



MAYOR BRIAN COOPER
COUNCIL PRESIDENT NATALIE VORUZ COUNCILOR KEITH KUDRNA
COUNCILOR MIKE WEATHERBY COUNCILOR BALWANT BHULLAR
COUNCILOR CATHI FORSYTHE COUNCILOR DARREN RIORDAN

FAIRVIEW CITY COUNCIL AGENDA

Fairview City Hall-Council Chambers
1300 NE Village Street, Fairview, Oregon

WEDNESDAY, MARCH 6, 2019

WORK SESSION

1. URBAN RENEWAL AGENCY: BRIDGE LOAN TO URA & CITY IGA WITH URA 6:00 PM
(Nolan Young, City Administrator) (CP 3-13)
2. RESERVOIR #1 REHABILITATION BID AWARD (CP 15)
(Allan Berry, Public Works Director)
3. EVALUATE MARKET DRIVE RESTRICTED PARKING (CP 17-26)
(Devree Leymaster, City Recorder)
4. WELL #10 BRIEFING (CP 27-28)
(Allan Berry, Public Works Director)
5. STORM WATER CIP UPDATE (MODELING PROJECT) (CP 29-122)
(Allan Berry, Public Works Director)
6. DRAFT GOAL OBJECTIVES & TASK LIST FY 2019-20 (CP 123-129)
(Nolan Young, City Administrator)

REGULAR SESSION

1. CALL TO ORDER 7:00 PM
ROLL CALL
PLEDGE OF ALLEGIANCE
2. CITIZENS WISHING TO SPEAK ON NON-AGENDA ITEMS (I)
3. CONSENT (A)
 - a. Minutes of February 20, 2019 (CP 131-146)
 - b. Adopt Findings for Billboard Amendment Request Denial: Resolution 20-2019 (CP 147-169)
 - c. Authorize IGA with Urban Renewal Agency: Resolution 19-2019 (CP 7-13)
 - d. Authorize Bridge Loan to Urban Renewal Agency: Resolution 18-2019 (CP 3-6)
 - e. Oppose Adoption of House Bill 2001 in the 2019 Legislative Session: Resolution 17-2019 (CP 171-174)
4. PRESENTATION (I)
None.
5. COUNCIL BUSINESS (A)
 - a. Reservoir #1 Rehab Bid Award: Resolution 16-2019 (CP 15)
 - b. Amend Council Rules: Order of Business to Include Pledge of Allegiance:
Ordinance 4-2019 (CP 175-178)
1st Reading/Staff Report/Council Discussion
(Nolan Young, City Administrator)

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- c. Amend Fairview Municipal Code Chapter 15.05 to Adopt Updated Oregon Building and Specialty Codes: Ordinance 5-2019 (CP 179-183)
1st Reading/Staff Report/Council Discussion
(Allan Berry, Public Works Director)
 - d. Authorize Transfer of Appropriations in the FY2018-19 Budget for the Public Works Facility Construction Project: Resolution 15-2019 (CP 185-188)
(Lesa Folger, Finance Director)
 - e. Authorize Transfer of Appropriations in the FY2018-19 Budget for the Urban Renewal Agency: Resolution 14-2019 (CP 189-191)
(Lesa Folger, Finance Director)
6. PUBLIC HEARING (A)
None.
7. ADJOURNMENT (A)



Brian Cooper
Mayor

March 1, 2019
Date

(A) Action requested (I) Information only

NEXT COUNCIL MEETING IS MARCH 20, 2019

COUNCIL EXECUTIVE SESSION – IF NECESSARY – END OF MEETING

PARK VIEW CONFERENCE ROOM

ORS 192.660(2)(d) - Labor Negotiations, ORS 192.660(2)(e) - Real Property Transactions,
ORS 192.660(2)(f) - Exempt Public Record and ORS 192.660(2)(h) - Legal Counsel

City Council Regular Sessions are broadcast live on Comcast Cable Channel 30 and Frontier Channel 39. Replays of the meeting are shown the following Saturday at 5:30pm and Sunday at 4:30pm following the original broadcast date. Meetings are also available for viewing via MetroEast Community Media, the week following the meeting, at metroeast.peg.tv. Go to the Playlist tab and select Municipal Meetings or find the link at <http://fairvieworegon.gov/AgendaCenter/City-Council-15>.

The meeting location is wheelchair accessible. A request for an interpreter for the hearing impaired or for other accommodations for person with disabilities should be made at least 48 hours before the meeting to the [City Recorder](#), 503-674-6224.



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #1 & 3.d.	2019-32

TO: Mayor and City Council
FROM: Nolan K. Young, City Administrator
DATE: February 28, 2019

ISSUE:

Approve a Memorandum of Understanding (MOU) between the Fairview Urban Renewal Agency and the City of Fairview for a \$650,000 bridge loan from the City.

RELATED COUNCIL GOALS:

Goal #5 Enhance and promote economic development activity.

Objective B: Investigate formation of an urban renewal district to identify and pursue economic development projects.

BACKGROUND:

City Council formed the Fairview Urban Renewal (UR) Agency on June 6, 2018. On November 7, 2018, the Council adopted the UR plan for the new agency. During the process of forming the district and adopting the plan it was determined that in order to allow the agency to immediately start pursuing projects, the city would loan the agency \$650,000 from the city's general fund excess reserve.

The March 6 Agency agenda includes an intergovernmental agreement (IGA) that among other provisions allows for the city to provide loans to the agency. Attached is a MOU that formalizes the proposed \$650,000 loan from the city to the agency.

Without the loan the agency would not be able to proceed with projects, including repaying the city for contractual services to form the agency, until November 2019, when it receives its first tax increment funds. It would be an additional one or two years before it could issue its first debt. By using a portion of the bridge loan to pay for the first year, or two, of the debt payments the agency will be able to obtain a loan for \$3.4 million in the summer of 2019. This will greatly enhance the agency's ability to proceed with projects, which will then help generate additional tax increment revenue, which will be used to pay off the debt and allow for the additional loans that would in turn create additional tax revenue.

RECOMMENDED ACTION:

Approve the proposed MOU.

ALTERNATIVE ACTIONS: Choose **not** to approve the MOU and not authorize the \$650,000 loan. This will delay any Urban Renewal projects until sufficient tax increment revenue is available.

BUDGET IMPLICATIONS:

The \$650,000 loan will reduce the city's excess reserve in the general fund from \$1,630,091 to \$980,091. During the time the loan is outstanding the city will earn an additional 1.5% over what we would earn if that money was in the pool. For a one-year period at full principle that would equal \$9,750.

CITY COUNCIL ALTERNATIVES:

1. **Staff Recommendation:** Adopt Resolution 18-2019, approving signature of the proposed MOU.
2. Amend the proposed MOU and then adopt resolution 18-2019.
3. Decline to adopt Resolution 18-2019 and wait to proceed with urban renewal projects until sufficient tax increment revenue is available.



RESOLUTION
(18 - 2019)

**A RESOLUTION OF THE FAIRVIEW CITY COUNCIL AUTHORIZING SIGNATURE
OF A MEMORANDUM OF UNDERSTANDING WITH THE FAIRVIEW URBAN
RENEWAL AGENCY FOR A \$650,000 BRIDGE LOAN**

WHEREAS, the Fairview City Council held a public hearing and adopted Ordinance 5-2018 on June 6, 2018, creating the Fairview Urban Renewal Agency; and

WHEREAS, the Fairview City Council held a public hearing and adopted Ordinance 8-2018 on November 7, 2018, adopting the Fairview Urban Renewal Plan; and

WHEREAS, the Fairview Urban Renewal Agency desires to start implementation of the Urban Renewal Plan as soon and expediently; and

WHEREAS, the Urban Renewal Agency is in need of financial resources pursue its plan; and

WHEREAS, the City of Fairview has available funds that it can loan the Urban Renewal Agency.

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 The City Council authorizes the city administrator to sign the proposed MOU with the Fairview Urban Renewal Agency, attached as exhibit A to this resolution.

Section 2 This resolution is and shall be effective from the day of its passage.

Resolution adopted by the Fairview City Council, this 6th day of March, 2019.

ATTEST

Mayor, City of Fairview
Brian Cooper

City Recorder, City of Fairview
Devree Leymaster

Date

Memorandum of Understanding

This Memorandum of Understanding (“MOU”) represents an agreement between the City of Fairview (“City”), and the Fairview Urban Renewal Agency (“Agency”), (collectively, the “Parties”) regarding a bridge loan from the City to the Agency in the amount of \$650,000.

Recitals:

1. March 6, 2019 the City and Agency signed an Intergovernmental Agreement (IGA).
2. Section 1(c) of the IGA allows for the City to provide financial assistance to the Agency in the form of an interest bearing loan.
3. The Agency desires to borrow \$650,000 from the City to fund its activities until other resources are available to the Agency.
4. The City is willing and legally able to loan the requested funds from its General Fund Contingency-Excess Reserves line item.

The Parties agree as follows:

Section 1: Loan

The City will loan the Agency the sum of \$650,000 on March 6, 2019, for a term not to exceed five years.

Section 2: Interest Rate

- a. The Agency agrees to pay interest on any outstanding principal from March 6, 2019 to June 30, 2019 at the equivalent of an annual interest rate of 4.25%. Said interest shall be paid to the City on June 30, 2019.

The annual interest rate on any outstanding principal after June 30, 2019 will be set on July 1 of each year for that fiscal year. The interest rate will equal the Local Government Investment Pool (base rate) +1.5%. The base rate will be calculated as an average of the prior 12 months, or the rate for the preceding month, whichever is higher. The interest incurred for fiscal each year will be due and payable on June 30. Any loan from the City to the Agency is further governed by section 1(c) of the IGA between the parties dated March 6, 2019.

Section 3: Principal Payments

The Agency may make payments of any amount of the principal owing at any time as long as the entire loan is repaid by March 6, 2024.

IN WITNESS WHEREOF, the Parties hereto have entered into this MOU as of the 6th day of March 2019.

CITY OF FAIRVIEW

FAIRVIEW URBAN RENEWAL AGENCY

By: _____
Nolan K Young, City Administrator

By: _____
Brian Cooper, Board Chair



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #1 & 3.c.	2019-31

TO: Mayor and City Council
FROM: Nolan K. Young, City Administrator
DATE: February 28, 2019

ISSUE:

Approval of an Intergovernmental Agreement (IGA) between the City of Fairview and Fairview Urban Renewal Agency for administrative and financial services.

RELATED COUNCIL GOALS:

Goal #5: Enhance and promote economic development activity.
Objective B: Investigate formation of an urban renewal district to identify and pursue economic development projects.

BACKGROUND:

City Council formed the Fairview Urban Renewal (UR) Agency on June 6, 2018. On November 7, 2018, the Council adopted the UR plan for the new agency. During the process of forming the district and adopting the plan it was determined that the agency would obtain the necessary operational capacity that it needed from the city. The attached IGA formalizes that relationship.

RECOMMENDED ACTION: Approve Resolution 19-2019 that relies upon city staff to operate the Urban Renewal Agency

ALTERNATIVE ACTIONS:

Choose **not** to acquire administrative and financial services from the city and identify a third party from which to obtain those services.

BUDGET IMPLICATIONS:

The Urban Renewal plan includes the allocation of resources to pay for administration of the plan. Through this intergovernmental agreement, the agency will pay the city for the initial costs of forming the Urban Renewal Agency and the costs of doing additional projects for the agency. It is the intent of the city to not start charging for employee services provided to the agency until July 1, 2019.

CITY COUNCIL ALTERNATIVES:

1. **Staff Recommendation:** Adopt Resolution 19-2019, approving signature of the proposed IGA.
2. Amend the proposed IGA and then adopt resolution 19-2019.-
3. Decline to adopt Resolution 19-2019 and determine another way to obtain these services.



RESOLUTION
(19 - 2019)

**A RESOLUTION OF THE FAIRVIEW CITY COUNCIL AUTHORIZING SIGNATURE
OF AN INTERGOVERNMENTAL AGREEMENT WITH THE CITY OF FAIRVIEW
FOR OPERATING AND FINANCIAL SERVICES**

WHEREAS, the Fairview City Council held a public hearing and adopted Ordinance 5-2018 on June 6, 2018, creating the Fairview Urban Renewal Agency; and

WHEREAS, the Fairview City Council held a public hearing and adopted Ordinance 8-2018 on November 7, 2018, adopting the Fairview Urban Renewal Plan; and

WHEREAS, the Fairview Urban Renewal Agency desires to start implementation of the Urban Renewal Plan; and

WHEREAS, the Urban Renewal Agency needs to obtain the necessary operational and financial capacity to operate the Urban Renewal Agency and pursue projects, and

WHEREAS, the City of Fairview has the desired operational and financial capacity to assist the Agency.

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 The City Council authorizes the city administrator to sign the proposed IGA with the Urban Renewal Agency, attached as exhibit A to this resolution.

Section 2 This resolution is and shall be effective from the day of its passage.

Resolution adopted by the Fairview City Council, this 6th day of March, 2019.

ATTEST

Mayor, City of Fairview
Brian Cooper

City Recorder, City of Fairview
Devree Leymaster

Date

**INTERGOVERNMENTAL AGREEMENT BETWEEN
THE CITY OF FAIRVIEW AND THE FAIRVIEW
URBAN RENEWAL AGENCY**

This Intergovernmental Agreement (Agreement) is entered into between The City of Fairview (“City”), an Oregon municipal corporation established under ORS Chapter 221, and the Fairview Urban Renewal Agency (“Agency”), a municipal corporation established under ORS Chapter 457.

