties and celebrations. The lawn would be a space that can comfortably host an audience of a few hundred up to a thousand spectators without displacing other activities taking places on its edges.

The lawn could be anchored by a café pavilion offering public restrooms and engaging the wide boulevard sidewalk promenade – the main connector to the park. We envision the pavilion as a small structure of about 1000 square feet with a generous overhang that creates a covered terrace or patio that would serve as a rain venue for





smaller events and activities. The pavilion terrace would accommodate setting up a portable movie screen or sound equipment for a small performance using the café as a background while the audience sits on the lawn.

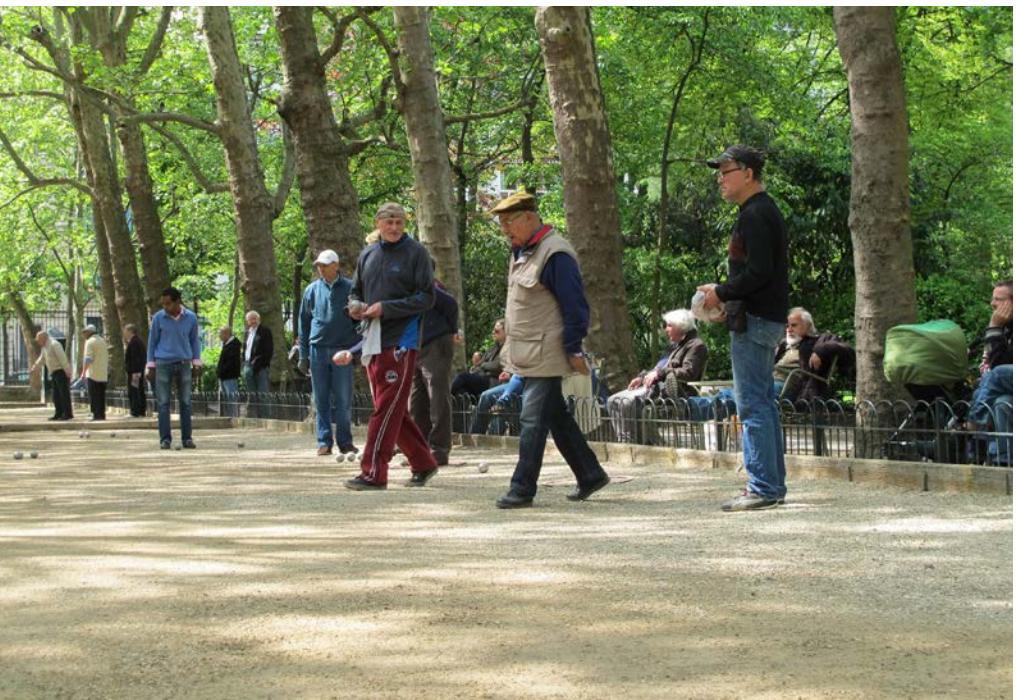
More significant stage set-up for larger events and performances should be accommodated across the lawn on the south side of the park where equipment trucks could park along the street.

The main gateway into Center Park will be the corner of Boulevard and Fenton Street, a corner that is very visible along the Boulevard and possibly even from Central Square. This corner of the park should be vibrant, attractive and active with a mini-

plaza leading visitors into the park, and an exciting play area stretching to the outdoor cafe terrace providing comfort and amenities to parents and caregivers taking their children to the play area. The children's play area would extend along Fenton Street with a more adventure-style zone for older kids that could feature a small scale zip-line, small climbing walls or boulders, and other special play and exercise features that are not found in Westminster's other playgrounds.

In the southwest corner of the park at Fenton Street we propose installing exercise equipment for adults, creating a fitness area where people can socialize and support each other in their health and fitness goals. This area could also





be a major hub for the walking and jogging path that encircles the entire park. Ideally the loop would have a soft-surface and distance markers along its length, while information would be available at a few key points like the corners and the fitness area.

The southeast corner near Eaton Street could be a resting point along the jogging path, but could also accommodate picnics and small gatherings such as birthday parties, potlucks and small celebrations. Picnic tables, social circular benches that allow people to sit in groups and a few grills or fire pits would contribute to making this area comfortable and inviting for this type of activity. On street parking close to the picnic area is available 89th Avenue, while drop off spaces are located on Eaton Street.

Along Eaton Street, the park could have a more natural, garden character with a meandering path offering natural shade and quiet pockets for people to sit, read, relax and enjoy the gardens. This is an opportunity to engage area partners like the Butterfly Pavilion to create some of the garden beds and natural environments such as a small butterfly or dragonfly

garden that would give them a presence and exposure in the new downtown. Area master gardeners could be enlisted to help maintain the gardens once they are planted.

Along Boulevard Center Park could spill onto and connect to the wide sidewalk promenade by offering visible activity right up to the sidewalk, and incorporating the sidewalk trees into the park. We propose to create a game area with lawn/court and table games, benches and social seating tables leading up to the café terrace which would spill onto the promenade. This area could offer one or two simple courts for bocce or petanque. These need not have a hard border, but could use movable borders or simple markers to delineate the court in the soft surface under the line of sidewalk trees, with double-facing benches in the shade that would allow people to sit and watch others play or to observe people promenading along the boulevard. The game area could potentially include informal (not fenced) grass courts for volleyball or





badminton, as well as space for less formal lawn games like bag toss or croquet. We also propose that a few ping pong, fussball and chess tables be installed here, and game sets be made available at the adjacent café. This is a low-cost, fun way to activate this area of the park while triangulating café, games, restrooms, and programs.

The Boulevard sidewalk promenade would offer unobstructed fluid access into the park and could be used for a variety of events including markets, art fairs and festivals, food truck rallies, etc. For special larger festivals and fairs, such as a natural or found art festival, or a drone festival both of which were mentioned as possible niche themes in discussion with the Cherry Creek Festival organizers, the Boulevard could be closed to traffic from Eaton Street to Gray Street connecting Center Park to the Square and allowing for activities to spill into these public spaces.



EAST PARK & MEDIAN PARK
Placemaking Concept

EAST PARK

While primarily a neighborhood park, East Park also provides access to US 36 Trail, the new bike trail along I-36, and help to create a natural buffer between Downtown Westminster and the highway. Along with Median Park, East Park can provide outdoor gathering space for local residents, and spaces for “back yard” experiences: dog walking, gardening and picnicking. In addition, East Park can offer a safe, observable space for teens to skateboard and ride BMX bikes.

Even apartment dwellers now exhibit a strong interest in growing their own vegetables and flowers, and East Park provides the opportunity for community gardening, bee keeping and sharing knowledge about native plants and sustainable best practices. The community garden is centrally located in East Park and will be an extension of Median Park.

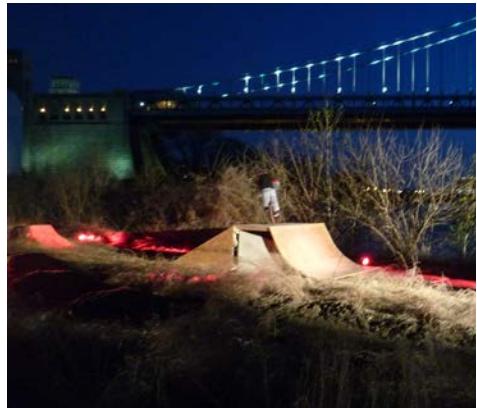


A natural rock outcropping with a waterfall and wildflower garden at the center of the community garden could terminate the view down the Boulevard. The area behind and a few feet above the water feature should be leveled so that garden plots can be assigned to local residents with guidelines for maintaining them.



An area to the north could be set aside for youth, featuring a skateboard park . In the future, if the dentist office is relocated, activities could be expanded to include a BMX track, rock and boulder climbing classes, slack lines, and a bike rental, repair and snack bar facility.



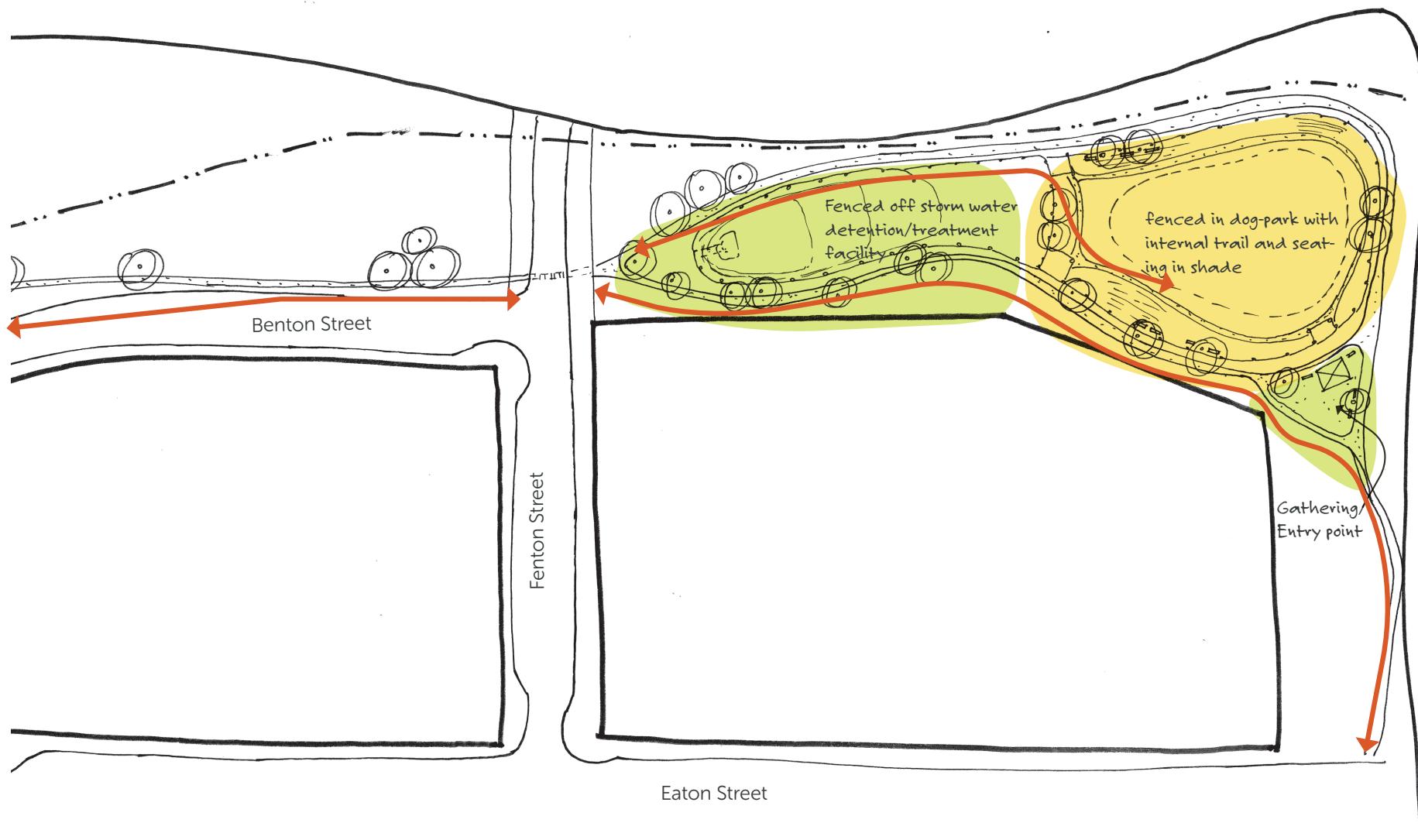


Dog parks in urban areas have become one of the most popular places for people to gather and socialize with their neighbors while their dogs play and socialize as well. A dog park in the southern part of East Park could be adjacent to the water detention pond, and provide boulders and natural planting for climbing and exploring, along with water for the dogs and shade for the dogs' owners. A trail around the detention pond will provide exercise for dogs and their human owners.



MEDIAN PARK

Median Park, which is surrounded by town houses and apartments, is appropriate for small scale neighborhood use and could connect nicely to activities and amenities both in East Park and in the Center Park described above. It can provide a strong pedestrian to Trail 36. At 0.6 acres this space could accommodate seating areas and community garden plots where apartment and town house residents can have a "back yard" experience.



SOUTH PARK & US 36 TRAIL
Placemaking Concept



SOUTH PARK

South Park currently exists as a green space with mature Cottonwood trees lining an irrigation ditch, called Allen Ditch, and a trail. Allen Ditch is a lateral extension of the historic Farmers' High Line Canal, flowing through the site to farms to the east. The ditch contains water only at certain times of the year and its flow is regulated by the irrigation company. South Park has the potential of creating a pleasant green buffer between the downtown and busy 88th Avenue, and can offer a bike link to the US 36 Trail, currently under construction.

The Master Plan proposes a supermarket at the entrance to Westminster Boulevard and we suggest that it include a prepared food section with outdoor dining facing South Park to create a visible activity at the gateway to the new downtown. Building on that concept, the ground floors of other buildings fronting the space on the east side of Westminster Boulevard could also feature restaurants, cafes, brewpubs or taverns with outdoor dining terraces. At least one of the

establishments along the promenade should be teen-oriented such as a coffee shop or ice cream parlor that also offers computer or video games, and outdoor fussball, ping pong, etc. These eating and drinking establishments could be joined by a pedestrian promenade along the northern edge of the park. Informal seating could line the promenade (lounge chairs, Adirondack chairs, etc), taking advantage of the southern exposure and managed by adjacent dining and coffee establishments. This area could also feature designated lawn game courts for

bocce, bag toss, croquet, badminton, etc. Game sets could be made available at one of the adjacent businesses.

The park should feature small play elements (i.e. interactive art, rocks or boulders, sand pit, water play piece) to attract families. Spaces for picnics in the shade of trees or under umbrellas and simple games (badminton, Frisbee, ball play) would also activate the park and create a lively atmosphere when viewed from 88th Avenue.



EATON STREET

Eaton Street in downtown Westminster is reminiscent of the lovely green and shady parkways, such as Monaco Parkway and 17th Avenue, for which Denver is famous. The City of Westminster, however, has the opportunity to design it for more public use by creating a walking path down the center of the median that also provides safe crosswalks at the intersections between the medians. In addition, the City can work with the Denver Botanical Garden and other horticulture experts to plant native, low-water plants that are both low-maintenance and wildlife-friendly. Thus, the median, like the native garden in Center Park, can be a demonstration garden with labels and interpretive information, to guide homeowners in xeriscape and sustainable gardening. We do not recommend that this path be used as a bike path as US 36 trail is just one block away and the walking path will be safer without bikes, although some sharing should be permissible.

Eaton Street medians can be used as an outdoor gallery featuring temporary sculpture shows and art exhibits. In this case, as visitors may want to stroll the path, access to the Boulevard from the Piazza and South Promenade should be indicated with maps and signage.



US 36 TRAIL

Route 36, the Federal highway that runs between Denver and Boulder, is being transformed into a highway of the 21st century, with many travel options. Not only is the Colorado Department of Transportation building an HOV lane with Bus Rapid Transit, and a toll for single-occupant cars; CDOT is also offering an alternative to the car by building a bike path along the highway that will connect Denver to Boulder. The City of Westminster rightly views this development as a great boon for its new downtown as the new path will run adjacent to the center and provide a green buffer between the center and the highway. As more and more Denver area residents are eager to commute by bike, the new trail will help reduce car trips from Westminster and become an important connector. In addition, commuters and recreational bike riders will be looking for destinations or stops en route that can provide food, beverages and bike repair facilities. Wayfinding signage directing cyclists into the commercial heart of the





downtown will be critical to complete the connection.

The US 36 trail Greenway provides an opportunity to create a green buffer using native plants and trees that will help to screen the views and sounds of the highway and provide a pleasant biking experience. At key intersections, especially at 88th Avenue, B Street, and the northeast corner of Northeast Park and G Street, areas for food kiosks, food trucks, portable bike



rental facilities, bike repair stations, waste receptacles, benches and shade trees will provide welcome stops for bike riders. These rest stops/nodes of activity can also be equipped with information and maps of the downtown so that riders who would like to make a longer stop can find cafes and restaurants.

Many towns around the country that have taken advantage of their proximity to bike trail heads have benefited

economically by becoming tourist destinations. Signage within the downtown Westminster should indicate the direction to this and other trails. Recreational bikers can then view the downtown as a jumping off point for regional rides, which will give a boost to the hospitality, restaurant and bike businesses within the downtown. Special events, such as bike rallies and races could kick off here as well.

CIRCULATION

Streets as Places

While streets were once places where we stopped for conversation and children played, they have often become the exclusive domain of cars. This is particularly true in Westminster. Even where sidewalks are present along the multi-laned, high-speed streets, they don't always feel hospitable to pedestrians. These kinds of streets are the product of very deliberate choices that have been made to shape our communities around the private automobile. We have the ability to make different choices-starting with the decision to design our streets as comfortable places for people.

Thankfully, the master plan for downtown Westminster depicts a different vision of what transportation can be. Here streets are for people first and downtown streets will be destinations worth visiting, not just thruways to and from the workplace or the home. Neighborhood streets can be places where it will be a delight to walk and interact with neighbors, and commercial streets can be vibrant public spaces that support the ground floor businesses and are destinations in themselves. All the streets will be safe for walking and cycling while allowing both through and local traffic. Pedestrian

and bike access to public transportation will also be promoted: a proposed commuter-rail station on 88th Avenue and the comfortable express RTD buses will make commuting by rail or bus a pleasure.

Perimeter Streets

The streets that serve as the boundaries of downtown Westminster, 88th, 92nd and Harlan Avenues, are overly wide, encouraging fast moving traffic and discouraging pedestrian crossing. In order to integrate the downtown with its surrounding neighborhood, it is imperative that these streets not act as barriers. Great commercial centers are not only pedestrian friendly within their precincts, but also easily accessible by bike and on foot. All three streets could be put on road diets to reduce the number of traffic lanes and create safer pedestrian and bike access. In addition, the streets can be designed to calm traffic, with planted medians, street trees, curb extensions and active uses on the ground floors or at the gateways to give motorists something to look at and entice them in.

Commercial Streets and Gateways

Downtown Westminster is strategically located on Westminster Boulevard, a major spine through the city that connects to the Promenade, the Butterfly Pavilion, City Park and the Westin Hotel to the north. Further north it becomes Main Street in Broomfield. It will serve as the commercial Main Street of Downtown Westminster and the way that most people will enter the commercial district from 92nd and 88th Avenues, as long as activity and signage indicate where to turn. Most visitors should be encouraged to enter on Westminster Boulevard because that will maximize business exposure and convey the feeling of a vibrant urban neighborhood that will attract them in to shop and dine.

Westminster Boulevard, Gray and Fenton Streets, and the Boulevard, the other main commercial corridor, should be treated differently than the residential streets downtown. The ground floors within the commercial core should be active with retail, restaurant and service uses that make walking a pleasure. Large, transparent storefronts with attractive, eye-catching displays, facades that open up to the street, outdoor dining, perpendicular signage and sidewalk displays of merchandise will create a street that attracts pedestrians. Most important, streetscape and street

trees should not obscure the view of storefronts from the street—trees must be carefully selected, placed and pruned to maximize visibility. Large planters should be avoided on commercial streets to allow for active uses on the sidewalks, such as dining at the curb, vending and food kiosks, and sidewalk sales and special events. Flexibility, triangulation and visible activity are just as critical on a sidewalk as in any other public space.

As the gateways to downtown Westminster, the intersections at the Westminster Boulevard entrances should not only be well signed, but should have safe and comfortable crosswalks encouraging pedestrian movement. They will be even more effective gateways if they offer views of activity, either at the corners or within a block of the entrance, ground floor uses that mirror the commercial activity further inside (e.g. a small coffee bar with outdoor seating or convenience retail for residents) and attractive planting. The activity of the commercial center should “reach out like an octopus” to the perimeter streets.

Bike Lanes

As a destination for regional bike riders and a jumping-off point for bike enthusiasts, downtown Westminster’s streets will be bike friendly, either with

dedicated Class II bike lanes or traffic slow enough to allow for safe shared streets. We recommend a bike lane along Harlan Way to link US 36 trail to Harlan Street. Fenton Street could be a designated bike route into the commercial area from US 36 Trail. Where these streets intersect with US 36 Trail, nodes should offer rest stops for riders with food, bike rentals, shade, bike racks and repair stations, and signage indicating what the downtown has to offer.

Bike Trails

US 36 Trail and the South Promenade on 88th Avenue will have off-street Class I bikeways that will be dedicated to bike riders. These will connect to other important bike trails in the City and the region.

Walking Trails/Promenades

A walking loop should be designated around the heart of downtown, not just the perimeter of the new development, to encourage safe recreational walking. Maintaining walking trails and promenades or sidewalks that are separate from dedicated bike trails will protect both walkers and bike riders, although some sharing of trails should not be prohibited. The loop should include a north-south trail along Harlan Street connecting to an attractively planted sidewalk (“promenade”) along Harlan Way leading

to a separate walking path through East Park. The promenade in South Park will provide the southern link of the walking trail.

The walking trail or promenade should be well-signed with wayfinding signs indicating key destinations and connectors. It should also be equipped with benches in strategic places (accompanied by shade trees and waste receptacles). Most importantly, the walking loop should have safe, and well-signaled or signed crosswalks to encourage pedestrian use. The loop trail could become a destination recreational walk for residents of all ages, but could be particularly attractive to seniors, who often walk inside malls because of the safety and comfort factors.



Proposed concept diagram of short-term LQC uses and activities

LIGHTER, QUICKER, CHEAPER

“Lighter, Quicker, Cheaper” (LQC) describes a moderate cost, high-impact framework for short-term, experimental interventions and events on the site. LQC experiments allow for lower risk, and lower cost improvements to become the launching pad for the development of Downtown Westminster. These experiments capitalize on the creative energy of the community and its partners to generate new uses, test ideas, and build a new image for this place in transition.

Experimenting with special events and activities is essential to the LQC approach and can draw upon the large number of stakeholders and partners who expressed an interest and shared their ideas for the public spaces of downtown Westminster. Creating an “interim public space” can provide a boost to the area and build momentum, while fulfilling a real community desire to see the site of the

Westminster Mall come back as a stronger, better place.

Temporary events can take many forms requiring varying degrees of time, money and effort, but the spectrum of interventions should always aim to build lasting change. A great program of events can put downtown Westminster back on the map. When people have positive experiences during the experimental phase, they are likely to return for more, and return regularly, after larger capital improvements have taken place.

Since the beginning of its cooperation with the City of Westminster and its stakeholders PPS has been seeking to develop not only a vision for the long term but also ways to transform the site in the immediate future. A number of focus group discussions and individual interviews explored strategies for immediate use. The ongoing work on the site – construction of the US 36 trail and other infrastructure element – paired with its significant

size, require careful consideration when locating LQC interventions. No matter what their character, they need to provide an exciting, but also pleasant and comfortable experience, and doing that in the middle of a vast construction site can be a real challenge.

Special events and programs should be focused on the areas that can currently offer the best image and easy access that wouldn’t require visitors to drive through the entire site. Since JCPenney is still active, using the area around it, and its parking lot as well as spaces along the South Promenade seems to be the best strategy.

NEXT STEPS

The City of Westminster should pursue and further develop some of the ideas discussed in the focus groups with PPS:

Organizing a variety of markets - flea markets, art and craft markets (the Affordable Art Fair was brought as an example), with prepared food and entertainment components.

A food truck rally with comfortable seating and entertainment. While this activity is related to the markets, creating a really pleasant seating area for people to sit, eat and

socialize will be key, and this will require more effort than organizing a market experience. Since food experiences in Westminster currently are somewhat limited, this could be a great way to offer residents more food choices, test the concept of attracting unique local and regional restaurants to downtown Westminster in the long term, and potentially incubate some of these entrepreneurs locally, helping them to grow from a food truck to a brick-and-mortar venue.

A beer festival/temporary beer garden where local breweries are represented. Again this

event would both test the viability of a “beer alley” concept for the South Promenade in the long term and help begin building partnerships with local brewers.

An outdoor movie series potentially staged near the JCPenney and using its wall for projection. JCPenney should be invited to both host and sponsor the events, and screenings could be tied to some of the store’s promotions and sales; for example beginning with their 4th of July sale and ending with their Labor Day sale.

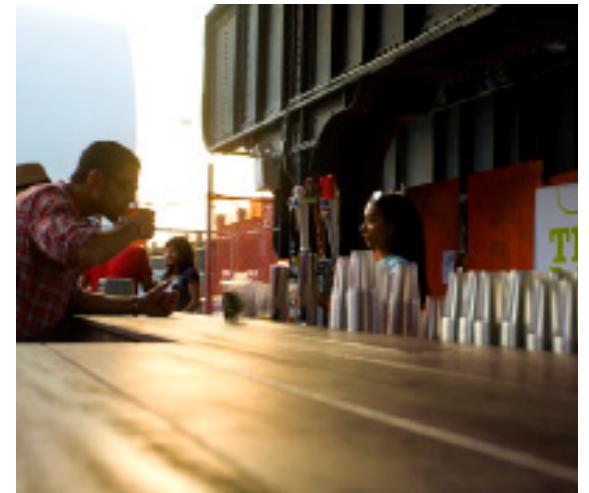


Flea market

Placemaking in Westminster



Food truck rallye



Beer garden

A special themed-art festival curated by the Cherry Creek Arts Festival (CCAF) team. The CCAF team has already expressed its readiness to curate an art festival in Westminster, and the city should pursue discussions with the organization to identify the most relevant theme for this event. The CCAF team felt strongly that a niche theme would be needed to attract people from the entire region since Westminster is not known as an art festival venue. Building off of what is already in Westminster, among the themes mentioned in the brainstorming discussion were:

- Nature and the outdoors, which are such a strong theme for the community - a festival of repurposed art that may include driftwood art, natural art, and objects such as beetle-kill furniture;
- Environmental Art Festival;
- A bike event like Denver's Tour de Fat with bicycle art such as art bikes, art pieces made with bike parts, gears, chains etc.;
- A "West-tech" robot fest/competition or drone festival connecting to the tech industry and techies in the area.

A hot air balloon event or potentially a regularly present hot air balloon operator who could add that experience to other events on the site. Hot air balloons emerged as an important theme from the history of the Westminster Mall. People remembered with nostalgia bringing their children to the mall to watch the balloon display. Re-interpreting this experience, and transforming it into something larger, more exciting and more natural could help set the tone for the new development.



Outdoor projection



Light art installation



Hot air balloon event

Community gardens - the idea of creating an area on the site where community members could garden, grow food and decorative plants was mentioned in a number of conversations. Gardening could be a great way of engaging local youth, community groups and garden enthusiasts on the site.

Related to the gardening idea was the thought of creating a large pumpkin patch area, which could culminate with a harvest festival.

Temporary BMX track to attract youth, with a possibility to expand activities with a graffiti wall, rock climbing, and other youth-oriented activities. Since urban adventure and fitness is one of the themes that will be explored in downtown Westminster's public spaces in the long term, it is important to engage local youth in the site early on.



Community garden

Placemaking in Westminster



Bike and BMX event

8.2

TRAFFIC STUDY



DOWNTOWN WESTMINSTER PLANNED UNIT DEVELOPMENT

FINAL TRAFFIC ANALYSIS

SUMMARY

The City of Westminster is proposing to create a mixed-use downtown on the site of the former Westminster Mall. The site is located west of the Boulder Turnpike between W 88th and W 92nd Avenues. The purpose of this document is to assess the traffic function of the proposed street grid assuming full build-out of the development program (see below). This study utilizes Synchro software to analyze traffic impacts at the primary site access points along W 88th Avenue and W 92nd Avenue. Furthermore, the study assesses the impacts of the proposed N Harlan Street realignment and reconfiguration at W 92nd Avenue.

VEHICLE TRIPS

Utilizing the Institute of Transportation Engineers (ITE) publication Trip Generation, we have calculated average daily trips and have also begun calculations for PM peak hour trips for a project program of:

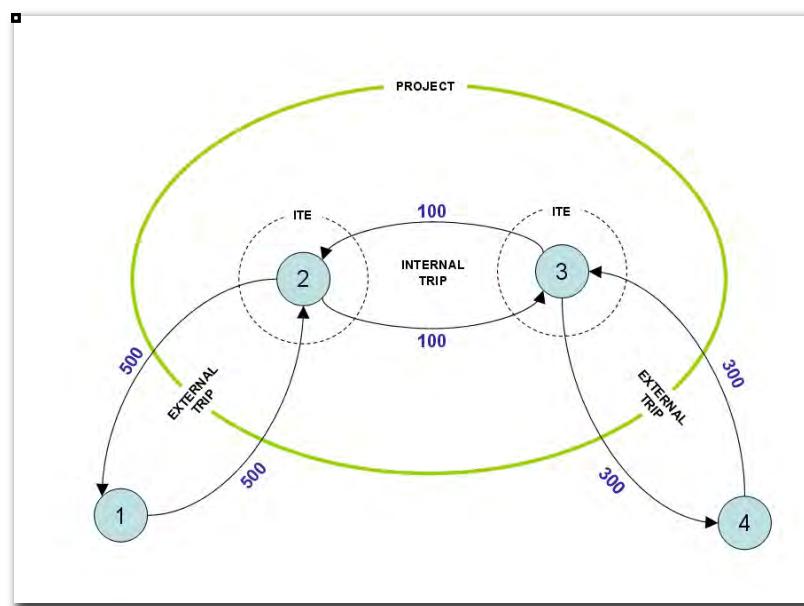
- 2,000 dwelling units;
- 1,000,000 sq. ft. of office uses;
- 740,000 sq. ft. of retail, including 180,000 sq. ft. of existing JC Penney;
- 280,000 sq. ft. of hotel space; and
- The existing Brunswick bowling facility of 37,400 sq. ft.

Since the Preliminary Development Plan (PDP) checklist is focused on traffic volume increases, we will at this point limit these calculations to the newly proposed uses and not the JC Penney or Brunswick uses.

TRIP CAPTURE

Mixed-use projects designed in a walkable, bikeable and transit-friendly manner such as Westminster Center generate less traffic than auto-oriented developments.

The diagram here illustrates the concept of a “captured” trip.



Captured trips include vehicle trips that do not leave the project; vehicle trips that do not occur because they are replaced by walking, bicycling or transit; and trips that do not occur such as a telecommuter working from home.

We have developed in-house methodologies for calculating trip capture using Urbemis and other programs.

Based on current research and the land use mix of the project, we estimate a daily capture rate of 35-percent and a PM peak hour capture rate of 40-percent. Note that we and others have documented daily capture rates of 50-percent and peak hour capture rates of over 60-percent in other cities and mixed-use activity centers, so these initial values are conservative.¹

TRAFFIC

For the above new development, we have refined our prior estimates to reflect a daily net trip generation of approximately 34,520 vehicle trips, evenly split as incoming and outgoing on a daily basis. We also estimate a PM peak hour trip volume of 3,150, with 1,440 inbound and 1,710 outbound.

The baseline turning movement counts utilized the City's Synchro files that were recently completed in accordance with the realignment of Sheridan Boulevard. Since those counts included one center, northerly, entrance, and the two southerly entries, it was assumed that existing traffic accessing the bowling facility and JC Penney were included in those counts.

Comparisons of the sizes of these facilities and their projected rates of trip generation using ITE methodologies showed this to be a reasonable assumption for the Brunswick center, but not for the JC Penney property (unless a significant number of patrons are accessing the store from Harlan, where we do not have traffic counts, except at its northerly and southerly ends).

Therefore, the existing northerly traffic counts were left to account for the Brunswick site, and the JC Penney space was factored up to account for a better-performing future use- which could very well be the JC Penney surrounded by a more vibrant center.

FORMER MALL/AREA TRAFFIC

The now abandoned mall that occupied most of this property was just over a million square feet in size (1,014,504). Using the ITE methodologies, we estimate that the mall, when fully leased and operating, used to generate approximately 43,500 daily trips and 3,410 PM peak hour trips, almost evenly split at 1,670 inbound and 1,740 outbound.

¹ http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_684.pdf
http://www.epa.gov/smartgrowth/mxd_tripgeneration.html

These comparisons mean that the current development program will distribute approximately 30-percent less daily traffic and 17-percent less PM peak hour traffic than the former mall. These calculations and comparisons will be refined as further trip capture data is developed and actual traffic counts around the former mall are evaluated.

KSS Fuels offers a complete database of U.S. traffic count data through Google Earth Pro, which was used as a source to provided existing and historic 1996 daily traffic data for W 88th Avenue. This data shows that W 88th Avenue had traffic as high as 40,000 vehicles/day, presumably when the Mall was performing well. Today, in 2013, W 88th Avenue has 22,000 to 29,000 vehicles per day currently.

Similarly, Harlan Street presently has approximately 10,000 vehicles/day and W 92nd Avenue ranges from 32,000 just west of the site to 28,000 just east of it.

During the PM peak hour study period, W 92nd Avenue presently has approximately 3,000 vehicles, with a very slightly higher westerly flow. W 88th Avenue has approximately 1,800 vehicles in the same hour, with approximately balanced flows, slightly more eastbound at Harlan Street and slightly more westbound at the former easterly mall entrance. Harlan Street, in contrast has only approximately 600 vehicles in the PM peak hour.

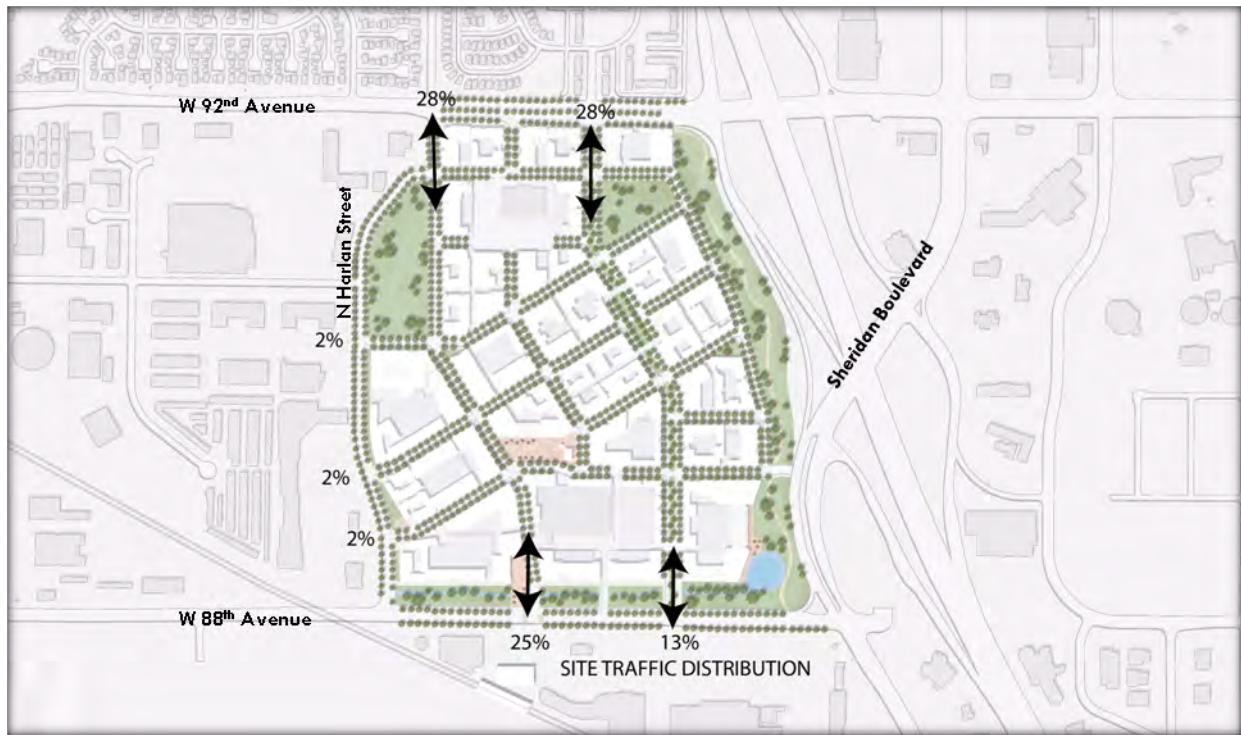
TRAFFIC DISTRIBUTION

Currently, approximately 56-percent of area traffic is on W 92nd Avenue; 11-percent on Harlan Street and the balance of 33-percent on W 88th Avenue. On inspection of the site plan and this information, it was determined to allocate site traffic as 56-percent to W 92nd Avenue, 6-percent to Harlan Street and 38-percent to W 88th Avenue. Part of the rationale for this is that, presently, Harlan Street does not serve much function to the site. The Harlan Street assignment may be low, but this is also conservative in order to test the effects on W 92nd Avenue and W 88th Avenue of higher volumes assigned to those streets.

We also assumed that the site traffic would assume a similar distribution easterly and westerly as currently exists, and therefore split incoming and outbound traffic equally.

Graphically, the following depicts the additional distributions among the primary site driveways.

Westminster, Colorado, PDP Traffic Analysis



The trip generation calculations and distributions are here:

| Description / ITE Code | Units | Rate Weekly Day Daily Traffic | PM Peak Period Rate | % PM In | % PM Out | Expected Units (Independent variable) | Calculated Daily Trips | PM Peak Trips - Total | PM In | PM Out |
|--|------------------|-------------------------------|---------------------|---------|----------|---------------------------------------|------------------------|-----------------------|-------|--------|
| Residential PUD 270 | DU | 7.50 | 0.62 | 65% | 35% | 2000.0 | 15,000 | 1,240 | 806 | 434 |
| Hotel 310 | Rooms | 8.17 | 0.59 | 53% | 47% | 650.0 | 5,311 | 384 | 203 | 180 |
| General Office .710 (Equation) | KSF ² | Equation | Equation | 17% | 83% | 1000.0 | 7,856 | 1,189 | 204 | 995 |
| Shopping Center 820 (Equation) | KSF ² | Equation | Equation | 49% | 51% | 740.0 | 24,942 | 2,432 | 1,192 | 1,240 |
| | | | | | | | 53,108 | 5,254 | 2,405 | 2,850 |
| 23-Sep-13 | | | | | | | | | | |
| Capture Daily pkhr | | | | | | | | | | |
| 0.35 0.40 Net Trips 34,520 3,153 1,443 1,710 | | | | | | | | | | |
| 88th east 410 188 222 | | | | | | | | | | |
| 88th west 788 361 428 | | | | | | | | | | |
| Harlan 63 29 34 | | | | | | | | | | |
| 92nd east/west 883 404 479 | | | | | | | | | | |

ANALYSIS

Synchro traffic software, published by Trafficware LLC (version 8.0, Build 804, revision 795) has been used for the technical analysis that has yielded levels of service and other traffic performance data.

The most recent set of analyses revisited the optimized timing plans, and at the request of Dave Loseman, P.E., L.S., Senior Project Engineer for the City, the following additional testing of the Westminster/W 92nd Avenue intersection was completed:

1. A four lane section on the south leg of the intersection with one south-bound lane, one left turn lane, one north-bound through lane and one free-flow right turn lane. On W 92nd Avenue, the west bound double left would need to be converted to a single left. All left turn lanes would be protected/ permissive movements.
2. A five lane section on the south leg of the intersection with two south-bound through lanes, one left turn lane, one north-bound through lane and one free-flow right turn lane. On W 92nd Avenue, the double left turn lane would remain but would be a protected movement. The north bound left could be protected/ permissive.
3. A five lane section on the south leg of the intersection with one south-bound through lane, a double left turn lane, one north-bound through lane and a free-flow right turn lane. On W 92nd Avenue, the double left would be converted to a single left. Left turns on W 92nd Avenue would be protected/ permissive and the left turns on Westminster Boulevard would be protected.
4. A six lane section south of the intersection with two south-bound through lanes, a double left turn lane, one north-bound through lane and one free-flow right turn lane. On W 92nd Avenue, the double left turn lane would remain. All left turn lanes would be protected movements.

The above analyses appear in the attached report in their numbered order, at the end of the technical analysis.

With the additional instruction that the volume to capacity ratios (V/C) remain less than 1.0, an additional analysis was conducted with no protected left turns, and only this set of analysis reduced all V/C ratios to less than 1.0. This analysis is contained in the main body of the technical analysis that follows.

Additionally, we added an eastbound on-ramp at the northeast corner of the site. This ramp is not in the City model that was provided during the charrette, and we did not have turning movement counts for it. However, given the City's belief that this ramp accommodates a significant amount of eastbound traffic, we inspected the volumes we did have and settled on 400 vehicles making this turn during the PM peak- this represents approximately 22-percent of eastbound traffic at that point.

Finally, we refined the intersection of Sheridan Boulevard at W 92nd Avenue (that was also helped by the above-referenced ramp). Overall level of service is now D, with both southbound and westbound left turn approaches at LOS F. These turns currently have protected-only phases, if this is changed to permitted/protected, they would improve to LOS D or E- depending on how the phasing is optimized, with no significant overall change to the intersection, which would remain at LOS D.

Westminster, Colorado, PDP Traffic Analysis

Synchro files are also included with the prior submission. Files #1-#4 should be inspected for Westminster at 92nd variations only. File #5 contains all of the above-referenced refinements.

PREPARATION

This report has been prepared by the undersigned, a licensed Colorado Professional Engineer.



Chester "Rick" Chellman, P.E.





LOS



V/C Ratios



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|------|-------|------|------|------|-------|
| Lane Configurations | ↑↑↑ | ↑ | | ↑↑↑ | | |
| Volume (vph) | 1415 | 400 | 0 | 1590 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 325 | 0 | | 0 | 0 |
| Storage Lanes | | 1 | 0 | | 0 | 0 |
| Taper Length (ft) | | | 25 | | 25 | |
| Lane Util. Factor | 0.91 | 1.00 | 1.00 | 0.86 | 1.00 | 1.00 |
| Fr _t | | 0.850 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 5085 | 1583 | 0 | 6408 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 5085 | 1583 | 0 | 6408 | 0 | 0 |
| Link Speed (mph) | 30 | | | 35 | 30 | |
| Link Distance (ft) | 549 | | | 303 | 845 | |
| Travel Time (s) | 12.5 | | | 5.9 | 19.2 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 1538 | 435 | 0 | 1728 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1538 | 435 | 0 | 1728 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 24 | | | 24 | 0 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Sign Control | Free | | | Free | Free | |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 30.7% ICU Level of Service A

Analysis Period (min) 15

Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑↑ | ↑↑ | | ↑ | ↑↑↑ | | | ↔ | | ↑↑ | ↑ | ↑↑ |
| Volume (vph) | 197 | 880 | 0 | 0 | 957 | 114 | 0 | 0 | 0 | 136 | 0 | 217 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 313 | | 0 | 100 | | 0 | 0 | | 0 | 150 | | 265 |
| Storage Lanes | 2 | | 0 | 1 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | | | | 0.984 | | | | | | 0.850 | 0.850 |
| Flt Protected | 0.950 | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 3539 | 0 | 1863 | 5004 | 0 | 0 | 1863 | 0 | 1770 | 1504 | 1504 |
| Flt Permitted | 0.950 | | | | | | | | | | 0.417 | |
| Satd. Flow (perm) | 3433 | 3539 | 0 | 1863 | 5004 | 0 | 0 | 1863 | 0 | 777 | 1504 | 1504 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | 23 | | | | | | | 232 | 232 |
| Link Speed (mph) | 40 | | | 40 | | | 15 | | | | 30 | |
| Link Distance (ft) | 972 | | | 103 | | | 243 | | | | 409 | |
| Travel Time (s) | 16.6 | | | 1.8 | | | 11.0 | | | | 9.3 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 207 | 926 | 0 | 0 | 1007 | 120 | 0 | 0 | 0 | 143 | 0 | 228 |
| Shared Lane Traffic (%) | | | | | | | | | | | | 50% |
| Lane Group Flow (vph) | 207 | 926 | 0 | 0 | 1127 | 0 | 0 | 0 | 0 | 143 | 114 | 114 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 24 | | | 24 | | | 12 | | | | 12 | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 |
| Detector Template | Left | Thru | | Left | Thru | | Thru | | Left | Thru | Right | |
| Leading Detector (ft) | 20 | 30 | | 20 | 30 | | 50 | 30 | 20 | 30 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | | 20 | 30 | | 50 | 30 | 20 | 30 | 20 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Turn Type | Prot | NA | | Prot | NA | | Perm | | pm+pt | NA | Perm | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | 7 | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | 4 |
| Detector Phase | 5 | 2 | | 1 | 6 | | 8 | 8 | | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | 5.0 | 10.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.5 | 24.0 | | 9.0 | 28.0 | | 29.4 | 29.4 | | 9.0 | 29.4 | 29.4 |
| Total Split (s) | 17.0 | 49.6 | | 9.0 | 41.6 | | 29.4 | 29.4 | | 12.0 | 41.4 | 41.4 |
| Total Split (%) | 17.0% | 49.6% | | 9.0% | 41.6% | | 29.4% | 29.4% | | 12.0% | 41.4% | 41.4% |

Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|-------|-----|------|-------|-----|------|------|------|------|------|------|
| Maximum Green (s) | 12.5 | 43.6 | | 5.0 | 35.6 | | 23.0 | 23.0 | | 7.0 | 35.0 | 35.0 |
| Yellow Time (s) | 3.0 | 4.2 | | 3.0 | 4.2 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| All-Red Time (s) | 1.5 | 1.8 | | 1.0 | 1.8 | | 3.4 | 3.4 | | 2.0 | 3.4 | 3.4 |
| Lost Time Adjust (s) | 0.0 | -1.3 | | 0.0 | -1.3 | | | | -1.5 | 0.0 | -1.5 | -1.5 |
| Total Lost Time (s) | 4.5 | 4.7 | | 4.0 | 4.7 | | | | 4.9 | 5.0 | 4.9 | 4.9 |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.5 | | 2.0 | 2.5 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | C-Max | | None | C-Max | | None | None | | None | None | None |
| Walk Time (s) | 5.0 | | | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Flash Dont Walk (s) | 13.0 | | | 17.0 | | | 18.0 | 18.0 | | 18.0 | 18.0 | |
| Pedestrian Calls (#/hr) | 5 | | | 5 | | | 5 | 5 | | 5 | 5 | |
| Act Effct Green (s) | 10.2 | 77.4 | | 62.7 | | | | | | 12.9 | 13.0 | 13.0 |
| Actuated g/C Ratio | 0.10 | 0.77 | | 0.63 | | | | | | 0.13 | 0.13 | 0.13 |
| v/c Ratio | 0.59 | 0.34 | | 0.36 | | | | | | 0.85 | 0.29 | 0.29 |
| Control Delay | 52.0 | 4.0 | | 4.7 | | | | | | 78.3 | 1.8 | 1.8 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | 52.0 | 4.0 | | 4.7 | | | | | | 78.3 | 1.8 | 1.8 |
| LOS | D | A | | A | | | | | | E | A | A |
| Approach Delay | | 12.8 | | 4.7 | | | | | | | 31.3 | |
| Approach LOS | | B | | A | | | | | | | C | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 11.9

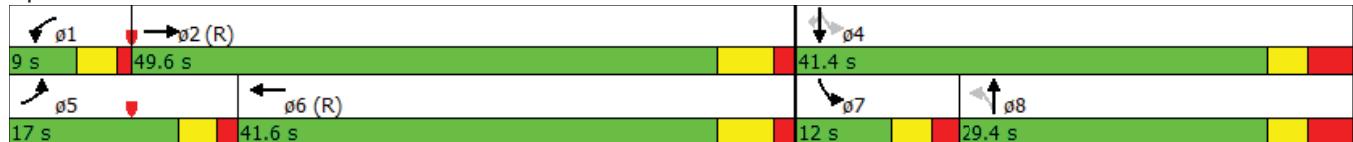
Intersection LOS: B

Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1504: Harlan St. & 88th Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↓ | | ↑ | ↑↓↑ | | | ↔ | | | ↔ | |
| Volume (vph) | 10 | 900 | 81 | 188 | 977 | 10 | 84 | 0 | 152 | 10 | 10 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 170 | | 0 | 180 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 25 | | | 25 | | | 25 | | | 25 |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 1.00 | | | 1.00 | | | 0.99 | | | 0.99 | |
| Frt | | 0.988 | | | 0.998 | | | 0.913 | | | 0.955 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.983 | | | 0.984 | | |
| Satd. Flow (prot) | 1770 | 3487 | 0 | 1770 | 5073 | 0 | 0 | 1653 | 0 | 0 | 1740 | 0 |
| Flt Permitted | 0.260 | | | 0.152 | | | 0.874 | | | 0.887 | | |
| Satd. Flow (perm) | 483 | 3487 | 0 | 283 | 5073 | 0 | 0 | 1467 | 0 | 0 | 1567 | 0 |
| Right Turn on Red | | Yes | | | Yes | | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | 12 | | | 3 | | | 93 | | | 11 | |
| Link Speed (mph) | | 40 | | | 40 | | | 30 | | | 15 | |
| Link Distance (ft) | | 231 | | | 972 | | | 786 | | | 243 | |
| Travel Time (s) | | 3.9 | | | 16.6 | | | 17.9 | | | 11.0 | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 5 | | 5 | 5 | 5 | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 11 | 957 | 86 | 200 | 1039 | 11 | 89 | 0 | 162 | 11 | 11 | 11 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 11 | 1043 | 0 | 200 | 1050 | 0 | 0 | 251 | 0 | 0 | 33 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 0 | | | 0 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | Left | Thru | | Left | Thru | | | Thru | | | Thru | |
| Leading Detector (ft) | 20 | 30 | | 20 | 30 | | 50 | 30 | | 50 | 30 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | | 20 | 30 | | 50 | 30 | | 50 | 30 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | Perm | NA | | pm+pt | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 1 | 6 | | | 4 | | | 4 |
| Permitted Phases | | 2 | | | 6 | | | 4 | | | 4 | |
| Detector Phase | | 2 | 2 | | 1 | 6 | | 4 | 4 | | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | | 4.0 | 20.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Minimum Split (s) | 25.7 | 25.7 | | 8.0 | 25.7 | | 33.6 | 33.6 | | 33.6 | 33.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|------|-------|-------|-----|
| Total Split (s) | 47.0 | 47.0 | | 19.0 | 66.0 | | 34.0 | 34.0 | | 34.0 | 34.0 | |
| Total Split (%) | 47.0% | 47.0% | | 19.0% | 66.0% | | 34.0% | 34.0% | | 34.0% | 34.0% | |
| Maximum Green (s) | 41.3 | 41.3 | | 15.0 | 60.3 | | 27.4 | 27.4 | | 27.4 | 27.4 | |
| Yellow Time (s) | 4.2 | 4.2 | | 3.0 | 4.2 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| All-Red Time (s) | 1.5 | 1.5 | | 1.0 | 1.5 | | 3.6 | 3.6 | | 3.6 | 3.6 | |
| Lost Time Adjust (s) | 0.0 | -1.0 | | 0.0 | -1.0 | | | | -1.8 | | -1.8 | |
| Total Lost Time (s) | 5.7 | 4.7 | | 4.0 | 4.7 | | | | 4.8 | | 4.8 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | C-Max | C-Max | | None | C-Max | | Max | Max | | Max | Max | |
| Walk Time (s) | 5.0 | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | | | 11.0 | | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 46.3 | 47.3 | | 62.0 | 61.3 | | | | 29.2 | | 29.2 | |
| Actuated g/C Ratio | 0.46 | 0.47 | | 0.62 | 0.61 | | | | 0.29 | | 0.29 | |
| v/c Ratio | 0.05 | 0.63 | | 0.62 | 0.34 | | | | 0.51 | | 0.07 | |
| Control Delay | 17.4 | 22.2 | | 15.7 | 6.4 | | | | 22.3 | | 19.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | | 0.0 | | 0.0 | |
| Total Delay | 17.4 | 22.2 | | 15.7 | 6.4 | | | | 22.3 | | 19.7 | |
| LOS | B | C | | B | A | | | | C | | B | |
| Approach Delay | | 22.2 | | | 7.9 | | | | 22.3 | | 19.7 | |
| Approach LOS | | C | | | A | | | | C | | B | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 35 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 15.2

Intersection LOS: B

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1505: Lamar St. & 88th Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑↑ | ↑ | ↑ | ↑↑↑ | ↑ | ↑ | ↑ | ↑ | ↑↑ | ↑↑ | ↑ |
| Volume (vph) | 180 | 851 | 39 | 71 | 900 | 181 | 59 | 0 | 38 | 214 | 10 | 214 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 255 | | 160 | 400 | | 0 | 100 | | 0 | 205 | | 205 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | 1.00 | 0.98 | | 0.99 | 0.98 | |
| Frt | | | | 0.850 | | 0.975 | | | 0.850 | | | 0.857 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 1770 | 4958 | 0 | 1770 | 1556 | 0 | 3433 | 1570 | 0 |
| Flt Permitted | 0.107 | | | 0.266 | | | 0.496 | | | 0.706 | | |
| Satd. Flow (perm) | 199 | 5085 | 1583 | 495 | 4958 | 0 | 921 | 1556 | 0 | 2538 | 1570 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 243 | | 45 | | | 219 | | | | 235 |
| Link Speed (mph) | | 40 | | | 40 | | | 30 | | | | 30 |
| Link Distance (ft) | | 597 | | | 704 | | | 312 | | | | 526 |
| Travel Time (s) | | 10.2 | | | 12.0 | | | 7.1 | | | | 12.0 |
| Confl. Peds. (#/hr) | | | | | | | 5 | | 5 | 5 | | 5 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 198 | 935 | 43 | 78 | 989 | 199 | 65 | 0 | 42 | 235 | 11 | 235 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 198 | 935 | 43 | 78 | 1188 | 0 | 65 | 42 | 0 | 235 | 246 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 24 | | | | 24 |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | | 20 | 30 | | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | | 20 | 30 | | 20 | 30 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | pm+pt | NA | Free | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | Free | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | | 4.0 | 15.0 | | 5.0 | 6.0 | | 5.0 | 6.0 | |
| Minimum Split (s) | 8.0 | 25.5 | | 8.0 | 25.5 | | 10.0 | 33.5 | | 10.0 | 33.5 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Total Split (s) | 19.0 | 46.0 | | 10.0 | 37.0 | | 10.0 | 34.0 | | 10.0 | 34.0 | |
| Total Split (%) | 19.0% | 46.0% | | 10.0% | 37.0% | | 10.0% | 34.0% | | 10.0% | 34.0% | |
| Maximum Green (s) | 15.0 | 40.2 | | 6.0 | 31.2 | | 5.0 | 27.5 | | 5.0 | 27.5 | |
| Yellow Time (s) | 3.0 | 4.2 | | 3.0 | 4.2 | | 3.0 | 3.1 | | 3.0 | 3.1 | |
| All-Red Time (s) | 1.0 | 1.6 | | 1.0 | 1.6 | | 2.0 | 3.4 | | 2.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | -1.5 | | 0.0 | -1.5 | | -1.0 | -2.0 | | -1.0 | -2.0 | |
| Total Lost Time (s) | 4.0 | 4.3 | | 4.0 | 4.3 | | 4.0 | 4.5 | | 4.0 | 4.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | | None | Max | | None | Max | |
| Walk Time (s) | | 5.0 | | | 5.0 | | | 4.0 | | | 4.0 | |
| Flash Dont Walk (s) | | 12.0 | | | 12.0 | | | 23.0 | | | 23.0 | |
| Pedestrian Calls (#/hr) | | 5 | | | 5 | | | 5 | | | 5 | |
| Act Effct Green (s) | 51.8 | 43.7 | 100.0 | 42.8 | 36.8 | | 36.0 | 29.5 | | 36.8 | 31.5 | |
| Actuated g/C Ratio | 0.52 | 0.44 | 1.00 | 0.43 | 0.37 | | 0.36 | 0.30 | | 0.37 | 0.32 | |
| v/c Ratio | 0.72 | 0.42 | 0.03 | 0.27 | 0.64 | | 0.17 | 0.07 | | 0.24 | 0.38 | |
| Control Delay | 35.1 | 14.0 | 0.0 | 7.0 | 9.3 | | 20.0 | 0.2 | | 20.3 | 6.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 35.1 | 14.0 | 0.0 | 7.0 | 9.3 | | 20.0 | 0.2 | | 20.3 | 6.1 | |
| LOS | D | B | A | A | A | | C | A | | C | A | |
| Approach Delay | | 17.1 | | | 9.1 | | | 12.3 | | | 13.0 | |
| Approach LOS | | B | | | A | | | B | | | B | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 96 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 74.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1509: 88th Ave. & Westminster



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBC | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑ | ↑ | ↑↑ | ↑↑ | ↑ | ↑↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Volume (vph) | 155 | 1313 | 287 | 366 | 1420 | 169 | 326 | 111 | 388 | 122 | 116 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 145 | | 75 | 265 | | 0 | 200 | | 230 | 135 | | 190 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 1 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | 0.96 | 1.00 | | | | 0.99 | | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.938 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1770 | 1733 | 0 |
| Flt Permitted | 0.138 | | | 0.097 | | | 0.209 | | | 0.681 | | |
| Satd. Flow (perm) | 257 | 5085 | 1548 | 351 | 5085 | 1524 | 752 | 1863 | 1583 | 1269 | 1733 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 266 | | | 174 | | | 326 | | 27 | |
| Link Speed (mph) | 40 | | | 40 | | | 35 | | | 30 | | |
| Link Distance (ft) | 599 | | | 846 | | | 336 | | | 484 | | |
| Travel Time (s) | 10.2 | | | 14.4 | | | 6.5 | | | 11.0 | | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 5 | | | | 5 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 123 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 210 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 12 | | | 24 | | | 24 | | | 12 | | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | 0 | | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | 16 | | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | pm+pt | NA | Free | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | Free | 6 | | 6 | 8 | | 8 | 4 | | |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | 5.0 | 10.0 | 10.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | |
| Minimum Split (s) | 9.0 | 23.1 | | 10.0 | 23.1 | 23.1 | 9.5 | 36.6 | 36.6 | 9.0 | 30.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|
| Total Split (s) | 19.0 | 51.1 | | 20.0 | 52.1 | 52.1 | 18.2 | 38.9 | 38.9 | 10.0 | 30.7 | |
| Total Split (%) | 15.8% | 42.6% | | 16.7% | 43.4% | 43.4% | 15.2% | 32.4% | 32.4% | 8.3% | 25.6% | |
| Maximum Green (s) | 15.0 | 45.0 | | 15.0 | 46.0 | 46.0 | 13.7 | 32.3 | 32.3 | 6.0 | 24.1 | |
| Yellow Time (s) | 3.0 | 4.3 | | 3.0 | 4.3 | 4.3 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | |
| All-Red Time (s) | 1.0 | 1.8 | | 2.0 | 1.8 | 1.8 | 1.5 | 3.0 | 3.0 | 1.0 | 3.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.1 | | 5.0 | 6.1 | 6.1 | 7.5 | 6.6 | 6.6 | 4.0 | 6.6 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | C-Max | None | None | None | None | None | |
| Walk Time (s) | | | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 13.0 | | | 13.0 | 13.0 | | 26.0 | 26.0 | | 20.0 |
| Pedestrian Calls (#/hr) | | | 5 | | | 5 | 5 | | 5 | 5 | | 5 |
| Act Effct Green (s) | 57.2 | 55.1 | 120.0 | 54.7 | 53.6 | 53.6 | 33.4 | 24.7 | 24.7 | 25.8 | 17.2 | |
| Actuated g/C Ratio | 0.48 | 0.46 | 1.00 | 0.46 | 0.45 | 0.45 | 0.28 | 0.21 | 0.21 | 0.22 | 0.14 | |
| v/c Ratio | 0.53 | 0.60 | 0.20 | 0.81 | 0.67 | 0.23 | 0.80 | 0.31 | 0.71 | 0.44 | 0.78 | |
| Control Delay | 34.9 | 21.2 | 0.2 | 62.7 | 16.1 | 1.1 | 48.4 | 40.9 | 16.5 | 36.8 | 61.6 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 34.9 | 21.2 | 0.2 | 62.7 | 16.1 | 1.1 | 48.4 | 40.9 | 16.5 | 36.8 | 61.6 | |
| LOS | C | C | A | E | B | A | D | D | B | D | E | |
| Approach Delay | | | 19.0 | | | 23.5 | | | 32.4 | | 52.1 | |
| Approach LOS | | | B | | | C | | | C | | D | |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

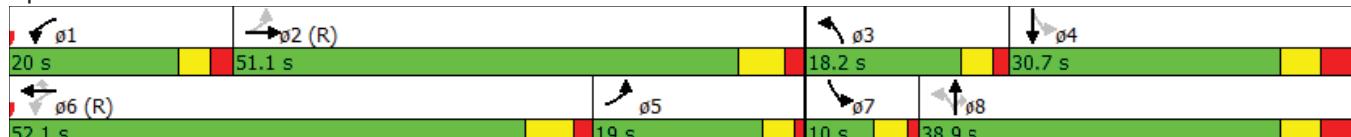
Intersection Signal Delay: 25.3 Intersection LOS: C

Intersection Capacity Utilization 78.0% ICU Level of Service D

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1510: Westminster/Westminster Blvd. W. & W. 92nd Ave.



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑↑ | ↑ | ↑ | ↑↑ | ↑ | ↑ |
| Volume (vph) | 1595 | 64 | 158 | 1700 | 81 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 140 | 190 | | 0 | 0 |
| Storage Lanes | | 1 | 1 | | 1 | 1 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | 0.98 | |
| Frt | | 0.850 | | | 0.850 | |
| Flt Protected | | | 0.950 | | 0.950 | |
| Satd. Flow (prot) | 3539 | 1583 | 1770 | 3539 | 1770 | 1583 |
| Flt Permitted | | | 0.089 | | 0.950 | |
| Satd. Flow (perm) | 3539 | 1583 | 166 | 3539 | 1770 | 1551 |
| Right Turn on Red | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | 37 | | | 178 | |
| Link Speed (mph) | 40 | | | 40 | 25 | |
| Link Distance (ft) | 365 | | | 267 | 225 | |
| Travel Time (s) | 6.2 | | | 4.6 | 6.1 | |
| Confl. Peds. (#/hr) | | | | | 5 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 1679 | 67 | 166 | 1789 | 85 | 180 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1679 | 67 | 166 | 1789 | 85 | 180 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Thru | Right | Left | Thru | Left | Right |
| Leading Detector (ft) | 30 | 20 | 20 | 30 | 20 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 30 | 20 | 20 | 30 | 20 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Turn Type | NA | Perm | pm+pt | NA | NA | Perm |
| Protected Phases | 2 | | 1 | 6 | 4 | |
| Permitted Phases | | 2 | 6 | | 4 | |
| Detector Phase | 2 | 2 | 1 | 6 | 4 | 4 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 4.0 | 10.0 | 4.0 | 4.0 |
| Minimum Split (s) | 21.7 | 21.7 | 8.0 | 20.7 | 27.6 | 27.6 |



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Total Split (s) | 76.4 | 76.4 | 16.0 | 92.4 | 27.6 | 27.6 |
| Total Split (%) | 63.7% | 63.7% | 13.3% | 77.0% | 23.0% | 23.0% |
| Maximum Green (s) | 70.7 | 70.7 | 12.0 | 86.7 | 21.9 | 21.9 |
| Yellow Time (s) | 4.1 | 4.1 | 3.0 | 4.1 | 3.3 | 3.3 |
| All-Red Time (s) | 1.6 | 1.6 | 1.0 | 1.6 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 4.0 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | Lag | Lag | Lead | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | 2.0 | 5.0 | 2.0 | 2.0 |
| Recall Mode | C-Max | C-Max | None | C-Max | None | None |
| Walk Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 10.0 | 17.0 | 17.0 |
| Pedestrian Calls (#/hr) | 5 | 5 | | 5 | 5 | 5 |
| Act Effct Green (s) | 83.5 | 83.5 | 98.8 | 97.1 | 11.5 | 11.5 |
| Actuated g/C Ratio | 0.70 | 0.70 | 0.82 | 0.81 | 0.10 | 0.10 |
| v/c Ratio | 0.68 | 0.06 | 0.63 | 0.62 | 0.50 | 0.58 |
| Control Delay | 13.8 | 4.4 | 35.6 | 6.9 | 60.2 | 14.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| Total Delay | 13.8 | 4.4 | 35.6 | 7.8 | 60.2 | 14.9 |
| LOS | B | A | D | A | E | B |
| Approach Delay | 13.4 | | | 10.2 | 29.4 | |
| Approach LOS | B | | | B | C | |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

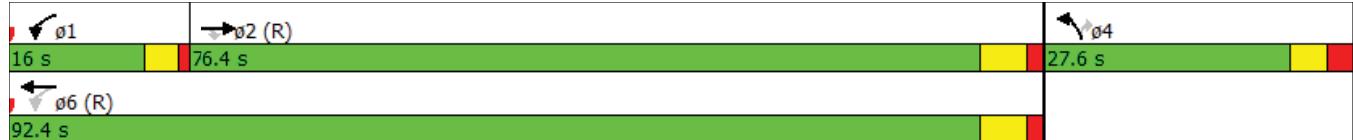
Intersection Signal Delay: 12.9 Intersection LOS: B

Intersection Capacity Utilization 72.2% ICU Level of Service C

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1512: Marshall Pl. / 6400 West & W. 92nd Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑↑ | ↑ | ↑↑↑ | ↑↑↑↑ | | ↑ | ↑ | ↑ | ↑ | ↑↑ | |
| Volume (vph) | 36 | 1573 | 214 | 257 | 1703 | 42 | 239 | 10 | 240 | 26 | 10 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 155 | | 0 | 375 | | 0 | 125 | | 75 | 80 | | 0 |
| Storage Lanes | 1 | | 1 | 2 | | 0 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 50 | | 50 | | | 50 | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.86 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | | | 1.00 | | | | | | | |
| Frt | | | 0.850 | | 0.996 | | | | 0.850 | | 0.915 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 6377 | 0 | 1770 | 1863 | 1583 | 1770 | 1704 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.594 | | | 0.751 | | |
| Satd. Flow (perm) | 1767 | 5085 | 1583 | 3433 | 6377 | 0 | 1106 | 1863 | 1583 | 1399 | 1704 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 203 | | 5 | | | | 213 | | 13 | |
| Link Speed (mph) | | | 35 | | 35 | | | 25 | | | 25 | |
| Link Distance (ft) | | | 846 | | 549 | | | 666 | | | 302 | |
| Travel Time (s) | | | 16.5 | | 10.7 | | | 18.2 | | | 8.2 | |
| Confl. Peds. (#/hr) | 5 | | | | 5 | | | | | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 37 | 1622 | 221 | 265 | 1756 | 43 | 246 | 10 | 247 | 27 | 10 | 13 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 37 | 1622 | 221 | 265 | 1799 | 0 | 246 | 10 | 247 | 27 | 23 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | | 20 | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | | 20 | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | Prot | NA | Perm | Prot | NA | | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | | 2 | | | 8 | | 8 | 4 | | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | | 3 | 8 | 8 | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 12.0 | 12.0 | 4.0 | 15.0 | | 4.0 | 5.0 | 5.0 | 4.0 | 5.0 | |
| Minimum Split (s) | 8.5 | 22.9 | 22.9 | 8.5 | 22.9 | | 8.5 | 38.6 | 38.6 | 8.5 | 36.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|-------|-----|
| Total Split (s) | 11.3 | 53.4 | 53.4 | 17.0 | 59.1 | | 13.0 | 41.1 | 41.1 | 8.5 | 36.6 | |
| Total Split (%) | 9.4% | 44.5% | 44.5% | 14.2% | 49.3% | | 10.8% | 34.3% | 34.3% | 7.1% | 30.5% | |
| Maximum Green (s) | 6.8 | 47.5 | 47.5 | 12.5 | 53.2 | | 8.5 | 34.5 | 34.5 | 4.0 | 30.0 | |
| Yellow Time (s) | 3.0 | 4.3 | 4.3 | 3.0 | 4.3 | | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | |
| All-Red Time (s) | 1.5 | 1.6 | 1.6 | 1.5 | 1.6 | | 1.5 | 3.0 | 3.0 | 1.5 | 3.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 5.9 | 5.9 | 4.5 | 5.9 | | 4.5 | 6.6 | 6.6 | 4.5 | 6.6 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | | None | Max | Max | None | None | |
| Walk Time (s) | | 4.0 | 4.0 | | 4.0 | | | 10.0 | 10.0 | | 4.0 | |
| Flash Dont Walk (s) | | 13.0 | 13.0 | | 13.0 | | | 16.0 | 16.0 | | 26.0 | |
| Pedestrian Calls (#/hr) | | 5 | 5 | | 5 | | | 5 | 5 | | 5 | |
| Act Effct Green (s) | 6.1 | 51.5 | 51.5 | 11.9 | 61.1 | | 41.7 | 34.5 | 34.5 | 23.3 | 20.0 | |
| Actuated g/C Ratio | 0.05 | 0.43 | 0.43 | 0.10 | 0.51 | | 0.35 | 0.29 | 0.29 | 0.19 | 0.17 | |
| v/c Ratio | 0.41 | 0.74 | 0.28 | 0.78 | 0.55 | | 0.50 | 0.02 | 0.41 | 0.10 | 0.08 | |
| Control Delay | 63.7 | 28.5 | 8.1 | 69.1 | 22.3 | | 33.6 | 30.9 | 8.9 | 27.7 | 21.8 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 63.7 | 28.5 | 8.1 | 69.1 | 22.3 | | 33.6 | 30.9 | 8.9 | 27.7 | 21.8 | |
| LOS | E | C | A | E | C | | C | C | A | C | C | |
| Approach Delay | | 26.8 | | | 28.3 | | | 21.4 | | | 25.0 | |
| Approach LOS | | C | | | C | | | C | | | C | |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 26.9

Intersection LOS: C

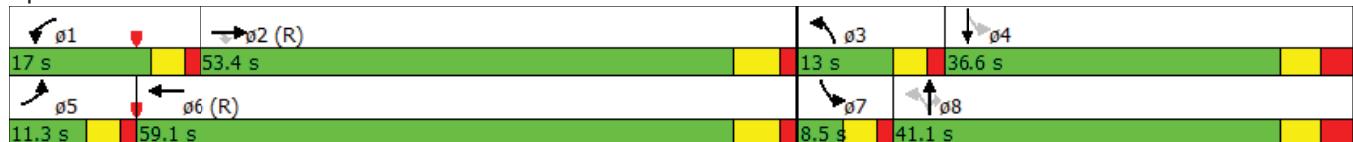
Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1516: Eaton/Benton St./5800 West & W. 92nd Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑ | ↑ | ↑ | ↑↑↑ | ↑ | ↑↑ | ↑ | ↑ | ↑ | ↑↑ | ↑ |
| Volume (vph) | 75 | 1020 | 258 | 40 | 795 | 68 | 481 | 119 | 64 | 86 | 71 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 175 | | 0 | 145 | | 30 | 252 | | 0 | 285 | | 190 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 2 | | 1 | 1 | | 1 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | 0.98 | | | | 0.98 | 0.99 | | |
| Frt | | | | 0.850 | | | 0.850 | | | 0.850 | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.950 | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 3539 | 1583 | 1770 | 5085 | 1583 | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.275 | | | | 0.183 | | | 0.492 | | | 0.671 | |
| Satd. Flow (perm) | 512 | 3539 | 1553 | 341 | 5085 | 1583 | 1778 | 1863 | 1555 | 1243 | 1863 | 1583 |
| Right Turn on Red | | | | Yes | | | Yes | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 289 | | | 151 | | | 103 | | 148 |
| Link Speed (mph) | 35 | | | | 35 | | | 25 | | | 30 | |
| Link Distance (ft) | 737 | | | | 576 | | | 331 | | | 435 | |
| Travel Time (s) | 14.4 | | | | 11.2 | | | 9.0 | | | 9.9 | |
| Confl. Peds. (#/hr) | | | 5 | 5 | | | | | 5 | 5 | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 85 | 1159 | 293 | 45 | 903 | 77 | 547 | 135 | 73 | 98 | 81 | 25 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 85 | 1159 | 293 | 45 | 903 | 77 | 547 | 135 | 73 | 98 | 81 | 25 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 24 | | | | 24 | | | 24 | | | 15 | |
| Link Offset(ft) | 0 | | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | 16 | | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 |
| Detector 1 Type | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Turn Type | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | 8 | 4 | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 15.0 | 15.0 | 4.0 | 15.0 | 15.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Minimum Split (s) | 8.0 | 30.3 | 30.3 | 8.0 | 45.0 | 45.0 | 9.0 | 35.6 | 35.6 | 8.0 | 35.6 | 35.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|
| Total Split (s) | 10.0 | 60.4 | 60.4 | 8.0 | 58.4 | 58.4 | 16.0 | 42.6 | 42.6 | 9.0 | 35.6 | 35.6 |
| Total Split (%) | 8.3% | 50.3% | 50.3% | 6.7% | 48.7% | 48.7% | 13.3% | 35.5% | 35.5% | 7.5% | 29.7% | 29.7% |
| Maximum Green (s) | 6.0 | 54.1 | 54.1 | 4.0 | 52.1 | 52.1 | 11.0 | 36.0 | 36.0 | 5.0 | 29.0 | 29.0 |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.2 | 3.2 | 3.0 | 3.2 | 3.2 |
| All-Red Time (s) | 1.0 | 2.3 | 2.3 | 1.0 | 2.3 | 2.3 | 2.0 | 3.4 | 3.4 | 1.0 | 3.4 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.3 | 6.3 | 4.0 | 6.3 | 6.3 | 5.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None | None |
| Walk Time (s) | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 25.0 | 25.0 | | 25.0 | 25.0 |
| Pedestrian Calls (#/hr) | | 5 | 5 | | 5 | 5 | | 5 | 5 | | 5 | 5 |
| Act Effct Green (s) | 80.0 | 73.0 | 73.0 | 76.9 | 71.4 | 71.4 | 29.3 | 18.7 | 18.7 | 18.7 | 12.8 | 12.8 |
| Actuated g/C Ratio | 0.67 | 0.61 | 0.61 | 0.64 | 0.60 | 0.60 | 0.24 | 0.16 | 0.16 | 0.16 | 0.11 | 0.11 |
| v/c Ratio | 0.21 | 0.54 | 0.28 | 0.17 | 0.30 | 0.08 | 0.90 | 0.47 | 0.22 | 0.46 | 0.41 | 0.08 |
| Control Delay | 10.3 | 21.3 | 4.7 | 10.5 | 14.1 | 0.1 | 60.0 | 48.9 | 4.0 | 42.8 | 53.6 | 0.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.3 | 21.3 | 4.7 | 10.5 | 14.1 | 0.1 | 60.0 | 48.9 | 4.0 | 42.8 | 53.6 | 0.5 |
| LOS | B | C | A | B | B | A | E | D | A | D | D | A |
| Approach Delay | | 17.5 | | | 12.9 | | | 52.6 | | | 41.9 | |
| Approach LOS | | B | | | B | | | D | | | D | |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