WHEREAS, the Agency is charged with administering and implementing The Fairview Urban Renewal Plan (“Plan”), as adopted by the agency board on November 7, 2018, and will be engaging in redevelopment activities to carry out the plan; and

WHEREAS, the City has experience in the provisions of administrative services for local governments and in planning and constructing public improvements and desires to assist the Agency in the planning and carrying out of the Plan, pursuant to ORS 457.320; and

WHEREAS, the City has the desire and the money to loan the Agency for implementation of the Plan as long as said funds are reimbursed to the City.

WHEREAS, pursuant to ORS 190.010, the City and Agency are authorized to enter into intergovernmental agreements for the performance of functions and activities either one is authorized by law to perform.

NOW, THEREFORE, THE CITY OF FAIRVIEW AND THE FAIRVIEW URBAN RENEWAL AGENCY AGREE AS FOLLOWS:

Section 1: City Duties and Responsibilities Nothing herein shall be construed to prohibit the Agency from contracting with third parties to provide any of the services listed below.

As requested and authorized by the Agency, the City shall provide administrative and development services to the Agency and undertake urban renewal activities as set forth in the adopted Plan, including but not limited to the following:

- a. **Accounting:** The City shall provide accounting services to the Agency for the fiscal tracking of Agency revenues and expenditures. In doing so, the City shall provide the necessary accounting services to make payments on behalf of the Agency and receipt resources received on behalf of the Agency. The City shall also provide the Agency financial reports every accounting period that detail revenues, expenditures, debt, and cash flow data for the Agency’s urban renewal funds.
 - i. Accounting System: The City shall maintain an accounting system for the Agency and charge expenses directly to the Agency through that system.

- ii. **Segregation of Funds:** The City shall segregate all Agency funds into an urban renewal fund in the City's financial accounting system and shall be responsible for maintaining that segregation.
 - iii. **Debt Service Payments:** The City shall make all debt service payments from Agency funds on behalf of the Agency as such payments come due.
 - iv. **Annual Agency Audit:** In order to comply with all provisions in ORS 297.405 through 297.555, the City shall contract on behalf of the Agency for an external audit of the Agency's year-end financial statements and accounting transactions. The City shall prepare the financial statements and manage the audit process.
- b. **Administrative Services:** The City will provide the following administrative services to the Agency: records management and record-keeping, human resources, engineering, planning services, legal services, purchasing information, technology services including internet and telephone service, office space and supplies, staff support for meetings (including preparation of meeting notices, agendas and minutes) and budget preparation and oversight.

In doing so, the City shall provide such services in compliance with the laws of the State of Oregon, and in accordance with the Plan and this Agreement.

- c. **Financial Assistance:** Pursuant to ORS 457.320, the City may loan money and provide other forms of financial assistance to the Agency in order to assist in carrying out the Plan. Any such assistance is to be properly documented and contain adequate provisions for the repayment of any loan made by the City to the Agency. Interest on any loan will be calculated based on the rate the City would receive if those funds were invested in the Local Government Investment Pool (base rate) +1.5%. The rate shall be annual and will be set July 1 of each Fiscal Year. Compounding of interest will correspond with the repayment schedule. The base rate will be calculated as an average of the prior 12 months, or the rate for the preceding month, whichever is higher.
- i. The City agrees to act, when appropriate upon request of the Agency, as the agent of the Agency for purposes of forming local improvement districts, awarding bids, assessments, and all other usual and necessary activities normally performed by the City with reference to public improvement projects in the City.
 - ii. The City agrees to exercise its powers under the law to facilitate carrying out the Plan at no cost to the Agency, except as provided for elsewhere in this agreement; except the Agency shall pay all required City fees and charges.

- d. **Insurance:** The Agency shall secure liability, property, and casualty insurance. The City will assist the Agency in acquiring the necessary insurance from the City's insurer or another vendor.

Section 2: Agency Duties and Responsibilities

- a. **Financial Management and Review:** The Agency is responsible for the oversight and management of the Plan and its projects, including, but not limited to: oversight of the fiscal health of the Agency and its authorized plan projects, management decisions affecting the fiscal status of the Agency, threshold and capacity of the Agency, and monitoring of all Agency revenues and expenditures. This includes annual budgeting and budget review of plan projects and funds, as required by Oregon local budget law (ORS 294.305 through 394.565). The Agency shall coordinate with the City as necessary to ensure proper oversight and management of Agency activities.
- b. **Annual Reporting:** Pursuant to ORS 457.460, the Agency shall prepare and provide both the Agency Board and City an annual financial report on the Agency and its projects no later than January 31 of each year.
- c. **Financial Assistance:** The Agency is authorized to loan money and provide other forms of financial assistance to the City as the Agency Board, in its sole discretion, determines appropriate to carry out one or more projects described in the Plan.
 - i. The Agency shall repay the City all contract expenses related to the Plan and report. Repayment shall be on a schedule mutually agreed to by the Agency and City, but no longer than five years from the signing of this agreement.

Section 3: Shared Duties and Responsibilities

- a. **Issuance of Debt for Urban Renewal Activity:** The Agency is ultimately responsible for negotiating and securing debt for the purpose of carrying out the Plan. City staff may assist the Agency with negotiating and securing debt by providing financial administrative assistance. Through a separate Memorandum of Understanding (MOU), the City may agree to issue debt for the Agency with the Agency assuming financial responsibility for any associated debt service.
- b. **Agency Staffing:** The City shall provide and supervise staff that performs Agency functions. City employees engaged in Agency activities are employees of the City and subject to the City's employment policies, procedures, and standards. It is also the intent of the parties that the services performed by City employees on behalf of the Agency shall not interfere with the ability of such employees to carry out their duties for the City.

- c. **Reimbursement for Services:** The City may seek reimbursement from the Agency for reasonable costs of services provided on behalf of the Agency. The City shall provide sufficient documentation and detail of service provided to the Agency.

Section 4: Additional Terms

- a. **Severability:** If any section, clause or phrase of this Agreement is judicially deemed invalid, illegal or unenforceable in any respect, the remaining parts of this Agreement shall be severed from the invalid parts and remain in full force and effect.
- b. **Indemnification:** The City agrees to save and hold harmless the Agency against all claims, suits, or actions whatsoever which arise out of or result from the negligent or intentional acts of the City's Officials, employees, and agents in providing the services pursuant to this Agreement
- c. **Modification:** This Agreement may be modified by mutual written consent of the parties. Any modification to a provision of this Agreement shall have no effect upon other provisions in this Agreement unless stated in writing.
- d. **Term and Termination:** This Agreement shall remain in effect until terminated by the parties as provided in this Section. Termination of this Agreement may be made by mutual consent of the parties and shall not affect the duties and obligations of the parties that occurred prior to the termination (including any bond, loan or other repayment obligations).
- e. **Effective Date:** This Agreement is effective upon the latest date it is executed by the parties below.
- f. **Entire Agreement:** This Agreement sets forth the entire understanding between the parties with respect to the subject matter of this Agreement and supersedes any and all prior understandings and agreements, whether written or oral, between the parties with respect to such subject matter.
- g. **Non-Agency Relationship:** Nothing in this Agreement is to be interpreted as creating or constituting an agency relationship between the parties. Each party remains separate and neither assumes the debts or obligations of the other by entering into this Agreement.

WHEREAS, all of the form mentioned is hereby agreed upon by the parties and executed by the duly authorized signatures below.

CITY OF FAIRVIEW

FAIRVIEW URBAN RENEWAL AGENCY

City Administrator Date

Agency Chair Date

Approved to Form:

City Attorney Date



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #2 & 5.a.	2019-27

TO: Mayor and City Council
FROM: Allan Berry P.E., Public Works Director
THRU: Nolan K. Young, City Administrator
DATE: February 26, 2019

ISSUE:
Complete rehabilitation of Reservoir #1.

RELATED COUNCIL GOALS:
4A: Develop plan to address concerns regarding Reservoir #1

PREVIOUS AGENDA STAFF REPORTS:
June 6, 2018

BACKGROUND:
The City Council approved a project for the rehabilitation of Reservoir #1. A design contract was awarded to Murray Smith & Associates and the design has been completed. The proposed project was subsequently advertised in the Daily Journal of Commerce on February 13, 2019, a mandatory pre-bid meeting and a site tour was conducted on February 20, 2019, and bids will be opened on March 5, 2019.

RECOMMENDED ACTION:
Staff recommends authorizing the City Administrator to enter into a contract with the responsive low bidder to provide construction services for the rehabilitation of Reservoir #1. A spreadsheet of the received bids will be presented to Council at the March 6, 2019 meeting, along with a draft resolution.

BUDGET IMPLICATIONS:
This project is included in the current budget in the amount of \$410,000, and is also included in the current capital improvement plan.

- COUNCIL ALTERNATIVES:**
1. **Staff Recommendation:** Authorize contract with the responsive low bidder.
 2. Direct Staff to consider other options.
 3. Defer action of Reservoir #1 to a future time.



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #3	2019-23

TO: Mayor and City Council
FROM: Devree Leymaster, City Recorder
THRU: Nolan K. Young, City Administrator
DATE: February 7, 2019

ISSUE:

Evaluate restricted parking along NE Market Drive.

BACKGROUND:

On June 6, 2018, City Council adopted Ordinance 4-2018, revising Chapter 10.05 (uniform traffic ordinance) of the Fairview Municipal Code (FMC) to provide the City Council with the authority to designate time limit restricted parking areas (anywhere in the City) and specified that a motor vehicle may only park in a time limit restricted area for the posted time limit. The revised code allowed for the issuance of a citation under certain circumstances and that any time-restricted parking area would need to be created by resolution.

After hearing and discussing Village business and resident concerns regarding parking and holding a public forum, the Council adopted **Resolution 26-2018** on July 18, 2018 authorizing a two hour parking limit, Monday thru Friday, from 8 a.m. to 6 p.m., on certain portions of NE Market Drive. The specific area is designated in the map labeled **Exhibit A** to the Resolution.

Council's direction was for the city to conduct a four month trial period during which time the impacted zone would be monitored at varying times and parking patterns would be recorded. A part-time (20 hours per week) temporary Enforcement Officer/Office Assistant was approved for the four month trial period. As recruitment efforts were unsuccessful, existing finance staff with oversight of the city recorder monitored and recorded data from September 24, 2018 to January 30, 2019.

With education and compliance being the primary goal, a notice letter regarding the time limit restricted parking area was mailed to all Village properties on September 4, 2018. The practice was to issue a warning for a first offense, document the license number and issue a citation should a second offense occur. From September 24, 2018 to January 30, 2019, nine warnings were issued and no citations.

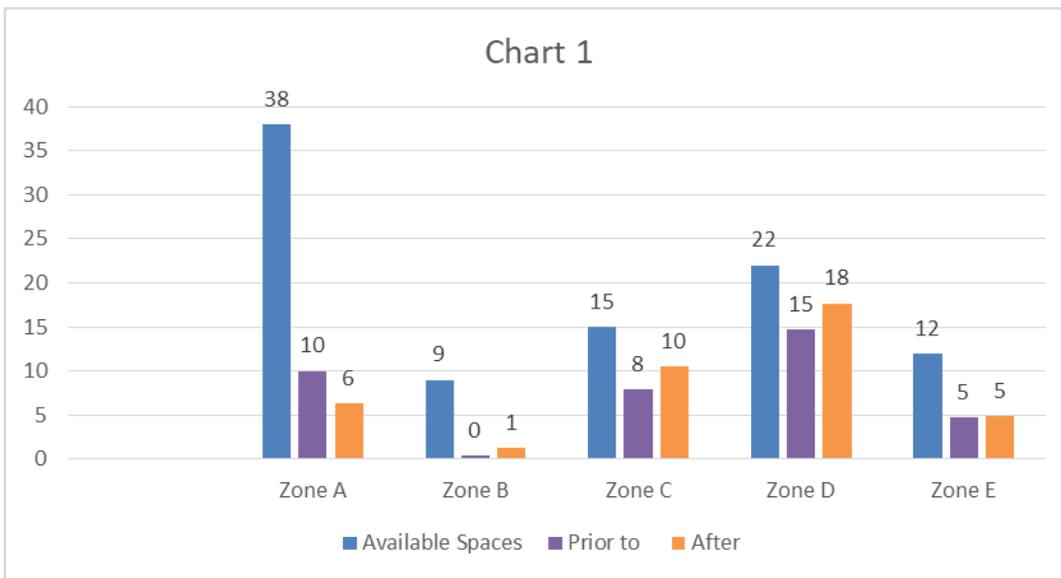
Prior to the two hour restriction, City Administrator Young documented parking numbers within five zones from June 21 to August 30, 2018. Documentation of these same zones continued to provide Council parking pattern data prior to and after the implementation of a two hour parking limit in Zone A.

The defined area in each zone are as follows. See also **Exhibit B**, Parking Zone Map.

- Zone A = Market Drive: Park to Village – *Two Hour Parking Limit*
- Zone B = Market Drive: Village east to curve
- Zone C = Village Street: library alley to Market
- Zone D = Village Street: city hall driveway to library alley
- Zone E = Village Street: city hall driveway to Park

Table/Chart 1 compares the number of spaces available per zone to the average number of vehicles parked per day prior to the two hour parking limit being implemented in Zone A, and after.

Table 1						
	Zone A	Zone B	Zone C	Zone D	Zone E	
Available Spaces ¹	38	9	15	22	12	
Average per Day						
Prior to	10	0	8	15	5	
After	6	1	10	18	5	



¹# Parking Spaces Available:

Zone A, B & E based on curb length and using a 20ft/vehicle average.

Zone C & D based on number of marked parking spaces.

According to this data, parking numbers decreased in Zone A following the implementation of the two hour parking limit; while parking numbers in Village Street Zones C & D increased. This may suggest some parking was displaced from Zone A to these zones.