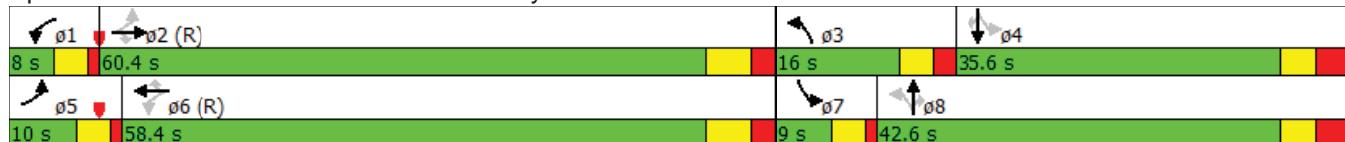
Intersection Signal Delay: 25.1 Intersection LOS: C

Intersection Capacity Utilization 66.6% ICU Level of Service C

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1517: Yates St/W. City Center Dr. & W. 92nd Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↓ | ↑ | ↑ | ↓ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Volume (vph) | 600 | 26 | 456 | 49 | 55 | 78 | 400 | 864 | 10 | 31 | 805 | 685 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 295 | | 0 | 220 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 2 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 1.00 | 1.00 | | | 0.99 | | 1.00 | | 0.99 | 1.00 | | 0.99 |
| Frt | | | 0.850 | | | 0.912 | | | | 0.850 | | 0.850 |
| Flt Protected | 0.950 | 0.956 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1681 | 1692 | 1583 | 1770 | 1674 | 0 | 3433 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.950 | 0.000 | | 0.357 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1673 | 0 | 1583 | 665 | 1674 | 0 | 3422 | 3539 | 1562 | 1766 | 3539 | 1561 |
| Right Turn on Red | | | Yes | | | Yes | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | 180 | | | 58 | | | | 286 | | 641 |
| Link Speed (mph) | | 40 | | | 20 | | | 40 | | | 40 | |
| Link Distance (ft) | | 878 | | | 327 | | | 370 | | | 939 | |
| Travel Time (s) | | 15.0 | | | 11.1 | | | 6.3 | | | 16.0 | |
| Confl. Peds. (#/hr) | 5 | | | | 5 | 8 | | | 6 | 6 | | 8 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 612 | 27 | 465 | 50 | 56 | 80 | 408 | 882 | 10 | 32 | 821 | 699 |
| Shared Lane Traffic (%) | 48% | | | | | | | | | | | |
| Lane Group Flow (vph) | 318 | 321 | 465 | 50 | 136 | 0 | 408 | 882 | 10 | 32 | 821 | 699 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | | 20 | 30 | 20 | 20 | 30 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | | 20 | 30 | 20 | 20 | 30 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Turn Type | Prot | NA | pm+ov | Perm | NA | | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 3 | 8 | 1 | | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | 8 | 4 | | | | | Free | | | Free |
| Detector Phase | 3 | 8 | 1 | 4 | 4 | | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | 8.0 | | 5.0 | 8.0 | |
| Minimum Split (s) | 12.5 | 29.5 | 12.0 | 13.4 | 13.4 | | 12.0 | 29.7 | | 11.0 | 29.7 | |

Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| Total Split (s) | 29.5 | 29.5 | 19.0 | 16.0 | 16.0 | | 19.0 | 43.5 | | 11.0 | 35.5 | |
| Total Split (%) | 29.5% | 29.5% | 19.0% | 16.0% | 16.0% | | 19.0% | 43.5% | | 11.0% | 35.5% | |
| Maximum Green (s) | 23.0 | 23.0 | 14.0 | 9.5 | 9.5 | | 14.0 | 36.8 | | 6.5 | 28.8 | |
| Yellow Time (s) | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | | 3.0 | 4.3 | | 3.0 | 4.3 | |
| All-Red Time (s) | 2.9 | 2.9 | 2.0 | 2.9 | 2.9 | | 2.0 | 2.4 | | 1.5 | 2.4 | |
| Lost Time Adjust (s) | -2.4 | -2.4 | -2.4 | -2.4 | -2.4 | | -1.0 | -2.4 | | 0.0 | -2.4 | |
| Total Lost Time (s) | 4.1 | 4.1 | 2.6 | 4.1 | 4.1 | | 4.0 | 4.3 | | 4.5 | 4.3 | |
| Lead/Lag | | | Lead | | | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | Max | None | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | | 4.0 | | | | | 4.0 | | | 4.0 | |
| Flash Dont Walk (s) | | | 19.0 | | | | | 19.0 | | | 19.0 | |
| Pedestrian Calls (#/hr) | | | 5 | | | | | 6 | | | 8 | |
| Act Effct Green (s) | 26.1 | 26.1 | 46.2 | 11.2 | 11.2 | | 14.6 | 43.7 | 100.0 | 5.9 | 31.6 | 100.0 |
| Actuated g/C Ratio | 0.26 | 0.26 | 0.46 | 0.11 | 0.11 | | 0.15 | 0.44 | 1.00 | 0.06 | 0.32 | 1.00 |
| v/c Ratio | 0.73 | 0.73 | 0.56 | 0.68 | 0.57 | | 0.82 | 0.57 | 0.01 | 0.31 | 0.73 | 0.45 |
| Control Delay | 26.0 | 26.1 | 6.1 | 84.1 | 34.4 | | 55.5 | 23.9 | 0.0 | 59.9 | 25.5 | 0.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 26.0 | 26.1 | 6.1 | 84.1 | 34.4 | | 55.5 | 23.9 | 0.0 | 59.9 | 25.5 | 0.8 |
| LOS | C | C | A | F | C | | E | C | A | E | C | A |
| Approach Delay | | | 17.7 | | | 47.7 | | | 33.6 | | | 15.1 |
| Approach LOS | | | B | | | D | | | C | | | B |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 56 (56%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.1

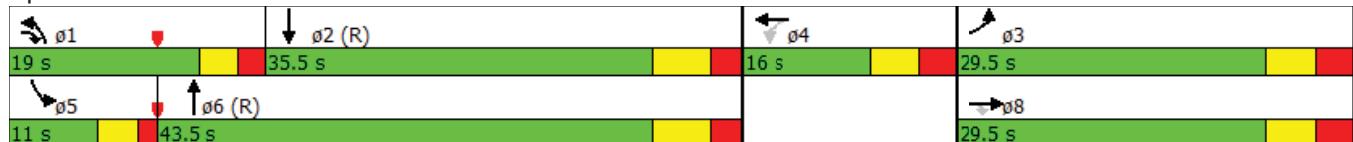
Intersection LOS: C

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1545: Sheridan Blvd & 88th Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBC | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑↑ | ↑↑ | ↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ | ↑↑↑ |
| Volume (vph) | 550 | 800 | 75 | 398 | 782 | 184 | 200 | 1485 | 415 | 189 | 807 | 530 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 0 | 280 | 0 | 0 | 425 | 0 | 0 | 0 | 0 | 315 |
| Storage Lanes | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 |
| Taper Length (ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Lane Util. Factor | 0.97 | 0.95 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 |
| Ped Bike Factor | | | | 0.99 | 1.00 | | | | | | | |
| Frt | | | | 0.850 | | | 0.850 | | | 0.850 | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | | | 0.950 | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 3539 | 1583 | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | | | 0.950 | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 3539 | 1562 | 3426 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 |
| Right Turn on Red | | | | Yes | | | Yes | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 301 | | | 301 | | | 301 | | 558 |
| Link Speed (mph) | | 35 | | | 35 | | | 40 | | | 35 | |
| Link Distance (ft) | | 649 | | | 737 | | | 426 | | | 484 | |
| Travel Time (s) | | 12.6 | | | 14.4 | | | 7.3 | | | 9.4 | |
| Confl. Peds. (#/hr) | | | 5 | 5 | | | | | | | | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 579 | 842 | 79 | 419 | 823 | 194 | 211 | 1563 | 437 | 199 | 849 | 558 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 579 | 842 | 79 | 419 | 823 | 194 | 211 | 1563 | 437 | 199 | 849 | 558 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 |
| Detector 1 Type | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Turn Type | Prot | NA | Free |
| Protected Phases | 7 | 4 | | 3 | 8 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | | | Free | | | Free | | | Free | | | Free |
| Detector Phase | 7 | 4 | | 3 | 8 | | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 15.0 | | 7.0 | 15.0 | |
| Minimum Split (s) | 10.0 | 34.7 | | 10.0 | 34.7 | | 9.5 | 32.6 | | 11.5 | 32.6 | |

Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total Split (s) | 26.0 | 40.7 | | 20.0 | 34.7 | | 17.2 | 46.8 | | 12.5 | 42.1 | |
| Total Split (%) | 21.7% | 33.9% | | 16.7% | 28.9% | | 14.3% | 39.0% | | 10.4% | 35.1% | |
| Maximum Green (s) | 21.0 | 34.0 | | 15.0 | 28.0 | | 12.7 | 40.2 | | 8.0 | 35.5 | |
| Yellow Time (s) | 3.0 | 4.0 | | 3.0 | 4.0 | | 3.0 | 4.3 | | 3.0 | 4.3 | |
| All-Red Time (s) | 2.0 | 2.7 | | 2.0 | 2.7 | | 1.5 | 2.3 | | 1.5 | 2.3 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 6.7 | | 5.0 | 6.7 | | 4.5 | 6.6 | | 4.5 | 6.6 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 3.0 | | 2.0 | 3.0 | | 2.0 | 3.5 | | 2.0 | 3.5 | |
| Recall Mode | None | None | | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | | | | | | | | | | | 4.0 |
| Flash Dont Walk (s) | | | | | | | | | | | | 22.0 |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | 5 |
| Act Effct Green (s) | 22.5 | 32.2 | 120.0 | 15.0 | 24.8 | 120.0 | 11.1 | 42.0 | 120.0 | 8.0 | 38.8 | 120.0 |
| Actuated g/C Ratio | 0.19 | 0.27 | 1.00 | 0.12 | 0.21 | 1.00 | 0.09 | 0.35 | 1.00 | 0.07 | 0.32 | 1.00 |
| v/c Ratio | 0.90 | 0.89 | 0.05 | 0.98 | 0.78 | 0.12 | 0.66 | 0.88 | 0.28 | 0.87 | 0.52 | 0.35 |
| Control Delay | 66.2 | 54.1 | 0.1 | 99.5 | 51.8 | 0.1 | 63.0 | 43.9 | 0.4 | 89.8 | 35.0 | 0.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.2 | 54.1 | 0.1 | 99.5 | 51.8 | 0.1 | 63.0 | 43.9 | 0.4 | 89.8 | 35.0 | 0.6 |
| LOS | E | D | A | F | D | A | E | D | A | F | C | A |
| Approach Delay | | | | | | | | | | | | 29.8 |
| Approach LOS | | | | | | | | | | | | C |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 44.2

Intersection LOS: D

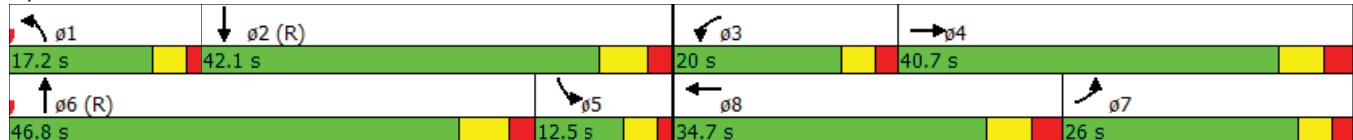
Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1546: Sheridan Blvd & W. 92nd Ave.



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑↑ | ↑↑ | ↑↑ | | | | | ↑↑ | ↑↑ | ↑↑ | ↑↑ | |
| Volume (vph) | 91 | 150 | 301 | 0 | 0 | 0 | 0 | 997 | 401 | 155 | 1371 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 270 | | 270 | 0 | | 0 | 0 | | 655 | 0 | | 0 |
| Storage Lanes | 2 | | 1 | 0 | | 0 | 0 | | 1 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | | | | | | | | | |
| Frt | | | 0.850 | | | | | | 0.850 | | | |
| Flt Protected | | 0.950 | | | | | | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 3539 | 1583 | 0 | 0 | 0 | 0 | 3539 | 1583 | 1770 | 3539 | 0 |
| Flt Permitted | | 0.950 | | | | | | | | 0.950 | | |
| Satd. Flow (perm) | 3433 | 3539 | 1560 | 0 | 0 | 0 | 0 | 3539 | 1583 | 1770 | 3539 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 199 | | | | | | 304 | | | |
| Link Speed (mph) | | 30 | | | 40 | | | 40 | | | 35 | |
| Link Distance (ft) | | 693 | | | 729 | | | 939 | | | 845 | |
| Travel Time (s) | | 15.8 | | | 12.4 | | | 16.0 | | | 16.5 | |
| Confl. Peds. (#/hr) | | | 10 | 10 | | | | | | | | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 103 | 170 | 342 | 0 | 0 | 0 | 0 | 1133 | 456 | 176 | 1558 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 103 | 170 | 342 | 0 | 0 | 0 | 0 | 1133 | 456 | 176 | 1558 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | |
| Detector Template | Left | Thru | Right | | | | | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | | | | | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | | | | | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | | | | | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | | | | | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | Split | NA | Free | | | | | NA | Perm | Prot | NA | |
| Protected Phases | 4 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | Free | | | | | | 2 | | | |
| Detector Phase | 4 | 4 | | | | | | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | | | | | 10.0 | 10.0 | 6.0 | 10.0 | |
| Minimum Split (s) | 13.1 | 13.1 | | | | | | 17.7 | 17.7 | 11.2 | 17.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-----|-----|-----|-----|-------|-------|-------|-------|-----|
| Total Split (s) | 16.0 | 16.0 | | | | | | 58.0 | 58.0 | 26.0 | 84.0 | |
| Total Split (%) | 16.0% | 16.0% | | | | | | 58.0% | 58.0% | 26.0% | 84.0% | |
| Maximum Green (s) | 9.6 | 9.6 | | | | | | 52.3 | 52.3 | 20.8 | 78.3 | |
| Yellow Time (s) | 3.8 | 3.8 | | | | | | 3.9 | 3.9 | 3.0 | 3.9 | |
| All-Red Time (s) | 2.6 | 2.6 | | | | | | 1.8 | 1.8 | 2.2 | 1.8 | |
| Lost Time Adjust (s) | -2.1 | -2.1 | | | | | | -1.7 | -1.7 | -1.2 | -1.7 | |
| Total Lost Time (s) | 4.3 | 4.3 | | | | | | 4.0 | 4.0 | 4.0 | 4.0 | |
| Lead/Lag | | | | | | | | Lag | Lag | Lead | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | | | | 5.0 | 5.0 | 5.0 | 5.0 | |
| Recall Mode | None | None | | | | | | C-Max | C-Max | Max | C-Max | |
| Walk Time (s) | | | | | | | | 5.0 | 5.0 | | 5.0 | |
| Flash Dont Walk (s) | | | | | | | | 7.0 | 7.0 | | 7.0 | |
| Pedestrian Calls (#/hr) | | | | | | | | 5 | 5 | | 5 | |
| Act Effct Green (s) | 11.1 | 11.1 | 100.0 | | | | | 54.0 | 54.0 | 22.6 | 80.6 | |
| Actuated g/C Ratio | 0.11 | 0.11 | 1.00 | | | | | 0.54 | 0.54 | 0.23 | 0.81 | |
| v/c Ratio | 0.27 | 0.43 | 0.22 | | | | | 0.59 | 0.46 | 0.44 | 0.55 | |
| Control Delay | 42.4 | 44.9 | 0.3 | | | | | 10.5 | 3.2 | 44.7 | 2.8 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 42.4 | 44.9 | 0.3 | | | | | 10.5 | 3.2 | 44.7 | 2.8 | |
| LOS | D | D | A | | | | | B | A | D | A | |
| Approach Delay | | 19.7 | | | | | | 8.4 | | | 7.0 | |
| Approach LOS | | B | | | | | | A | | | A | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 18 (18%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 9.6

Intersection LOS: A

Intersection Capacity Utilization 50.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1550: Sheridan Blvd & US-36 EB Ramp



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | | | ↑↑ | ↑↑ | ↑↑ | ↑↑ | ↑↑ | | | ↑↑↑ | ↑↑ |
| Volume (vph) | 0 | 0 | 0 | 404 | 196 | 457 | 165 | 964 | 0 | 0 | 953 | 215 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 420 | | 330 | 290 | | 0 | 215 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | | | | | 0.850 | | | | | | 0.850 |
| Flt Protected | | | | | 0.950 | | | 0.950 | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3433 | 3539 | 1583 | 1770 | 3539 | 0 | 0 | 5085 | 1583 |
| Flt Permitted | | | | | 0.950 | | 0.950 | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3433 | 3539 | 1583 | 1770 | 3539 | 0 | 0 | 5085 | 1583 |
| Right Turn on Red | | | | Yes | | | Yes | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | | 424 | | | | | | 222 |
| Link Speed (mph) | 40 | | | | 30 | | | 35 | | | | 35 |
| Link Distance (ft) | 484 | | | | 716 | | | 845 | | | | 56 |
| Travel Time (s) | 8.3 | | | | 16.3 | | | 16.5 | | | | 1.1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 0 | 0 | 0 | 416 | 202 | 471 | 170 | 994 | 0 | 0 | 982 | 222 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 416 | 202 | 471 | 170 | 994 | 0 | 0 | 982 | 222 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | 24 | | | | 24 | | | 12 | | | | 12 |
| Link Offset(ft) | 0 | | | | 0 | | | 0 | | | | 0 |
| Crosswalk Width(ft) | 16 | | | | 16 | | | 16 | | | | 16 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | | | 1 | 1 | 1 | 1 | 1 | | | | 1 |
| Detector Template | | | | Left | Thru | Right | Left | Thru | | | Thru | Right |
| Leading Detector (ft) | | | | 20 | 30 | 20 | 20 | 30 | | | 30 | 20 |
| Trailing Detector (ft) | | | | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| Detector 1 Position(ft) | | | | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| Detector 1 Size(ft) | | | | 20 | 30 | 20 | 20 | 30 | | | 30 | 20 |
| Detector 1 Type | | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Detector 1 Queue (s) | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Detector 1 Delay (s) | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Turn Type | | | | Split | NA | Free | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 4 | 4 | | 1 | 6 | | | 2 | |
| Permitted Phases | | | | | | Free | | | | | | 2 |
| Detector Phase | | | | 4 | 4 | | 1 | 6 | | | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 6.0 | 6.0 | | 5.0 | 10.0 | | | 10.0 | 10.0 |
| Minimum Split (s) | | | | 28.1 | 28.1 | | 9.7 | 20.9 | | | 43.0 | 43.0 |
| Total Split (s) | | | | 30.0 | 30.0 | | 24.0 | 70.0 | | | 46.0 | 46.0 |
| Total Split (%) | | | | 30.0% | 30.0% | | 24.0% | 70.0% | | | 46.0% | 46.0% |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-----|-----|-----|------|------|-------|------|-------|-----|-----|-------|-------|
| Maximum Green (s) | | | | 23.9 | 23.9 | | 19.3 | 64.1 | | | 40.1 | 40.1 |
| Yellow Time (s) | | | | 3.8 | 3.8 | | 3.0 | 3.9 | | | 3.9 | 3.9 |
| All-Red Time (s) | | | | 2.3 | 2.3 | | 1.7 | 2.0 | | | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | -2.1 | -2.1 | | -0.7 | -1.8 | | | -1.8 | -1.8 |
| Total Lost Time (s) | | | | 4.0 | 4.0 | | 4.0 | 4.1 | | | 4.1 | 4.1 |
| Lead/Lag | | | | | | | Lag | | | | Lead | Lead |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | | 3.0 | 2.0 | | | 2.0 | 2.0 |
| Recall Mode | | | | None | None | | None | C-Max | | | C-Max | C-Max |
| Walk Time (s) | | | | 4.0 | 4.0 | | | 4.0 | | | | |
| Flash Dont Walk (s) | | | | 18.0 | 18.0 | | | 11.0 | | | | |
| Pedestrian Calls (#/hr) | | | | 5 | 5 | | | 5 | | | | |
| Act Effct Green (s) | | | | 19.7 | 19.7 | 100.0 | 20.0 | 72.2 | | | 48.2 | 48.2 |
| Actuated g/C Ratio | | | | 0.20 | 0.20 | 1.00 | 0.20 | 0.72 | | | 0.48 | 0.48 |
| v/c Ratio | | | | 0.61 | 0.29 | 0.30 | 0.48 | 0.39 | | | 0.40 | 0.25 |
| Control Delay | | | | 40.3 | 34.4 | 0.5 | 26.7 | 3.3 | | | 17.8 | 3.2 |
| Queue Delay | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | | | | 40.3 | 34.4 | 0.5 | 26.7 | 3.3 | | | 17.8 | 3.2 |
| LOS | | | | D | C | A | C | A | | | B | A |
| Approach Delay | | | | | | 22.0 | | | 6.7 | | | 15.1 |
| Approach LOS | | | | | | C | | | A | | | B |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 44 (44%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.4

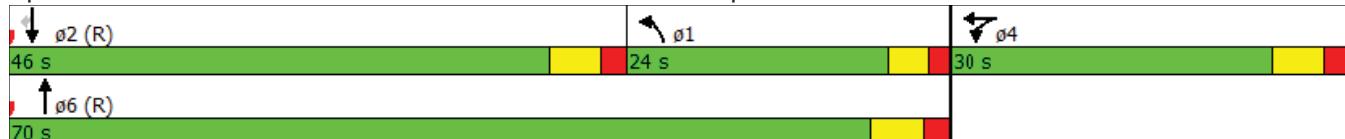
Intersection LOS: B

Intersection Capacity Utilization 50.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1551: Sheridan Blvd & US-36 WB Ramp



Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑↓ | | ↑ | ↑↑↓ | | ↑ | ↑ | | ↑ | ↑ | |
| Volume (vph) | 94 | 971 | 0 | 61 | 983 | 94 | 102 | 10 | 36 | 111 | 10 | 111 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 230 | | | 0 | 520 | | 615 | 150 | | 0 | 125 | 100 |
| Storage Lanes | 1 | | | 0 | 1 | | 0 | 1 | | 0 | 1 | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.91 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | 0.99 | 0.99 | | |
| Frt | | | | | 0.987 | | | | 0.882 | | | 0.862 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 0 | 1770 | 5019 | 0 | 1770 | 1620 | 0 | 1770 | 1606 | 0 |
| Flt Permitted | 0.144 | | | 0.209 | | | 0.677 | | | 0.625 | | |
| Satd. Flow (perm) | 268 | 5085 | 0 | 389 | 5019 | 0 | 1261 | 1620 | 0 | 1158 | 1606 | 0 |
| Right Turn on Red | | Yes | | | Yes | | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | 18 | | | 37 | | | 114 | | |
| Link Speed (mph) | 40 | | | 40 | | | 30 | | | 30 | | |
| Link Distance (ft) | 704 | | | 878 | | | 269 | | | 731 | | |
| Travel Time (s) | 12.0 | | | 15.0 | | | 6.1 | | | 16.6 | | |
| Confl. Peds. (#/hr) | | | | | | | | | 5 | 5 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 97 | 1001 | 0 | 63 | 1013 | 97 | 105 | 10 | 37 | 114 | 10 | 114 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 97 | 1001 | 0 | 63 | 1110 | 0 | 105 | 47 | 0 | 114 | 124 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | | | 12 | | | 12 | | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | 0 | | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | 16 | | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | |
| Detector Template | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | | 20 | 30 | | 20 | 30 | | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | | 20 | 30 | | 20 | 30 | | 20 | 30 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Turn Type | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Detector Phase | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 20.0 | | 4.0 | 20.0 | | 4.0 | 6.0 | | 4.0 | 6.0 | |
| Minimum Split (s) | 8.0 | 29.2 | | 8.0 | 26.2 | | 8.0 | 33.6 | | 8.5 | 33.4 | |

Westminster Center
5th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|------|-------|-----|------|-------|-----|-------|-------|-----|
| Total Split (s) | 13.0 | 46.0 | | 9.0 | 42.0 | | 9.0 | 34.0 | | 11.0 | 36.0 | |
| Total Split (%) | 13.0% | 46.0% | | 9.0% | 42.0% | | 9.0% | 34.0% | | 11.0% | 36.0% | |
| Maximum Green (s) | 9.0 | 39.8 | | 5.0 | 35.8 | | 5.0 | 27.6 | | 6.5 | 29.6 | |
| Yellow Time (s) | 3.0 | 4.2 | | 3.0 | 4.2 | | 3.0 | 3.1 | | 3.0 | 3.1 | |
| All-Red Time (s) | 1.0 | 2.0 | | 1.0 | 2.0 | | 1.0 | 3.3 | | 1.5 | 3.3 | |
| Lost Time Adjust (s) | 0.0 | -1.8 | | 0.0 | -1.8 | | 0.0 | -2.1 | | -0.5 | -2.1 | |
| Total Lost Time (s) | 4.0 | 4.4 | | 4.0 | 4.4 | | 4.0 | 4.3 | | 4.0 | 4.3 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | | None | None | | None | Max | |
| Walk Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Flash Dont Walk (s) | | 19.0 | | | 11.0 | | | 23.0 | | | 23.0 | |
| Pedestrian Calls (#/hr) | | 5 | | | 5 | | | 5 | | | 5 | |
| Act Effct Green (s) | 50.0 | 43.4 | | 45.6 | 41.2 | | 30.2 | 27.6 | | 39.8 | 33.5 | |
| Actuated g/C Ratio | 0.50 | 0.43 | | 0.46 | 0.41 | | 0.30 | 0.28 | | 0.40 | 0.34 | |
| v/c Ratio | 0.40 | 0.45 | | 0.26 | 0.53 | | 0.26 | 0.10 | | 0.21 | 0.20 | |
| Control Delay | 22.8 | 13.2 | | 13.9 | 24.9 | | 25.0 | 11.5 | | 19.8 | 6.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 22.8 | 13.2 | | 13.9 | 24.9 | | 25.0 | 11.5 | | 19.8 | 6.7 | |
| LOS | C | B | | B | C | | C | B | | B | A | |
| Approach Delay | | 14.0 | | | 24.3 | | | 20.8 | | | 13.0 | |
| Approach LOS | | B | | | C | | | C | | | B | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 92 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 18.8

Intersection LOS: B

Intersection Capacity Utilization 54.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1557: 88th Ave. & Eaton



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|--------|-------|-------|
| Lane Configurations | ↑↑↑↑ | ↑ | ↑ | ↑↑↑↑ | ↑ | ↑ |
| Volume (vph) | 1400 | 24 | 40 | 1590 | 0 | 41 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 130 | 170 | | 0 | 0 |
| Storage Lanes | | 1 | 1 | | 0 | 1 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 0.81 | 1.00 | 1.00 | 0.86 | 1.00 | 1.00 |
| Frt | | 0.850 | | | 0.865 | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 7544 | 1583 | 1770 | 6408 | 0 | 1611 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 7544 | 1583 | 1770 | 6408 | 0 | 1611 |
| Right Turn on Red | | Yes | | | Yes | |
| Satd. Flow (RTOR) | | 25 | | | 2 | |
| Link Speed (mph) | 35 | | 35 | 25 | | |
| Link Distance (ft) | 213 | | 649 | 377 | | |
| Travel Time (s) | 4.1 | | 12.6 | 10.3 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 1443 | 25 | 41 | 1639 | 0 | 42 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1443 | 25 | 41 | 1639 | 0 | 42 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | 12 | 0 | | |
| Link Offset(ft) | 0 | | 0 | 0 | | |
| Crosswalk Width(ft) | 16 | | 16 | 16 | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | | 9 | 15 | | 15 | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | | 1 |
| Detector Template | Thru | Right | Left | Thru | | Right |
| Leading Detector (ft) | 30 | 20 | 20 | 30 | | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | | 0 |
| Detector 1 Size(ft) | 30 | 20 | 20 | 30 | | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | NA | Perm | Prot | NA | | Over |
| Protected Phases | 2 | | 4 | 6 | | 4 |
| Permitted Phases | | 2 | | | | |
| Detector Phase | 2 | 2 | 4 | 6 | | 4 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 5.0 | 10.0 | | 5.0 |
| Minimum Split (s) | 17.7 | 17.7 | 11.1 | 49.0 | | 11.1 |
| Total Split (s) | 22.0 | 22.0 | 28.0 | 50.0 | | 28.0 |
| Total Split (%) | 44.0% | 44.0% | 56.0% | 100.0% | | 56.0% |

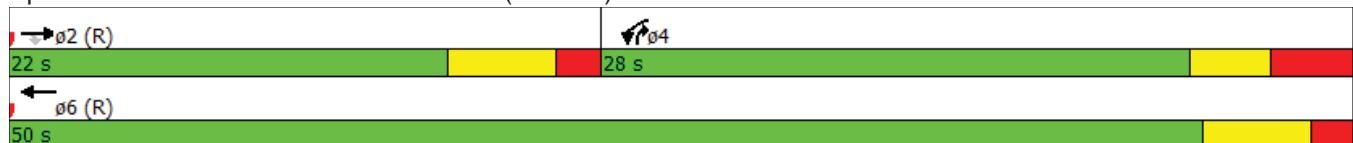


| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-------|------|-------|-----|------|
| Maximum Green (s) | 16.3 | 16.3 | 21.9 | 44.4 | | 21.9 |
| Yellow Time (s) | 4.0 | 4.0 | 3.0 | 4.0 | | 3.0 |
| All-Red Time (s) | 1.7 | 1.7 | 3.1 | 1.6 | | 3.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 6.1 | 5.6 | | 6.1 |
| Lead/Lag | Lead | Lead | Lag | | | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 3.0 | 2.0 | | 3.0 |
| Recall Mode | C-Max | C-Max | None | C-Max | | None |
| Walk Time (s) | 4.0 | 4.0 | | | | |
| Flash Dont Walk (s) | 8.0 | 8.0 | | | | |
| Pedestrian Calls (#/hr) | 5 | 5 | | | | |
| Act Effct Green (s) | 29.8 | 29.8 | 15.4 | 50.0 | | 15.4 |
| Actuated g/C Ratio | 0.60 | 0.60 | 0.31 | 1.00 | | 0.31 |
| v/c Ratio | 0.32 | 0.03 | 0.08 | 0.26 | | 0.08 |
| Control Delay | 10.1 | 5.8 | 9.1 | 0.1 | | 8.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 10.1 | 5.8 | 9.1 | 0.1 | | 8.9 |
| LOS | B | A | A | A | | A |
| Approach Delay | 10.0 | | | 0.3 | | |
| Approach LOS | B | | | A | | |

Intersection Summary

| | |
|---|------------------------|
| Area Type: | Other |
| Cycle Length: | 50 |
| Actuated Cycle Length: | 50 |
| Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green | |
| Natural Cycle: | 50 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.32 |
| Intersection Signal Delay: 4.9 | Intersection LOS: A |
| Intersection Capacity Utilization 30.2% | ICU Level of Service A |
| Analysis Period (min) 15 | |
| Description: Westminster Signal | |

Splits and Phases: 1566: Bank Access (5300 W) & W. 92nd Ave.



Westminster Center
First Westminster/92nd scenario

Future Traffic/Optimized Timings
9/29/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑ | ↑ | ↑ | ↑↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Volume (vph) | 155 | 1313 | 287 | 366 | 1420 | 169 | 326 | 111 | 388 | 122 | 116 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 145 | | 75 | 265 | | 0 | 200 | | 230 | 135 | | 190 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | 0.97 | 1.00 | | | | | 0.99 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.938 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 1770 | 5085 | 1583 | 1770 | 1863 | 1583 | 1770 | 1734 | 0 |
| Flt Permitted | 0.160 | | | 0.138 | | | 0.249 | | | 0.681 | | |
| Satd. Flow (perm) | 298 | 5085 | 1548 | 257 | 5085 | 1529 | 462 | 1863 | 1583 | 1269 | 1734 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 320 | | | 199 | | | 413 | | 34 | |
| Link Speed (mph) | 40 | | | 40 | | | 35 | | | 30 | | |
| Link Distance (ft) | 599 | | | 846 | | | 336 | | | 484 | | |
| Travel Time (s) | 10.2 | | | 14.4 | | | 6.5 | | | 11.0 | | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 5 | | | | | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 123 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 210 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | | | 12 | | | 12 | | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | 0 | | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | 16 | | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | pm+pt | NA | Free | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | Free | 6 | | 6 | 8 | | 8 | 4 | | |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | 5.0 | 10.0 | 10.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | |
| Minimum Split (s) | 9.0 | 23.1 | | 10.0 | 23.1 | 23.1 | 9.5 | 36.6 | 36.6 | 9.0 | 30.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-----|
| Total Split (s) | 12.0 | 33.3 | | 20.0 | 41.3 | 41.3 | 16.1 | 37.7 | 37.7 | 9.0 | 30.6 | |
| Total Split (%) | 12.0% | 33.3% | | 20.0% | 41.3% | 41.3% | 16.1% | 37.7% | 37.7% | 9.0% | 30.6% | |
| Maximum Green (s) | 8.0 | 27.2 | | 15.0 | 35.2 | 35.2 | 11.6 | 31.1 | 31.1 | 5.0 | 24.0 | |
| Yellow Time (s) | 3.0 | 4.3 | | 3.0 | 4.3 | 4.3 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | |
| All-Red Time (s) | 1.0 | 1.8 | | 2.0 | 1.8 | 1.8 | 1.5 | 3.0 | 3.0 | 1.0 | 3.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.1 | | 5.0 | 6.1 | 6.1 | 7.5 | 6.6 | 6.6 | 4.0 | 6.6 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | C-Max | None | None | None | None | None | |
| Walk Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | 13.0 | | | 13.0 | 13.0 | | 26.0 | 26.0 | | 20.0 | |
| Pedestrian Calls (#/hr) | | 5 | | | 5 | 5 | | 5 | 5 | | 5 | |
| Act Effct Green (s) | 38.0 | 35.9 | 100.0 | 45.0 | 43.9 | 43.9 | 30.1 | 22.4 | 22.4 | 22.9 | 15.3 | |
| Actuated g/C Ratio | 0.38 | 0.36 | 1.00 | 0.45 | 0.44 | 0.44 | 0.30 | 0.22 | 0.22 | 0.23 | 0.15 | |
| v/c Ratio | 0.71 | 0.76 | 0.20 | 1.14 | 0.68 | 0.23 | 1.38 | 0.28 | 0.61 | 0.41 | 0.72 | |
| Control Delay | 42.8 | 25.2 | 0.2 | 109.0 | 23.0 | 7.1 | 224.2 | 30.8 | 9.3 | 28.6 | 46.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 42.8 | 25.2 | 0.2 | 109.0 | 23.0 | 7.1 | 224.2 | 30.8 | 9.3 | 28.6 | 46.5 | |
| LOS | D | C | A | F | C | A | F | C | A | C | D | |
| Approach Delay | | 22.7 | | | 37.7 | | | 97.1 | | | 39.6 | |
| Approach LOS | | C | | | D | | | F | | | D | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 46 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.38

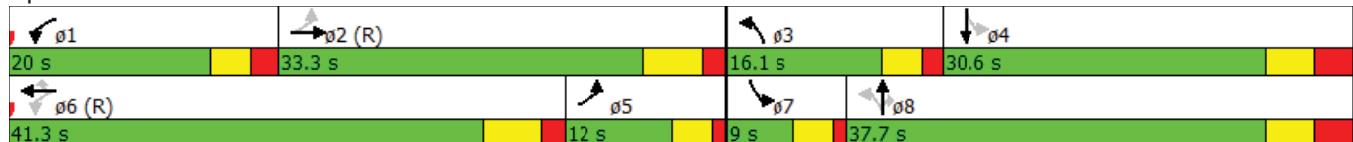
Intersection Signal Delay: 42.5 Intersection LOS: D

Intersection Capacity Utilization 96.6% ICU Level of Service F

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1510: Westminster/Westminster Blvd. W. & W. 92nd Ave.



Westminster Center
Second Westminster/92nd scenario

Future Traffic/Optimized Timings
9/29/2013

| Lane Group | EBL | EBT | EBC | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑ | ↑ | ↑↑ | ↑↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Volume (vph) | 155 | 1313 | 287 | 366 | 1420 | 169 | 326 | 111 | 388 | 122 | 116 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 145 | | 75 | 265 | | 0 | 200 | | 230 | 135 | | 190 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | | 1.00 | | 0.97 | 1.00 | | | | 0.99 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.938 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 1863 | 1583 | 1770 | 1735 | 0 |
| Flt Permitted | 0.147 | | | 0.950 | | | 0.292 | | | 0.681 | | |
| Satd. Flow (perm) | 273 | 5085 | 1562 | 3427 | 5085 | 1531 | 542 | 1863 | 1583 | 1269 | 1735 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 355 | | | 221 | | | 397 | | 39 | |
| Link Speed (mph) | 40 | | | 40 | | | 35 | | | 30 | | |
| Link Distance (ft) | 599 | | | 846 | | | 336 | | | 484 | | |
| Travel Time (s) | 10.2 | | | 14.4 | | | 6.5 | | | 11.0 | | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 5 | | | | | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 123 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 210 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 12 | | | 24 | | | 12 | | | 12 | | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | 0 | | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | 16 | | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | pm+pt | NA | Free | Prot | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | Free | | | 6 | 8 | | 8 | 4 | | |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | 5.0 | 10.0 | 10.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | |
| Minimum Split (s) | 9.0 | 23.1 | | 10.0 | 23.1 | 23.1 | 9.5 | 36.6 | 36.6 | 9.0 | 30.6 | |

Westminster Center
Second Westminster/92nd scenario

Future Traffic/Optimized Timings
9/29/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Total Split (s) | 9.0 | 30.4 | | 14.0 | 35.4 | 35.4 | 14.8 | 36.6 | 36.6 | 9.0 | 30.8 | |
| Total Split (%) | 10.0% | 33.8% | | 15.6% | 39.3% | 39.3% | 16.4% | 40.7% | 40.7% | 10.0% | 34.2% | |
| Maximum Green (s) | 5.0 | 24.3 | | 9.0 | 29.3 | 29.3 | 10.3 | 30.0 | 30.0 | 5.0 | 24.2 | |
| Yellow Time (s) | 3.0 | 4.3 | | 3.0 | 4.3 | 4.3 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | |
| All-Red Time (s) | 1.0 | 1.8 | | 2.0 | 1.8 | 1.8 | 1.5 | 3.0 | 3.0 | 1.0 | 3.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.1 | | 5.0 | 6.1 | 6.1 | 7.5 | 6.6 | 6.6 | 4.0 | 6.6 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | C-Max | None | None | None | None | None | |
| Walk Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | 13.0 | | | 13.0 | 13.0 | | 26.0 | 26.0 | | 20.0 | |
| Pedestrian Calls (#/hr) | | 5 | | | 5 | 5 | | 5 | 5 | | 5 | |
| Act Effct Green (s) | 36.2 | 34.1 | 90.0 | 9.0 | 39.1 | 39.1 | 26.6 | 20.2 | 20.2 | 22.0 | 14.4 | |
| Actuated g/C Ratio | 0.40 | 0.38 | 1.00 | 0.10 | 0.43 | 0.43 | 0.30 | 0.22 | 0.22 | 0.24 | 0.16 | |
| v/c Ratio | 0.85 | 0.72 | 0.20 | 1.13 | 0.68 | 0.23 | 1.34 | 0.28 | 0.62 | 0.39 | 0.68 | |
| Control Delay | 71.3 | 28.4 | 0.3 | 128.8 | 23.9 | 2.4 | 202.5 | 28.8 | 7.8 | 23.8 | 38.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 71.3 | 28.4 | 0.3 | 128.8 | 23.9 | 2.4 | 202.5 | 28.8 | 7.8 | 23.8 | 38.9 | |
| LOS | E | C | A | F | C | A | F | C | A | C | D | |
| Approach Delay | | 27.6 | | | 41.7 | | | 87.6 | | | 33.1 | |
| Approach LOS | | C | | | D | | | F | | | C | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.34

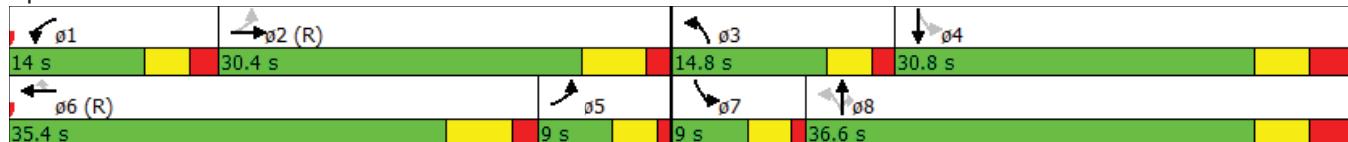
Intersection Signal Delay: 43.8 Intersection LOS: D

Intersection Capacity Utilization 86.8% ICU Level of Service E

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1510: Westminster/Westminster Blvd. W. & W. 92nd Ave.



Westminster Center
Third Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑ | ↑ | ↑ | ↑↑ | ↑ | ↑↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Volume (vph) | 155 | 1313 | 287 | 366 | 1420 | 169 | 326 | 111 | 388 | 122 | 116 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 145 | | 75 | 265 | | 0 | 200 | | 230 | 135 | | 190 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 2 | | 1 | 1 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | 0.96 | 0.99 | | | | 0.99 | | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.938 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 1770 | 5085 | 1583 | 3433 | 1863 | 1583 | 1770 | 1734 | 0 |
| Flt Permitted | 0.160 | | | 0.125 | | | 0.950 | | | 0.681 | | |
| Satd. Flow (perm) | 297 | 5085 | 1548 | 233 | 5085 | 1527 | 3415 | 1863 | 1583 | 1269 | 1734 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | Yes | |
| Satd. Flow (RTOR) | | | 291 | | | 180 | | | 413 | | 30 | |
| Link Speed (mph) | 40 | | | 40 | | | 35 | | | 30 | | |
| Link Distance (ft) | 599 | | | 846 | | | 336 | | | 484 | | |
| Travel Time (s) | 10.2 | | | 14.4 | | | 6.5 | | | 11.0 | | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 5 | | | | 5 | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 123 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 210 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | | | 24 | | | 12 | | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | 0 | | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | 16 | | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | pm+pt | NA | Free | pm+pt | NA | Perm | Prot | NA | Perm | pm+pt | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 2 | | Free | 6 | | 6 | | | 8 | 4 | | |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | 5.0 | 10.0 | 10.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | |
| Minimum Split (s) | 9.0 | 23.1 | | 10.0 | 23.1 | 23.1 | 9.5 | 36.6 | 36.6 | 9.0 | 30.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|
| Total Split (s) | 12.0 | 37.2 | | 23.0 | 48.2 | 48.2 | 19.2 | 39.8 | 39.8 | 10.0 | 30.6 | |
| Total Split (%) | 10.9% | 33.8% | | 20.9% | 43.8% | 43.8% | 17.5% | 36.2% | 36.2% | 9.1% | 27.8% | |
| Maximum Green (s) | 8.0 | 31.1 | | 18.0 | 42.1 | 42.1 | 14.7 | 33.2 | 33.2 | 6.0 | 24.0 | |
| Yellow Time (s) | 3.0 | 4.3 | | 3.0 | 4.3 | 4.3 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | |
| All-Red Time (s) | 1.0 | 1.8 | | 2.0 | 1.8 | 1.8 | 1.5 | 3.0 | 3.0 | 1.0 | 3.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.1 | | 5.0 | 6.1 | 6.1 | 7.5 | 6.6 | 6.6 | 4.0 | 6.6 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | C-Max | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | 4.0 | 4.0 | | | 4.0 |
| Flash Dont Walk (s) | | | | | | | | 13.0 | 13.0 | | | 20.0 |
| Pedestrian Calls (#/hr) | | | | | | | | 5 | 5 | | | 5 |
| Act Effct Green (s) | 41.2 | 39.1 | 110.0 | 51.2 | 50.1 | 50.1 | 11.4 | 25.2 | 25.2 | 24.8 | 16.2 | |
| Actuated g/C Ratio | 0.37 | 0.36 | 1.00 | 0.47 | 0.46 | 0.46 | 0.10 | 0.23 | 0.23 | 0.23 | 0.15 | |
| v/c Ratio | 0.76 | 0.77 | 0.20 | 1.08 | 0.65 | 0.23 | 0.97 | 0.28 | 0.61 | 0.42 | 0.75 | |
| Control Delay | 62.4 | 36.1 | 0.3 | 101.2 | 25.8 | 3.9 | 91.3 | 35.0 | 7.2 | 30.6 | 53.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 62.4 | 36.1 | 0.3 | 101.2 | 25.8 | 3.9 | 91.3 | 35.0 | 7.2 | 30.6 | 53.9 | |
| LOS | E | D | A | F | C | A | F | D | A | C | D | |
| Approach Delay | | | | | | | | 32.6 | | 38.0 | | 44.2 |
| Approach LOS | | | | | | | | C | | D | | D |

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 37.6

Intersection LOS: D

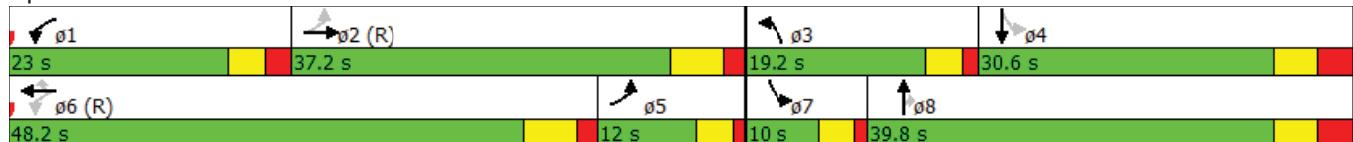
Intersection Capacity Utilization 87.9%

ICU Level of Service E

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1510: Westminster/Westminster Blvd. W. & W. 92nd Ave.



Westminster Center
4th Westminster/92nd scenario

Future Traffic/Optimized Timings
9/30/2013

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↑ | ↑↑ | ↑ | ↑↑ | ↑↑ | ↑ | ↑↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| Volume (vph) | 155 | 1313 | 287 | 366 | 1420 | 169 | 326 | 111 | 388 | 122 | 116 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 145 | | 75 | 265 | | 0 | 200 | | 230 | 135 | | 190 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 1 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | | 1.00 | | 0.97 | 1.00 | | | | 0.99 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.938 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 1863 | 1583 | 1770 | 1735 | 0 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1767 | 5085 | 1562 | 3427 | 5085 | 1531 | 3419 | 1863 | 1583 | 1770 | 1735 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 355 | | | 221 | | | 279 | | | 39 |
| Link Speed (mph) | 40 | | | 40 | | | 35 | | | 30 | | |
| Link Distance (ft) | 599 | | | 846 | | | 336 | | | 484 | | |
| Travel Time (s) | 10.2 | | | 14.4 | | | 6.5 | | | 11.0 | | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 5 | | | | | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 123 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 165 | 1397 | 305 | 389 | 1511 | 180 | 347 | 118 | 413 | 130 | 210 | 0 |
| Enter Blocked Intersection | No |
| Lane Alignment | Left | Left | Right |
| Median Width(ft) | 12 | | | 24 | | | 24 | | | 12 | | |
| Link Offset(ft) | 0 | | | 0 | | | 0 | | | 0 | | |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 | | | 16 | | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Detector 1 Size(ft) | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | 20 | 20 | 30 | |
| Detector 1 Type | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | 6 | | | 8 | | | |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | 5.0 | 10.0 | 10.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | |
| Minimum Split (s) | 9.0 | 23.1 | | 10.0 | 23.1 | 23.1 | 9.5 | 36.6 | 36.6 | 9.0 | 30.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Total Split (s) | 10.0 | 31.4 | | 13.0 | 34.4 | 34.4 | 15.0 | 36.6 | 36.6 | 9.0 | 30.6 | |
| Total Split (%) | 11.1% | 34.9% | | 14.4% | 38.2% | 38.2% | 16.7% | 40.7% | 40.7% | 10.0% | 34.0% | |
| Maximum Green (s) | 6.0 | 25.3 | | 8.0 | 28.3 | 28.3 | 10.5 | 30.0 | 30.0 | 5.0 | 24.0 | |
| Yellow Time (s) | 3.0 | 4.3 | | 3.0 | 4.3 | 4.3 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | |
| All-Red Time (s) | 1.0 | 1.8 | | 2.0 | 1.8 | 1.8 | 1.5 | 3.0 | 3.0 | 1.0 | 3.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.1 | | 5.0 | 6.1 | 6.1 | 7.5 | 6.6 | 6.6 | 4.0 | 6.6 | |
| Lead/Lag | Lag | Lag | | Lead | Lead | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Recall Mode | None | C-Max | | None | C-Max | C-Max | None | None | None | None | None | |
| Walk Time (s) | | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | 13.0 | | | 13.0 | 13.0 | | 26.0 | 26.0 | | 20.0 | |
| Pedestrian Calls (#/hr) | | 5 | | | 5 | 5 | | 5 | 5 | | 5 | |
| Act Effct Green (s) | 6.0 | 35.0 | 90.0 | 8.0 | 38.0 | 38.0 | 7.5 | 20.3 | 20.3 | 5.0 | 14.3 | |
| Actuated g/C Ratio | 0.07 | 0.39 | 1.00 | 0.09 | 0.42 | 0.42 | 0.08 | 0.23 | 0.23 | 0.06 | 0.16 | |
| v/c Ratio | 1.40 | 0.71 | 0.20 | 1.28 | 0.70 | 0.23 | 1.21 | 0.28 | 0.72 | 1.33 | 0.68 | |
| Control Delay | 256.9 | 27.3 | 0.3 | 182.8 | 25.2 | 2.5 | 161.1 | 28.7 | 17.4 | 237.9 | 39.0 | |
| Queue Delay | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 256.9 | 27.3 | 0.3 | 182.8 | 25.2 | 2.5 | 161.1 | 28.7 | 17.4 | 237.9 | 39.0 | |
| LOS | F | C | A | F | C | A | F | C | B | F | D | |
| Approach Delay | | 43.2 | | | 52.7 | | | 75.7 | | | 115.1 | |
| Approach LOS | | D | | | D | | | E | | | F | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.40

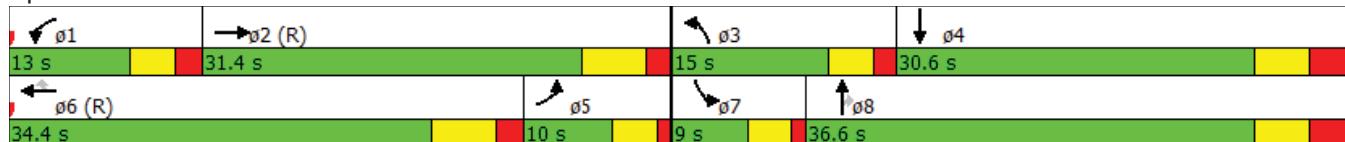
Intersection Signal Delay: 57.3 Intersection LOS: E

Intersection Capacity Utilization 78.0% ICU Level of Service D

Analysis Period (min) 15

Description: Westminster Signal

Splits and Phases: 1510: Westminster/Westminster Blvd. W. & W. 92nd Ave.



8.3

UTILITY PLAN

**DOWNTOWN WESTMINSTER
WESTMINSTER MALL REDEVELOPMENT
PRELIMINARY DEVELOPMENT PLAN UTILITY STUDY**

SEPTEMBER 18, 2013

PREPARED BY:

MARTIN/MARTIN, INC.
12499 WEST COLFAX AVENUE
LAKEWOOD, COLORADO 80215
(303) 431-6100
PROJECT NO. 13.0463

PREPARED FOR:

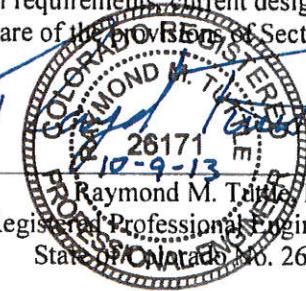
TORTI GALLAS & PARTNERS, INC.
523 WEST 6TH STREET, SUITE 212
LOS ANGELES, CALIFORNIA 90014
(213) 607-0070
NEAL PAYTON

PRINCIPAL-IN-CHARGE: RAYMOND M. TUTTLE, P.E.

PROJECT MANAGER: DAVID A. LOVATO, P.E.

PROJECT ENGINEER: JACQUELYN STACKHOUSE, P.E.

"This Utility Report for the design of the Downtown Westminster development was prepared by me or under my direct supervision in accordance with the City of Westminster's Standards and Specifications and acceptable professional practices of the industry. We acknowledge that the City of Westminster's review of this Utility Study is only for general conformance with submittal requirements, current design criteria and standard engineering principles and practices. We are also aware of the requirements of Section 11-6-5(B) of the City Code of the City of Westminster."



Raymond M. Tidde, P.E.
Registered Professional Engineer
State of Colorado No. 26171

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BACK POCKET – UTILITY PLAN

INTRODUCTION

This utility study accompanies the Preliminary Development Plan for the Downtown Westminster – Westminster Mall Redevelopment. This site was previously the location of the Westminster Mall. The majority of the buildings on-site have been demolished in preparation for the redevelopment project. The JCPenny and the Brunswick Zone are to remain. This utility study will supersede any previously approved utility studies for this property.

I. PROJECT LOCATION AND DESCRIPTION

A. Location

The site is located in the south half of Section 24, Township 2 South, Range 69 West of the 6th Principal Meridian, City of Westminster, County of Jefferson, State of Colorado. The property is bounded by North Harlan Street to the west, West 88th Avenue to the south, Denver Boulder Turnpike (US Highway 36) right-of-way and Sheridan Boulevard to the east, and West 92nd Avenue to the north.

B. Description of Property

The site is approximately 107.39 acres of the former Westminster Mall property. This site was previously developed and is covered with buildings, pavement and landscaped areas. The majority of buildings on-site have been demolished in preparation for redevelopment, and native grasses and weeds are growing in the stripped, vacant lots. The proposed Downtown Westminster will consist of a combination of multifamily residential and commercial development.

II. SYSTEM LAYOUT

A. Existing Water Infrastructure

The former Westminster Mall site is located within existing water Zone 1. Zone 1 only provides a residual pressure of 40 psi to the development, which is located at the high point of the zone, and a private on-site booster pump is used to bring the pressure up to 90 psi for fire suppression/protection.

B. Proposed Water Infrastructure

Several options to serve the proposed Downtown Westminster redevelopment were evaluated in “Distribution System Modeling Series 600 – Task 604: Zones 3 Evaluation” and “Westminster Urban Reinvestment Project (WURP) Water Storage Hydraulic Modeling Analysis,” both completed by URS. The first report evaluated the water network under several possible scenarios, including extending Zone 3 to Pierce Street and 95th Avenue for 80%, 100%, and 120% of the planned WURP demand, serving the redeveloped Subarea A (this redevelopment site - the former Westminster Mall) on Zone 1, extending Zone 3 to Subarea A only, and extending Zone 3 to Subarea A, 88th Avenue, Pierce Street, and their adjacent mains. The later evaluated the advantages and disadvantages of creating a brand new zone (Zone 18) to serve the development versus extending Zone 3. The recommendation stemming from these analyses was to extend Zone 3 to serve 100% of the planned WURP development.

The extension of Zone 3 will require the installation of a 24” transmission main within 92nd Avenue which crosses Highway 36 and Sheridan Boulevard, a pump station for Zones 3 and 4, and a 2.5 MG storage tank. The engineer’s estimate of probable construction cost performed in 2012 was approximately \$18.3 million for the Zone 3 extension.

C. Existing Sanitary Sewer Infrastructure

The existing site drains via existing 12” and 18” sanitary sewer lines to the south, adjacent to Sheridan Boulevard, discharging to the Little Dry Creek outfall. The existing sanitary sewer at the southeast corner of the site will serve as a connection point for the redeveloped site and proposed infrastructure.

D. Proposed Sanitary Sewer Infrastructure

The redeveloped site will drain to the existing sanitary sewer system and continue to use as much of the existing infrastructure as possible. Seven projects downstream are anticipated to upsize sections of pipe in order to accommodate sanitary flows from all of the development planned with the WURP. Six of the projects are currently accounted for in the City of Westminster’s CIP.

III. DESIGN FLOW REQUIREMENTS

A. Water Demands

The existing site has a peak demand of 150 Ac-ft/year (approximately 93 gpm), per the City of Westminster. The redevelopment can remain on Zone 1 with a temporary booster pump to bring the pressure up to acceptable levels until a design maximum day demand (MDD) of 93 gpm is reached. At that time, the Zone 3 extension will be triggered and infrastructure will need to be installed to connect the site to Zone 3. The anticipated MDD for the redevelopment of Subarea A was modeled as 950 gpm by URS in the “Distribution System Modeling Series 600 – Task 604: Zones 3 Evaluation.” Based on the proposed land use for the redevelopment, the MDD is anticipated to be 2,203 gpm (see Appendix B for water demand calculations). Additional infrastructure improvements may be required to meet this demand. In order to limit the demand to the anticipated 950 gpm, the number of residential units would need to be reduced from 2,000 to 622. The Westminster Fire Department estimated the fire flow for Subarea A of the WURP to be 4,500 gpm, as referenced from the URS Zone 3 evaluation. Therefore, the total demand for Subarea A (MDD+FF) is anticipated to be 6,703 gpm under the proposed development conditions.

B. Sanitary Flows

The existing site has a peak sanitary flow of 150 Ac-ft/year (approximately 0.21 cfs), per the City of Westminster. The redevelopment can continue to use the existing sanitary sewer infrastructure until a peak design flow of 0.21 cfs is reached. At that time, the downstream upsizing projects will be triggered to accommodate the redeveloped flows. Sanitary flows were calculated using the City of Westminster criteria for the residential portion of the development, and City and County of Denver (CCOD) criteria for the commercial uses because CCOD criteria allows for calculating sanitary flow demands based on areas of individual buildings, which is a more conservative method, whereas City of Westminster does not. The total anticipated peak daily sewage flow, including infiltration, is 3.45 cfs for the redevelopment (see Appendix C for sanitary flow calculations).

IV. CONCLUSIONS

The proposed site is a 107.39 acre redevelopment of the former Westminster Mall to be developed into a combination of multifamily residential and commercial. The redeveloped site will continue to use as much of the existing water and sanitary infrastructure as possible. At the time that the existing water demands are exceeded by the new development, the extension of Zone 3 will be triggered. The extension of Zone 3 will require the installation of a 24" transmission main within 92nd Avenue which crosses Highway 36 and Sheridan Boulevard, a pump station for Zones 3 and 4, and a 2.5 MG storage tank. At the time that the existing sanitary flows are exceeded by the new development, the downstream upsizing projects will be triggered. A total of seven projects are anticipated to upsize sections of pipe in order to accommodate sanitary flows from all of the development planned with the WURP. The site's water and sanitary flow demands have been designed in accordance with the City of Westminster Standards and Specifications for Public Improvements.

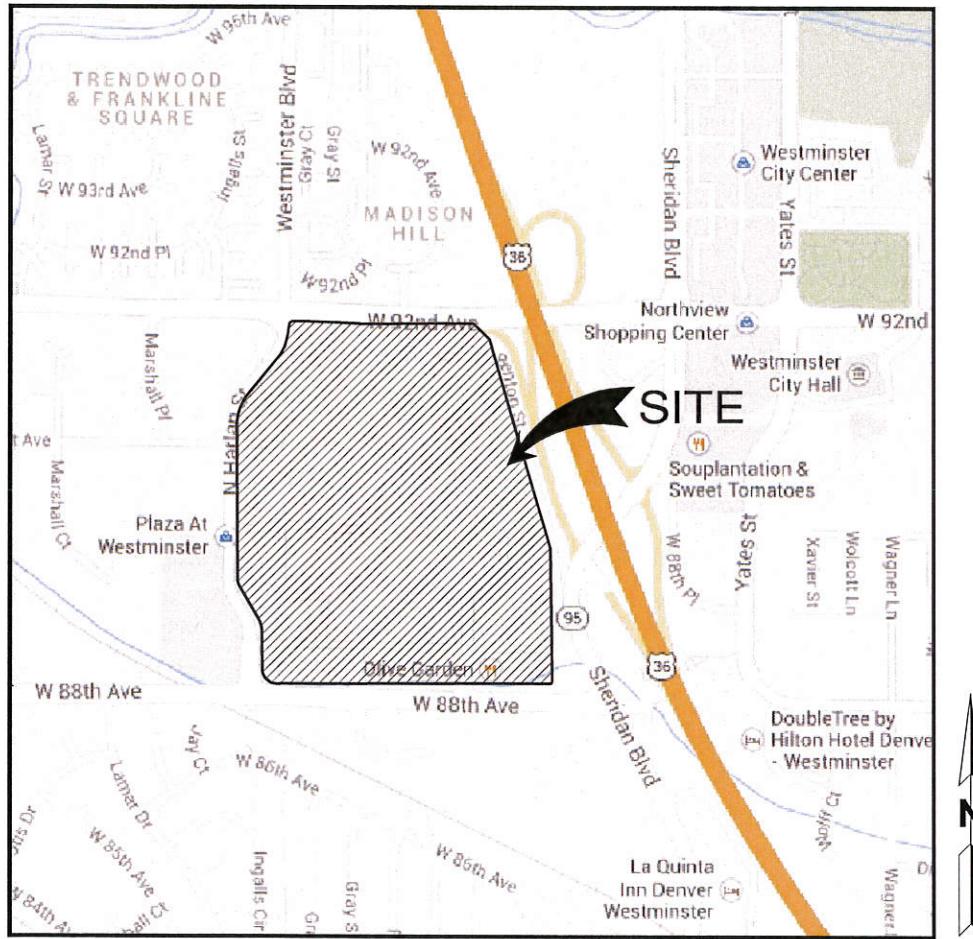
V. REFERENCES

1. City of Westminster Standards and Specifications for Public Improvements, City of Westminster.
2. Distribution System Modeling Series 600 – Task 604: Zones 3 Evaluation, URS Corporation, Denver, Colorado, July 2011.
3. Westminster Urban Reinvestment Project (WURP) Water Storage Hydraulic Modeling Analysis, URS Corporation, Denver, Colorado, June 2012.
4. Water Storage Tanks Hydraulic Modeling Analysis, URS Corporation, Denver, Colorado, June 2011.
5. Sanitary Sewer Design Technical Criteria Manual, City and County of Denver Department of Public Works.

APPENDIX

MAPS

A



VICINITY MAP

N.T.S.

WATER DEMANDS

DOWNTOWN WESTMINSTER
WATER DEMANDS
Average & Maximum Demand Calculations

| Proposed Development | Total Square Footage | Number of Units | People per Unit | Average Day Demand (gpd/person) | Average Day Demand (gpd/room) | Average Day Demand (gpd/sf based on Land Use) | Average Day Demand (GPM) | Maximum Day Factor | Maximum Day Demand (GPM) | Peak Hour Factor | Peak Hour Demand (GPM) |
|------------------------|----------------------|-----------------|-----------------|---------------------------------|-------------------------------|---|--------------------------|--------------------|--------------------------|------------------|------------------------|
| Office | 1,000,000 | N/A | N/A | N/A | N/A | 0.04 | 27.78 | 2.50 | 69.44 | 4.00 | 111.11 |
| Retail (incl. JCPenny) | 770,000 | N/A | N/A | N/A | N/A | 0.16 | 85.56 | 2.50 | 213.89 | 4.00 | 342.22 |
| Hotel | 280,000 | 400 | N/A | N/A | 130 | N/A | 36.11 | 2.50 | 90.28 | 4.00 | 144.44 |
| Brunswick Zone | 37,400 | N/A | N/A | N/A | N/A | 0.16 | 4.16 | 2.50 | 10.39 | 4.00 | 16.62 |
| Residential | N/A | 2,000 | 2.62 | 200 | N/A | N/A | 727.78 | 2.50 | 1819.44 | 4.00 | 2911.11 |
| Total | | | | | | | 881.38 | | 2203.44 | | 3525.51 |

SANITARY FLOWS

DOWNTOWN WESTMINSTER
SANITARY FLOWS
Average & Maximum Flow Calculations

| Proposed Development | Total Square Footage | Number of Units | People per Unit | Average Daily Sewage Flow | | | Peak Factor | Peak Daily Sewage Flow (CFS) | Infiltration Based on 1000 GPD/AC (CFS)* | Peak Daily Sewage Flow + Infiltration (CFS) |
|------------------------|----------------------|-----------------|-----------------|---------------------------|---------------------------------|-------|-------------|------------------------------|--|---|
| | | | | (gpd/person) | (gpd/1000 sf based on Land Use) | (CFS) | | | | |
| Office | 1,000,000 | N/A | N/A | N/A | 200 | 0.31 | 3.0 | 0.93 | 0.04 | 0.96 |
| Retail (incl. JCPenny) | 770,000 | N/A | N/A | N/A | 200 | 0.24 | 3.0 | 0.71 | 0.03 | 0.74 |
| Hotel | 280,000 | N/A | N/A | N/A | 350 | 0.15 | 3.0 | 0.45 | 0.01 | 0.46 |
| Brunswick Zone | 37,400 | N/A | N/A | N/A | 200 | 0.01 | 3.0 | 0.03 | 0.00 | 0.04 |
| Residential | N/A | 2,000 | 1.80 | 70 | N/A | 0.39 | 3.0 | 1.17 | 0.08 | 1.25 |
| Total | | | | | | 1.10 | | 3.29 | 0.16 | 3.45 |

*Per City of Westminster criteria, infiltration rates are 1000 gpd/Ac for all land uses. The proposed development assumes a total developable square footage of 4,375,000 based on an FAR of 1.75 and excluding the Brunswick Zone site. 1,000,000 sq ft is designated for office and 1,050,000 sq ft is designated for retail (including the JCPenny and 280,000 sq ft of hotel space). Therefore, it is assumed that the 2,000 residential units make up the remaining 2,325,000 sq ft of developable area.

DESIGN AIDS

- c) **Design flow requirements** – Complete design flow calculations and a discussion explaining the calculations and assumptions shall be provided. Items shall include types of facilities to be served, fire flow calculations based on building construction type and floor area, developed land area, number of units based on land use, and population densities. Calculations for Average Day, Max Day and Peak Hour demands shall be presented. Max Day plus Fire Flow and Peak Hour demand scenarios shall be evaluated for worst case and shall include domestic demands, building sprinkler flows and domestic irrigation flows. Data shall be presented in table format, if possible, for ease of reading. The report shall acknowledge that the Fire Department has provided the required fire flows and that they approve of the proposed fire hydrant locations.
- d) **Hydraulic Analysis** – A detailed description of modeling assumptions and rationale shall be provided in the report text such that the analysis is clear and can be confirmed. Results of the analysis at a minimum shall include: minimum and maximum system pressures for the various scenarios modeled, corresponding node locations, distribution of fire flows among hydrants, and maximum pipe velocities. Data should be presented in table format. Reference shall be made to modeling data in the appendix and a figure of the pipe and node network provided.
- e) **Conclusions** – a description of the results and how they follow the City criteria shall be provided. Any deviations from the City criteria shall be described and applicable variances requested.
- C) f) **Appendices** - Printed data output from the modeling results shall be provided in the appendix and shall correspond with a figure of the pipe and node network. The appendix shall also include hydrant flow test results, hand calculations and any other pertinent data. A large size figure (24" x 36") illustrating the existing and proposed utility improvements shall be provided and shall conform to the City's latest master plan. The drawing shall include pressure zone boundaries, building finished floor elevations, elevation contours and locations of proposed and existing utility easements and right-of-way.

3.13.0 DESIGN DEMAND

The domestic demands for a particular development vary depending on the type of development, land use density, irrigation demand and building fire sprinkler flow requirements. However, the demand used to design a water system is largely a function of the required fire flow for a particular development.

There are two general categories of development for which domestic flow rates are determined: residential and commercial/industrial. Domestic demands for these developments are determined from Tables 3.13.A, 3.13.B and 3.13.C below and then peaking factors are applied to develop the Maximum Day Demand and Peak Hour Demand as follows:

$$\begin{aligned}\text{Maximum Day Demand} &= 2.5 \times \text{Average Day Demand} \\ \text{Peak Hour Demand} &= 4.0 \times \text{Average Day Demand}\end{aligned}$$

Domestic demands for a development shall be combined with peak irrigation demand, building fire sprinkler demand and the project fire flow. The peak irrigation demand shall be determined by the irrigation designer and the fire sprinkler demand shall be determined by the fire sprinkler Engineer. The fire flow for a project is determined from the 2006 International Fire Code and requires the

approval of the City Fire Marshal. Factors such as building area and construction type are required to determine the fire flow for a structure.

The design of the water distribution system shall be based on the higher of the two demand scenarios:

Maximum Day Demand + project fire flow + building fire sprinkler flow + peak irrigation flow, or

Peak Hour Demand + peak irrigation flow.

The City shall be consulted for design criteria with regard to non-standard developments, design of municipal infrastructure such as transmission mains, pump stations, etc. and for development with unusually high demands. The City Engineer shall have final input in these instances.

Residential Average Day Demand shall be based on density, and zoning as determined by the Preliminary Development Plan and Official Development Plan for the project. A per capita demand of 200 gallons per person per day shall be applied toward the People per Unit specified in Table 3.13.A below. For residential planning purposes, Average Day Demand can be calculated on an acreage basis as specified in Table 3.13.A.

Table 3.13.A – Residential Average Day Demand Data.

| Zoning | Type of Development | Units per Acre* | People per Unit* | Gallons per Acre-Day** |
|---------------------------------|------------------------|-----------------|------------------|------------------------|
| R-1 to R-5 | Single Family Detached | Up to 5 | 2.62 | 1650 |
| R-8 to R-18 and District Center | Single Family Attached | Up to 18 | 2.62 | 4150 |

Commercial and industrial Average Day Demands will vary widely depending on the type of development. The following criteria in Table 3.13.B is based on historic information from the City's water records and can be used to estimate the water usage for the various developments listed. The City of Westminster Water Resources Division should be consulted to determine tap fees.

Table 3.13.B – Commercial/Industrial Average Day Demand Data (Based on Building Area)

| Type of Development | Unit | Design Demand (gallons/unit-day) |
|------------------------------|------|----------------------------------|
| Auto Service and Repair | sf | 0.12 |
| Car Wash | bay | 528 |
| Childcare | sf | 0.32 |
| Church | sf | 0.18 |
| Grocery Store | sf | 0.22 |
| Gas Station with Car Wash | sf | 8 |
| Gas Station without Car Wash | sf | 1.32 |
| Hospital | sf | 0.32 |
| Hotel/Motel | room | 130 |
| Medical Office | sf | 0.2 |
| General Offices | sf | 0.04 |
| Restaurant | sf | 1.1 |

| | | |
|------------------------|----|------|
| Retail/Shopping Center | sf | 0.16 |
| School | sf | 0.06 |
| Warehouse/Industrial | sf | 0.04 |

For commercial and industrial planning purposes, average day demands can be calculated on an acreage basis as specified in Table 3.13.C.

Table 3.13.C – Commercial/Industrial Average Day Demand Data (Based on Acreage)

| Type of Development | Gallons per Acre-Day** |
|-----------------------------------|------------------------|
| Retail Commercial | 1400 |
| Office | 1400 |
| Business Park | 1400 |
| District Center (non-residential) | 1400 |
| Industrial | 220 |
| School/Church | 630 |

* From the “2004 City of Westminster Comprehensive Land Use Plan”

** From the City of Westminster “Water and Sewer Infrastructure Master Plan”, URS, 2010.

3.14.00

HYDRAULIC DESIGN

A computer generated hydraulic analysis of the proposed infrastructure, or “model”, shall be developed using standard industry software such as WaterCAD or City approved equal. In order for the model to properly correlate with the City’s distribution system, a hydrant flow test needs to be performed on nearby hydrants and static and residual pressures obtained as a function of flow rate. This data shall be used in the model to develop a water source curve, represented by a reservoir and pump, and this will allow modeled pressures to vary over a range of imposed demands. The water source curve functions as a boundary condition in the model where proposed piping interfaces with the existing distribution system at this boundary.

The objective during hydrant flow testing is to obtain a flow rate similar to the design demand required for the proposed development. The hydrants to be tested shall be determined by the City and data obtained during this test shall be valid for up to one-year, unless otherwise approved in writing by the City. Distribution system factors may require that a fire flow be increased for a particular area of the system, as determined by City engineering staff. A hydrant flow test shall be requested by the design engineer from the City Engineering Division.