Staff observations:

In Zone A (two hour restricted) most parked vehicles were concentrated at the west end (Post Office, businesses along Market).

One vehicle that frequently parked at the east end of Zone A, moved to Zone B when the two hour limit signs were posted.

Parking in Zone D (Village: city hall driveway to library alley) is frequently near capacity. There are 22 marked spaces and the average per day parked vehicle count increased from 15 to 18.

Having existing staff incorporate parking enforcement duties into their work day routine is possible. On occasion, the time sensitive component (two hour plus intervals) was disruptive to the work flow of other duties. Enforcement at varying time intervals (AM, mid-day, PM) was also sometimes challenging due to other demands. Should Council continue the restricted parking area, staff would propose continuing enforcement as complaint driven or at a random once to twice a week monitoring schedule to balance the demands of other duties.

Request from Council:

Staff is requesting Council direction for the next steps regarding the two hour limited parking along a portion of Market Drive (Zone A).

1. Continue limited parking in Zone A?
2. If restricted parking continues, what should the level of enforcement be? Complaint or monitored? If monitored, at what frequency?

ATTACHMENTS:

Resolution 26-2018 & Restricted Parking Map (Exhibit A)

Parking Zone Map (Exhibit B)

Collected Data (Exhibit C)



RESOLUTION
(26-2018)

**A RESOLUTION TO LIMIT PARKING TO TWO HOURS, MONDAY THRU FRIDAY,
IN CERTAIN AREAS OF THE VILLAGE**

WHEREAS, the City Council has evaluated issues with parking in certain commercial areas of the Village; and

WHEREAS, the City Council has determined that a two hour parking limit in certain commercial areas of the Village would promote the economic vitality of said commercial area; and

WHEREAS, on May 11, 2018, notice was provided to all properties within 250 feet of the restricted parking area, a public forum was held on June 19, 2018 to receive public comment regarding the two hour parking restriction, and Council reviewed and considered the public comments from the forum at their June 20, 2018 work session; and

WHEREAS, the City Council finds that it is in the public interest to adopt a two hour parking limit on certain portions of NE Market Drive, which will apply from 8 a.m. to 6 p.m., Monday thru Friday.

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 In accordance with FMC 10.05.040(B)(4) and FMC10.05.120(J), a two hour parking limit will apply, from 8 a.m. to 6 p.m., Monday thru Friday, on certain portions of NE Market Drive as identified on the attached Exhibit A.

Section 2 The City Administrator is authorized to take all necessary steps to implement the two hour parking limit in accordance with this Resolution, including, but not limited to, installing signage and hiring additional staff to enforce the parking time limit. This Section 2 shall become effective upon adoption.

Resolution adopted by the City Council of the City of Fairview, this 18th day of July, 2018.

Mayor, City of Fairview
Ted Tosterud

ATTEST

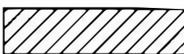
City Recorder, City of Fairview
Devree Leymaster

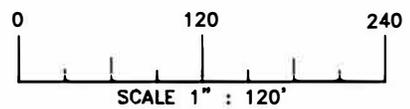
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Date

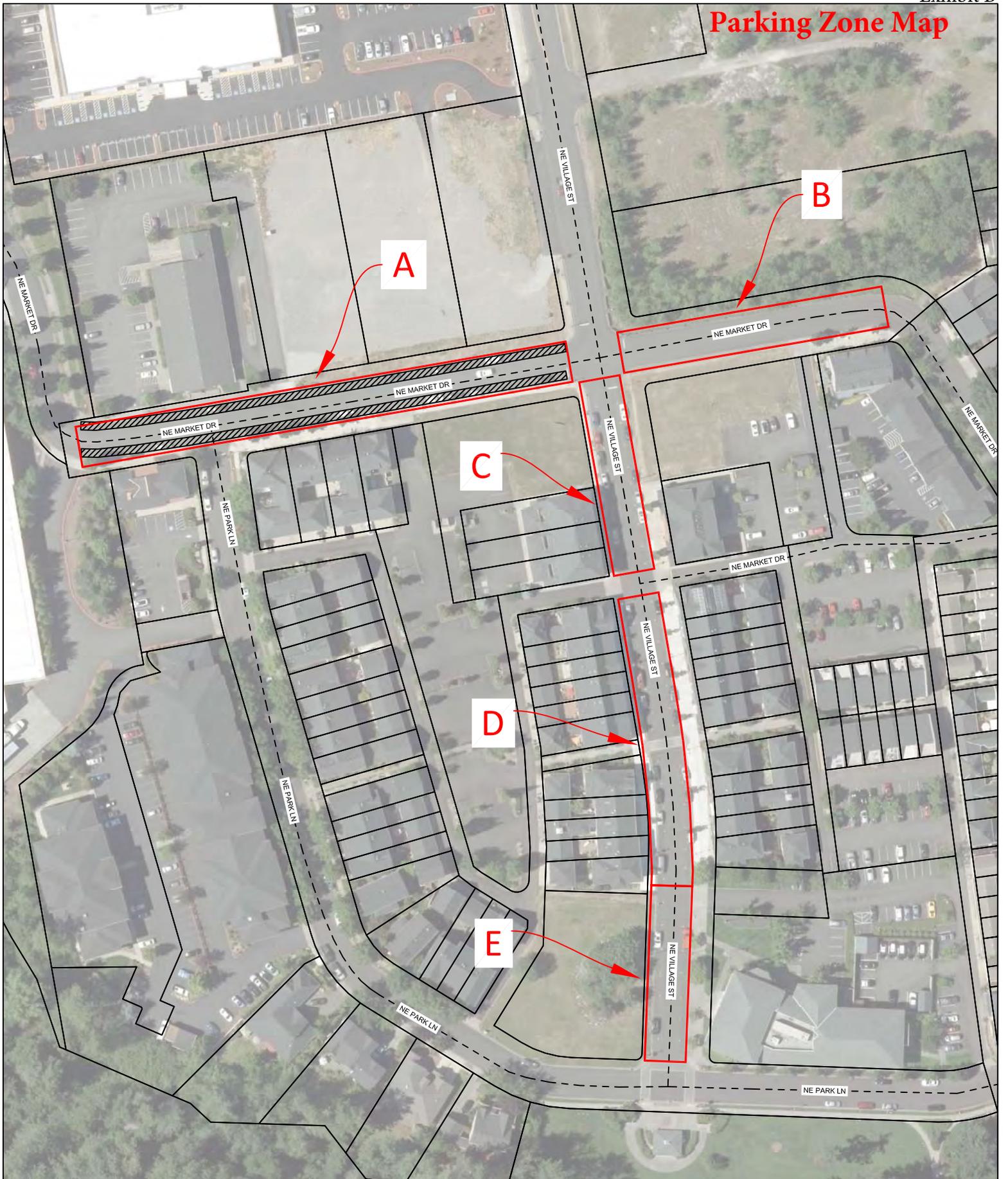


CITY of FAIRVIEW – PARKING RESTRICTION

2 HR PARKING RESTRICTION 

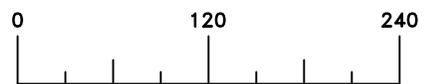
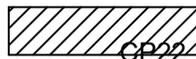


Parking Zone Map



CITY of FAIRVIEW – PARKING RESTRICTION

2 HR PARKING RESTRICTION



SCALE 1" : 120'



VILLAGE PARKING

Data **After** Zone A Restricted

Zone A = Market: Park to Village			Zone D = Village: City Hall driveway to library alley				
Zone B = Market: Village east to curve			Zone E = Village: City Hall driveway to Park				
Zone C = Village: Market to library alley							
Parking Spaces Available Per Zone			38	9	15	22	12
Date	Day	Time	Zone A	Zone B	Zone C	Zone D	Zone E
9/24/2018	Mon	10:00 AM	5	no data	5	15	3
9/24/2018	Mon	12:10 PM	11	no data	9	17	4
9/25/2018	Tues	2:09 PM	7	no data	11	20	4
9/25/2018	Tues	4:00 AM	6	no data	6	18	3
9/26/2018	Wed	9:30 AM	5	no data	6	19	0
9/26/2018	Wed	11:30 AM	7	no data	10	19	2
9/27/2018	Thurs	11:45 AM	5	no data	10	20	11
9/27/2018	Thurs	2:00 AM	7	no data	8	15	7
9/28/2018	Fri	11:00 AM	8	no data	10	20	9
9/28/2018	Fri	1:25 PM	4	no data	7	18	9
10/1/2018	Mon	11:15 AM	7	no data	12	15	3
10/2/2018	Tues	9:39 AM	5	no data	8	17	2
10/2/2018	Tues	12:55 PM	6	no data	8	16	7
10/3/2018	Wed	12:40 PM	6	no data	10	17	7
10/3/2018	Wed	3:25 PM	5	no data	8	15	5
10/5/2018	Fri	1:25 PM	5	no data	12	20	8
10/8/2018	Mon	9:48 AM	7	2	8	14	3
10/9/2018	Tues	3:00 PM	8	3	10	15	3
10/10/2018	Wed	1:05 PM	6	4	12	19	3
10/10/2018	Wed	3:47 PM	8	3	10	15	3
10/11/2018	Thurs	1:50 PM	9	1	10	19	6
10/11/2018	Thurs	4:15 PM	9	1	9	16	11
10/12/2018	Fri	2:00 PM	12	5	11	16	5
10/12/2018	Fri	4:50 PM	5	3	11	15	2
10/15/2018	Mon	8:23 AM	3	0	5	16	3
10/16/2018	Tues	12:10 PM	9	0	12	19	5
10/16/2018	Tues	2:45 PM	5	1	8	18	4
10/17/2018	Wed	1:30 PM	9	2	9	19	8
10/17/2018	Wed	3:50 PM	8	1	8	17	1
10/18/2018	Thurs	9:15 AM	1	1	8	18	3
10/22/2018	Mon	2:20 PM	6	2	7	19	5
10/25/2018	Thurs	8:30 AM	1	0	7	13	1
10/25/2018	Thurs	10:53 AM	11	1	12	19	5
10/26/2018	Fri	12:40 PM	6	2	11	20	7
10/27/2018	Fri	3:00 PM	6	0	11	18	5
10/29/2018	Mon	10:30 AM	9	2	9	19	6
10/30/2018	Tues	2:15 PM	2	1	10	20	8

Date	Day	Time	Zone A	Zone B	Zone C	Zone D	Zone E
10/31/2018	Wed	12:30 PM	8	1	9	16	4
10/31/2018	Wed	4:15 PM	4	1	10	16	6
11/13/2018	Tues	1:10 PM	5	0	10	15	8
11/14/2018	Wed	1:14 PM	7	2	10	17	3
11/14/2018	Wed	3:47 PM	6	1	9	16	5
11/15/2018	Thurs	12:05 PM	7	0	12	19	7
11/15/2018	Thurs	3:41 PM	8	1	14	17	6
11/19/2018	Mon	12:30 PM	7	1	10	20	4
11/19/2018	Mon	3:30 PM	8	3	14	19	5
11/20/2018	Tues	12:35 PM	8	1	10	18	7
11/20/2018	Tues	2:55 PM	4	2	9	16	7
11/26/2018	Mon	11:34 AM	10	2	14	21	9
11/26/2018	Mon	1:40 PM	0	no data	no data	no data	no data
11/27/2018	Tues	9:40 AM	4	0	10	17	7
11/27/2018	Tues	1:30 PM	3	1	10	16	8
11/29/2018	Thurs	1:30 PM	4	1	11	18	6
11/29/2018	Thurs	3:50 PM	7	0	8	16	8
12/3/2018	Mon	1:30 AM	4	0	10	20	7
12/4/2018	Tues	10:45 AM	12	1	15	19	7
12/4/2018	Tues	1:30 PM	0	no data	no data	no data	no data
12/5/2018	Wed	11:15 AM	4	1	12	17	4
12/5/2018	Wed	2:32 PM	4	2	10	19	1
12/6/2018	thurs	9:02 AM	4	0	8	18	2
12/6/2018	thurs	11:18 AM	6	1	13	20	7
12/7/2018	Fri	12:35 PM	2	0	9	17	3
12/7/2018	Fri	3:15 PM	6	2	12	21	5
12/10/2018	Mon	2:47 PM	9	0	13	15	4
12/10/2018	Mon	4:53 PM	5	1	13	18	4
12/11/2018	Tues	8:36 AM	0	1	7	15	3
12/12/2018	Wed	11:25 AM	13	3	14	20	3
12/12/2018	Wed	3:45 PM	2	0	11	17	5
12/13/2018	Thurs	2:30 PM	7	3	12	19	3
12/13/2018	Thurs	4:30 PM	6	0	11	19	8
12/17/2018	Mon	11:50 AM	11	2	13	21	5
12/17/2018	Mon	2:30 PM	6	1	12	19	5
12/18/2018	Tues	12:35 PM	13	1	12	21	6
12/18/2018	Tues	2:40 PM	13	1	12	16	5
12/19/2018	Wed	1:16 PM	7	0	10	20	4
12/20/2018	Thurs	9:15 AM	10	0	11	18	10
12/20/2018	Thurs	11:20 AM	10	1	12	19	4
1/2/2019	Wed	12:40 PM	6	1	9	17	3
1/2/2019	Wed	4:00 PM	6	2	13	19	7
1/8/2019	Tues	9:00 AM	0	0	7	6	0
1/9/2019	Wed	11:15 AM	9	3	14	19	5

Date	Day	Time	Zone A	Zone B	Zone C	Zone D	Zone E
1/9/2019	Wed	1:30 PM	5	1	11	18	1
1/10/2019	Thurs	2:30 PM	2	1	14	15	2
1/10/2019	Thurs	4:37 PM	7	2	12	17	6
1/22/2019	Tues	9:50 AM	2	0	12	19	4
1/24/2019	Thurs	3:00 PM	9	3	14	18	6
1/28/2019	Mon	2:00 PM	5	1	13	18	3
1/28/2019	Mon	4:45 PM	8	2	12	15	2
1/29/2019	Tues	8:19 AM	1	1	6	15	1
1/29/2019	Tues	11:15 AM	12	1	13	16	5
1/30/2019	Wed	1:25 AM	5	0	12	18	0
1/30/2019	Wed	3:55 PM	2	1	11	13	3
		Total Sum	572	92	933	1573	434
		Days of Data	91	73	89	89	89
		av/day	6.3	1.3	10.5	17.7	4.9
		# spaces	38	9	15	22	12
		av / # spaces	16.5%	14.0%	69.9%	80.3%	40.6%

Parking Spaces Available: Zone A, B & E based on curb length and using a 20ft/car average.
Zone C & D based on number of marked parking spaces.