Special analysis may be required by the City for developments requiring large flow demands and shall be discussed with the Utilities Division. Future changes in zone pressures, in conformance with the City’s latest master plan, shall be considered in the hydraulic analysis.

Upon approval by the City, exceptions to the computer generated hydraulic analysis may be made for the following:

- Developments requiring low domestic demands (less than 600 gpm) and with no fire flow requirement; or

4.12.01 Study

The study shall include, as a minimum, the following information and shall be typed and bound in an 8-1/2-inch x 11-inch folder:

- (A) Text, which addresses, a minimum of project location and description, project concept, discussion of any information that would affect the City's ability to serve the new area, and any recommendations and conclusions of the analysis.
- (B) The area, in acres, which could be served by gravity by the new sewer, shown on a topographic map which delineates the basin boundaries as stated in (G) below.
- (C) The estimated population densities and total population based on land use projections to be served by the new sewer.
- (D) The estimated quantity and quality of any industrial wastes to be discharged to the system.
- (E) Design flow rates, minimum and maximum flow velocities, minimum and maximum pipe slopes, and infiltration allowances.
- (F) The impact of the additional flows on the existing sanitary sewer system at all critical points between the proposed site and the major interceptor.
- (G) A utility map which includes, a minimum of, the following information:
 - Location of all proposed and existing easements and/or rights-of-way.
 - Existing and proposed sanitary sewer lines and appurtenances with sizes and slopes shown.
 - Basin delineation
 - All other existing and proposed utilities.

4.13.00 DESIGN FLOW

The flows used to design the sanitary sewer system for a particular development vary depending on the type of development. There are three general categories of development for which flow rates are given: residential development, commercial development and industrial development. Once the specific type of development is determined, the peak flows are calculated based on average demand, peak factor and infiltration/inflow amounts.

The following is a list of the criteria to be used in the preparation of all sanitary sewer system analyses:

Utility Study Criteria

Assume 2.90 People/Unit for all single family residential units *

Assume 1.80 People/Unit for all multi family units, including apartments.

Average Use: Residential -- 70 Gallons/Capita/Day **
 Commercial -- 1000 Gallons/Acre/Day **
 Industrial -- 1000 Gallons/Acre/Day **
 School -- 25 Gallons/Capita/Day ***

Peak Factor = 3.0 **

Infiltration and Inflow Rate for all uses -- 1000 Gallons/Acre/Day **

Sanitary sewers shall be designed to convey the peak daily flow plus Infiltration and Inflow. If an industry uses more than the average allowance, then the sewer must be designed to handle that industry's peak daily flow.

Flow rates downstream of lift stations shall take into account the flow generated at the maximum pumping rate plus peak daily flow plus Infiltration and Inflow.

- * From "1988 Population and Household Estimates," published by the Denver Regional Council of Governments with revisions by City of Westminster planning staff.
- ** From "1986 Sewer System Master Plan - City of Westminster," Brown and Caldwell
- *** From "WPCF Manual of Practice No. 9, fifth printing," American Society of Civil Engineers and the Water Pollution Control Federation.

4.14.00 HYDRAULIC DESIGN/SIZING OF SEWER LINES

4.14.01 General

Sanitary sewer shall be designed to carry the discharge calculated in accordance with Section 4.23.00 and to transport suspended material such that deposits in the sewer are precluded

The minimum diameter for sanitary sewer mains shall be 8-inches.

Oversizing of mains may be required by the City, and the recovery of the costs of such oversizing shall be in accordance with the Municipal Code.

The minimum diameter for sanitary sewer service lines shall be 4 inches.

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS

SECTION 2: SANITARY PLANNING CRITERIA

TABLE 2.04.3 - COMMERCIAL/INDUSTRIAL FLOW FACTORS

| Type of Establishment Future Average Flow | (GPD/1000 Gross Building sq. ft.) |
|---|---|
| Office Buildings | 200 |
| Restaurants | 500 |
| Bar & Lounges | 300 |
| Hotels & Motels | 350 |
| Neighborhood Stores | 200 |
| Department Stores | 200 |
| Laundries & Dry Cleaning | 1000 |
| Banks & Financial Buildings | 300 |
| Medical Buildings & Clinics | 300 |
| Warehouses | 100 |
| Meat & Food Processing Plants | 2800 |
| Car Washes | 1900 |
| Service Stations | 20 |
| Auto Dealer, Repair & Service | 150 |
| Super Market | 200 |
| Trade Businesses - Plumbers, Exterminator, etc. | 200 |
| Mobile Home Dealer, Lumber Co., Drive-In Movies, Flea Markets | 300 |
| Places of Assembly - Churches, Schools, Libraries, Theaters | 600 |
| Factories - Manufacturing raw products into finished products | 800 |
| Hospitals | 450 gal/bed |

2.1 BRACKETS, DEMAND AND FIRE FLOW ASSUMPTIONS

2.1.1 Bracket Description

The six scenarios planned for this work were broken into two phases. The first phase included brackets 1, 2, and 3 consisting of 100, 80 and 120% of projected developed density for the WURP Subareas A-E. Demand projections for the second phase (brackets 4, 5, and 6) were determined based on results of the first phase. Brackets 4-6 assumed that WURP Subarea A will be built out, Subareas B-E will not be redeveloped, and the remainder of the City will operate under future demands.

Future demands for Subareas A-E modeled are summarized in Table 2.1.

Table 2.1
Future Subareas A-E Demand, gpm

| WURP Subarea | 100% WURP | | 80% WURP | | 120% WURP | | No Redevelopment (except Subarea A) | |
|--------------|-----------|-------|----------|-------|-----------|-------|-------------------------------------|-------|
| | MDD | MHD | MDD | MHD | MDD | MHD | MDD | MHD |
| A | 950 | 1,520 | 760 | 1,216 | 1,140 | 1,824 | 950 | 1,520 |
| B | 525 | 840 | 420 | 672 | 630 | 1,008 | 61 | 98 |
| C | 600 | 960 | 480 | 768 | 720 | 1,152 | 169 | 271 |
| D | 294 | 471 | 235 | 377 | 353 | 565 | 209 | 333 |
| E | 133 | 213 | 106 | 170 | 160 | 255 | 53 | 85 |
| Total | 2,503 | 4,004 | 2,002 | 3,203 | 3,003 | 4,805 | 1,442 | 2,306 |

Currently the area where WURP redevelopment will occur is served by the pressure Zone 1. For brackets 1-3, Zone 3 was extended west to Pierce St so that WURP Subareas A, B, and C are served by Zone 3. Bracket 4 assumed that Zone 3 will not be extended. Bracket 5 extended Zone 3 to include Subarea A only. Bracket 6 includes Subarea A and areas that feed from 88th Ave east of Pierce St.

Six modeled brackets are summarized in Table 2.2.

Table 2.2
Bracketing Analysis Description

| Bracket | Phase | Description | |
|---------|-------|----------------|--|
| 1 | 1 | 100% WURP | Z3 Extension to Pierce St and 95th Ave |
| 2 | | 80% WURP | Z3 Extension to Pierce St and 95th Ave |
| 3 | | 120% WURP | Z3 Extension to Pierce St and 95th Ave |
| 4 | 2 | 100% Subarea A | No Z3 Extension |
| 5 | | 100% Subarea A | Z3 Extension to include Subarea A only |
| 6 | | 100% Subarea A | Z3 Extension to include Subarea A, 88th Ave, Pierce St, adjacent mains |

2.1.3 Fire Flow Assumptions

Required fire flows were provided by Mike Schafer with the Westminster Fire Department as follows:

2.1.3.1 Westminster Urban Reinvestment Project

The Westminster Urban Reinvestment Project (WURP) is a mixed-use high density redevelopment. The highest fire flow requirement of 4,500 gpm is estimated for the Subarea A that will replace the existing Westminster Mall.

2.1.3.2 Single Family Residential

The fire flow requirement for single family residential development is 1,500 gpm.

2.1.3.3 Fire Flow Assumptions Summary

In summary, the modeling was performed with the following fire flows:

- WURP Subarea A = 4,500 gpm
- Fire flow at other locations = 1,500 gpm

PLOT DATE: Wednesday, September 18, 2013 12:27 PM LAST SAVED BY: STACKHOUSE
DRAWING LOCATION: G:\Tuttle\13.0463-Downtown Westminster\DDO\WATER\Utility Planning



NOTES:

1. EXISTING WATER AND SANITARY SEWER INFRASTRUCTURE WILL BE REUSED WHERE FEASIBLE.
2. THE EXISTING SITE IS SERVED OFF OF WATER ZONE 1, WHEN EXISTING DEMANDS HAVE BEEN EXCEEDED BY THE REDEVELOPMENT PROJECT, THE EXTENSION OF ZONE 3 WILL BE TRIGGERED TO SERVE THE SITE.
3. THE EXISTING SANITARY SEWER WILL NEED TO BE UPGRADED DOWNSTREAM TO ACCOMMODATE THE INCREASED FLOW FROM THE PROPOSED WURF DEVELOPMENT. SEVEN UPGRADING PROJECTS ARE ANTICIPATED.
4. A FIRE FLOW OF 4,000 GPM IS REQUIRED FOR THE SITE.

BASIS OF BEARINGS

BEARINGS ARE BASED ON THE CITY OF WESTMINSTER GIS HORIZONTAL CONTROL NETWORK. BEARINGS HAVE BEEN ROTATED 00°08'32" COUNTERCLOCKWISE FROM THE PLATTED BEARINGS FOR WESTMINSTER MALL 2ND AMENDMENT PLAT, RECORDED AT RECEPTION NO. 86018236.



CALL 811 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE OR EXCAVATE FOR
MARKING OF UNDERGROUND MEMBER LINES

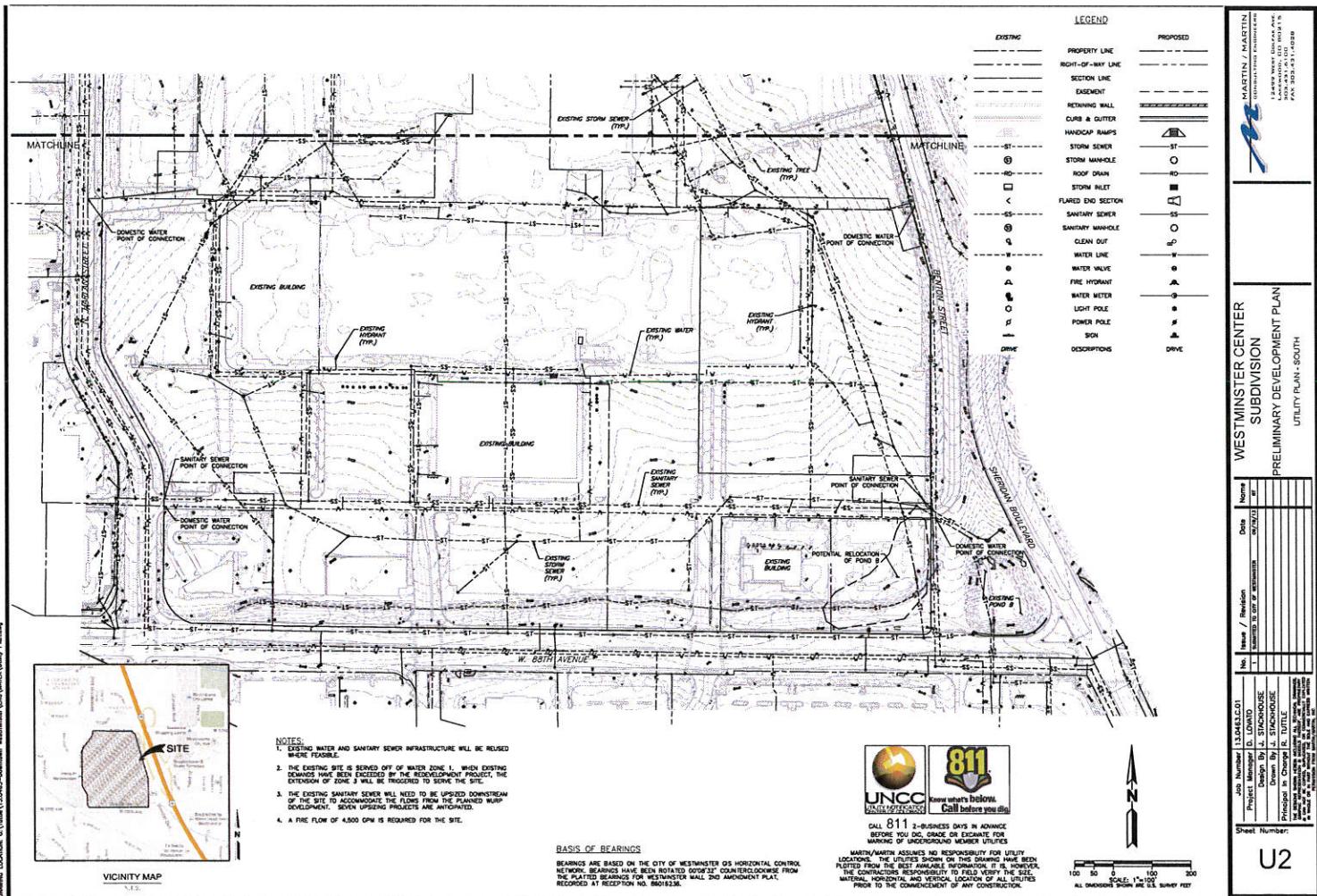
MARTIN/MARTIN ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

100 50 0 100 200
SCALE: 1" = 100'
ALL DIMENSIONS SHOWN ARE U.S. SURVEY FEET

| | | | | |
|--------------------------------|--|------------------------------|------------|------|
| Job Number: 12045.CJU | | No. Issue / Revision | Date | None |
| Project Manager: D. LOANO | | Numbered in front of drawing | 07/10/2010 | |
| Drawn by: STOCKHOUSE | | Drawn by: | Stockhouse | |
| Approved in Charge: R. TUTTE | | Approved in Charge: | R. TUTTE | |
| WESTMINSTER CENTER SUBDIVISION | | | | |
| PRELIMINARY DEVELOPMENT PLAN | | | | |
| UTILITY PLAN - NORTH | | | | |

Sheet Number: U1

PLOT DATE: Wednesday, September 18, 2013 12:28 PM LAST SAVED BY: STACKHOUSE
DRAWING LOCATION: G:\Title\12-0463-Dorcas Westminster\DWG\WATER\WDR_Pending



8.4

DRAINAGE PLAN

**DOWNTOWN WESTMINSTER
WESTMINSTER MALL REDEVELOPMENT
PHASE II DRAINAGE REPORT**

**JUNE 12, 2014
JULY 24, 2014**

PREPARED BY:

**MARTIN/MARTIN, INC.
12499 WEST COLFAX AVENUE
LAKEWOOD, COLORADO 80215
(303) 431-6100
PROJECT NO. 13.0463**

**PREPARED FOR:
TORTI GALLAS & PARTNERS, INC.
523 WEST 6TH STREET, SUITE 212
LOS ANGELES, CALIFORNIA 90014
(213) 607-0070
NEAL PAYTON**

PRINCIPAL-IN-CHARGE: RAYMOND M. TUTTLE, P.E.

PROJECT MANAGER: DAVID A. LOVATO, P.E.

PROJECT ENGINEER: GINA B. GRAVES, P.E.

"I hereby affirm that this report and plan for the Phase II drainage design of the development, Downtown Westminster, was prepared by me (or under my direct supervision) in accordance with the provisions of the City of Westminster Storm Drainage Design and Technical Criteria for the owners thereof. I understand that the City of Westminster does not and will not assume liability for drainage facilities designed by others. I am also aware of the provisions of Section 11-6-5(B) of the City CODE as it pertains to the City's review."

David A. Lovato, P.E.
Registered Professional Engineer
State of Colorado No. 32137



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BACK POCKET – DRAINAGE PLAN

INTRODUCTION

This site was previously the location of the Westminster Mall. The majority of the buildings on-site have been demolished in preparation for the redevelopment project. Buildings to remain include: JC Penny, US Bank, Olive Garden, Dentist office and the Brunswick Zone. This drainage study will supersede any previously approved drainage studies for this property.

I. GENERAL LOCATION AND DESCRIPTION

A. Location

The site is located in the south half of Section 24, Township 2 South, Range 69 West of the 6th Principal Meridian, City of Westminster, County of Jefferson, State of Colorado. The property is bounded by Harlan Street to the west, West 88th Avenue to the south, Denver Boulder Turnpike right-of-way and Sheridan Boulevard to the east, and West 92nd Avenue to the north. No major drainageways or storm drainage facilities are located within the site. The property drains to two existing ponds; one is located near the southeast corner of the site and the other is across W. 88th Avenue behind the Lowe's.

B. Description of Property

The site is approximately 107.39 acres of the former Westminster Mall property. The previous development consisted of two-story buildings, parking lots, drive aisles and landscaped areas. The original mall structure with the exception of JC Penney has been demolished. Native grasses and weeds are now growing in the stripped, vacant lots. The hydrologic soil group is Type C, according to the USDA Natural Resources Conservation Service's Web Soil Survey. The western portion of the site (Basin W) drains to existing storm sewer and outfalls to existing Detention Pond W, located south of the site, behind the Lowe's. The eastern portion of the site (Basin E) drains to existing storm sewer and outfalls to existing Detention Pond E, located in the southeast corner of the site, bounded by W. 88th Avenue and Sheridan Boulevard. There is no major drainage way or wetland areas within this site. Between the southern site boundary and the W. 88th Avenue right-of-way is an active irrigation canal.

The proposed Downtown Westminster will consist of a combination of multifamily residential developments, commercial developments, drive aisles, parking lots and landscaped areas. The existing on-site detention pond will be resized and relocated.

II. DRAINAGE BASINS

A. Major Basin Description

This site is located within Zone X as referenced from the FEMA Flood Insurance Rate Map (08059C0206E). The FEMA map legend defines "Zone X" as "areas determined to be outside the 0.2% annual chance floodplain" (500-year floodplain). Refer to Appendix A for Flood Insurance Rate Map. This site is divided into two major basins. The western basin conveys runoff to the existing Detention Pond W, south of the site, behind the Lowe's. The eastern basin conveys runoff to the existing Detention Pond E located just east of the southeast corner of the site, adjacent to the W. 88th Avenue & Sheridan Boulevard intersection. Proposed runoff will flow overland to proposed curb and gutter, storm sewer inlets, storm sewer piping and ultimately to the detention ponds. The proposed major basin delineations have been determined in order to control detention volume for the existing pond. The relocation of the on-site pond allows the pond to be sized to accommodate the proposed eastern major basin. The size of the western basin is limited to the allowable volume within the existing pond. No major drainage facilities are located within this site or anticipated to be affected by the redevelopment project. There is an existing irrigation canal that is located between the site's southern boundary and the right-of-way for 88th Avenue. The limits of the existing irrigation canal shall be outside the proposed site work. No grading is to occur within the limits of the irrigation canal.

B. Sub-Basin Description

A drainage plan (see back pocket) demonstrates the major basin delineations as well as the sub-basins. The eastern sub-basins are labeled "EA" for East Area and "ER" for East Roadway. Similarly, the western sub-basins are labeled "WA" for West Area and "WR" for West Roadway.

The eastern major basin will direct all runoff via a proposed storm sewer system to a proposed pond at the southeastern corner of the site, adjacent to the existing Olive Garden restaurant. The intent of the overlot grading is to slope streets to direct runoff via curb & gutter to proposed storm sewer inlets. The proposed storm sewer main will proceed north to south and is to be located within the right-of-way of the street. The western major basin will direct runoff via a proposed storm sewer system to the existing storm sewer system that will carry the runoff across W. 88th Avenue to the existing pond behind the existing Lowe's south of the site. The City is requiring that the percent impervious for each proposed area not exceed 80%. The roadways assume a 90% impervious. The proposed calculated eastern flow amounts are included in the Appendix.

III. DRAINAGE CRITERIA

City of Westminster Storm Drainage Design and Technical Criteria (STANDARDS), and the Urban Drainage and Flood Control District (UDFCD) “Urban Storm Drainage Criteria Manual” were used for the storm drainage system design.

The following criteria were utilized in developing the proposed drainage system.

- The proposed drainage system is designed to match, as best as possible, the historic drainage patterns occurring at the site.
- The proposed drainage system attempts to limit the diversion of storm runoff from one basin to another (basin transfer).
- Runoff generated from drainage sub-basins is conveyed either directly or via storm sewer systems or channels to outfall locations into a local detention pond where water quality facilities are located.

Design Rainfall: City of Westminster’s rainfall data is used to determine peak runoff values. The 5-year and 100-year frequency storms are used as the initial and major design storms respectively.

Runoff Calculation: Peak storm runoff is determined using the rational formula,

$Q = CIA$:

Q = storm runoff in CFS;

C = runoff coefficient based on surface impermeability;

I = rainfall intensity in inches per hour; and

A = drainage basin area in acres.

City of Westminster Recommended Runoff Coefficients and Percent Impervious Table (Table 602) are used to develop basin runoff coefficients. The runoff coefficients are weighted for each applicable sub-basin to more accurately reflect the runoff characteristics of the site.

Time of Concentration is determined using the criteria in Sections 3.4.1 and 3.4.2 of the UDFCD Criteria Manual.

Rainfall intensities are determined using STANDARDS Point Rainfall data and Intensity-Duration curves.

The recurrence intervals used for this study were based on a commercial land use. The minor drainage system is designed for a 5-year recurrence interval and the major drainage system is designed for a 100-year recurrence interval.

IV. DRAINAGE FACILITY DESIGN

A. General Concept

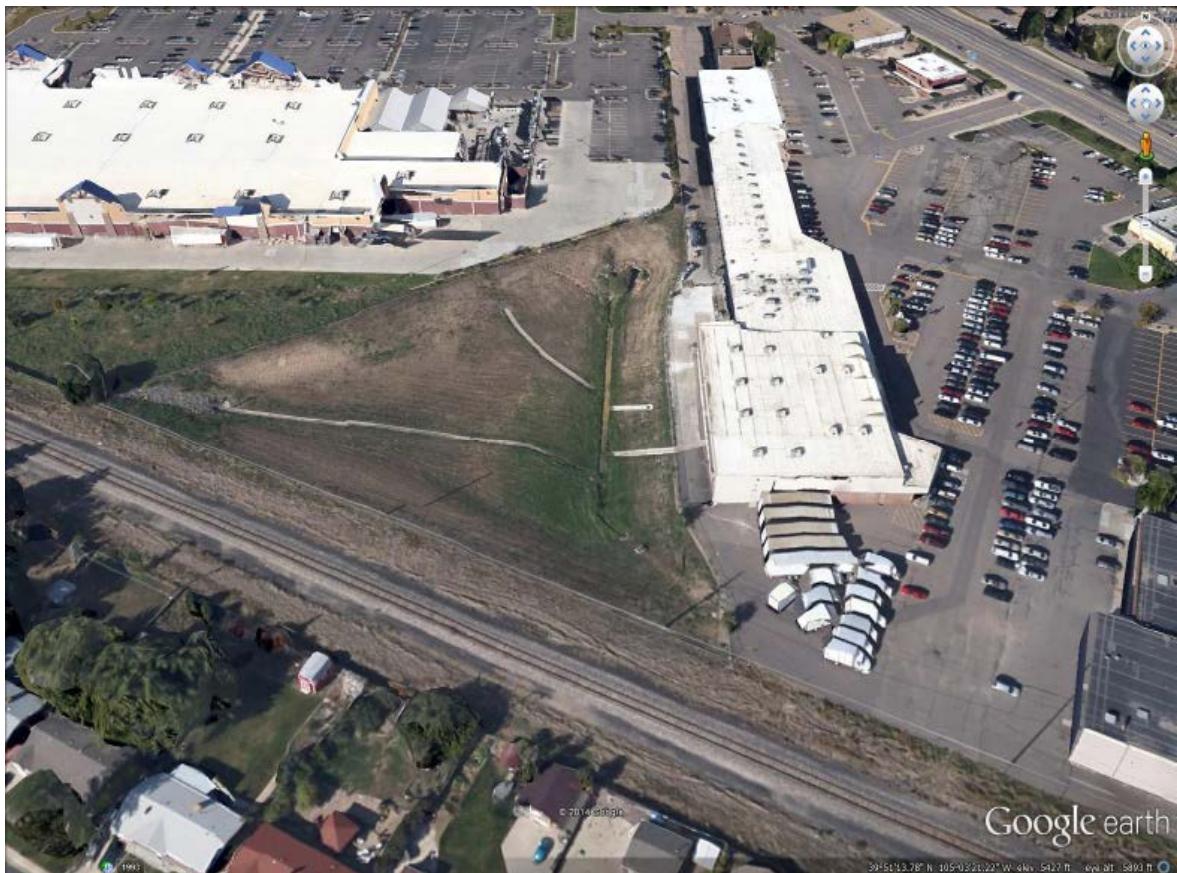
No existing drainage reports are available for this property. The record drawings for the existing storm system have been reviewed. The redeveloped site will continue to divide storm water runoff between the two existing detention ponds. No problems with capacity or overtopping have been observed by the City of Westminster in either of the two existing detention ponds. The intention is that the western basin will be manipulated so that the detention volume of the proposed site will not exceed the capacity of the existing pond. The existing eastern pond will be relocated in anticipation of the future Sheridan Boulevard re-alignment allowing the pond to be re-sized based on the requirements of the proposed eastern basin. Both ponds are required to provide water quality and detention volume for the 5-year and 100-year storm. The required water quality, EURV, detention volumes were calculated with the UDFCD's Full Spectrum Detention Design Worksheets (see Appendix for calculations) per the City of Westminster.

B. Historical Perspective

The western half of the property directs runoff to the south end of the site. It is estimated in the Phase I Historical Drainage Plan that the western basin is 68.85 acres. This basin primarily uses a stormwater piping system to direct flows. There does not appear to be any off-site storm water from the west or northwest that flows into this property.

The existing pond (behind Lowe's) was designed and built to include the stormwater runoff for the western basin. While comparing the record drawings with the current survey data it is apparent that at some point since the pond's initial construction the pond limits and volume were altered. The photo below shows that the eastern boundary of the pond has been moved to the west several feet. The back of the building sits very close to the initial location of the eastern ponds boundary. The top of pond on the east, behind the Labelle's Plaza Building has been lowered by 3 to 4 feet. The conjecture is that the Labelle's Plaza Building was altered, encroaching on the edge of pond so much so that eastern pond boundary was moved westerly to accommodate a necessary

drive aisle. Photos of the addition show a 3 to 4 foot raised foundation. It is our understanding that the revised intent of the pond (during the major storm) is expected to utilize the drive aisle for ponding to obtain the required volume. The record drawings for this pond note that

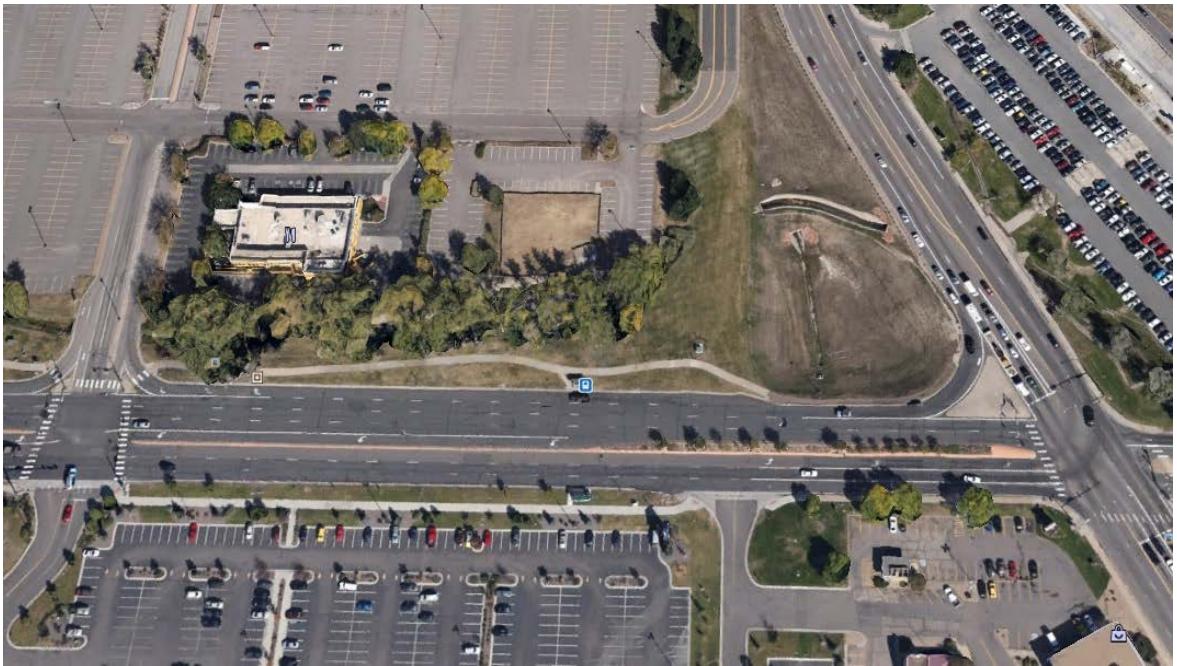


the estimated pond volume is 9.5 acre-feet at an elevation of 5421.2 feet. The record drawings show the 100-year WSEL at 5421.2 but does not give the required design volume. The drawings demonstrate a top of pond as 5426.00 feet. The pond outfalls through a dual release structure into a 42-inch concrete pipe at the south corner of the pond. This pond was surveyed to determine existing volume. Taking into consideration the ponding in the drive aisle, one foot of freeboard, the pond volume is 11.87 acre-feet at a WSEL of 5426.00. (Elevations from current survey and record drawings cannot be compared because the two surveys used different datum. The area to the west and north of the existing pond also generate stormwater runoff that is detained in the pond. Using a 95% imperviousness this area would generate a 100-year volume of approximately 4.36 acre-feet. This volume will be included with the proposed West Basin volumes to determine adequacy of existing pond.



The eastern half of the property directs runoff to the existing detention pond at the southeast corner of the site. It is estimated in the Phase I Historical Drainage Plan that the eastern basin is 38.54 acres. West 92nd Avenue has a low point just west of the existing main entrance. There are storm sewer inlets on both the north and south side of 92nd within this sump condition. The north inlet outflows through a storm pipe to the south inlet which then appears to direct flow via a storm pipe that joins the existing on-site storm sewer system. There appears to be two other systems that outfall to the inlets. The first is the detention pond for the single-family residential subdivision north of West 92nd Avenue appears to outfall to the northern inlet in 92nd Avenue. Secondly, the commercial business at the northwest corner of W. 92nd Avenue and N. Harlan Street appears to have a small water quality/detention pond that outfalls to the existing inlet along the north corner of 92nd & Harlan and this inlet outfalls to the existing 92nd Avenue inlet in sump.

Typical practice for off-site flow is to allow the off-site runoff through the on-site detention pond. This is accomplished by not including the basin area of the off-site with the on-site areas for the pond volume calculations. In order to bypass this flow through the detention pond the release rates must be added to the on-site release rates. Release rates are derived from basin areas. The estimated areas for the off-site residential basin is 3.5 acres and the basin area for the commercial area plus the right-of-way for 92nd Avenue is 4.45 acres.



The detention pond for the eastern basin is located at the northeast corner of the intersection of W. 88th Avenue and Sheridan Boulevard. The record drawings for this pond notes that the estimated pond volume is 4.5 acre-feet. The record drawings show the 100-year WSEL at 5441.10 feet but does not give the required design volume. The drawings demonstrate a top of pond as 5445.00 feet. The pond currently outfalls through a dual release structure into a 36-inch concrete pipe at the southwest corner of the pond. This Pond will need to be relocated to the west to accommodate the future proposed Sheridan Boulevard realignment.

C. Specific Details

The existing detention ponds will capture the runoff from the storm sewer system and overland flow from the western basin. The stormwater runoff is captured within an existing 66-inch diameter pipe that crosses W. 88th Avenue and outfalls into the north corner of the existing pond (behind Lowe's). The full-flow capacity of this pipe is 158 cfs. The estimated Q100 for the West Basin is 229 cfs. Analyzing the aerial in an attempt to determine original design intent it stands out that this pipe crosses W. 88th Ave. at the low point of the street which is directly north of the existing pond. It appears that the overland flow of the 100-year storm is directed to the existing detention pond via curb & gutter and topography. Water quality is provided in the existing pond. The water quality, 5-year and 100-year storm volume calculations of the West Basin using a composite 82.37% imperviousness resulted in volumes of 1.52, 3.38 and 5.74 acre-feet. The 5-year WSEL will be determined with the water quality volume not included for a total of 4.90

acre-feet. The 100-year WSEL will include the water quality volume, 5.74 acre-feet. The total 100-year volume would be 5.74 acre-feet plus 4.36 acre-feet for a total of 10.10 acre-feet. The existing pond has a volume of 11.87 acre-feet at a WSEL of 5426.00, but ponds into the existing drive to achieve the required volume.

The stormwater runoff within the East Basin will be captured by a proposed detention pond via storm sewer system and overland flow. The water quality, EURV and 100-year storm volume calculations of the East Basin using an 80% imperviousness resulted in volumes of 2.00, 4.96 and 9.45 acre-feet. The corresponding water surface elevations are 5446.96, 5448.92 and 5451.53. A minimum of 1-foot of freeboard (5452.53) is required however the top of pond is at 5453.00. Two Type D inlets will be used for the outlet structure (see Detail Sheets in Appendix). The size of the inlet was determined based on the inlets ability to handle the 100-yr flow in a weir condition and orifice condition with the tightest criteria setting the constraint. The existing 36-inch pipe that outfalls into the street governs the maximum size of pipe leaving the proposed outlet structure. The existing inlet from the existing pond will be converted to a manhole. Release rates were determined based upon basin area. The off-site areas that are to be by-passed through the detention pond have a combined area of 7.95 acres. The commercial basin was estimated to be 4.45 acres. The release rates for the detention pond for the residential basin north of 92nd Avenue are noted to be $Q_{R100}=5.30 \text{ cfs}$ and $Q_{R5}=2.60 \text{ cfs}$. Adding the off-site area to the East Basin area gives a total of 77.59 acres which produces a $Q_{R100}=78.44 \text{ cfs}$ and $Q_{R5}=15.04 \text{ cfs}$.

V. CONCLUSION

A. Compliance with Standards

The drainage system for Downtown Westminster was designed to meet the City of Westminster's drainage criteria. The site does not include any F.E.M.A. mapped floodplains. The existing Flood Insurance Rate Map (F.I.R.M) is presented in Appendix A and shows no portion of the site to be in a flood hazard area. Therefore, no map revisions are required as part of this development.

B. Drainage Concept

The drainage system for Downtown Westminster was designed to allow storm water to be safely conveyed through and away from the site without negatively impacting downstream or upstream properties (regionally) beyond that imposed by the historic condition. All drainage facilities to be proposed with this development are public facilities and will be maintained by the City of Westminster.

C. Sediment and Erosion Control Concept

The construction BMP's proposed for this site follow the requirements of the City of Westminster and recommendations by UDFCD. Attention to proper installation and maintenance are essential for the sediment and erosion control practices to function properly.

VI. REFERENCES

1. Urban Drainage and Flood Control District, Denver, Colorado, *Urban Storm Drainage Criteria Manual*, Volumes 1, 2 & 3, June 2001 (with current revisions).
2. City of Westminster, *City of Westminster Storm Drainage Design and Technical Criteria*.