VILLAGE PARKING

Data **Prior to Zone A Restricted**

Zone A = Market: Park to Village			Zone D = Village: City Hall driveway to library alley				
Zone B = Market: Village east to curve			Zone E = Village: City Hall driveway to Park				
Zone C = Village: Market to library alley							
Parking Spaces Available Per Zone			38	9	15	22	12
Date	Day	Time	Zone A	Zone B	Zone C	Zone D	Zone E
6/21/2018	Thurs	9:00 AM	3	0	5	0	5
6/21/2018	Thurs	5:30 PM	5	0	8	0	0
6/22/2018	Fri	11:00 AM	11	0	8	21	5
6/26/2018	Tues	3:30 PM	8	0	8	21	8
6/27/2018	Wed	12:30 PM	7	1	0	0	0
6/27/2018	Wed	3:00 PM	8	1	0	0	0
6/28/2018	Thurs	11:30 AM	15	0	10	22	5
7/10/2018	Tues	4:00 PM	6	0	8	16	5
7/12/2018	Thurs	8:00 AM	4	0	5	12	3
8/8/2018	Wed	11:00 AM	8	0	6	21	8
8/14/2018	Tues	12:30 PM	15	1	11	19	9
8/16/2018	Thurs	10:30 AM	11	0	11	19	7
8/17/2018	Fri	10:30 AM	15	0	15	21	9
8/17/2018	Fri	12:00 PM	15	0	11	21	5
8/22/2018	Wed	11:00 AM	16	2	11	16	5
8/22/2018	Wed	2:45 PM	8	0	9	21	3
8/28/2018	Tues	10:30 AM	17	2	10	21	5
8/30/2018	Thurs	4:15 PM	8	0	7	14	3
		Total Sum	180	7	143	265	85
		Days of Data	18	18	18	18	18
		av/day	10.0	0.4	7.9	14.7	4.7
		# spaces	38	9	15	22	12
		av / # spaces	26.3%	4.3%	53.0%	66.9%	39.4%

Parking Spaces Available: Zone A, B & E based on curb length and using a 20ft/car average.
Zone C & D based on number of marked



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #4	2019-14

TO: Mayor and City Council
FROM: Allan Berry, Public Works Director
THRU: Nolan K. Young, City Administrator
DATE: January 10, 2019

ISSUE:

Council update on Well #10 preliminary design and next steps in the process.

RELATED COUNCIL GOALS:

#4: Maintain and enhance the City's public infrastructure in a cost efficient manner.
Objective C: Complete pre--design for Well #10.

UPDATE:

The city has a need for additional ground water production to meet its needs for current and future firm capacity, and to fulfill all available water rights. These production needs can only be met by the construction of a new Well (#10).

Work for FY 2018-19, was planned to involve the preparation of site specific technical specifications and a site evaluation to determine the feasibility of the well location. Aquifer data will also be reviewed to corroborate the siting. Currently, staff is gathering up field data and has prepared a base-map to support the pre-design work.

The next steps are:

1. Site Well: This requires confirmation of required set-backs from all utilities and natural and constructed water resources. The proposed site will ultimately need a review by the Oregon Health Authority. The current proposed site (south of Anthem Church) is complicated by its location near an existing storm water detention pond. We are investigating innovative ways to incorporate that feature into the site.
2. Design Well: The well design will be performed in coordination with a required water source submittal to the State. We will be developing specifications which include the casing design, screen locations and depth. We have the site base map but will be adding the design features to that base map including the well and the well house.
3. Drill Well: The well drilling will include a pump test and will thereby prove the source. We will include WSE testing in the scope to identify issues with iron bacteria, etc.
4. Design Well house: Subsequent to the well design, or possibly in concert with the well design, we will engage a firm to design the well house and associated piping. This will also include the aforementioned innovative approach to dealing with the adjacent storm water facilities.

5. Construct Well House: This will require contract documents and a competitive bid process.

QUESTIONS TO ANSWER DURING THE UPCOMING MONTHS:

- Can we re-work the existing detention pond and meet state requirements?
- Do we need to do anything special with the sanitary sewer line in the pond vicinity?
- Discuss Pump/C1₂ for final pump installation.
- Sentinel well to provide notice of potential EDB migration from its' current location (see related issues below).

RELATED ISSUES:

As a result of DEQ reviews of the local aquifer, it has been determined that there may be a source of ethylene dibromide (EDB) in the vicinity of Townsend Farms. To mitigate the potential for contamination of the aquifer, and to satisfy DEQ requirements, Townsend Farms is reconstructing their well to current state standards. To identify any impacts on our water system, we will be siting a sentinel well as a means to monitor pollutant plumes prior to their entry into our system. This sentinel well will be sited in coordination with the new well #10 design, with likely construction at the same time as well #10.



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #5	2019-33

TO: Mayor and City Council
FROM: Jeremy Hanson, Civil Engineer, EIT
THRU: Nolan K. Young, City Administrator
DATE: March 1, 2019

ISSUE:

Project update of the Stormwater CIP Update from the Fairview Creek modeling project.

RELATED COUNCIL GOALS:

Goal #4: Maintain and enhance the City's public infrastructure in a cost efficient manner.

BACKGROUND:

The Consolidated Stormwater Master Plan (CSMP) was developed in 2007 and updated in 2016 by Brown and Caldwell. The CSMP outlines capital project priorities for the next 5 to 10 years and includes existing, unconstructed, and additional capital projects to reduce flooding, improve stormwater conveyance, and improve stormwater quality.

Summary of Addendum

Inconsistencies have been found among existing capital improvement projects (CIP) for the Fairview Creek and No-Name Creek basins within the CSMP, 2007, and the CSMP Update, 2016. The Consolidated Stormwater Master Plan Fairview Creek Addendum, 2019, (Exhibit A) addresses these inconsistencies by the use of an updated hydrologic model. The City provided the previously developed hydrologic model, Geographical Information System storm water shapefile data, and construction project as-builts, to Cardno, as a base for the model update. Cardno further developed the model using light imaging detection and ranging (LiDAR) elevation data from Oregon DOGAMI which was used to delineate drainage sub-basins and create cross sections of open channels and drainage ways not surveyed.

The model was then calibrated to mimic real-world flow data. Calibration was made using stream flow gauge measurements from two sources; a USGS gauge at Fairview Creek at NE Glisan St. (May 1992 to present) and the other source from two stream gauges installed at Fairview Creek and No-Name Creek at NE Sandy Blvd. and I-84 (February 2018) respectively.

Summary of Changes

In response to the results of the stormwater model, city staff has proposed changes to the CIPs identified in the Consolidated Stormwater Master Plan, 2016, with a final outcome of a newly prepared Consolidated Stormwater Master Plan. City staff further identified projects that were either completed or have been eliminated as they fall on private property. A summary of changes are:

GN 4, FV 8a, and FV 9 should be removed as they are completed.
FV 2 and NN 2 should be removed as the storm deficiencies are on private property.
FV 3d and FV 3e should be removed as the storm model shows no benefit to the minimal storage increase.
FV 8b should be removed as it captured under the Well 10 improvement.
FV 8, FV 9, FV 10, FV 11, NN 4a, NN 4b, and NN 5 should be added as newly identified stormwater CIPs.

The CSMP Update, 2016, estimates total capital project costs to be \$5,944,000. After proposed revisions, per the addendum, the estimated total capital project costs are \$2,576,187.

RECOMMENDED ACTION:

Staff recommends to review the Consolidated Stormwater Master Plan Fairview Creek Addendum, 2019, to be incorporated in the final Consolidated Stormwater Master Plan to be presented for adoption by June 30th, 2019.

ALTERNATIVE ACTIONS:

- Do not review the Consolidated Stormwater Master Plan Fairview Creek Addendum, 2019.
- Defer review to a later meeting to allow for additional research on areas of concern or where questions remain unanswered.

BUDGET IMPLICATIONS:

The plan contains the CIP projects planned to be undertaken by the City. All these projects would need budgetary authority and therefore the basic adoption of the plan does not have direct budget implication.

COUNCIL ALTERNATIVES:

1. Staff Recommendation: Review the Consolidated Stormwater Master Plan Fairview Creek Addendum, 2019, for the preparation of the final Consolidated Stormwater Master Plan.
2. Defer reviewing to a later meeting to allow for additional research on areas of concern or where questions remain unanswered.



Prepared For
City of Fairview, Oregon

January 2019, Draft

Executive Summary

Understanding existing stormwater infrastructure and watershed hydrology is a critical component to stormwater master planning. Hydraulic-hydrologic models provide an effective way to quantify the performance of a watershed and storm system. As a planning tool, one-dimensional modeling provides information on sewer capacity, velocities, and the presence of flooding. This information can be used by the City to identify and prioritize stormwater improvements, anticipate future infrastructure improvement costs, and increase public safety.

This report presents the methodology used to create and calibrate hydraulic-hydrologic models within the City of Fairview's city limits. A 1D hydraulic model was created to represent Fairview and No-Name Creek watersheds.

Specifically, the 1D model will be used to identify capital improvement projects.

The project entails characterizing Fairview's watersheds, which include Fairview Creek and No-Name Creek. This was completed by delineating basins for all areas within the City of Fairview. A total area of 1,183 acres was delineated and incorporated into the model. Boundary conditions were also established that considered additional acreage upstream of Fairview's city limits. The boundary conditions contribute flow to the modeled area. Additionally, hydrologic infiltration parameters were determined.

An assessment of the City's stormwater GIS data was reviewed for completeness and used in the development of the model. 477 nodes and 463 links were used to represent the City of Fairview storm system. The hydraulic model was calibrated and verified using data collected from 1 storm event that occurred February 28th, 2018.

A lack of historical gauged stream data for Fairview Creek and No-Name Creek within the study area limited available calibration parameters for the system. These limitations restricted available calibration storm events to the timeframe between February and May 2018. A stream gauge managed by U.S. Geological Survey (USGS) on Fairview Creek at NE Glisan Street (USGS 14211814) with a record starting in May 1992, allowed for the capture of a 25-year equivalent gauged storm at the upstream boundary of the study area. A low-intensity storm measured on February 28, 2018 was used to evaluate hydraulic/hydrologic accuracy within the model, and the 25-year equivalent storm measured December 7, 2015 was used to calibrate the upstream boundary condition at NE Glisan Street.

This model was used to conduct a full master plan evaluation of the existing Fairview Creek and No-Name Creek storm system in order to identify required capital improvement projects to meet the public's needs, according to the City's design standards. Additionally, once the existing system deficiencies were defined, the model was expanded to represent future build-out within the City of Fairview.

This report is organized into five sections. Section 1 provides an overview of the purpose for the 1D modeling, area modeled, and general description of how a 1D model is developed. Section 2 provides a description of the variables and parameters used to develop the model. Section 3 provides a description of the model calibration process and model results. Section 4 describes the conveyance evaluation criteria, known problem areas, model results and deficiencies. Section 5 describes the capital improvement project (CIP) development, design, cost estimates, and table that describes and scores CIP projects, then lists those projects in order of prioritization and ranking.

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Acronyms and Abbreviations

CIP	Capital Improvement Project
CN	Curve Number
CSPM	City of Fairview Consolodated Stormwater Master Plan
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map

GIS	Geographic Information System
LiDAR	Light imaging, Detection, and Ranging
NRCS	Natural Resources Conservation Service
SCS	Soil Conservation Service
TBD	To Be Determined
UIC	Underground Injection Control
USDA	U,S Department of Agriculture
USGS	U.S. Geological Service

1 Introduction

This report describes the modeling process, Capital Improvement Project (CIP) evaluation process, and recommended CIP addendums for the City of Fairview Consolidated Stormwater Master Plan (CSMP). The primary purpose of this project is to address inconsistencies found concerning existing CIPs for the Fairview Creek and No-Name Creek basins.