APPENDIX

MAPS

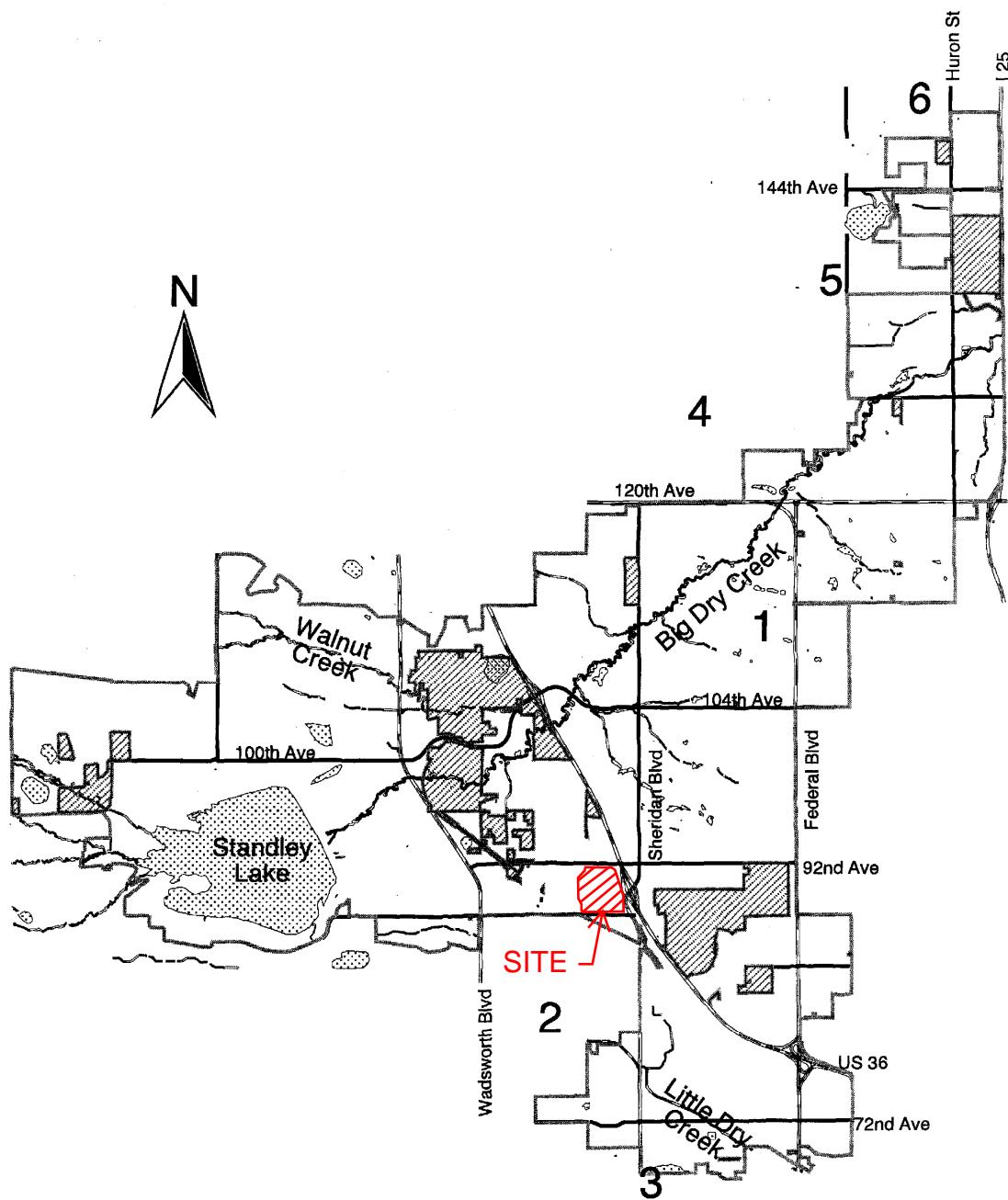
A

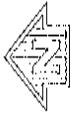


VICINITY MAP

N.T.S.

Figure 201
Floodplain Information for the City of Westminster





MAP SCALE 1" = 500'

250 0 500 1000 FEET

PAGE E1 0206 F

FIRM FLOOD INSURANCE RATE MAP
JEFFERSON COUNTY,
COLORADO AND
INCORPORATED AREAS

CITY OF WESTMINSTER
080008

JONIS PANEL 0202

PAGE 1 OF 675

ISEE MAP INDEX FOR FIRM PANEL LAYOUT

| <u>CONTAINS:</u> | <u>COMMUNITY</u> | <u>NUMBER</u> | <u>PANEL</u> | <u>SUFFIX</u> |
|--|------------------|----------------|--------------|---------------|
| WESTMASTER, CITY OF LEFFORD COUNTY, UNINCORPORATED AREAS | | 02006 02007 | c006 c006 | E E |

Notice to User: The **Map Number** shown, below, should be used when placing two orders: the **Community Number** shown above should be used on subsequent applications for the subject community.

**EFFECTIVE DATE:
JUNE 17, 2003**

Federal Emergency Management Agency



Refusal to User: The **Map Number** shown below should be used when addressing to users; the **Community Number** shown above should be used on instance applications for the subject community.

HYDROLOGY

PROJECT DOWNTOWN WEST MI
 JOB NO: 13.0463
 DATE: 04.01.14



Tc= 15
 I5= 3.22
 I100= 6.15

| RUNOFF SUMMARY | | | | | | | |
|----------------------|--------------|--------------|--------------|----------------|------------------|----------------------|------------------------|
| BASIN | DESIGN POINT | AREA (ACRES) | % IMP. | C ₅ | C ₁₀₀ | Q ₅ (CFS) | Q ₁₀₀ (CFS) |
| EA-1 | | 1.58 | 80 | 0.63 | 0.74 | 3.21 | 7.20 |
| EA-2 | | 1.49 | 80 | 0.63 | 0.74 | 3.03 | 6.79 |
| EA-3 | | 1.56 | 80 | 0.63 | 0.74 | 3.16 | 7.09 |
| EA-4 | | 2.09 | 80 | 0.63 | 0.74 | 4.24 | 9.51 |
| EA-5 | | 1.95 | 80 | 0.63 | 0.74 | 3.95 | 8.86 |
| EA-6 | | 1.37 | 80 | 0.63 | 0.74 | 2.78 | 6.24 |
| EA-7 | | 2.66 | 80 | 0.63 | 0.74 | 5.40 | 12.12 |
| EA-8 | | 2.56 | 80 | 0.63 | 0.74 | 5.19 | 11.65 |
| EA-9 | | 2.58 | 80 | 0.63 | 0.74 | 5.23 | 11.74 |
| EA-10 | | 2.63 | 80 | 0.63 | 0.74 | 5.33 | 11.96 |
| EA-11 | | 2.41 | 80 | 0.63 | 0.74 | 4.89 | 10.98 |
| EA-12 | | 1.87 | 80 | 0.63 | 0.74 | 3.80 | 8.53 |
| EA-13 | | 7.57 | 80 | 0.63 | 0.74 | 15.35 | 34.43 |
| EA-14 | | 4.44 | 80 | 0.63 | 0.74 | 9.01 | 20.22 |
| EA-15 | | 2.71 | 80 | 0.63 | 0.74 | 5.49 | 12.31 |
| EA-16 | | 1.64 | 80 | 0.63 | 0.74 | 3.33 | 7.47 |
| EA-17 | | 1.89 | 80 | 0.63 | 0.74 | 3.84 | 8.62 |
| SUB-TOTAL | | 43.01 | 0.63 | 0.74 | 87.25 | 195.74 | |
| ER-1 | | 0.74 | 90 | 0.75 | 0.83 | 1.80 | 3.80 |
| ER-2 | | 1.52 | 90 | 0.75 | 0.83 | 3.68 | 7.78 |
| ER-3 | | 0.40 | 90 | 0.75 | 0.83 | 0.97 | 2.05 |
| ER-4 | | 0.40 | 90 | 0.75 | 0.83 | 0.97 | 2.05 |
| ER-5 | | 1.41 | 90 | 0.75 | 0.83 | 3.41 | 7.21 |
| ER-6 | | 0.67 | 90 | 0.75 | 0.83 | 1.63 | 3.43 |
| ER-7 | | 1.09 | 90 | 0.75 | 0.83 | 2.63 | 5.55 |
| ER-8 | | 2.92 | 90 | 0.75 | 0.83 | 7.06 | 14.93 |
| ER-9 | | 0.75 | 90 | 0.75 | 0.83 | 1.82 | 3.85 |
| ER-10 | | 2.35 | 90 | 0.75 | 0.83 | 5.68 | 12.01 |
| ER-11 | | 1.11 | 90 | 0.75 | 0.83 | 2.69 | 5.68 |
| ER-12 | | 0.31 | 90 | 0.75 | 0.83 | 0.74 | 1.57 |
| ER-13 | | 0.74 | 90 | 0.75 | 0.83 | 1.80 | 3.80 |
| ER-14 | | 0.18 | 90 | 0.75 | 0.83 | 0.43 | 0.90 |
| ER-15 | | 0.38 | 90 | 0.75 | 0.83 | 0.91 | 1.93 |
| ER-16 | | 0.38 | 90 | 0.75 | 0.83 | 0.91 | 1.93 |
| ER-17 | | 0.92 | 90 | 0.75 | 0.83 | 2.22 | 4.69 |
| ER-18 | | 1.39 | 90 | 0.75 | 0.83 | 3.37 | 7.11 |
| ER-19 | | 0.09 | 90 | 0.75 | 0.83 | 0.22 | 0.47 |
| ER-20 | | 0.26 | 90 | 0.75 | 0.83 | 0.62 | 1.31 |
| ER-21 | | 5.90 | 100 | 0.90 | 0.96 | 17.10 | 34.83 |
| ER-22 | | 2.70 | 100 | 0.90 | 0.96 | 7.82 | 15.94 |
| SUB-TOTAL | | 26.63 | 93.23 | 0.76 | 0.84 | 42.71 | 90.27 |
| TOTAL ON SITE | | | | | | | |
| EAST BASIN | | 69.64 | 85.06 | 0.68 | 0.79 | 152.49 | 338.36 |

RELEASE RATES FOR OFF SITE DETAINED BASINS (CFS)

| | | | |
|------------------|-------------|-------------|-------------|
| OS-RE | 3.50 | 0.60 | 3.50 |
| OS-C | 4.45 | 2.60 | 5.30 |
| SUB-TOTAL | 7.95 | 3.20 | 8.80 |

| | |
|-----------------------------|---------------|
| GRAND TOTAL OF FLOWS | |
| INTO EAST POND | 77.59 |
| | 155.69 |
| | 347.16 |

5-YR RELEASE RATE 15.04
 100-YR RELEASE RATE 78.44

PROJECT: DOWNTOWN WESTMINSTER

JOB NO: 13.0463
DATE: 04.01.14



Tc= 15
I5= 3.24
I100= 6.16

| RUNOFF SUMMARY | | | | | | | |
|-------------------|--------------|--------------|-------------|----------------|------------------|----------------------|------------------------|
| BASIN | DESIGN POINT | AREA (ACRES) | % IMP. | C ₅ | C ₁₀₀ | Q ₅ (CFS) | Q ₁₀₀ (CFS) |
| WA-1 | | 2.06 | 80 | 0.63 | 0.74 | 4.20 | 9.38 |
| WA-2 | | 3.04 | 80 | 0.63 | 0.74 | 6.20 | 13.84 |
| WA-3 | | 4.09 | 80 | 0.63 | 0.74 | 8.35 | 18.64 |
| WA-4 | | 4.35 | 80 | 0.63 | 0.74 | 8.88 | 19.83 |
| WA-5 | | 2.33 | 80 | 0.63 | 0.74 | 4.76 | 10.62 |
| WA-7 | | 3.55 | 80 | 0.63 | 0.74 | 7.24 | 16.17 |
| WA-8 | | 2.96 | 80 | 0.63 | 0.74 | 6.03 | 13.47 |
| WA-9 | | 6.34 | 80 | 0.63 | 0.74 | 12.94 | 28.91 |
| WA-10 | | 3.21 | 80 | 0.63 | 0.74 | 6.55 | 14.62 |
| WA-12 | | 1.89 | 80 | 0.63 | 0.74 | 3.87 | 8.64 |
| SUB-TOTAL: | | 33.81 | 0.63 | 0.74 | 69.01 | 154.12 | |
| WR-1 | | 0.45 | 90 | 0.75 | 0.83 | 1.11 | 2.33 |
| WR-2 | | 0.26 | 90 | 0.75 | 0.83 | 0.62 | 1.31 |
| WR-3 | | 0.87 | 90 | 0.75 | 0.83 | 2.12 | 4.46 |
| WR-4 | | 0.80 | 90 | 0.75 | 0.83 | 1.95 | 4.11 |
| WR-5 | | 0.51 | 90 | 0.75 | 0.83 | 1.23 | 2.59 |
| WR-6 | | 0.32 | 90 | 0.75 | 0.83 | 0.78 | 1.65 |
| WR-7 | | 0.20 | 90 | 0.75 | 0.83 | 0.49 | 1.03 |
| WR-8 | | 0.56 | 90 | 0.75 | 0.83 | 1.37 | 2.88 |
| WR-9 | | 0.34 | 90 | 0.75 | 0.83 | 0.82 | 1.72 |
| WR-10 | | 0.21 | 90 | 0.75 | 0.83 | 0.51 | 1.07 |
| WR-11 | | 0.80 | 90 | 0.75 | 0.83 | 1.94 | 4.08 |
| WR-12 | | 0.60 | 90 | 0.75 | 0.83 | 1.46 | 3.07 |
| WR-13 | | 0.31 | 90 | 0.75 | 0.83 | 0.75 | 1.58 |
| WR-14 | | 0.31 | 90 | 0.75 | 0.83 | 0.76 | 1.60 |
| WR-15 | | 0.94 | 90 | 0.75 | 0.83 | 2.29 | 4.83 |
| WR-16 | | 0.74 | 90 | 0.75 | 0.83 | 1.80 | 3.79 |
| WR-17 | | 0.44 | 90 | 0.75 | 0.83 | 1.08 | 2.27 |
| WR-18 | | 0.55 | 90 | 0.75 | 0.83 | 1.33 | 2.79 |
| WR-19 | | 0.88 | 90 | 0.75 | 0.83 | 2.13 | 4.48 |
| WR-20 | | 0.10 | 90 | 0.75 | 0.83 | 0.24 | 0.51 |
| WR-22 | | 0.27 | 90 | 0.75 | 0.83 | 0.66 | 1.39 |
| SUB-TOTAL: | | 8.09 | 0.75 | 0.83 | 19.65 | 41.35 | |
| TOTAL | | | | | | | |
| WEST BASIN: | | 41.90 | 81.93 | 0.65 | 0.76 | 88.24 | 196.15 |

WATER QUALITY/ DETENTION

PROJECT: Downtown Westminster

PRO. NO. 13.0463

DESIGN BY: G. GRAVES

REV. BY: D. LOVATO

AGENCY: CITY OF WESTMINSTER

METHOD: V=KA

DATE: 3/31/2014

**EXISTING
REQUIRED DETENTION BASIN VOLUMES**

$$K100 = (1.78*I - 0.002*I^2 - 3.56)/1000$$

$$K5 = (0.77*I - 2.26)/1000$$

| BASIN | AREA (AC) | % IMP. | K5 | K100 |
|-------|-----------|--------|-------|-------|
| West | 68.85 | 87.80 | 0.082 | 0.137 |
| East | 38.54 | 92.00 | 0.086 | 0.143 |
| Lowes | 31.04 | 90.00 | 0.084 | 0.140 |

| BASIN | V=KA METHOD- VOL | |
|-------|------------------|---------|
| | 5-YR. | 100-YR. |
| West | 5.61 | 9.45 |
| East | 3.30 | 5.52 |
| Lowes | 2.59 | 4.36 |

VOLUMES ARE IN ACRE-FT

REQUIRED RELEASE RATES

| BASIN | AREA (AC) | 100 YR | 5 YR |
|-------|-----------|--------|-------|
| West | 68.85 | 68.85 | 11.70 |
| East | 38.54 | 38.54 | 6.55 |
| Lowes | 31.04 | 31.04 | 5.28 |

PROJECT: Downtown Westminster

PRO. NO. 13.0463

DESIGN BY: G. GRAVES

REV. BY: D. LOVATO

AGENCY: CITY OF WESTMINSTER

METHOD: V=KA

DATE: 3/31/2014

REV:

**EXISTING
WATER QUALITY VOLUME REQUIRED**

REQ'D VOL=(WQCV/12)*(AREA)*(1.2)
WQCV=a((0.91*i^3)-(1.19*i^2)-(0.78*i))
a=1.0 FOR 40HR. DRAIN TIME

| BASIN | AREA | % IMP. | WQCV | REQ'D VOL. (AC-FT) |
|-------|-------|--------|------|--------------------|
| West | 68.85 | 87.80 | 0.38 | 2.64 |
| East | 38.54 | 92.00 | 0.42 | 1.61 |
| Lowes | 31.04 | 90.00 | 0.40 | 1.25 |

TOTAL REQUIRED VOLUME (WATER QUALITY PLUS DETENTION)

| BASIN | WQ VOL | 5-YR VOL | 100YR VOL* |
|-------|--------|----------|------------|
| West | 2.64 | 5.61 | 9.45 |
| East | 1.61 | 3.30 | 5.52 |
| Lowes | 1.25 | 2.59 | 4.36 |

*DENOTES THAT VOLUME INCLUDES WATER QUALITY

POND VOLUMES

Westminster Mall Redevelopment

Existing LOWE'S POND Ponding to Building Face

| CONTOUR | AREA (SF) | VOLUME (CF) | SUM VOLUME (CF) | VOLUME (ACRE-FT) |
|---------|-----------|-------------|-----------------|------------------|
| 5414.5 | 0 | | | |
| 5415 | 24.63 | 4.11 | 4.11 | 0.00 |
| 5416 | 1619.44 | 614.60 | 618.70 | 0.01 |
| 5417 | 16093.29 | 7605.95 | 8224.65 | 0.19 |
| 5418 | 30564.51 | 22945.42 | 31170.06 | 0.72 |
| 5419 | 40840.55 | 35578.65 | 66748.71 | 1.53 |
| 5420 | 49460.9 | 45081.99 | 111830.70 | 2.57 |
| 5421 | 55882.52 | 52639.06 | 164469.76 | 3.78 |
| 5422 | 61290.366 | 58565.63 | 223035.39 | 5.12 |
| 5423 | 65967.12 | 63614.42 | 286649.81 | 6.58 |
| 5424 | 73995 | 69942.66 | 356592.47 | 8.19 |
| 5425 | 80527 | 77237.98 | 433830.45 | 9.96 |
| 5426 | 86152 | 83323.68 | 517154.12 | 11.87 |

| | VOLUME | ELEVATION |
|------------------------------------|--------|-----------|
| WATER QUALITY VOLUME REQ'D = | 2.770 | 5420.17 |
| 5-YR VOLUME PLUS WQ= | 8.740 | 5424.31 |
| 100YR VOLUME REQ'D (INCLUDING WQ)= | 10.10 | 5425.07 |
| 5 YR RELEASE (CFS)= | 12.81 | |
| 100YR RELEASE (CFS)= | 75.33 | |

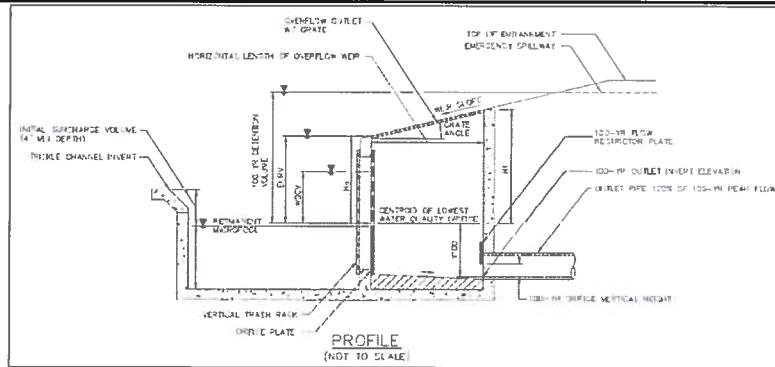
NOTE:

1-FOOT OF FREEBOARD GIVES TOP OF POND ELEVATION: 5426.07

Initial Design for Full Spectrum Detention Basins

Project: DOWNTOWN WESTMINSTER

Basin ID: EAST BASINS - EAST POND



User Input: Watershed Parameters

| | | |
|---|-------|---------|
| Watershed Area = | 69.64 | acres |
| Watershed Imperviousness = | 80.0% | percent |
| Percentage Hydrologic Soil Group A = | | percent |
| Percentage Hydrologic Soil Group B = | | percent |
| Percentage Hydrologic Soil Groups C/D = | 100% | percent |

Location for 1-hr Rainfall Depths = Westminster - Westminster City Hall

Calculated Watershed Parameters

| | | |
|-------------------------------|---------|-----------------|
| Required EURV = | 229,885 | ft ³ |
| Routed EURV = | 5,292 | acre-ft |
| Routed EURV = | 230,503 | ft ³ |
| Calc. vs. Req Volume % Diff = | 0.3% | |
| EURV Drain Time = | 64.42 | hrs |

Calculated Detention Basin Parameters

| | | |
|---|------|-----------------|
| Surface Area of Initial Surcharge Volume = | 852 | ft ² |
| Maximum EURV Ponding Depth = | 4.40 | ft |
| Depth Where Basin Floor Meets Side Slopes = | 3.75 | ft |

Calculated Overflow Grate Parameters

| | | |
|---|-----|-----------------|
| Height of Grate Upper Edge H _g = | 4.5 | ft |
| Grate Open Area / 100-yr Orifice Area = | 3.3 | should be ≥ 4 |
| Overflow Weir Slope Length = | 2.9 | ft |
| Overflow Grate Open Area w/o Debris = | 23 | ft ² |

Calculated WQ Plate Parameters

| | | |
|----------------------------|----------|-----------------|
| WQ Orifice Area per Row = | 7.50E-03 | ft ² |
| Elliptical Half-Width = | N/A | ft |
| Elliptical Slot Centroid = | N/A | ft |
| Elliptical Slot Area = | N/A | ft ² |

| User Input: Detention Basin Parameters | | |
|---|-------|------------------------------------|
| Depth of Initial Surcharge Volume = | 0.33 | ft |
| Trickle Channel Slope = | 0.008 | ft/ft |
| Detention Basin Length-to Width Ratio = | 2.00 | L/W |
| Basin Side Slope (Above Basin Floor) = | 4.00 | H.V |
| Available EURV Ponding Depth = | 4.50 | ft (relative to lowest WQ orifice) |
| Desired WQCV Drain Time = | 40 | hours |

| User Input: Outlet Structure Parameters | | |
|---|------------------|------------------------------------|
| Overflow Weir Front Edge Height, H _w = | 4.5 | ft (relative to lowest WQ orifice) |
| Overflow Weir Front Edge Length = | 11.3 | ft |
| Overflow Weir Slope = | 0 | H.V (enter zero for flat grate) |
| Horizontal Length of Overflow Weir Sides = | 2.9 | ft |
| Overflow Grate Open Area % = | 70% | %: grate open area / total area |
| Debris Clogging % = | 50% | % of open area clogged w/ debris |
| Water Quality Plate Type = | WQ Orifice Plate | |
| WQ Orifice Plate: Orifice Vertical Spacing = | 1.4 | in |
| WQ Orifice Plate: Orifice Area per Row = | 1.08 | sq. inch (diameter = 1-1/8 inches) |

Calculated 100-Year Orifice Parameters

| | | |
|---------------------------------------|------|-----------------|
| 100-Year Orifice Area = | 7.1 | ft ² |
| 100-Year Orifice Centroid = | 1.50 | ft |
| Half-Central Angle of Plate on Pipe = | 3.14 | radians |

Calculated Spillway Parameters

| | | |
|--|------|-------|
| Depth of Flow through Spillway = | 2.8 | ft |
| Stage at Top of Freeboard = | 10.7 | ft |
| Detention Basin Area at Top of Freeboard = | 3.60 | acres |

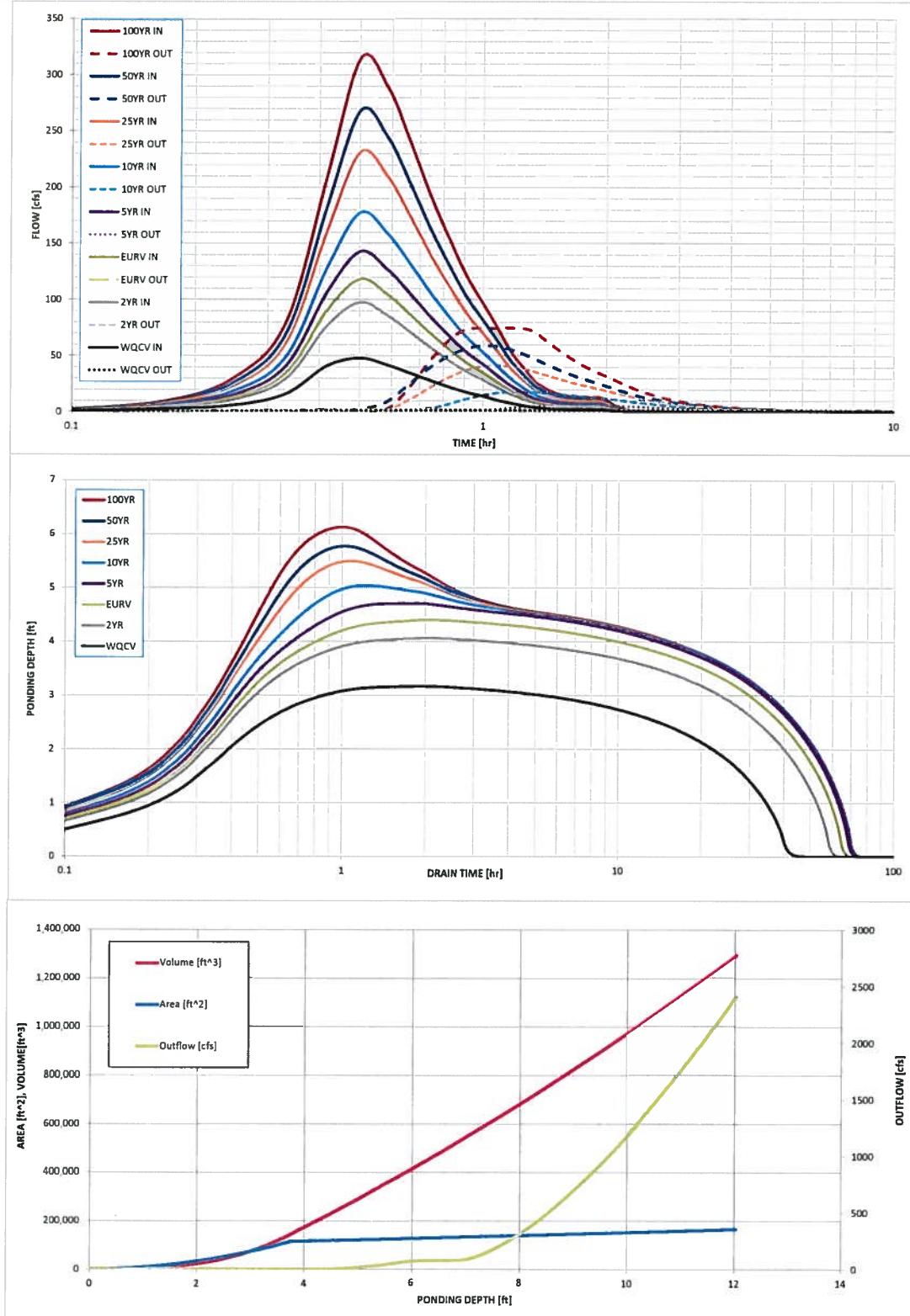
User Input: Emergency Spillway Parameters

| | | |
|----------------------------|------|------------------------------------|
| Spillway Crest Stage = | 6.9 | ft (relative to lowest WQ orifice) |
| Spillway Crest Length = | 63 | ft |
| Spillway End Slopes = | 4.00 | H.V |
| Freeboard above Spillway = | 1.00 | ft |

Routed Hydrograph Results For 2:1 L:W Rectangular Basin with 0.008 ft/ft Slope Trickle Channel

| Design Storm Return Period | 2 Year | EURV | 5 Year | 10 Year | 25 Year | 50 Year | 100 Year |
|--------------------------------------|--------|-------|--------|---------|---------|---------|----------|
| One-Hour Rainfall Depth | 0.53 | 0.96 | 1.07 | 1.38 | 1.64 | 2.03 | 2.63 |
| Calculated Runoff Volume | 2,152 | 4,352 | 5,277 | 6,369 | 7,909 | 10,335 | 12,004 |
| OPTIONAL Override Runoff Volume | | | | | | | |
| Inflow Hydrograph Volume | 2.151 | 4,352 | 5,271 | 6,364 | 7,908 | 10,335 | 11,997 |
| Historic Peak Flow Rate Per Acre (q) | 0.00 | 0.02 | 0.10 | 0.38 | 0.61 | 0.94 | 1.17 |
| Historic Peak Q | 0.0 | 1.6 | 7.0 | 26.7 | 42.3 | 65.6 | 81.7 |
| Peak Inflow Q | 47.6 | 97.2 | 117.8 | 142.4 | 176.9 | 231.0 | 267.8 |
| Peak Outflow Q | 1.2 | 1.6 | 1.7 | 5.5 | 17.6 | 41.3 | 58.7 |
| Ratio Peak Outflow to Historic Q | N/A | N/A | N/A | 0.2 | 0.4 | 0.6 | 0.7 |
| Structure Controlling Flow | | | | | | | |
| Max Velocity through Grate | N/A | N/A | N/A | 0.2 | 0.7 | 1.7 | 2.4 |
| Time to Drain Detention Basin | 40 | 58 | 64 | 69 | 69 | 70 | 70 |
| Maximum Ponding Depth | 3.17 | 4.06 | 4.40 | 4.71 | 5.04 | 5.49 | 5.77 |
| Maximum Volume Stored | 1,989 | 4,122 | 5,020 | 5,852 | 6,774 | 8,058 | 8,847 |

Initial Design for Full Spectrum Detention Basins



Initial Design for Full Spectrum Detention Basins

Storm Inflow Hydrograph

| SOURCE | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK |
|--------|------------|--------------|------------|--------------|---------------|---------------|---------------|----------------|----------|
| TIME | WQCV [cfs] | 2 Year [cfs] | EURV [cfs] | 5 Year [cfs] | 10 Year [cfs] | 25 Year [cfs] | 50 Year [cfs] | 100 Year [cfs] | |
| 0 00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0 05 | 0.07 | 0.13 | 0.15 | 0.17 | 0.19 | 0.23 | 0.26 | 0.28 | |
| 0 10 | 2.25 | 3.93 | 4.54 | 5.22 | 6.09 | 7.32 | 8.10 | 9.02 | |
| 0 15 | 5.85 | 11.08 | 13.14 | 15.52 | 18.76 | 23.63 | 26.86 | 30.85 | |
| 0 20 | 15.97 | 29.78 | 35.14 | 41.29 | 49.64 | 62.16 | 70.41 | 80.60 | |
| 0 25 | 40.49 | 76.11 | 90.02 | 106.07 | 127.88 | 160.71 | 182.42 | 209.29 | |
| 0 30 | 47.62 | 97.16 | 117.81 | 142.37 | 176.91 | 230.95 | 267.81 | 314.43 | |
| 0 35 | 41.59 | 85.83 | 104.51 | 126.87 | 158.80 | 209.69 | 244.78 | 289.56 | |
| 0 40 | 33.93 | 70.16 | 85.51 | 103.92 | 130.15 | 171.90 | 200.72 | 237.56 | |
| 0 45 | 27.14 | 56.00 | 68.22 | 82.87 | 103.69 | 136.69 | 159.45 | 188.52 | |
| 0 50 | 21.45 | 44.41 | 54.16 | 65.87 | 82.52 | 108.94 | 127.18 | 150.50 | |
| 0 55 | 16.98 | 35.08 | 42.79 | 52.04 | 65.20 | 86.10 | 100.54 | 119.00 | |
| 1 00 | 13.79 | 28.31 | 34.53 | 42.00 | 52.61 | 69.46 | 81.09 | 95.97 | |
| 1 05 | 10.15 | 21.34 | 26.19 | 32.04 | 40.41 | 53.79 | 63.07 | 74.96 | |
| 1 10 | 7.55 | 15.63 | 19.09 | 23.25 | 29.20 | 38.72 | 45.31 | 53.76 | |
| 1 15 | 5.33 | 11.21 | 13.76 | 16.83 | 21.23 | 28.25 | 33.12 | 39.37 | |
| 1 20 | 3.82 | 7.92 | 9.69 | 11.81 | 14.84 | 19.67 | 23.03 | 27.33 | |
| 1 25 | 2.96 | 6.11 | 7.47 | 9.10 | 11.41 | 15.09 | 17.63 | 20.89 | |
| 1 30 | 2.40 | 4.93 | 6.01 | 7.31 | 9.15 | 12.08 | 14.09 | 16.67 | |
| 1 35 | 2.11 | 4.30 | 5.23 | 6.34 | 7.92 | 10.43 | 12.15 | 14.35 | |
| 1 40 | 2.01 | 4.08 | 4.95 | 5.99 | 7.45 | 9.76 | 11.35 | 13.36 | |
| 1 45 | 1.96 | 3.97 | 4.82 | 5.82 | 7.24 | 9.48 | 11.01 | 12.96 | |
| 1 50 | 1.96 | 3.97 | 4.81 | 5.81 | 7.22 | 9.43 | 10.95 | 12.87 | |
| 1 55 | 1.96 | 3.97 | 4.81 | 5.81 | 7.22 | 9.43 | 10.95 | 12.87 | |
| 2 00 | 1.35 | 2.90 | 3.58 | 4.40 | 5.58 | 7.47 | 8.79 | 10.48 | |
| 2 05 | 0.79 | 1.68 | 2.07 | 2.54 | 3.21 | 4.32 | 5.09 | 6.08 | |
| 2 10 | 0.46 | 0.97 | 1.20 | 1.48 | 1.88 | 2.52 | 2.96 | 3.54 | |
| 2 15 | 0.25 | 0.52 | 0.65 | 0.80 | 1.01 | 1.36 | 1.60 | 1.91 | |
| 2 20 | 0.12 | 0.27 | 0.33 | 0.41 | 0.53 | 0.72 | 0.85 | 1.02 | |
| 2 25 | 0.04 | 0.09 | 0.12 | 0.15 | 0.20 | 0.28 | 0.34 | 0.41 | |
| 2 30 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.04 | 0.05 | 0.07 | |
| 2 35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6 00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |

Final Design for Full Spectrum Detention Basins

Project: DOWNTOWN WESTMINSTER

Basin ID: EAST BASINS - EAST POND

User Input: Watershed Parameters

| | | |
|--|-------------|-------------------------|
| Watershed Area = | 69.64 | acres |
| Watershed Imperviousness = | 80.0% | percent |
| Percentage Hydrologic Soil Group A = | | percent |
| Percentage Hydrologic Soil Group B = | | percent |
| Percentage Hydrologic Soil Group C/D = | 100% | |
| Location for 1-hr Rainfall Depths = | Westminster | - Westminster City Hall |

See Outlet Structure Figure on Initial Design Worksheet

User Input: Outlet Structure Parameters

| User Input: Outlet Structure Parameters | |
|--|--|
| Overflow Weir Front Edge Height, H_o | 4.5 ft (relative to lowest WQ orifice) |
| Overflow Weir Front Edge Length | 11.3 ft |
| Overflow Weir Slope | 0 H/V (enter zero for flat grate) |
| Horizontal Length of the Overflow Weir Sides | 2.9 ft |
| Overflow Grate Open Area % | 70% %, grate open area / total area |
| Debris Clogging % | 50% % |
| Water Quality Plate Type | WQ Orifice Plate |
| WQ Orifice Plate | Orifice Vertical Spacing = 18.0 inch |
| WQ Orifice Plate | Orifice Area per Row = 14.58 sq. in. (use rectangular opening) |

Calculated Outlet Discharge Parameters

| Calculated Safe Discharge Parameters | |
|---|----------------------|
| Height of Grate Upper Edge H = | 4.5 ft |
| Over Flow Weir Slope Length = | 2.9 ft |
| Grate Open Area / 100-yr Orifice Area = | 3.3 |
| Overflow Grate Area w/o Debris = | 23.0 ft ² |

User Input: 100-Year Orifice Parameters

User Input: 100-Year Orifice Parameters
 100-yr Restrictor Plate Type = =VLOOKUP(Ori
 100-yr Orifice Invert Depth = ft (below the lowest WQ orifice)
 100-Year Outlet Pipe Diameter = in
 100-yr Restrictor Plate Height = in

Calculated WQ Plate Parameters

| | | |
|----------------------------|----------|-----------------|
| WQ Orifice Area per Row = | 1013E-01 | ft ² |
| Elliptical Half-Width = | N/A | ft |
| Elliptical Slot Centroid = | N/A | ft |
| Elliptical Slot Area = | N/A | ft ² |

User Input: Emergency Spillway Parameters

User Input: Emergency Spillway Parameters

Calculated 100-yr Orifice Parameters

| | | |
|--------------------------------------|------|-----------------|
| 100-Year Orifice Area = | 7.1 | ft ² |
| 100-Year Orifice Centroid = | 150 | ft |
| Half Central Angle of Plateon Pipe = | 3.14 | radians |

User Input: Emergency Spillway Parameters

| Input: Emergency Spillway Parameters | |
|--------------------------------------|-----|
| Spillway Invert Stage = | 6.9 |
| Spillway Crest Length = | 63 |
| Spillway End Slopes = | 4.0 |
| Freeboard above Spillway = | 1.0 |