1.1 Goals

The goals of this project are to conduct a comprehensive hydrologic/hydraulic (H/H) model update for the Fairview Creek and No-Name Creek basins with the intent to evaluate existing CIPs and identify potential additional CIPs needed to meet the City of Fairview's stormwater goals. The total project effort included the following tasks:

- > Review the City's existing data including: existing XPSWMM models, Geographic Information System (GIS) data, and as-built data
- > Conduct interviews with City staff to identify known stormwater issues within the study area
- > Identify data gaps
- > Conduct field investigations to fill identified data gaps
- > Data preparation including: basin, sub-basin, land use, and soil mapping
- > One-dimensional (1D) Hydraulic model development and calibration
- > Model evaluation
- > CIP development
- > Engineering cost estimates
- > CIP prioritization

1.2 Report Organization

This report is organized into five sections:

- > **Section 1 – Introduction:** provides a general overview and the purpose for this project, the project study area, modeling software selection, and a general description of how a 1D model is developed.
- > **Section 2 – Model Development:** provides a description of the variables and parameters used to develop the hydraulic model. This section covers model hydrology, hydraulics, and boundary conditions.
- > **Section 3 – Calibration and Results:** provides a description of the model in detail, the model calibration process, basin maps, model results and inundation maps.
- > **Section 4 – Storm System Capacity Evaluation:** describes the conveyance infrastructure evaluation criteria, known problem areas, model results, and identified deficiencies.
- > **Section 5 – Capital Improvement Projects Update:** describes the CIP development process, design, and cost estimates.
- > **Appendix A – Model Development**
- > **Appendix B – Reports and Studies**

1.3 Computer Model Selection

The use of 1D models allows channelized flows such as creeks, rivers, and pipes to be analyzed using cross sectional data along the flow line. These cross sections give information about the topography of the channelized flows. The water depths and velocities are then calculated using one-dimensional governing equations which solve for the depth of flow at each model node. A 1D model uses governing equations to solve for depth of flow, which is the single dimension which gives the model its classification. When considering unsteady flows along structures – such as through culverts, around bridges, or over weirs – upstream and downstream boundary conditions are used in order to see the change in flow when water moves through them.

XPSWMM was the selected hydrologic and hydraulic computer model. XPSWMM is based on the EPA SWMM model developed in the 1970's as a comprehensive urban runoff model for continuous and event based simulation. XPSWMM was selected for its user friendly model development, report generation, ability to import and export GIS shapefiles, data management tools, and due to existing models of the study area having been developed previously in XPSWMM.

1.4 Study Area

Two creeks analyzed in this study area are: Fairview and No-Name Creek. Fairview Creek runs from the southern edge of the city limits meandering through the city. No-Name Creek is part of the Fairview Creek watershed and runs on the eastern side of the city before discharging to Fairview Creek. Fairview Creek drains into Fairview Lake which then drains into the Columbia Slough by means of a mechanical gate controlled structure.

Fairview Creek originates from the Wetlands on the northeast side of Grant Butte in the City of Gresham, travels northward running between the Salish Ponds and then discharging into Fairview Lake. The study area for this project limits the Fairview Creek basin between NE Glisan Street and Fairview Lake. No-Name Creek originates south of NE Glisan Street and discharges to Fairview Creek north of NE Sandy Blvd and east of NE Fairview Ave. The study area encompasses the entire No-Name Creek basin. A map showing each study area basin is shown in Figure 1-1 Fairview Creek Study Area and Figure 1-2 No-Name Creek Study Area.

The Fairview Creek and No-Name Creek basins were divided into 214 sub-basins. See Exhibits 5 and 6 in Appendix A for a listing of each sub-basin for Fairview Creek and No-Name Creek, respectively.

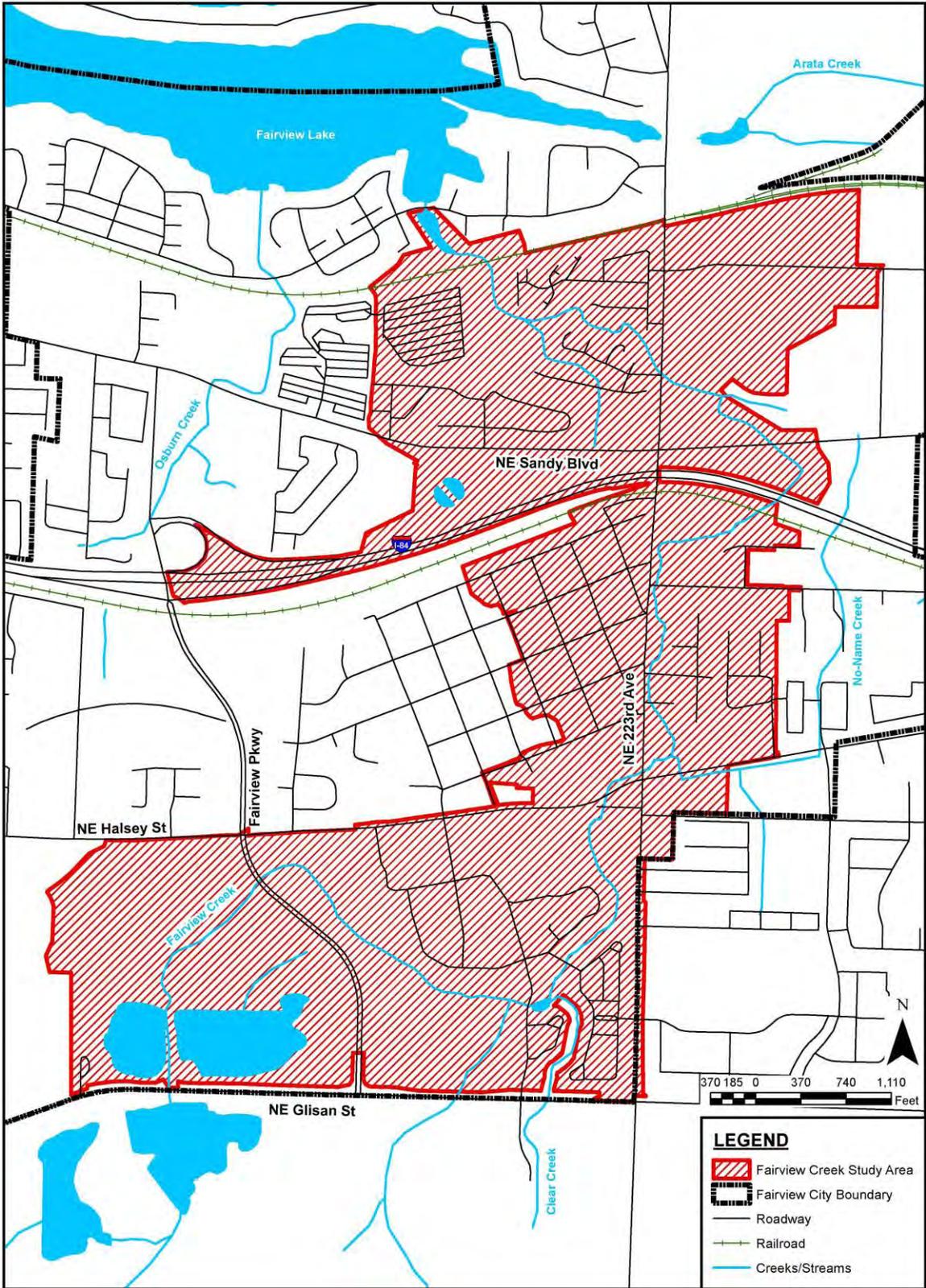


Figure 1-1 Fairview Creek Study Area

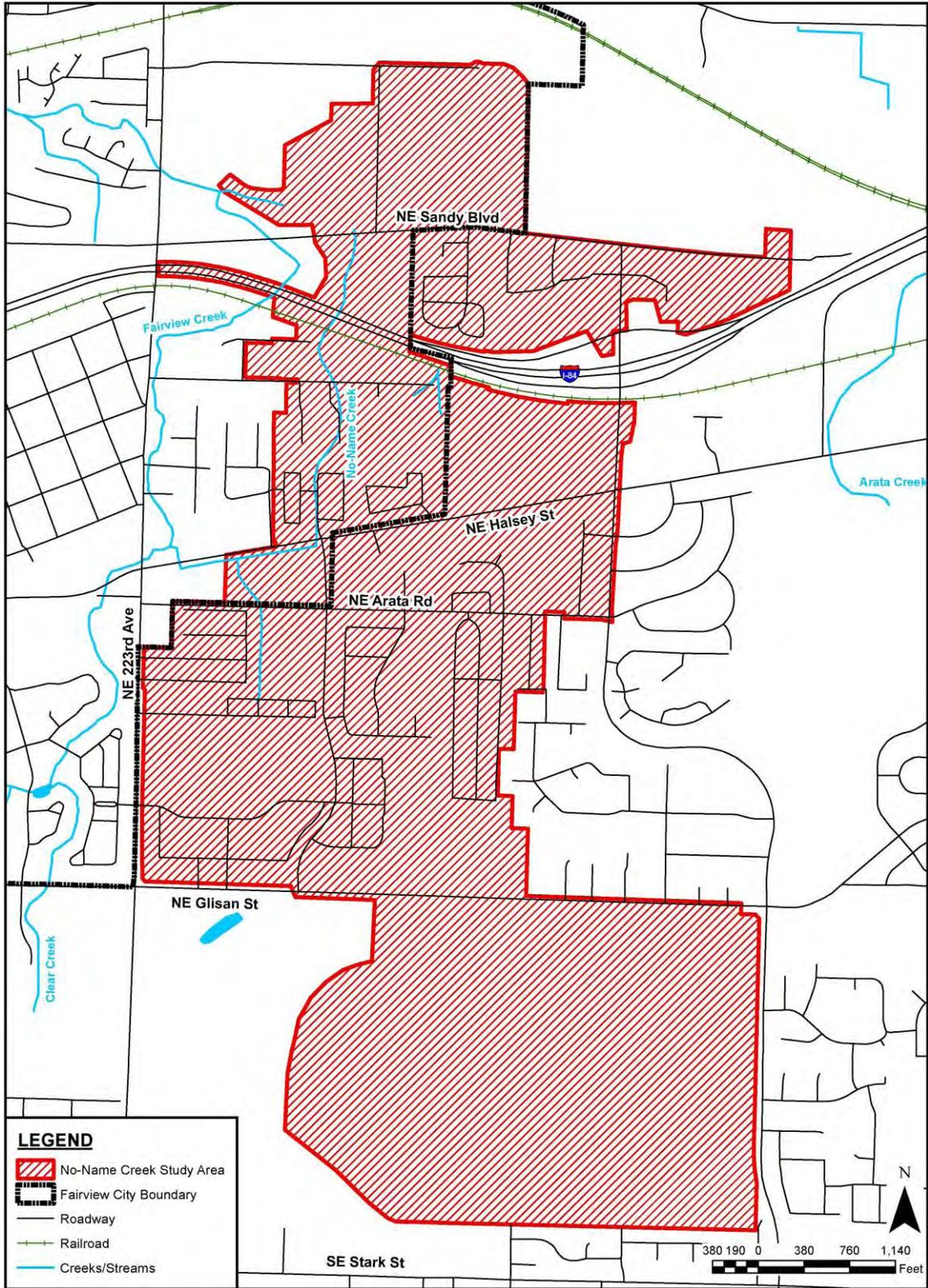


Figure 1-2 No-Name Creek Study Area

2 Model Development

This section presents the methodology used to develop the 1D hydrologic/hydraulic model. Model development has three primary components:

- > **Hydrology:** The hydrologic analysis defines the amount of runoff generated within each watershed. Hydrologic parameters include basin area, soil infiltration, evaporation, and surface storage.
- > **Hydraulics:** The hydraulic analysis defines how generated runoff moves through the watershed. Hydraulic model components include closed conduits, open channels, and storage facilities. Hydraulic parameters include system geometry, Manning's roughness coefficients, and entrance/exit losses.
- > **Boundary Conditions:** Boundary conditions define the hydrologic/hydraulic conditions at the upstream and downstream limits of the model. Boundary conditions can be entered as either a flow, stage, or complex hydrologic parameters.

2.1 Model Description

The study area model includes Fairview Creek, No-Name Creek, and Clear Creek. Fairview Creek is the dominant creek within the study area and is modeled from NE Glisan Street to Fairview Lake. Fairview Lake is pump controlled and discharges to the Columbia Slough. No-Name Creek is located east of Fairview Creek and discharges to Fairview Creek north of NE Sandy Blvd. No-Name Creek was modeled from NE Arata Road to its confluence with Fairview Creek. Clear Creek is a minor tributary of Fairview Creek and the two connect north of NE Glisan Street between NE Market Drive and NE Park Lane. All Creeks flow south to north. The contributing basin contained in the model area is approximately 1,183 acres and was divided into 214 sub-basins.

An upstream contributing basin outside the modeled area was delineated for Fairview Creek and represented as an upstream boundary condition (see discussion in Section 2.4.1). The Fairview Creek watershed is highly developed and extends through the City of Gresham.

The hydraulic model includes 477 nodes and 463 links representing 8.2 miles of conduit and 4.4 miles of open channels. The model includes four weirs.

The following exhibits, included in Appendix A, provide additional information on the Fairview – No-Name Creek model: Exhibit 5 and Exhibit 6 identify each sub-basin used to develop the model. The Fairview Creek Summary Sheet and No-Name Creek Summary Sheet provide an overview of model conditions. The Fairview – No-Name Creek Area Table provides hydrologic parameters, such as impervious, pervious and total area, sub-basin width, sub-basin slope, and pervious curve number.

2.2 Hydrologic Data

The runoff function of XPSWMM generates surface runoff based on design or measured rainfall conditions, impervious cover, and soil groups. The SWMM Runoff Curve Number Method was selected for this analysis. This method was selected for its ability to combine losses and calculate excess runoff due to interception, depression storage, and infiltration.

2.2.1 Basin Delineation

Fairview Creek and its tributary No-Name Creek provide drainage to the main portion of the City of Fairview. The total acreage of the City of Fairview is 2,258 acres (3.53 square miles). Of the total drainage area of 3,738 acres, 693 acres lie within city limits. The total drainage area for each creek basin is summarized in Table 2-1.

Table 2-1 Watershed Area Summary

Creek	Watershed Area, acres	Study Area, acres
Fairview	3,107	552
No-Name	631	631
Total	3,738	1,183

37 acres of the study area drain away from the identified watersheds through Underground Injection Control's (UICs) or other means and are not accounted for in this analysis (See Section 0 Excluded Areas). Some basin boundaries extend beyond Fairview city limits, but are not a part of an upstream boundary condition (See Section 2.4.1 Upstream Boundary Conditions). These basins were delineated and included within the study area. Modeled basin drainage area totals are summarized in Table 2-2.