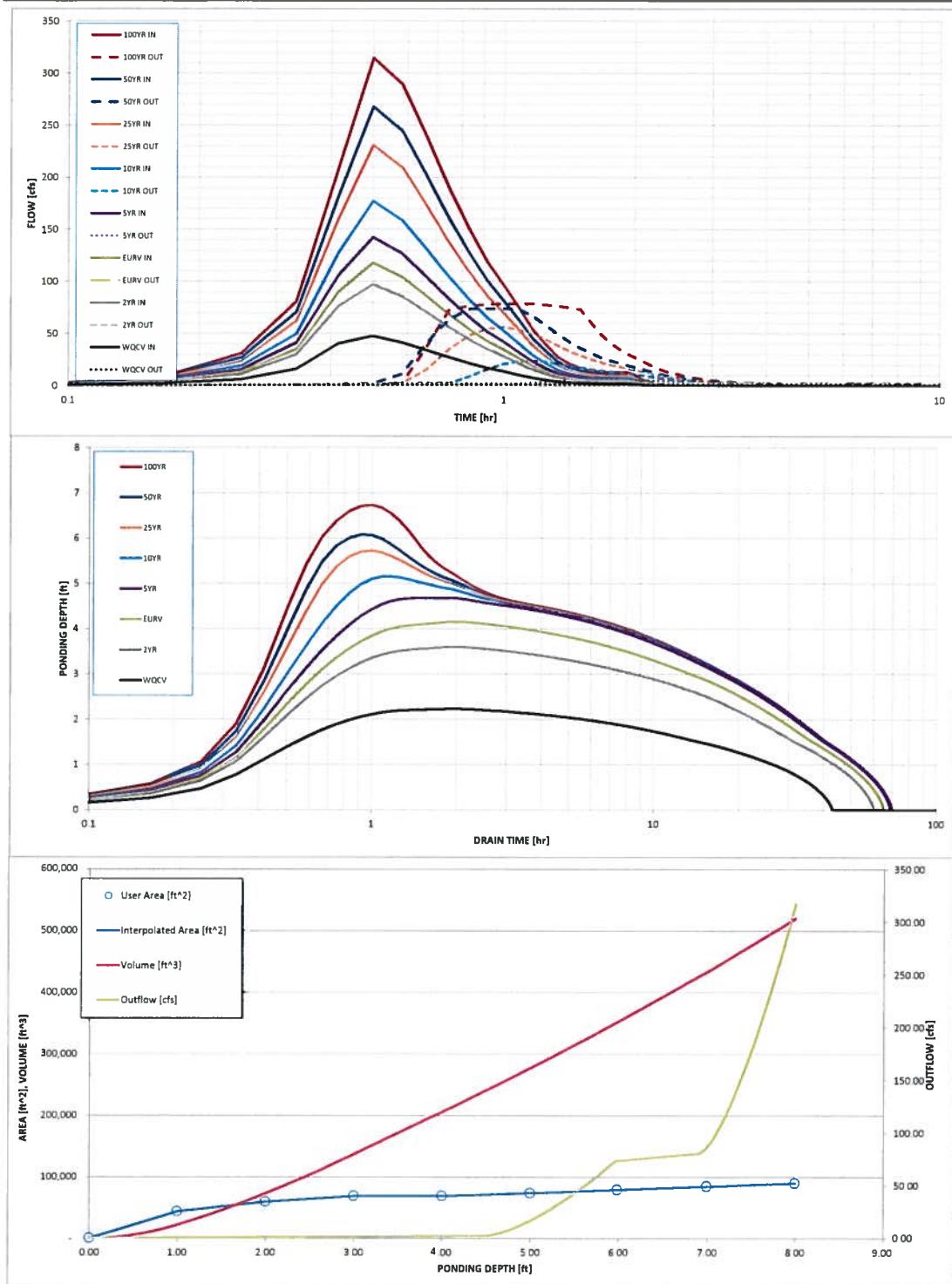
Calculated Spillway Parameters

| Calculated Spillway Parameters | |
|----------------------------------|------------|
| Spillway Design Flow Depth= | 2.8 ft |
| Stage at Top of Freeboard = | 10.7 ft |
| Basin Area at Top of Freeboard = | 2.04 acres |

Routed Hydrograph Results For Rectangular Basin with 0.01 ft/ft Slope Trickle Channel

| Design Storm Return Period = 2 Year | | | | | | | | |
|--|----------|----------|----------|--------|---------|---------|--------------|--------------|
| Historical Basin with 5% Slope, 10' Slope, 10' Channel | | | | | | | | |
| Design Storm Return Period = | WQCV | 2 Year | EURV | 5 Year | 10 Year | 25 Year | 50 Year | 100 Year |
| One-Hour Rainfall Depth = | 0.53 | 0.96 | 1.07 | 1.38 | 1.64 | 2.03 | 2.30 | 2.63 |
| Calculated Runoff Volume = | 2.15 | 4.352 | 5.277 | 6.369 | 7.909 | 10.335 | 12.004 | 14.109 |
| OPTIONAL Override Runoff Volume = | | | | | | | | |
| Inflow Hydrograph Volume = | 2.151 | 4.352 | 5.271 | 6.364 | 7.908 | 10.335 | 11.997 | 14.108 |
| Historic Peak Flow Rate Per Acre (q) = | 0.00 | 0.02 | 0.10 | 0.38 | 0.61 | 0.94 | 1.17 | 1.46 |
| Historic Peak Q = | 0.0 | 1.6 | 7.0 | 26.7 | 42.3 | 65.6 | 81.7 | 101.4 |
| Peak Inflow Q = | 47.6 | 97.2 | 117.8 | 142.4 | 176.9 | 231.0 | 267.8 | 314.4 |
| Peak Outflow Q = | 1.1 | 2.0 | 2.3 | 5.8 | 23.7 | 56.5 | 74.1 | 79.1 |
| Ratio Peak Outflow to Historic Q = | N/A | N/A | N/A | 0.2 | 0.6 | 0.9 | 0.9 | 0.8 |
| Structure Controlling Flow = | WQ Plate | WQ Plate | WQ Plate | Grate | Grate | Grate | 100yr Outlet | 100yr Outlet |
| Max Velocity through Grate = | N/A | N/A | N/A | 0.1 | 0.9 | 2.3 | 3.1 | 3.3 |
| Time to Drain Detention Basin = | 40 | 57 | 62 | 66 | 66 | 66 | 67 | 67 |
| Maximum Ponding Depth = | 2.23 | 3.60 | 4.16 | 4.69 | 5.15 | 5.72 | 6.07 | 6.73 |
| Maximum Volume Stored = | 1.997 | 4.085 | 4.958 | 5.822 | 6.613 | 7.598 | 8.222 | 9.447 |

Final Design for Full Spectrum Detention Basins



Final Design for Full Spectrum Detention Basins

Storm Inflow Hydrograph

| SOURCE | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK | WORKBOOK |
|--------|------------|--------------|------------|--------------|---------------|---------------|---------------|----------------|
| TIME | WQCV [cfs] | 2 Year [cfs] | EURV [cfs] | 5 Year [cfs] | 10 Year [cfs] | 25 Year [cfs] | 50 Year [cfs] | 100 Year [cfs] |
| 0:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0:05 | 0.07 | 0.13 | 0.15 | 0.17 | 0.19 | 0.23 | 0.26 | 0.28 |
| 0:10 | 2.25 | 3.93 | 4.54 | 5.22 | 6.09 | 7.32 | 8.10 | 9.02 |
| 0:15 | 5.85 | 11.08 | 13.14 | 15.52 | 18.76 | 23.63 | 26.86 | 30.85 |
| 0:20 | 15.97 | 29.78 | 35.14 | 41.29 | 49.64 | 62.16 | 70.41 | 80.60 |
| 0:25 | 40.49 | 76.11 | 90.02 | 106.07 | 127.88 | 160.71 | 182.42 | 209.29 |
| 0:30 | 47.62 | 97.16 | 117.81 | 142.37 | 176.91 | 230.95 | 267.81 | 314.43 |
| 0:35 | 41.59 | 85.83 | 104.51 | 126.87 | 158.80 | 209.69 | 244.78 | 289.56 |
| 0:40 | 33.93 | 70.16 | 85.51 | 103.92 | 130.15 | 171.90 | 200.72 | 237.56 |
| 0:45 | 27.14 | 56.00 | 68.22 | 82.87 | 103.69 | 136.69 | 159.45 | 189.52 |
| 0:50 | 21.45 | 44.41 | 54.16 | 65.87 | 82.52 | 108.94 | 127.18 | 150.50 |
| 0:55 | 16.98 | 35.08 | 42.79 | 52.04 | 65.20 | 86.10 | 100.54 | 119.00 |
| 1:00 | 13.79 | 28.31 | 34.53 | 42.00 | 52.61 | 69.46 | 81.09 | 95.97 |
| 1:05 | 10.15 | 21.34 | 26.19 | 32.04 | 40.41 | 53.79 | 63.07 | 74.96 |
| 1:10 | 7.55 | 15.63 | 19.09 | 23.25 | 29.20 | 38.72 | 45.31 | 53.76 |
| 1:15 | 5.33 | 11.21 | 13.76 | 16.83 | 21.23 | 28.25 | 33.12 | 39.37 |
| 1:20 | 3.82 | 7.92 | 9.69 | 11.81 | 14.84 | 19.67 | 23.03 | 27.33 |
| 1:25 | 2.96 | 6.11 | 7.47 | 9.10 | 11.41 | 15.09 | 17.63 | 20.89 |
| 1:30 | 2.40 | 4.93 | 6.01 | 7.31 | 9.15 | 12.08 | 14.09 | 16.67 |
| 1:35 | 2.11 | 4.30 | 5.23 | 6.34 | 7.92 | 10.43 | 12.15 | 14.35 |
| 1:40 | 2.01 | 4.08 | 4.95 | 5.99 | 7.45 | 9.76 | 11.35 | 13.36 |
| 1:45 | 1.96 | 3.97 | 4.82 | 5.82 | 7.24 | 9.48 | 11.01 | 12.96 |
| 1:50 | 1.96 | 3.97 | 4.81 | 5.81 | 7.22 | 9.43 | 10.95 | 12.87 |
| 1:55 | 1.96 | 3.97 | 4.81 | 5.81 | 7.22 | 9.43 | 10.95 | 12.87 |
| 2:00 | 1.35 | 2.90 | 3.58 | 4.40 | 5.58 | 7.47 | 8.79 | 10.48 |
| 2:05 | 0.79 | 1.68 | 2.07 | 2.54 | 3.21 | 4.32 | 5.09 | 6.08 |
| 2:10 | 0.46 | 0.97 | 1.20 | 1.48 | 1.88 | 2.52 | 2.96 | 3.54 |
| 2:15 | 0.25 | 0.52 | 0.65 | 0.80 | 1.01 | 1.36 | 1.60 | 1.91 |
| 2:20 | 0.12 | 0.27 | 0.33 | 0.41 | 0.53 | 0.72 | 0.85 | 1.02 |
| 2:25 | 0.04 | 0.09 | 0.12 | 0.15 | 0.20 | 0.28 | 0.34 | 0.41 |
| 2:30 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.04 | 0.05 | 0.07 |
| 2:35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2:40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2:45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2:50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2:55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3:55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4:55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5:55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6:00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

POND VOLUMES

Westminster Mall Redevelopment

Proposed East Pond

OUTLET ELEVATION=5444.44

| CONTOUR | AREA (SF) | VOLUME (CF) | SUM VOLUME (CF) | VOLUME (ACRE-FT) |
|---------|------------|-------------|-----------------|------------------|
| 5444.5 | 0 | | | |
| 5445 | 25222.8829 | 4203.81 | 4203.81 | 0.10 |
| 5446 | 43463.9886 | 33932.37 | 38136.18 | 0.88 |
| 5447 | 59236.9718 | 51147.41 | 89283.59 | 2.05 |
| 5448 | 68669.7114 | 63895.29 | 153178.88 | 3.52 |
| 5449 | 68669.7114 | 68669.71 | 221848.59 | 5.09 |
| 5450 | 73576.0053 | 71108.75 | 292957.34 | 6.73 |
| 5451 | 78590.2312 | 76069.35 | 369026.69 | 8.47 |
| 5452 | 83704.9929 | 81134.18 | 450160.86 | 10.33 |
| 5453 | 88920.2906 | 86299.51 | 536460.37 | 12.32 |
| | | | | |

| | VOLUME | ELEVATION |
|--|--------|-----------|
| WATER QUALITY VOLUME REQ'D = | 2.00 | 5446.96 |
| EURV VOLUME (INCLUDES WQ)= | 4.96 | 5448.92 |
| 100YR VOLUME REQ'D (INCLUDES WQ)= | 9.45 | 5451.53 |
| 10 YR RELEASE (CFS)= | 15.04 | |
| 100YR RELEASE (CFS)= | 78.44 | |

NOTE:

1-FOOT OF FREEBOARD GIVES TOP OF POND ELEVATION: 5452.53

ORIFICE CALCULATIONS
DETENTION POND - EAST POND

Formulas

$$\begin{aligned}
 (3) &= \text{acos} [\{ (2) - (1) \} / (2)] \\
 (4) &= (3) - \sin(3) * \cos(3) \\
 (5) &= (2)^2 * (4) \\
 (6) &= (5) / 144 \\
 (7) &= \text{pipe inv} + (2) \\
 (8) &= \text{WSEL} - (7) + [2/3 * (2) * \sin(3)^3 / (4)] \\
 (9) &= 0.6 * (6) * [2 * g * (8)]^{0.5}
 \end{aligned}$$

DATE: 05/20/14

CALCULATIONS IN RADIANS

| | | |
|----------------|----------|------|
| Structure ID = | INLET | POND |
| Storm Event = | 100 year | |

| | | |
|-----------------------------------|----------------|-------|
| input | RELEASE RATE = | 78.44 |
| ----- | | |
| 5451.53 Water Surface Elev (WSEL) | | |
| 36.00 Pipe Diam (in) | | |
| 5444.44 Invert | | |

| (1) | (2) | (3) | (4) alpha - sin(Alpha)* | (5) | (6) | (7) | (8) | (9) |
|-------------------------|------------------------|----------------|-------------------------------|-----------------|-----------------|----------------|-------------------|------------|
| Inv to Plate (in) | Pipe Radius (in) | alpha (rad) | cos(alpha) (rad) | Area (sq in) | Area (sq ft) | Spring Elev | Head H (ft) | Q (cfs) |
| 0.50 | 18 | 0.236251 | 0.008693 | 2.82 | 0.020 | 5445.94 | 7.07 | 0.26 |
| 1.00 | 18 | 0.334896 | 0.024485 | 7.93 | 0.055 | 5445.94 | 7.04 | 0.70 |
| 1.50 | 18 | 0.411138 | 0.044790 | 14.51 | 0.101 | 5445.94 | 7.02 | 1.29 |
| 2.00 | 18 | 0.475882 | 0.068662 | 22.25 | 0.155 | 5445.94 | 6.99 | 1.97 |
| 2.50 | 18 | 0.533345 | 0.095542 | 30.96 | 0.215 | 5445.94 | 6.97 | 2.73 |
| 3.00 | 18 | 0.585686 | 0.125043 | 40.51 | 0.281 | 5445.94 | 6.94 | 3.56 |
| 3.50 | 18 | 0.634184 | 0.156876 | 50.83 | 0.353 | 5445.94 | 6.92 | 4.47 |
| 4.00 | 18 | 0.679674 | 0.190810 | 61.82 | 0.429 | 5445.94 | 6.89 | 5.42 |
| 4.50 | 18 | 0.722734 | 0.226656 | 73.44 | 0.510 | 5445.94 | 6.87 | 6.44 |
| 5.00 | 18 | 0.763786 | 0.264253 | 85.62 | 0.595 | 5445.94 | 6.84 | 7.49 |
| 5.50 | 18 | 0.803149 | 0.303464 | 98.32 | 0.683 | 5445.94 | 6.82 | 8.59 |
| 6.00 | 18 | 0.841069 | 0.344165 | 111.51 | 0.774 | 5445.94 | 6.79 | 9.71 |
| 6.50 | 18 | 0.877743 | 0.386246 | 125.14 | 0.869 | 5445.94 | 6.77 | 10.89 |
| 7.00 | 18 | 0.913333 | 0.429611 | 139.19 | 0.967 | 5445.94 | 6.74 | 12.09 |
| 7.50 | 18 | 0.947970 | 0.474168 | 153.63 | 1.067 | 5445.94 | 6.72 | 13.32 |
| 8.00 | 18 | 0.981765 | 0.519832 | 168.43 | 1.170 | 5445.94 | 6.70 | 14.58 |
| 8.50 | 18 | 1.014814 | 0.566529 | 183.56 | 1.275 | 5445.94 | 6.67 | 15.86 |
| 9.00 | 18 | 1.047198 | 0.614186 | 199.00 | 1.382 | 5445.94 | 6.65 | 17.16 |
| 9.50 | 18 | 1.078986 | 0.662732 | 214.73 | 1.491 | 5445.94 | 6.62 | 18.47 |

| | | | | | | | | |
|-------|----|----------|----------|--------|-------|---------|------|-------|
| 10.00 | 18 | 1.110242 | 0.712106 | 230.72 | 1.602 | 5445.94 | 6.60 | 19.82 |
| 10.50 | 18 | 1.141021 | 0.762246 | 246.97 | 1.715 | 5445.94 | 6.58 | 21.18 |
| 11.00 | 18 | 1.171371 | 0.813094 | 263.44 | 1.829 | 5445.94 | 6.55 | 22.54 |
| 11.50 | 18 | 1.201337 | 0.864593 | 280.13 | 1.945 | 5445.94 | 6.53 | 23.93 |
| 12.00 | 18 | 1.230959 | 0.916689 | 297.01 | 2.063 | 5445.94 | 6.50 | 25.33 |
| 12.50 | 18 | 1.260274 | 0.969331 | 314.06 | 2.181 | 5445.94 | 6.48 | 26.73 |
| 13.00 | 18 | 1.289316 | 1.022470 | 331.28 | 2.301 | 5445.94 | 6.46 | 28.16 |
| 13.50 | 18 | 1.318116 | 1.076054 | 348.64 | 2.421 | 5445.94 | 6.43 | 29.56 |
| 14.00 | 18 | 1.346703 | 1.130037 | 366.13 | 2.543 | 5445.94 | 6.41 | 31.00 |
| 14.50 | 18 | 1.375105 | 1.184372 | 383.74 | 2.665 | 5445.94 | 6.39 | 32.44 |
| 15.00 | 18 | 1.403348 | 1.239012 | 401.44 | 2.788 | 5445.94 | 6.36 | 33.85 |
| 15.50 | 18 | 1.431457 | 1.293914 | 419.23 | 2.911 | 5445.94 | 6.34 | 35.29 |
| 16.00 | 18 | 1.459455 | 1.349032 | 437.09 | 3.035 | 5445.94 | 6.32 | 36.74 |
| 16.50 | 18 | 1.487366 | 1.404322 | 455.00 | 3.160 | 5445.94 | 6.29 | 38.16 |
| 17.00 | 18 | 1.515212 | 1.459742 | 472.96 | 3.284 | 5445.94 | 6.27 | 39.59 |
| 17.50 | 18 | 1.543015 | 1.515248 | 490.94 | 3.409 | 5445.94 | 6.25 | 41.04 |
| 18.00 | 18 | 1.570796 | 1.570796 | 508.94 | 3.534 | 5445.94 | 6.23 | 42.47 |
| 18.50 | 18 | 1.598578 | 1.626345 | 526.94 | 3.659 | 5445.94 | 6.20 | 43.87 |
| 19.00 | 18 | 1.626381 | 1.681851 | 544.92 | 3.784 | 5445.94 | 6.18 | 45.29 |
| 19.50 | 18 | 1.654226 | 1.737269 | 562.88 | 3.909 | 5445.94 | 6.16 | 46.71 |
| 20.00 | 18 | 1.682137 | 1.792560 | 580.79 | 4.033 | 5445.94 | 6.14 | 48.12 |
| 20.50 | 18 | 1.710136 | 1.847679 | 598.65 | 4.157 | 5445.94 | 6.12 | 49.52 |
| 21.00 | 18 | 1.738244 | 1.902579 | 616.44 | 4.281 | 5445.94 | 6.09 | 50.87 |
| 21.50 | 18 | 1.766487 | 1.957220 | 634.14 | 4.404 | 5445.94 | 6.07 | 52.24 |
| 22.00 | 18 | 1.794889 | 2.011554 | 651.74 | 4.526 | 5445.94 | 6.05 | 53.60 |
| 22.50 | 18 | 1.823477 | 2.065539 | 669.23 | 4.647 | 5445.94 | 6.03 | 54.94 |
| 23.00 | 18 | 1.852276 | 2.119122 | 686.60 | 4.768 | 5445.94 | 6.01 | 56.28 |
| 23.50 | 18 | 1.881318 | 2.172260 | 703.81 | 4.888 | 5445.94 | 5.99 | 57.60 |
| 24.00 | 18 | 1.910633 | 2.224902 | 720.87 | 5.006 | 5445.94 | 5.97 | 58.89 |
| 24.50 | 18 | 1.940255 | 2.276999 | 737.75 | 5.123 | 5445.94 | 5.95 | 60.17 |
| 25.00 | 18 | 1.970222 | 2.328500 | 754.43 | 5.239 | 5445.94 | 5.93 | 61.43 |
| 25.50 | 18 | 2.000572 | 2.379347 | 770.91 | 5.354 | 5445.94 | 5.91 | 62.67 |
| 26.00 | 18 | 2.031350 | 2.429486 | 787.15 | 5.466 | 5445.94 | 5.89 | 63.87 |
| 26.50 | 18 | 2.062606 | 2.478860 | 803.15 | 5.577 | 5445.94 | 5.87 | 65.06 |
| 27.00 | 18 | 2.094395 | 2.527408 | 818.88 | 5.687 | 5445.94 | 5.85 | 66.23 |
| 27.50 | 18 | 2.126778 | 2.575063 | 834.32 | 5.794 | 5445.94 | 5.83 | 67.36 |
| 28.00 | 18 | 2.159827 | 2.621760 | 849.45 | 5.899 | 5445.94 | 5.81 | 68.46 |
| 28.50 | 18 | 2.193623 | 2.667426 | 864.25 | 6.002 | 5445.94 | 5.79 | 69.54 |
| 29.00 | 18 | 2.228260 | 2.711982 | 878.68 | 6.102 | 5445.94 | 5.77 | 70.58 |
| 29.50 | 18 | 2.263849 | 2.755346 | 892.73 | 6.200 | 5445.94 | 5.76 | 71.65 |
| 30.00 | 18 | 2.300524 | 2.797428 | 906.37 | 6.294 | 5445.94 | 5.74 | 72.61 |
| 30.50 | 18 | 2.338444 | 2.838129 | 919.55 | 6.386 | 5445.94 | 5.72 | 73.54 |
| 31.00 | 18 | 2.377806 | 2.877339 | 932.26 | 6.474 | 5445.94 | 5.70 | 74.42 |
| 31.50 | 18 | 2.418858 | 2.914936 | 944.44 | 6.559 | 5445.94 | 5.69 | 75.33 |
| 32.00 | 18 | 2.461919 | 2.950783 | 956.05 | 6.639 | 5445.94 | 5.67 | 76.12 |
| 32.50 | 18 | 2.507409 | 2.984717 | 967.05 | 6.716 | 5445.94 | 5.66 | 76.93 |
| 33.00 | 18 | 2.555907 | 3.016549 | 977.36 | 6.787 | 5445.94 | 5.65 | 77.68 |
| 33.50 | 18 | 2.608247 | 3.046051 | 986.92 | 6.854 | 5445.94 | 5.63 | 78.31 |

| | | | | | | | | |
|-------|----|----------|----------|---------|-------|---------|------|-------|
| 34.00 | 18 | 2.665710 | 3.072931 | 995.63 | 6.914 | 5445.94 | 5.62 | 78.92 |
| 34.50 | 18 | 2.730455 | 3.096803 | 1003.36 | 6.968 | 5445.94 | 5.61 | 79.47 |
| 35.00 | 18 | 2.806696 | 3.117108 | 1009.94 | 7.013 | 5445.94 | 5.60 | 79.91 |
| 35.50 | 18 | 2.905341 | 3.132899 | 1015.06 | 7.049 | 5445.94 | 5.59 | 80.25 |
| 36.00 | 18 | 3.141593 | 3.141593 | 1017.88 | 7.069 | 5445.94 | 5.59 | 80.47 |

Emergency Spillway - Broad Crested Weir

Project Description

Solve For Crest Length

Input Data

| | | |
|---------------------|---------|-------|
| Discharge | 347.16 | ft³/s |
| Headwater Elevation | 5453.00 | ft |
| Crest Elevation | 5451.53 | ft |
| Tailwater Elevation | 0.00 | ft |
| Crest Surface Type | Gravel | |
| Crest Breadth | 0.67 | ft |

Results

| | | |
|------------------------------|----------|-----------------|
| Crest Length | 63.10 | ft |
| Headwater Height Above Crest | 1.47 | ft |
| Tailwater Height Above Crest | -5451.53 | ft |
| Weir Coefficient | 3.09 | US |
| Submergence Factor | 1.00 | |
| Adjusted Weir Coefficient | 3.09 | US |
| Flow Area | 92.75 | ft ² |
| Velocity | 3.74 | ft/s |
| Wetted Perimeter | 66.04 | ft |
| Top Width | 63.10 | ft |

DESIGN AIDS

Table 502
Time-Intensity-Frequency Tabulation
for the Rational Method

Rainfall Intensity
 (in/hr)/duration

| Frequency | 5-min | 10-min | 15-min | 30-min | 60-min |
|------------------|--------------|---------------|---------------|---------------|---------------|
| 2-year | 3.48 | 2.70 | 2.28 | 1.58 | 1.00 |
| 5-year | 4.92 | 3.84 | 3.24 | 2.24 | 1.42 |
| 10-year | 5.88 | 4.56 | 3.84 | 2.66 | 1.68 |
| 50-year | 8.16 | 6.36 | 5.36 | 3.72 | 2.35 |
| 100-year | 9.48 | 7.32 | 6.16 | 4.28 | 2.71 |

I. One-hr Precipitation Values for Metro Denver Area

| Return period in years | 2 | 5 | 10 | 50 | 100 |
|------------------------|------|------|------|------|------|
| Depth in inches | 0.93 | 1.35 | 1.61 | 2.20 | 2.60 |

II. Recommended Runoff Coefficients for Metro Denver

| Land Use or Surface Characteristics | Percent Impermeability |
|---|------------------------|
| Business: | |
| Commercial areas | 95 |
| Neighborhood areas | 85 |
| Residential: | |
| Single-family | * |
| Multifamily (detached) | 60 |
| Multifamily (attached) | 75 |
| Half-acre lot or larger | * |
| Apartments | 80 |
| Industrial: | |
| Light areas | 80 |
| Heavy areas | 90 |
| Parks, cemeteries: | 5 |
| Playgrounds: | 10 |
| Schools: | 50 |
| Railroad yard areas: | 15 |
| Undeveloped areas: | |
| Historical Flow Analysis | 2 |
| Greenbelts, agricultural | |
| Off-site flow analysis (when land use not defined) | 45 |
| Streets: | |
| Paved | 100 |
| Gravel (packed) | 40 |
| Driveways and sidewalks: | 90 |
| Roofs: | 90 |
| Lawns, sandy soil | 0 |
| Lawns, clayey soil | 0 |

*Refer to Figures RO-3 through RO-5 in Runoff Chapter of USDCM.

Runoff Coefficient vs. Watershed Imperviousness

Based on Runoff Coefficient estimating equation published by Urbonas, et.al. (1990) & WEF (1998)

Basic equation for NRCS Soil Types C & D:

$$C_{CD} = K_{CD} + (0.858 \cdot i^3 - 0.786 \cdot i^2 + 0.774 \cdot i + 0.04)$$

Basic equation for NRCS Soil Type A:

$$C_A = K_A + (1.31 \cdot i^3 - 1.44 \cdot i^2 + 1.135 \cdot i - 0.12) \text{ in which use values for } C_A > 0$$

in which: $i = I_a/100$, imperviousness ratio

I_a = watershed imperviousness in percent

C_A = Runoff Coefficient for NRCS Soil Type A

K_A = Correction factor for C_A when the storm return period is greater than 2-years

C_{CD} = Runoff Coefficient for NRCS Soil Types C and D

K_{CD} = Correction factor for C_{CD} when the storm return period is greater than 2-years

| NRCS Soil Types | Values of Correction Factors K_{CD} & K_A | | | | | |
|--------------------|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Storm Return Period | | | | | |
| | 2-yr | 5-yr | 10-yr | 25-yr | 50-yr | 100-yr |
| C & D | 0.00 | [0.10 <i>i</i> +0.11] | [0.18 <i>i</i> +0.21] | [0.28 <i>i</i> +0.33] | [0.33 <i>i</i> +0.40] | [0.39 <i>i</i> +0.46] |
| A | 0.00 | [0.08 <i>i</i> +0.09] | [0.14 <i>i</i> +0.17] | [0.19 <i>i</i> +0.24] | [0.22 <i>i</i> +0.28] | [0.25 <i>i</i> +0.32] |

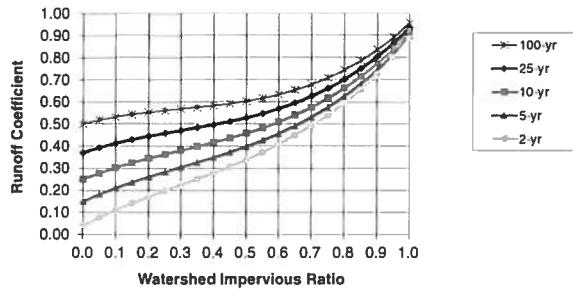
| Imperv. Ratio (i) | Values of Runoff Coefficient C_{CD} | | | | | Values of Runoff Coefficient C_A | | | | | | |
|--------------------------|--|------|-------|-------|-------|------------------------------------|-------|-------|-------|-------|------|------|
| | Type C and D NRCS Hydrologic Soil Groups | | | | | Type A NRCS Hydrologic Soils Group | | | | | | |
| | 2-yr | 5-yr | 10-yr | 25-yr | 50-yr | 2-yr | 5-yr | 10-yr | 25-yr | 50-yr | | |
| 0.00 | 0.04 | 0.15 | 0.25 | 0.37 | 0.44 | 0.50 | -0.12 | -0.03 | 0.05 | 0.12 | 0.16 | 0.20 |
| 0.05 | 0.08 | 0.18 | 0.28 | 0.39 | 0.46 | 0.52 | -0.07 | 0.02 | 0.10 | 0.16 | 0.20 | 0.24 |
| 0.10 | 0.11 | 0.21 | 0.30 | 0.41 | 0.48 | 0.53 | -0.02 | 0.06 | 0.14 | 0.20 | 0.24 | 0.28 |
| 0.15 | 0.14 | 0.24 | 0.32 | 0.43 | 0.49 | 0.54 | 0.02 | 0.10 | 0.17 | 0.23 | 0.27 | 0.30 |
| 0.20 | 0.17 | 0.26 | 0.34 | 0.44 | 0.50 | 0.55 | 0.06 | 0.13 | 0.20 | 0.26 | 0.30 | 0.33 |
| 0.25 | 0.20 | 0.28 | 0.36 | 0.46 | 0.52 | 0.56 | 0.09 | 0.16 | 0.23 | 0.29 | 0.32 | 0.35 |
| 0.30 | 0.22 | 0.30 | 0.38 | 0.47 | 0.53 | 0.57 | 0.13 | 0.19 | 0.25 | 0.31 | 0.34 | 0.37 |
| 0.35 | 0.25 | 0.33 | 0.40 | 0.48 | 0.54 | 0.57 | 0.16 | 0.22 | 0.28 | 0.33 | 0.36 | 0.39 |
| 0.40 | 0.28 | 0.35 | 0.42 | 0.50 | 0.55 | 0.58 | 0.19 | 0.25 | 0.30 | 0.35 | 0.38 | 0.41 |
| 0.45 | 0.31 | 0.37 | 0.44 | 0.51 | 0.56 | 0.59 | 0.22 | 0.27 | 0.33 | 0.37 | 0.40 | 0.43 |
| 0.50 | 0.34 | 0.40 | 0.46 | 0.53 | 0.57 | 0.60 | 0.25 | 0.30 | 0.35 | 0.40 | 0.42 | 0.45 |
| 0.55 | 0.37 | 0.43 | 0.48 | 0.55 | 0.59 | 0.62 | 0.29 | 0.33 | 0.38 | 0.42 | 0.45 | 0.47 |
| 0.60 | 0.41 | 0.46 | 0.51 | 0.57 | 0.61 | 0.63 | 0.33 | 0.37 | 0.41 | 0.45 | 0.47 | 0.50 |
| 0.65 | 0.45 | 0.49 | 0.54 | 0.59 | 0.63 | 0.65 | 0.37 | 0.41 | 0.45 | 0.49 | 0.51 | 0.53 |
| 0.70 | 0.49 | 0.53 | 0.57 | 0.62 | 0.66 | 0.68 | 0.42 | 0.45 | 0.49 | 0.53 | 0.54 | 0.56 |
| 0.75 | 0.54 | 0.58 | 0.62 | 0.66 | 0.69 | 0.71 | 0.47 | 0.50 | 0.54 | 0.57 | 0.59 | 0.61 |
| 0.80 | 0.60 | 0.63 | 0.66 | 0.70 | 0.73 | 0.74 | 0.54 | 0.56 | 0.60 | 0.63 | 0.64 | 0.66 |
| 0.85 | 0.66 | 0.68 | 0.71 | 0.75 | 0.78 | 0.79 | 0.61 | 0.63 | 0.66 | 0.69 | 0.70 | 0.72 |
| 0.90 | 0.73 | 0.75 | 0.77 | 0.80 | 0.83 | 0.83 | 0.69 | 0.71 | 0.73 | 0.76 | 0.77 | 0.79 |
| 0.95 | 0.80 | 0.82 | 0.84 | 0.87 | 0.89 | 0.89 | 0.78 | 0.80 | 0.82 | 0.84 | 0.85 | 0.86 |
| 1.00 | 0.89 | 0.90 | 0.92 | 0.94 | 0.96 | 0.96 | 0.89 | 0.90 | 0.92 | 0.94 | 0.95 | 0.96 |

Notes: For Type B Soils, use the average of coefficients C_{CD} and C_A .

When the Runoff Coefficient in above table is < 0, use 0.

When compositing the Runoff Coefficient for different soil types, use the table values above regardless if they are < 0.

**Runoff Coefficient vs. Imperviousness
NRCS Hydrologic Soils C & D**



**Runoff Coefficient vs. Imperviousness
NRCS Hydrologic Soil A**

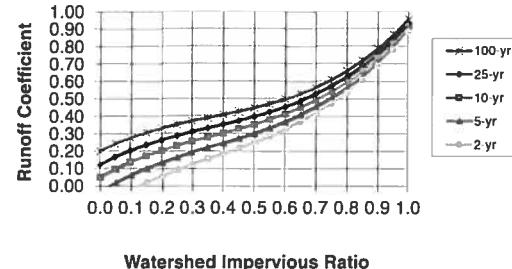
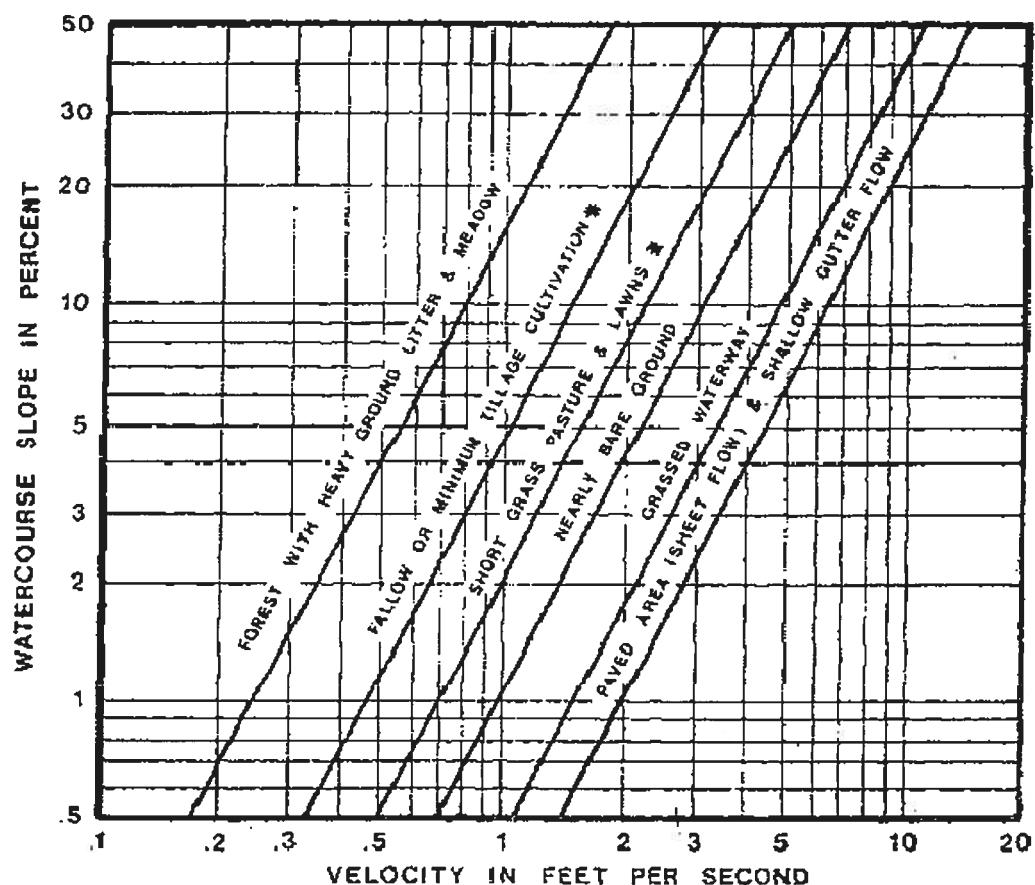
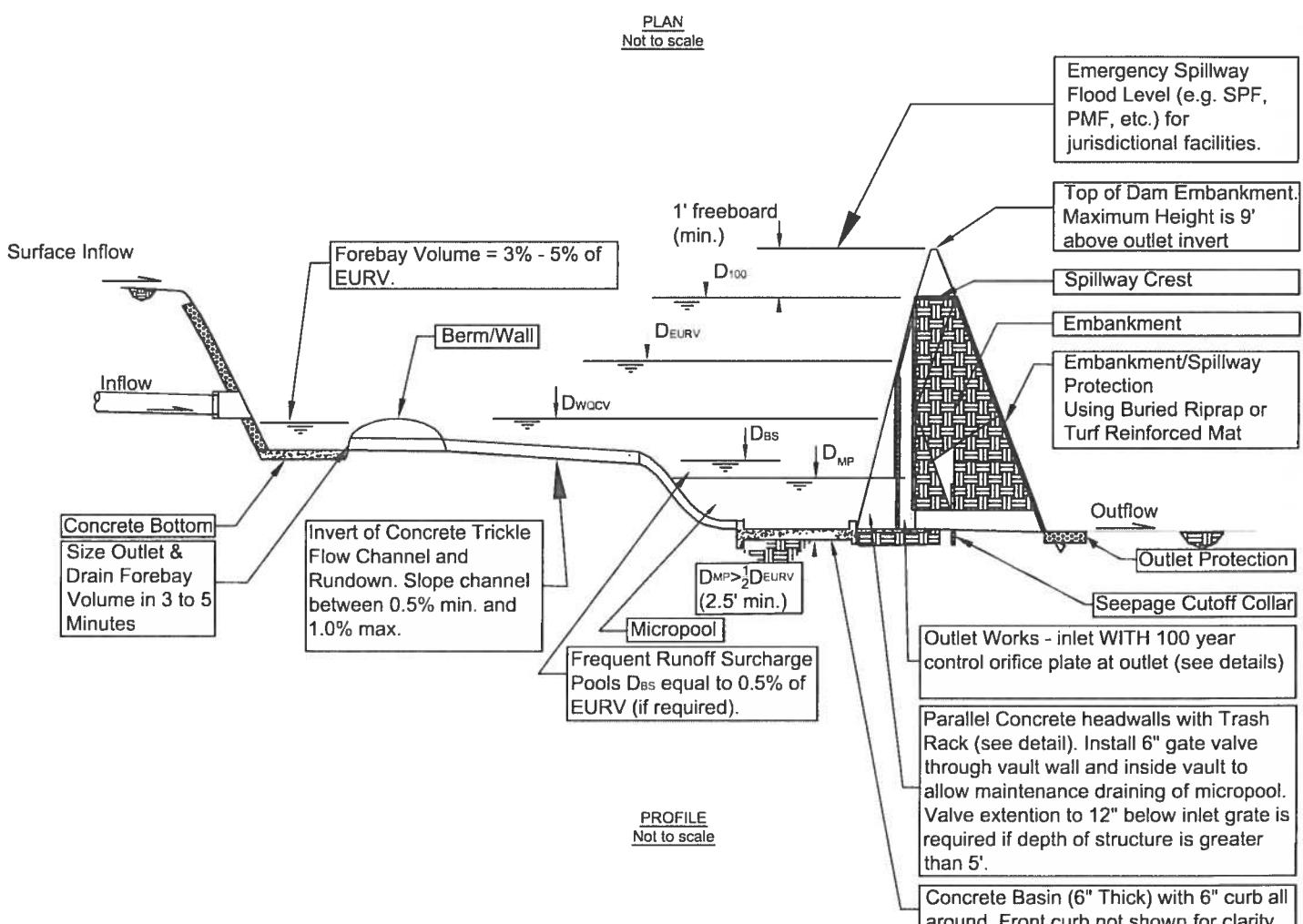
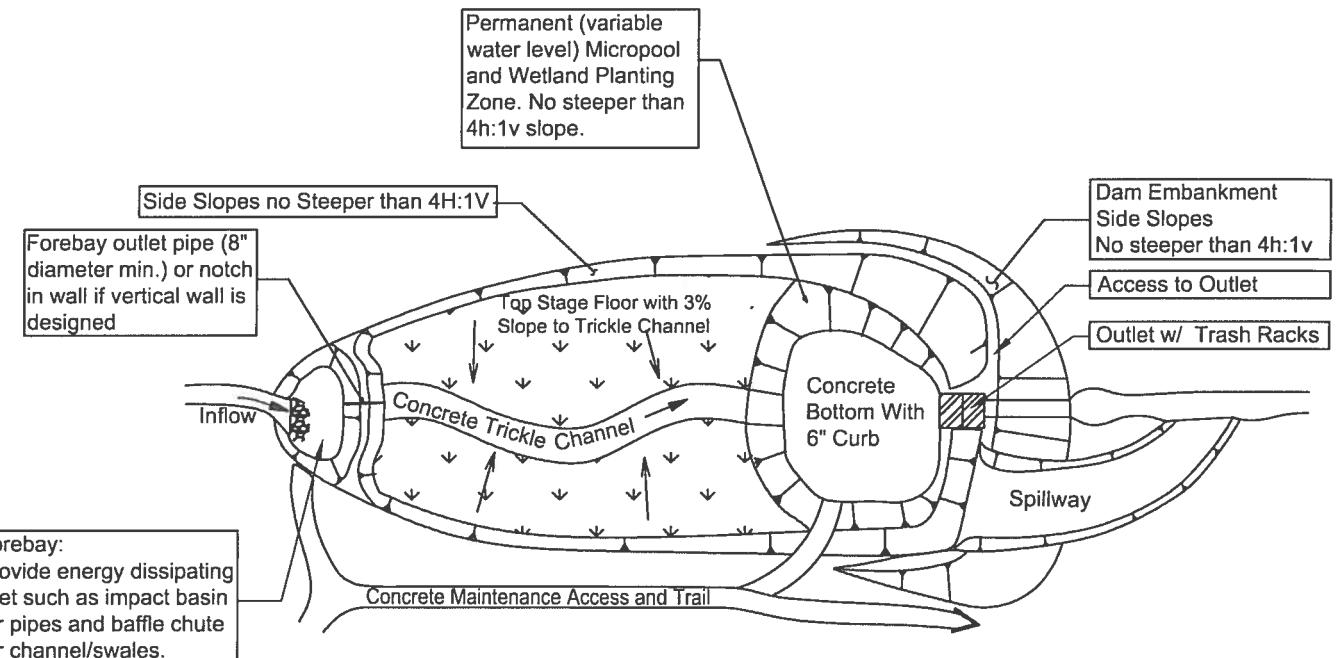


Figure 602
Estimate of Average Flow Velocity
For Use with the Rational Method Formula



*Most Frequently Occurring "Undeveloped" Land Surfaces in the Denver Region

Reference: "Urban Hydrology For Small Watersheds", Technical Release No. 55, USDA, SCS Jan. 1975.

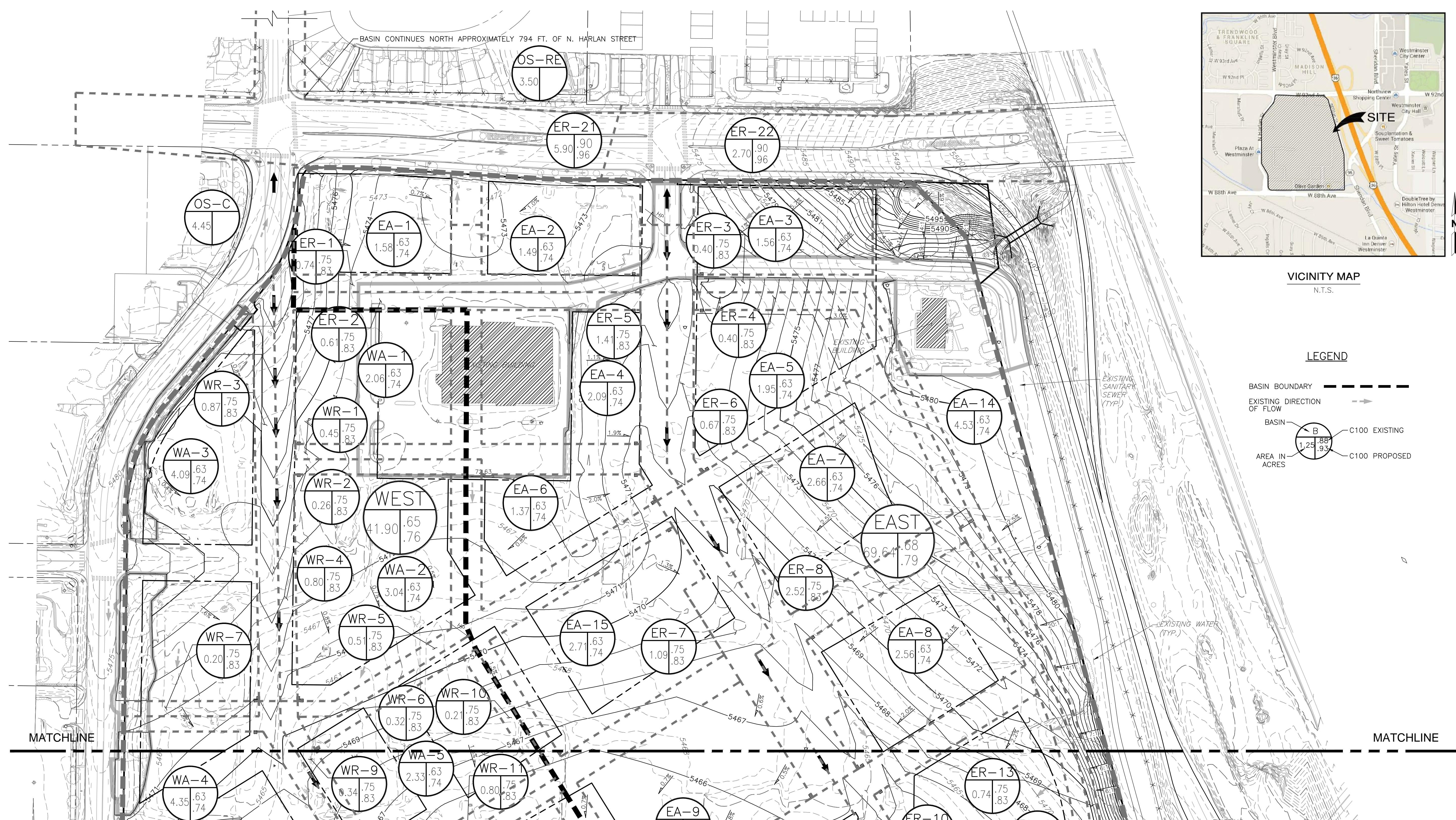


CITY of WESTMINSTER
4800 WEST 92ND AVENUE
WESTMINSTER, COLO. 80031

EXTENDED DETENTION BASIN
BASINS LARGER THAN 5
IMPERVIOUS ACRES

DATE: JANUARY 2011

SHEET ST 11



NOTES:

1. EXISTING STORM SEWER AND INLETS WILL BE REUSED WHEN FEASIBLE.
2. BASIN WEST RUNOFF IS ROUTED AND CONVEYED TO EXISTING DETENTION POND W, LOCATED SOUTH OF THE SITE, ADJACENT TO THE LOWE'S.
3. EXISTING DETENTION POND E WILL BE RELOCATED TO THE WEST TO ACCOMMODATE THE PROPOSED SHERIDAN BOULEVARD REALIGNMENT.
4. NO ADDITIONAL DETENTION IS REQUIRED AS LONG AS THE COMPOSITE PERCENT IMPERVIOUS TRIBUTARY TO EACH POND REMAINS AT OR BELOW EXISTING LEVELS.

BASIS OF BEARINGS

BEARINGS ARE BASED ON THE CITY OF WESTMINSTER GIS HORIZONTAL CONTROL NETWORK. BEARINGS HAVE BEEN ROTATED 00°08'32" COUNTERCLOCKWISE FROM THE PLATTED BEARINGS FOR WESTMINSTER MALL 2ND AMENDMENT PLAT, RECORDED AT RECEPTION NO. 86016236.



**CALL 811 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE OR EXCAVATE FOR
MARKING OF UNDERGROUND MEMBER UTILITIES**

MARTIN/MARTIN ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

RAINAGE SUB-BASINS WERE NOT UPDATED TO MATCH REVISED ROAD LAYOUT. SUBJECT TO CHANGE WITH FUTURE PHASE III DRAINAGE STUDY.

A horizontal scale bar consisting of a thin black line with tick marks at 100, 50, 0, 100, and 200. The segments between 100 and 50, and between 0 and 100, are shaded black. The segment between 100 and 200 is also shaded black.

100 50 0 100 200

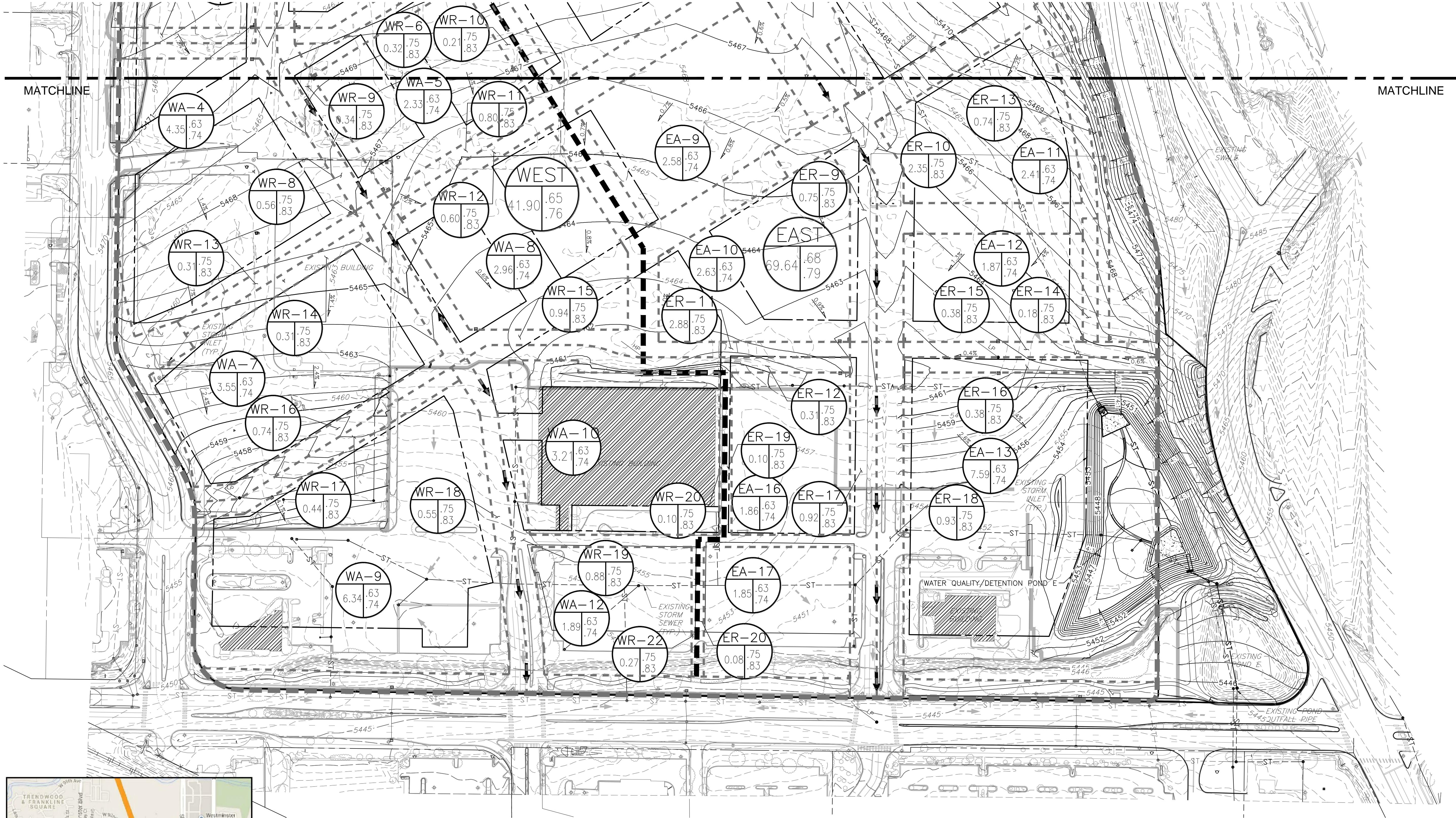
SCALE: 1"=100'

ALL DIMENSIONS SHOWN ARE U.S. SURVEY FEET

Sheet Number:

D1

MARTIN CONSULTING ENGINEERS
12499 WEST COLFAX AVENUE, LAKEWOOD, COLORADO 80215
MAIN 303.431.6100 MARTINMARTIN.COM



VICINITY MAP
 N.T.S.

NOTES:

- EXISTING STORM SEWER AND INLETS WILL BE REUSED WHEN FEASIBLE.
- BASIN WEST RUNOFF IS ROUTED AND CONVEYED TO EXISTING DETENTION POND W, LOCATED SOUTH OF THE SITE, ADJACENT TO THE LOWE'S.
- EXISTING DETENTION POND E WILL BE RELOCATED TO THE WEST TO ACCOMMODATE THE PROPOSED SHERIDAN BOULEVARD REALIGNMENT.
- NO ADDITIONAL DETENTION IS REQUIRED AS LONG AS THE COMPOSITE PERCENT IMPERVIOUS TRIBUTARY TO EACH POND REMAINS AT OR BELOW EXISTING LEVELS.

BASIS OF BEARINGS

BEARINGS ARE BASED ON THE CITY OF WESTMINSTER GIS HORIZONTAL CONTROL NETWORK. BEARINGS HAVE BEEN ROTATED 00°08'32" COUNTERCLOCKWISE FROM THE PLATTED BEARINGS FOR WESTMINSTER MALL 2ND AMENDMENT PLAT, RECORDED AT RECEIPT NO. 86016236.

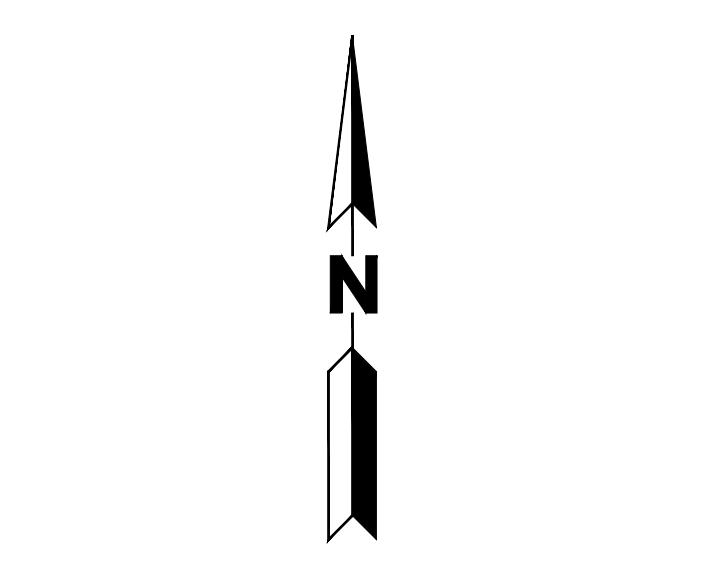


811 2-BUSINESS DAYS IN ADVANCE
 BEFORE YOU DIG, GRADE OR EXCAVATE FOR
 MARKING OF UNDERGROUND MEMBER UTILITIES

MARTIN/MARTIN ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

EXISTING POND W LOCATED TO THE SOUTH, BEHIND THE
 LOWE'S

DRAINAGE SUB-BASINS WERE NOT UPDATED TO
 MATCH REVISED ROAD LAYOUT, SUBJECT TO
 CHANGE WITH FUTURE PHASE III DRAINAGE STUDY.



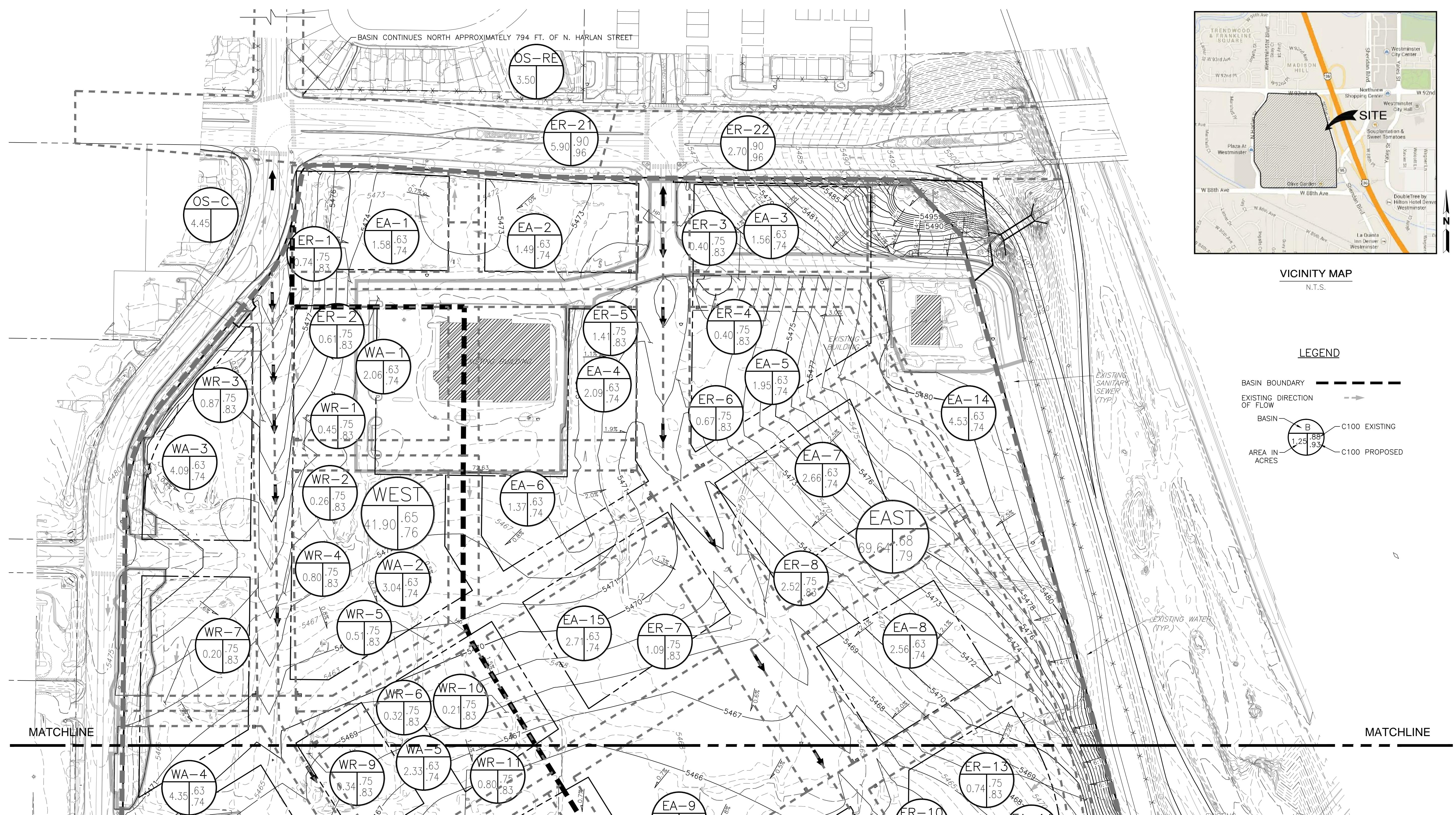
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 SCALE: 1"=100'
 ALL DIMENSIONS SHOWN ARE U.S. SURVEY FEET

DOWNTOWN
 WESTMINSTER
 PHASE II PLAN
 DRAINAGE PLAN - SOUTH

| No. | Issue / Revision | Date | Name |
|-----|----------------------------------|------------|------|
| 1 | SUBMITTED TO CITY OF WESTMINSTER | 06.12.2014 | DL |
| 2 | CONSTRUCTION ISSUE | 07.24.2014 | DL |

Sheet Number:

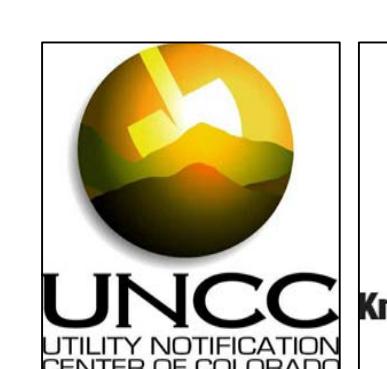
D2



- NOTES:**
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100 50 0 100 200
SCALE: 1"=100'
ALL DIMENSIONS SHOWN ARE U.S. SURVEY FEET



VICINITY MAP
N.T.S.

**DOWNTOWN
WESTMINSTER**
PHASE II PLAN
DRAINAGE PLAN - NORTH

MARTIN/MARTIN
CONSULTING ENGINEERS
12499 WESTOLFAX AVENUE, LAKWOOD, COLORADO 80215
MAIN 303.431.6100 MARTIN/MARTIN.COM

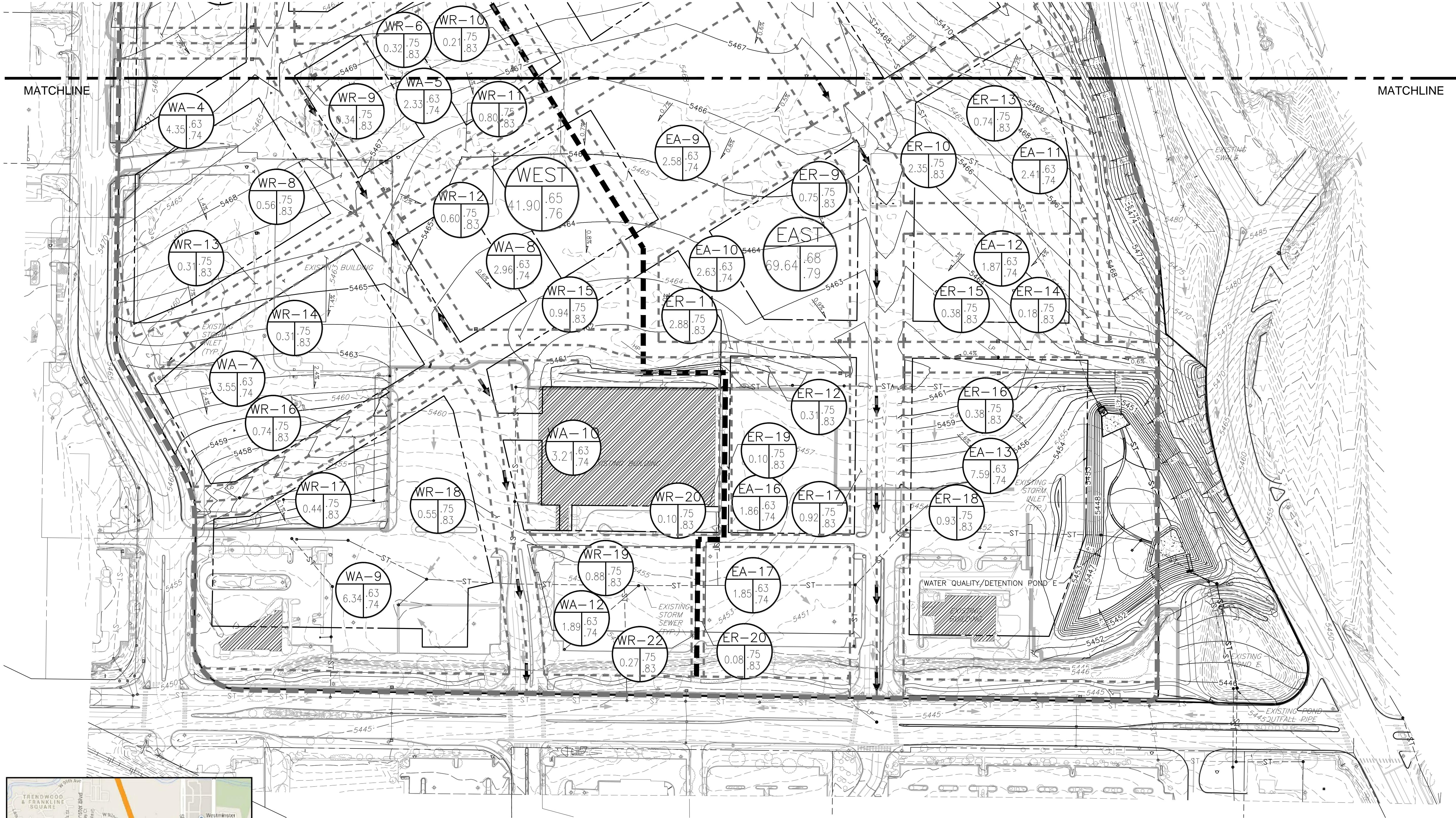
Sheet Number:

D1

DRAINAGE SUB-BASINS WERE NOT UPDATED TO
MATCH REVISED ROAD LAYOUT. SUBJECT TO
CHANGE WITH FUTURE PHASE III DRAINAGE STUDY.

| Job Number | 13.0463 | No. | Issue / Revision | Date | Name |
|-----------------|-----------|-----|----------------------------------|------------|------|
| Project Manager | D. LOVATO | 1 | SUBMITTED TO CITY OF WESTMINSTER | 06-12-2014 | DL |
| Design By | G. GRAVES | 2 | CONSTRUCTION ISSUE | 07-24-2014 | DL |

Principal In Charge D. LOVATO
Design By G. GRAVES
Drawn By G. GRAVES
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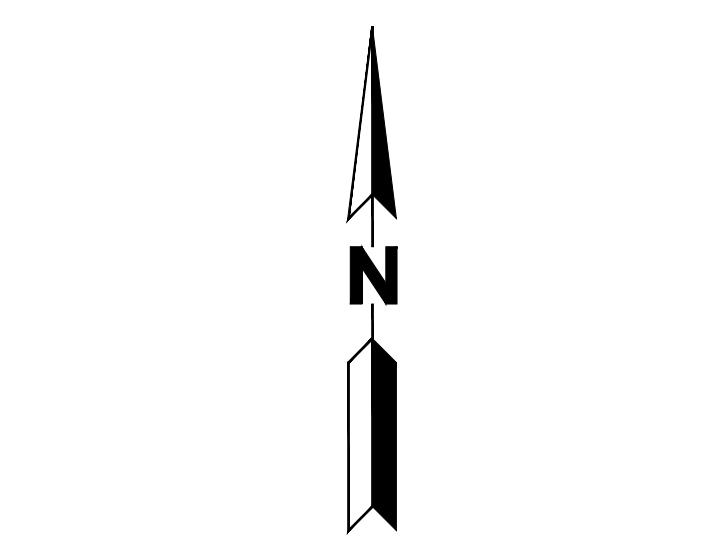
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LEGEND

| | |
|----------------------------|---------------|
| BASIN BOUNDARY | - - - - - |
| EXISTING DIRECTION OF FLOW | → |
| BASIN | C100 EXISTING |
| AREA IN ACRES | C100 PROPOSED |



100 50 0 100 200
 SCALE: 1"=100'
 ALL DIMENSIONS SHOWN ARE U.S. SURVEY FEET

DOWNTOWN WESTMINSTER PHASE II PLAN DRAINAGE PLAN - SOUTH

MARTIN/MARTIN
 CONSULTING ENGINEERS
 12499 WEST COFFEE AVENUE, LAKWOOD, COLORADO 80215
 MAIN 303.431.6100 MARTINMARTIN.COM

D2

| No. | Issue / Revision | Date | Name |
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Principal In Charge D. LOVATO
 Project Manager D. LOVATO
 Design By G. GRAVES
 Drawn By G. GRAVES
 Sheet Number: 13.0463

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W E S T M I N S T E R

Agenda Item 11 A

Agenda Memorandum

City Council Meeting
November 10, 2014



SUBJECT: Second Reading of Councillor's Bill No. 26 re Salaries for Elective Officers

Prepared By: Barbara Opie, Assistant City Manager
Debbie Mitchell, General Services Director
Hilary Graham, Acting City Attorney

Recommended City Council Action:

Pass Councillor's Bill No. 26 on second reading, amending the Westminster Municipal Code to allow for automatic biennial adjustments to City Council's compensation in an amount equal to the percentage of the Non-Exempt General Pay Plan's market adjustments; the compensation adjustments will be effective the first full pay period in January, 2016, and effective the first full pay period in even-numbered years thereafter.

Summary Statement

- City Council directed Staff to research the possibility of amending the Westminster Municipal Code to link City Council's salary with any adjustments made to the city employees' pay plan as part of the 2015/2016 Budget development process; the attached ordinance accomplishes this City Council proposed change.
- City Council action is requested to pass the attached Councillors Bill on second reading that amends the Westminster Municipal Code allowing for automatic biennial adjustments to City Council's compensation in an amount equal to the percentage of the Non-Exempt General Pay Plan's market adjustments and will be effective the first full pay period in January, 2016, and effective the first full pay period in even-numbered years thereafter.
- This Councillor's Bill was passed on first reading on October 27, 2014.

Expenditure Required: \$1,370 in 2016

Source of Funds: General Fund - City Council Operating Budget

Respectfully submitted,

J. Brent McFall
City Manager

Attachment

BY AUTHORITY

ORDINANCE NO. **3743**

COUNCILLOR'S BILL NO. **26**

SERIES OF 2014

INTRODUCED BY COUNCILLORS
Briggs - Seitz

A BILL

FOR AN ORDINANCE AMENDING THE WESTMINSTER MUNICIPAL CODE CONCERNING
SALARIES FOR ELECTIVE OFFICERS

THE CITY OF WESTMINSTER ORDAINS:

Section 1. Section 1-7-1, W.M.C., is hereby AMENDED to read as follows:

1-7-1: ELECTIVE OFFICERS: The salaries of the City's elective officers shall be as follows:

| | |
|--|-------------------|
| Mayor | \$1,400 per month |
| Mayor Pro Tem, elected by Council | \$1,200 per month |
| Councillors, other than Mayor or Mayor Pro Tem | \$1,000 per month |

Commencing the first full pay period in 2016, City elective officer salaries shall be adjusted by the percentage of the 2015 non-exempt general employee pay plan adjustment rounded to the nearest whole dollar. Biennially thereafter in the first full pay period of the year, City elective officer salaries shall be adjusted by the cumulative percentage of the two (2) previous years' non-exempt general employee pay plan adjustments rounded to the nearest whole dollar.

The City's elective officers shall receive an additional monthly allowance for expenses related to the performance of their respective duties. Commencing January 1, 2011, the below stated allowance shall be adjusted, and biennially thereafter ~~each January 1 in the first full pay period in January~~, by the then current Denver/Boulder Consumer Price Index, rounded to the nearest whole dollar. This allowance shall be in lieu of any reimbursement to which the Mayor, Mayor Pro Tem or Councillor may otherwise be entitled to for Internet service, fax communications, cell phone usage, and local commuting costs within the city limits. All mileage for trips outside of the City limits shall be a reimbursable expense.

The allowances shall be as follows:

| | |
|--------------------------------------|-----------------|
| Mayor, Mayor Pro Tem and Councillors | \$300 per month |
|--------------------------------------|-----------------|

In addition, the City shall contribute to the City deferred compensation accounts of each such officer an amount equal to the officer's City deferred compensation contributions. The combined contributions from the City and the elective officer shall be subject to all applicable I.R.S. regulations, but in no event shall such combined contributions from the City and the elective officer exceed 25% of the officer's total City salary.

Section 2. This ordinance shall take effect on passage on second reading.

Section 3. The title and purpose of this ordinance shall be published prior to its consideration on second reading. The full text of this ordinance shall be published within ten (10) days after its enactment after second reading.

INTRODUCED, PASSED ON FIRST READING, AND TITLE AND PURPOSE ORDERED
PUBLISHED this 27th day of October, 2014.

PASSED, ENACTED ON SECOND READING, AND FULL TEXT ORDERED PUBLISHED
this 10th day of November, 2014.

ATTEST:

City Clerk

Mayor

APPROVED AS TO LEGAL FORM:

City Attorney