Table 2-2 Drainage Study Area Summary (Modeled Area)

Creek	Study Area Within City Limits, acres	Study Area Outside City Limits, acres	Total Study Area, acres
Fairview	552	0	552
No-Name	141	490	631
Total	693	490	1183

Basin information that contributes upstream of the study area is discussed within Section 2.4 Boundary Conditions, of this report. Each watershed within the study area was divided into several sub-basins based on ground topography and storm networks.

Sub-basin delineation was mapped manually using the City's stormwater infrastructure shapefiles and digital elevation data. Sub-basin parameters such as area, slope and basin flow length were also determined during the delineation process. Sub-basin flow length was used to calculate basin width.

Excluded Areas

Portions of the City of Fairview do not drain to one of the identified creeks modeled as part of this analysis. Five sub-basins were excluded. These areas were identified as draining to UIC systems, or draining away from the study area. Hydraulic models were not created for these areas (see Technical Appendix A: Exhibit 7 – Excluded Areas).

2.2.2 Impervious Percentage

Existing Conditions

The total impervious coverage for the study area is 46.3% of the total area. The city of Fairview is an urban area with some industrial areas as well as open spaces and recreational sites. Fairview is highly developed, and impervious coverage is generally homogeneous throughout the city with pockets of high and low impervious areas based on the zoning designations, such as industrial areas and city parks. Table 2-3 summarizes impervious, pervious, and total basin area in the existing conditions for the 1D model.

Table 2-3 1D Drainage Basin Area Summary

Creek	Impervious Area, acres	Pervious Area, acres	Impervious Percentage	Total Basin Drainage Area, acres
Fairview	263	289	47.6%	552
No-Name	285	346	45.2%	631
Total	548	635	46.3%	1183

Build-Out Conditions

Impervious coverage for the future build-out condition was developed based on the City of Fairview’s comprehensive plan (See Figure 2-1). Impervious percentages for each basin were increased based on an assumed maximum build-out percentage for each zone in the comprehensive plan. Table 2-4 outlines the assumed maximum impervious percentages for each zone listed in Figure 2-1.

Table 2-4 Build-Out Impervious Cover By Zone

Comprehensive Plan Zone	Maximum Build-Out Impervious Percentage
Commercial	95
General Industrial	90
Light Industrial	90
Residential Light Density	80
Residential Medium Density	80
Village	95
Parks	By Basin
Public	By Basin
River Oriented	By Basin

Areas that are zoned Public, Parks, and River Oriented were looked at on a case by case basis, as these areas don’t have a homogeneous impervious cover. Basins that contained above-ground stormwater facilities and greenways that were not likely to be covered by impervious area were considered to remain the same between existing and build-out conditions.

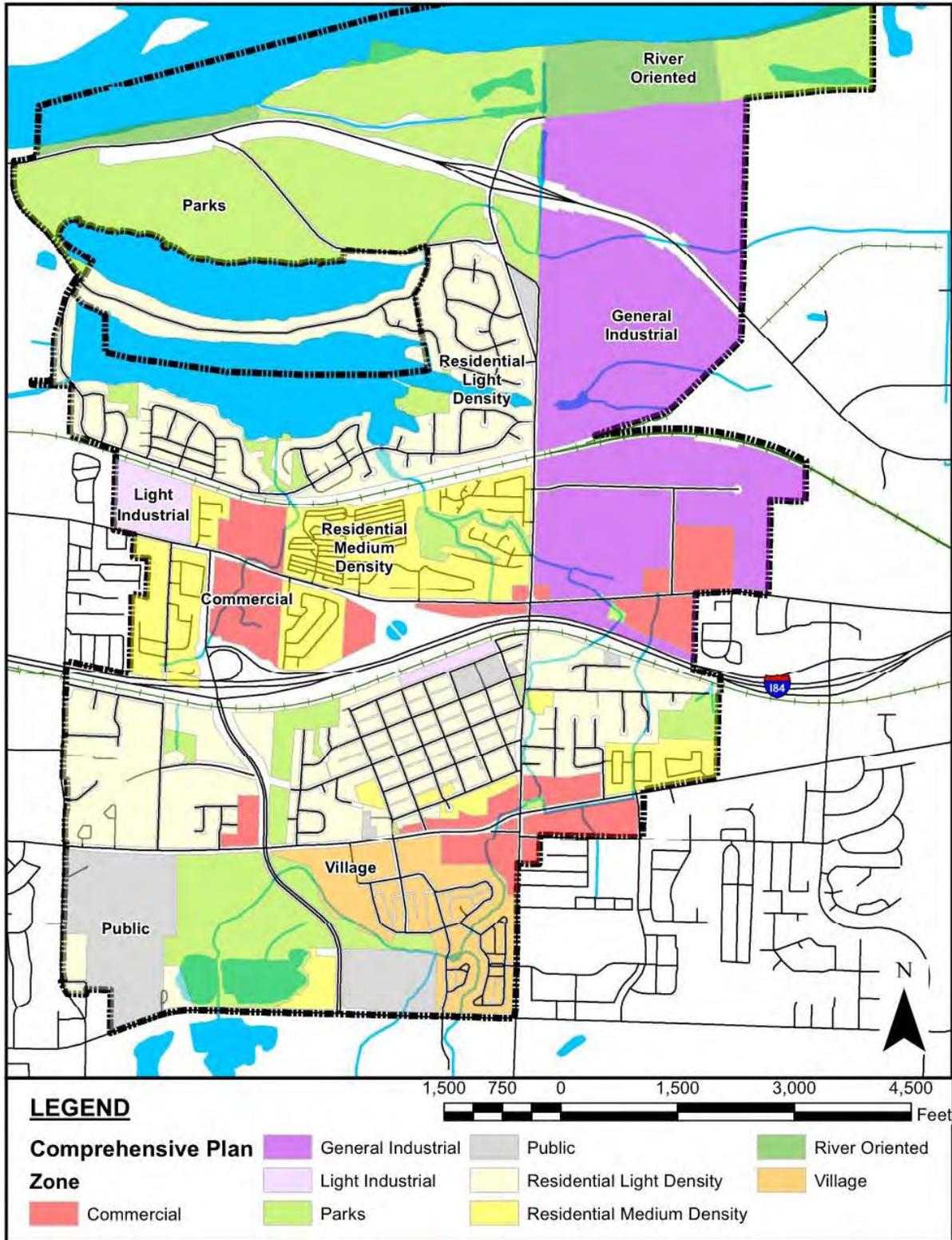


Figure 2-1 City of Fairview Comprehensive Plan

2.2.3 Width and Slope

The width parameter determines the lag time between the peak precipitation and the peak runoff. In other words, a smaller width will attenuate the flow while a larger width will have a quicker peak time for the same basin area. The width parameter is the distance perpendicular to flow path.

ArcMap version 10.4.1 was used to calculate basin flow length from Light imaging, Detection, and Ranging (LiDAR) elevation data. Statistics were generated for each sub-basin from the calculated flow length raster. A flow length of two standard deviations was used for each sub-basin, assuming a normal distribution, to capture 50% of the data. This was done to reduce the impact of outlier data that otherwise skewed the desired outcome beyond acceptable bounds.

The slope parameter also determines the lag time between the peak precipitation and peak runoff. A steep slope will have a shorter attenuation of flow while a flatter slope will have a longer response time.

The average basin slope used for the Fairview Creek study area was 1.27% and the average basin slope used for the No-Name Creek study area was 2.96%. See Technical Appendix A: Exhibits 5 and 6 Basin Delineation Summary Tables, for a listing of the width and slopes for Fairview Creek and No-Name Creek, respectively.

2.2.4 Infiltration and Surface Parameters

Hydrologic soil groups are based on estimates of infiltration rates. These infiltration rates are determined by soil types and then are categorized into four groups (A, B, C, and D), where Group A has a high infiltration rate and Group D has a very low infiltration rate. The three predominant groups within the site area are B, C, and C/D. In areas where Group C/D is identified, we are assuming a developed/ impacted area, and Group D is assumed. (See Technical Appendix A: Exhibit 1A: USDA Soil Group).

The Curve Number Method is the selected infiltration method. This method uses pervious and impervious land areas, runoff curve numbers (CN) and a design storm. The runoff curve numbers are determined based on the land use, cover type, hydrologic condition and hydrologic soil groups (See Technical Appendix A: Exhibit 1C NRCS Curve Numbers).

Depression storage is the initial abstraction by the process of surface ponding, surface wetting, interception and evaporation. All depression storage must be filled before runoff begins and hence influences the volume that is conveyed downstream. Depression storage controls the amount of runoff that immediately runs off a surface. A percentage of Zero Detention Storage can be applied to represent an amount of impervious area that has no depression storage, and contributes 100% of its rainfall volume to surface runoff. Table 2-5 lists the depression storage parameters that were used to calibrate the model.

Table 2-5 Depression Storage Infiltration Parameters

Impervious Depression Storage, inches	Pervious Depression Storage, inches	Zero Detention Storage, %
0.0625	0.2500	25%

2.2.5 Rainfall and Evaporation

Rainfall Data

Fairview's average annual rainfall is 45-inches. Storms during the winter rainy season are often of long duration/low intensity extending two to three days. Shorter duration/high intensity events are typical in spring, and last a few hours. Rain gauge data was used from the Portland-Troutdale Airport rain gauge (KTTD).

Table 2-6 Rain Gauge Location Table

Gauge Name	Period of Record Used (Data and Time)
Portland-Troutdale Airport (KTTD)	2/28/2018 1:19 - 23:53 12/7/2015 - 12/8/2015 0:00 - 24:00, 0:00 - 16:30

Evaporation

Evaporation is used to renew surface depression storage. It is subtracted from the rainfall at each time step and is important to continuous simulation modeling. A default value of 0.1 in/day was used as a conservative estimate.

2.3 Hydraulic Data

2.3.1 Data Sources

The City of Fairview provided the primary data sources for this analysis. City GIS shapefiles were received in July 2016 and September 2017 and include; FVSTORM_CatchBasins, FVSTORM_Cleanouts, FVSTORM_Manholes, FVSTORM_Culverts, FVSTORM_Facilities, FVSTORM_Pipes, FVSTORM_Outfalls, FVSTORM_Swales, FVSTORM_OtherLines, and FVSTORM_OtherPoints. Data from these shapefiles were imported into the XPSWMM hydraulic model. The GIS shapefile data was reviewed for accuracy and as-builts provided by the city were used to fill in and add data to the model. A meeting with Public Works and the Public Works Operations and Maintenance staff was also held on January 9th, 2018 in order to learn about known problem areas so they can be captured within the model appropriately.

The City provided XPSWMM models previously developed that encompassed Fairview and No-Name Creek. These models were developed by the City of Gresham for their Fairview Creek Stormwater Master Plan (May 2003), and the City of Wood Village for their Storm Water System Facility Plan Update (November 2011).

LiDAR data from Oregon DOGAMI includes tile bh45122e4. The LiDAR data includes 3 feet by 3 feet cell size in Esri grid format. Structures and vegetation have been removed from the bare-earth file so that only ground elevation data is provided. The LiDAR data was used to delineate drainage sub-basins, and create cross sections of small open channels and drainage ways not surveyed. Additionally, LiDAR data was used to estimate rim elevations for storm structures (manholes, catch basins) where GIS data was unavailable.

Additional information, including as-constructed plans, verification of GIS data and photos were obtained.

2.3.2 Conveyance System Information

Node and Conduit Data

The City of Fairview GIS data for the City's storm sewer system contained: pipe identification, pipe length, upstream invert, downstream invert and pipe diameter within the FVSTORM_Pipes shapefile. FVSTORM_Manholes, catch basin, node identification and rim elevations were provided within the FVSTORM_Manholes, FVSTORM_CatchBasins, and FVSTORM_OtherPoints shapefiles.

In the XPSWMM model, Cardno has attempted to maintain the naming convention established within the City of Fairview GIS data. For all links, the Object ID was used. This is a unique number for all pipes. For all nodes, the Node ID was used. In cases where this information was not available, a unique ID easily distinguishable from the Object ID format was used instead.

The hydraulic model is limited to mainline storm drain lines and does not include connections to catch basins. Catch basins included in the model are limited to those flow-through structures or those collecting a large drainage area. Drainage basins were directed to the upstream manhole when catch basins were not included within the model.

Node and Conduit Roughness Coefficients

The roughness coefficient (Manning's "n") is used to estimate friction loss within an open channel or closed conduit. For this analysis a value of 0.013 was used for all storm pipes.

Manning's "n" values used for culverts were defaulted to 0.013, with higher values ranging from 0.012 to 0.035 where appropriate. These values were obtained by previous master plans in Wood Village and Gresham.

Open Channel Data

Open channels include Fairview Creek, its tributary No-Name Creek, and Clear Creek, along with smaller drainage channels including conveyance ditches, such as roadside ditches. Cross sections were taken where the channel had visible changes in geometry.

Left and right banks were estimated from cross sectional and photo information. Channels are identified within XPSWMM by the abbreviated creek name followed by the link number counting downstream to upstream (e.g. FVC_0140 is the 14th link modeled in Fairview Creek).

Open Channel Roughness Coefficients

Manning's "n" values can be estimated from published tables and from flow and stage measurements. This analysis used flow and stage data when available, and published table values when unavailable. The selected Manning's "n" values used for Fairview's streams range from 0.005 to 0.500. Specifically, the overbanks of the streams ranged from 0.005 to 0.500 and the main channel ranged from 0.0050 to 0.100. The Manning's "n" determination methodology is discussed in Section 3.

Manning's "n" tables provide Manning's "n" values for different vegetation conditions. Table 3-1 Manning's "n" Values from *HEC-RAS River Analysis System, Hydraulic Reference Manual* by US Army Corps of Engineers dated February 2016 were used as a reference (See Technical Appendix A: Table 3-1 Manning's "n" Values).

2.3.3 Culverts and Bridges

The City of Fairview has several culvert and bridge structures. These structures range from the large box culverts that pass flow under I-84 to 18-inch driveway culverts. Culverts were modeled to the best data available. Photos and survey information were used to classify inlet type, material and shape. Previous data was also used from the Gresham and Wood Village master plans where no field data was available.

All culverts and bridges have been assigned an inlet type and an entrance/exit loss coefficient. XPSWMM uses the selected inlet type for inlet controlled conditions. In all other conditions, XPSWMM uses the specified entrance/exit loss coefficient (See Technical Appendix A: Exhibit 3: Culvert Location Map and Culvert Summary Table). Entrance and exit loss coefficients were obtained from *Table 12 – Entrance Loss Coefficients from the Hydraulic Design of Highway Culvert HDS No. 5*. Common entrance loss coefficients range from 0.2 to 0.9 and exit loss coefficient is the typical value of 1. (See Technical Appendix A: *Table 12 – Entrance Loss Coefficients*).

2.3.4 Detention Facilities

The City of Fairview maintains GIS data of known public and private detention facilities throughout the City. Stormwater facilities that retain stormwater runoff for either treatment or flow control include

underground detention pipes, surface ponds, wetlands and swales. A control structure (with orifices and weirs) or a pipe, limits the amount of water leaving the facility.

The largest detention facilities were included within the hydraulic model. As-built documents provided by the City of Fairview were used. (See Technical Appendix A: Exhibit 3: Detention Facility Location Map).

2.4 Boundary Conditions

2.4.1 Upstream Boundary Conditions

Fairview Creek's headwaters is outside the study area; therefore upstream boundary conditions were developed. Upstream boundary conditions establish discharge rates entering the hydraulic model at Fairview's city limit. No-Name Creek is completely contained within the study area, and is included within the hydraulic model. No definition of upstream boundary conditions is required for this.

A complete hydraulic analysis of the upstream basin is outside the scope of this project. For this report, an idealized one node upstream basin was developed for Fairview Creek. The upstream basin has attempted to reproduce the peak flows and approximate volume generated. This was accomplished through virtual links that lag the direct basin flow before entering the modeled system.

Upstream basins were delineated based on information from the Fairview Creek Stormwater Master plan developed by the City of Gresham (2003) and the Wood Village Storm Water System Facility Plan Update (2011). Upstream basins are located between the City of Gresham and the City of Fairview, within Multnomah County. The primary land use is residential. The upstream basins contain the primary creek channel, but are dominantly comprised of developed area with associated underground storm sewer infrastructure.

Table 2-7 Basin Upstream Area Summary Table

Creek	Total Upstream Drainage Area, acres
Fairview	2,555
No-Name	0

2.4.2 Downstream Boundary Conditions

The Columbia River Slough is the ultimate discharge location for Fairview's streams. Fairview Creek discharges into Fairview Lake then into the Columbia River Slough. No-Name Creek is a tributary of Fairview Creek, thus discharges into Fairview Creek.

Downstream boundary conditions were evaluated for just Fairview Creek. Fairview Lake is pump-controlled and maintains a consistent elevation of 14 feet. Therefore, the downstream boundary for Fairview Creek is a fixed backwater elevation.

2.4.3 Initial Conditions

An initial water level was set for Fairview Lake at 14 feet. A constant inflow was entered to account for stream base flow. This flow is entered at the upper most node along with the upstream basin information. The base flow was established as part of the calibration process following a review of information gathered by the USGS.

3 Calibration and Results

A key goal of this project was to develop a well-calibrated, existing-conditions model of the City of Fairview storm system within the Fairview Creek and No-Name Creek basins. An accurate existing conditions model requires both reliable hydrologic data and a truthful depiction of physical conditions. As described in the sections above, the hydrologic and hydraulic existing conditions have been obtained and incorporated into the XPSWMM model, setting the foundation for model calibration.

Model calibration is the comparison of stage, flow and volume from the model output to gauge readings, flow measurement, and observations of storm events. Parameters are then adjusted to match a historical calibration storm. This is an iterative process, where one parameter is changed and output is observed until stage, flow, and volume are considered well-matched.

The calibration approach began with identifying discrepancies within the model. Where discrepancies occurred, further investigations were completed to determine whether the discrepancy was a model calibration issue or if there was something in the field creating the discrepancy, such as incorrect inverts, pipe slopes, or partially blocked pipes. Structures were identified and presented to City staff for field verification by either surveying the structure or locating as-built drawings. Drainage reports were obtained where available and contributing area confirmed. Once field conditions were confirmed, the model was calibrated with a review of roughness, and other losses. Finally, the model was refined with infiltration parameters.

3.1 Storm Events

Due to a lack of historical gauged data available for Fairview Creek and No-Name Creek between Fairview Lake and NE Glisan Street, calibration storms applicable to the study area were limited to a time period between February and May of 2018. One storm was selected from this data and used to evaluate model accuracy. This storm occurred on February 28th, 2018 and lasted approximately 24 hours. Historical gauged data was available for Fairview Creek at NE Glisan Street (USGS 14211814), and this data was used to calibrate the upstream boundary condition for Fairview Creek. A peak flow rate at NE Glisan Street from a storm on December 7, 2015 was used to calibrate the upstream boundary condition. This storm is roughly equivalent to a 25-year event.

3.2 Sensitivity Analysis

A sensitivity analysis was completed to find which hydrologic parameters are most likely to adjust model results. The sensitivity parameters checked are: area, impervious percentage, width, slope, impervious and pervious depression storage, impervious and pervious Manning's "n", and two parameters related to infiltration; Soil Conservation Service (SCS) curve number, and initial abstraction factor.

The sensitivity analysis found area and impervious percentage are the most sensitive parameters, although these parameters are physically based and are fixed. Width is somewhat sensitive with slope being less so. SCS curve number is the most sensitive of the two infiltration parameters. This value is set by Fairview's soil and cover types, and influences the sensitivity of the pervious depression storage and Manning's "n".

3.3 Gauge Measurements

Data used to calibrate the model was gathered from two sources. The first source is USGS gauge 14211814 located on Fairview Creek at NE Glisan Street with a record from May 1992 to the present. The second source is a set of stream flow gauges installed by the City on Fairview Creek and No-Name Creek. These gauges are located at NE Sandy Blvd and at I-84 respectively, and were installed in February 2018 to capture flow data downstream of NE Glisan Street.

Table 3-1 lists the locations of gauge data used for calibration. The gauge type and recorded storm events are listed in the table (See Appendix A: Exhibit 4: Gauge Location Map).

Table 3-1 Gauge Measurement for Fairview Creek and No-Name Creek

Gauge Location	Gauge Location in Model	Type	Storm Events
Fairview Creek at NE Glisan St	FVSTORM-01451M	Stream	December 7, 2015 & February 28, 2018
Fairview Creek at NE Sandy Blvd	FVSTORM-01374S	Stream	February 28, 2018
No-Name Creek at I-84	FVSTORM-00914S	Stream	February 28, 2018

3.4 Model Analysis

The calibration process began by first reviewing the gauges installed by the City. Flow data was provided and used for calibration. Along the creeks, locations with downstream gauges were calibrated first, followed by upstream boundaries. Only minor adjustments to the study area were made to calibrate the model, with the addition of creek base flow, and the adjustment of width and slope for one large basin south of NE Arata Road for No-Name Creek. A complex hydrological system was developed for the upstream basin of Fairview Creek south of NE Glisan Street. This hydrology consists of a split basin and several links to attenuate the flow. This was done to calibrate the hydrology based off the December 7th, 2015 storm which approximates a 25-year storm event.

Being “well calibrated” was defined by comparing the shape and peaks of the creek’s hydrograph. A good match was considered when a small change in peak flow did not result in a large change in volume. The XPSWMM results provide a continuity check, a comparison between flow generated during the model run and flow leaving the model. The check accounts for initial and final storage volumes. A discrepancy occurs when there is instability within the model, and the program fails to converge flow results between conduits. The XPSWMM user manual has provided the following ranges for model performance as listed in Table 3-2 below.

Table 3-2 Continuity Check

Continuity Error as Percentage	Rating
Under 1	Excellent
1 to 2	Great
2 to 5	Good
5 to 10	Fair
10 to 25	Poor
25 to 50	Bad
Above 50	Terrible

Continuity error should be below 2% for the overall model. Note that a positive continuity error means loss of volume occurred through the model run, and a negative continuity error means gain of volume occurred through the model run.

3.5 Calibration Results

Figure 3-1, Figure 3-2, and Figure 3-3 show the calibrated model results at the City installed gauges in Fairview Creek, No-Name Creek, and the USGS gauge for Fairview Creek at Glisan Street. The two City installed gauges illustrate the February 28, 2018 event while the Glisan gauge illustrates the December 7, 2015 event. The December 7, 2015 event was used to calibrate the upstream boundary condition at Glisan Street as it approximates a 25-year event.

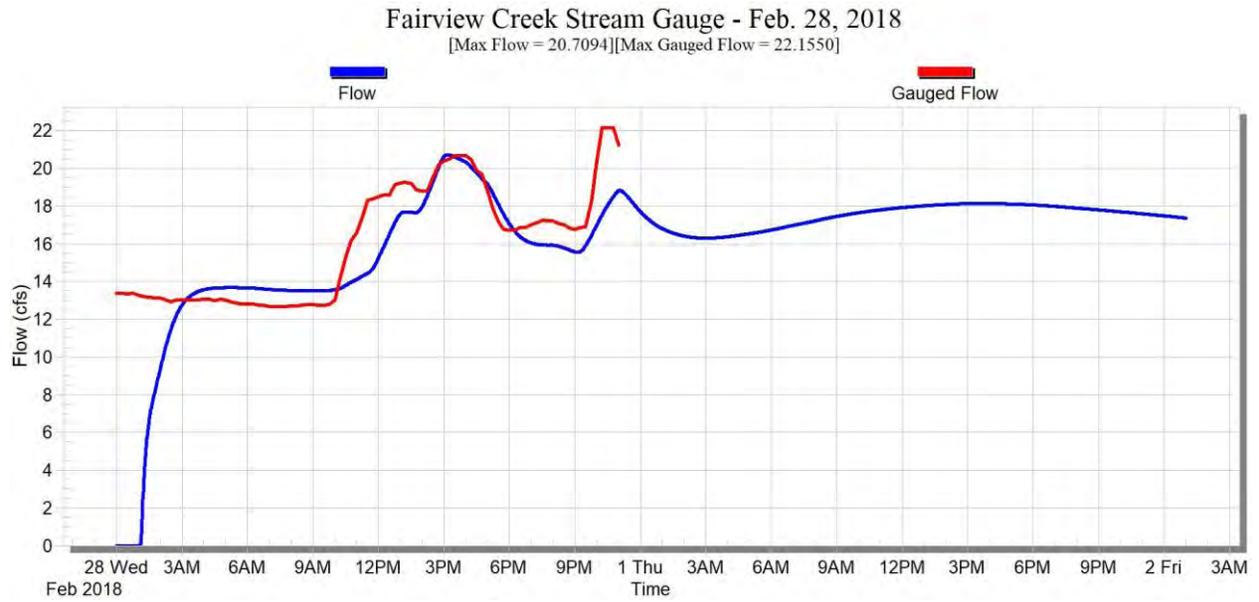


Figure 3-1 Fairview Creek Gauge – February 28, 2018

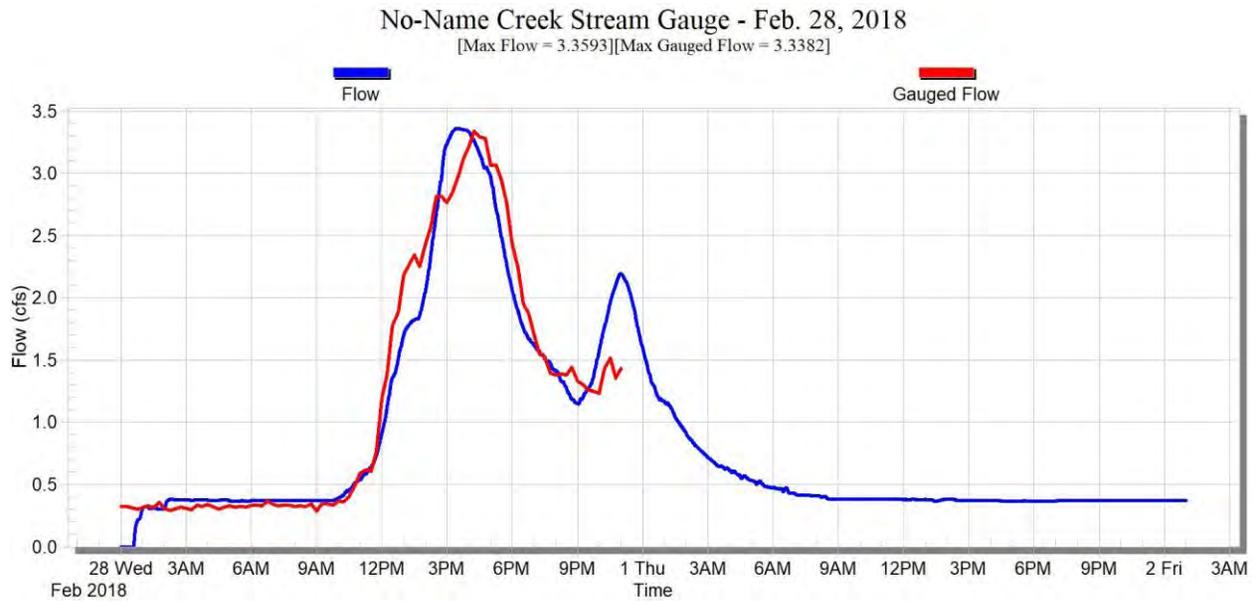


Figure 3-2 No-Name Creek Gauge – February 28, 2018

Fairview Creek Glisan St Gauge - Dec. 7, 2015

[Max Flow = 137.7238][Max Gauged Flow = 137.0000]

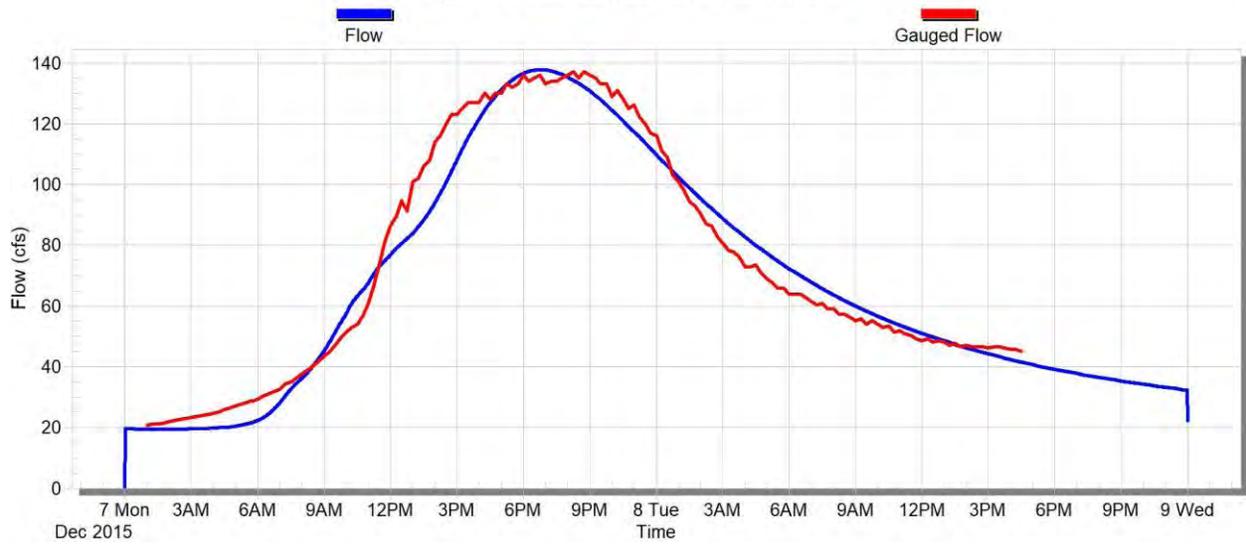


Figure 3-3 Fairview Creek Glisan Street Gauge – December 7, 2015

4 Storm System Capacity Evaluation

4.1 Conveyance Evaluation Criteria

4.1.1 Storm Sewer

The evaluation criteria for this section are outlined in the City of Fairview *Design Standards and Standard Details*, dated May 30, 2017. This manual was used to evaluate the performance of the stormwater sewer system. The manual classifies storm pipe by the amount of area draining to them. Storm sewers collecting a larger area have a more restrictive design standard. Table 4-1 below lists the conveyance standards as outlined within the Engineering Standards.

Table 4-1 City of Fairview Standards

Drainage System Element	Facility Type	Design Storm Return Period, years
Minor:	Streets, curbs, gutters, inlets, catch basin, and connector drains.	10
Major:	Laterals (collectors) <250 tributary acres	25
	Trunk > 250 tributary acres	50*
	Arterial Streets and the Drainage System in or under Arterial Streets	50
Watercourses:	Without designated floodplain	50
	With designated floodplain	100
Bridges:		100
Detention Facilities:	Storage volume (onsite)	25
	Discharge rate	Function of downstream capacity
Retention Facilities:	Drywell infiltration capacity	25**

* *Surcharged conditions for pipe systems and culverts and bank-full conditions for open ditches and channels are acceptable only for demonstrating the adequacy of the conveyance system to convey the peak runoff for the 25 or 50-year design storms (as required) provided that:*

1. *Runoff is contained within defined conveyance system elements; AND*
2. *The hydraulic grade line does not exceed the elevation of the roadway subgrade; AND*
3. *No portions of a building will be flooded.*

** *Maximum allowable design capacity = 1200 GPM = 2.67 CFS per drywell.*

These Engineering Standards apply to new development and redevelopment projects and were put in place after much of the City developed. A conveyance deficiency has been defined by the following criteria:

- > A pipe designated as a collector with a 25-year freeboard at upstream and/or downstream structures less than one foot
- > A pipe designated as a trunk with a 50-year freeboard at upstream and/or downstream structures less than one foot

Pipe velocities were reviewed to identify locations exceeding 15 feet per second. High velocities can reduce the life of a storm pipe by resulting in pipe abrasion.

4.1.2 Culverts and Bridges

The City's major culverts and bridges were also analyzed for conveyance capacity. The City of Fairview's design standards do not specifically identify conveyance criteria for bridges and culverts. Planning criteria for natural creeks with a channel shown on the Flood Insurance Rate Map (FIRM) stipulate the 100-year storm event. As such, bridge and culvert crossings, open channels, and creeks have been designed to the 100-year storm event. Stream crossings must also be designed to meet Oregon Department of Fish and Wildlife fish passage requirements and FEMA's water surface rise standards. The roadway classification and designation as a safety corridor will also require the crossing be designed to the 100-year storm event.

One foot of clearance between the water surface and the top of roadway or bank (whichever is lowest) was used to classify a deficient system. Removal of the structures was recommended in some cases.

4.2 Known Problem Areas

City operation and maintenance staff were interviewed in January 2018 to determine known problem areas within the City's stormwater system. The following list summarizes the results of the interview:

- > Flooding occurs along No-Name Creek at the Sandy Blvd culvert.
- > The Fairview Creek culvert under 223rd Ave has issues with accumulating debris possibly linked to issues with the culvert.
- > Flooding issues caused by a diversion manhole located along No-Name Creek north of the Fairview Woods Apartments.
- > Flooding occurs along No-Name Creek at Bridge Street.
- > Fence crossing No-Name Creek at Fairview Woods Apartments collects debris.
- > Erosion issues at No-Name Creek diversion outlet.
- > Channel capacity issues along No-Name Creek at the Fairview Woods Apartments.
- > Flooding occurs at the Ukrainian Bible Church adjacent to No-Name Creek.
- > Flooding occurs along Fairview Creek at Halsey Street.

4.3 Deficiency List

This section describes the identified deficiencies for the existing condition hydrology and build-out condition hydrology scenarios. Detailed tables identifying and describing each deficiency are located in Appendix B.

4.3.1 Existing Condition

Along Fairview Creek, the most notable deficiencies in the existing condition scenario occur between 223rd Ave and Walnut Lane. These modeled issues are caused by shallow slopes and depth in the Fairview Creek channel within this stretch. Deficiencies also occur within the storm system in 3rd Street between Main Street and Cedar Street. These deficiencies occur due to an undersized pipe in Cedar Street.

Along No-Name Creek, the most notable deficiencies in the existing condition scenario occur between Arata Road and Bridge Street. These modeled issues are caused by the flow diversion north of the Fairview Woods Apartments, a deficient culvert within the apartments, and high flows along No-Name

Creek between Arata Road and Halsey Street. Issues also occur at Sandy Blvd caused by culvert capacity issues.

4.3.2 Built-Out Condition

Existing deficiencies are exacerbated in the build-out condition for both Fairview Creek and No-Name Creek. New deficiencies occur within the Fairview Creek basin along Lincoln Street between 5th Street and 223rd Ave, Cedar Street between 4th Street and 2nd Street, and at Depot Street at 2nd Street. These deficiencies are caused by undersized pipes.

5 Capital Improvement Projects Update

5.1 CIP Development

Projects for the conveyance issues identified in the existing system were evaluated using the XPSWMM model. These issues were identified through the model and through City maintenance staff as described in Section 4.2 and 4.3.1. Projects identified for the built-out condition system were identified and evaluated using the XPSWMM model and identified in Section 4.3.2.

The projects for the Fairview Creek basin and No-Name Creek basin can be described generally, as increasing conveyance and providing additional detention. This can be accomplished by upsizing pipe diameter in order to better convey detained stormwater during peak flow storm events.

Each project includes the following components:

- > Existing or Build-Out: Each project will identify whether it is an existing or build-out issue.
- > Problem Location: Location of identified problem.
- > Land Ownership: States whether the problem is located on public or privately owned land.
- > Problem Summary: Describes the system issue using the evaluation criteria.
- > Technical Details: Description of pipe sizes, flow rates, and flooded volume.
- > Alternative Summary: Narrative of the components that make up each proposed solution including pipe size changes, length of channel improvements, and other improvements needed in order to implement the project.
- > Benefits: Identifies how each project resolves the issue and other enhancements to adjacent or connecting portions of the system or area surrounding.
- > Implementation Issues: Describes the issues with the implementation of each project.
- > Cost: Estimated cost for each project.

5.2 CIP Sizing and Design Assumptions

5.2.1 Improvement Criteria

Pipe improvement and channel criteria will follow the City of Fairview public design standards. Pipe design criteria related to material, minimum dimensions, and cover will be followed. The Oregon Department of Transportation design criteria were used when City standards did not specify a condition.

Proposed culvert and bridge criteria will follow Oregon Department of Fish and Wildlife fish passage requirements. Only box culverts will be recommended for culverts requiring fish passage. The design criteria are listed below in Table 5-1.

Table 5-1 Improvement Design Criteria

Facility Type	Defenition
Pipes and Culverts	
Minimum Pipe Diameter	12-inch, 10-inch for inlet leads
Velocity	Minimum 3 feet/second, Maximum 15 feet/second
Minimum Cover	3 feet - PVC, 2.5 feet - Ductile iron, 1.5 feet - reinforced concrete
Flow-Through Inlets	Four inlets may be connected together at intersections
Spacing	400 feet - Inlet, 500 feet - Manholes
Manning's 'n'	0.013 new pipes, 0.024 new culverts
Ditches and Channels	
Manning's 'n'	0.018 - 0.104 depending on channel type
Side Slopes	Maximum of 2:1, 3:1 for roadside ditches, 4:1 if safety is a concern

5.2.2 Solution Hierarchy

Solutions are focused on minimizing design and construction costs, including reviewing each design for the shortest distance, easiest maintenance, greatest accessibility, constructability, sufficient pipe cover and pipe slope, and reviewed for other potential conflicts (e.g. sanitary sewer and franchise utility crossings).

Recommended solutions were approached with the following hierarchy of preference:

- > Upsize Existing System: This approach involves upsizing the existing conveyance piping to provide sufficient conveyance.
- > Run Parallel Lines: This approach will propose installing a second parallel pipe when an existing pipe with sufficient cover is unavailable.
- > Reroute Stormwater Flows: This approach reroutes the stormwater system to decrease downstream flooding issues, and to potentially provide a stormwater utility to areas currently lacking stormwater drainage.
- > New Stormwater System: This approach is limited to underserved communities, and new communities where stormwater systems are proposed. The number of new discharge locations will be limited to decrease the associated permitting challenges and costs. The design of new stormwater systems were limited to trunk lines, excluding catch basin laterals and other peripheral pipes.

5.3 CIP Unit Cost Estimates

Cost estimates have been completed at the master plan level for the locations of deficiencies identified within the hydraulic analysis. As each project enters a detailed design stage for construction, actual and more detailed construction costs will be realized. The costs are based on anticipated construction costs, engineering costs, environmental and permitting costs and other capital cost such as administration, legal fees and contingencies.

Itemized cost sheets for existing and build-out conditions CIPs can be found in Appendix B.

5.3.1 Engineering and Administration Costs

Engineering and administration costs associated with projects often include surveying, geotechnical exploration, preparation of drawings and specifications, environmental investigations, construction management, inspections, and construction staking.

The costs for these services are estimated to be 35 percent of the project cost for projects up to \$100,000, and 25 percent for projects over \$100,000. Engineering and administration costs were calculated including the 20 percent contingency in the total project cost.

5.3.2 Permitting Costs

The necessary environmental permits for a particular project can be highly variable depending on the location, scope and what is found at the construction site. Some permits are more common than others such as wetland permits, 401 and 404 certifications, and general environmental assessments. The Department of State Lands (DSL) requires a permit for work in a wetland or body of water that involves more than 50 cubic yards of fill or removal, which is expected for some of these projects knowing the area has poor drainage.

The costs for these services are not included in the estimate.

5.3.3 Mobilization Costs

Mobilization costs consist of preparatory work and operations. This includes associated costs for transporting equipment, supplies and incidentals to the project site on behalf of the contractor. It also covers the establishment of all offices, buildings and other general facilities necessary for the contractor's operations at the site, and all other work and operations which must be performed or cost incurred prior to beginning work on the project site.

The costs for these services are estimated to be 9 percent of the project cost (not including engineering and administrations costs) or \$10,000, whichever is greater.

5.3.4 Contingency Costs

The project size and type will dictate the scope of services needed to obtain permits and commence construction. The range of services is unknown for any particular project; as a result, a contingency cost for these projects is estimated to be 20 percent of the construction subtotal, which is included in the total project cost.

5.3.5 Property Acquisition Costs

No allowance has been made for property acquisition and/or easements. It is expected at the beginning of design for each project that an evaluation of needed property or easements would be completed. There may be situations where additional easements or property is needed to complete a project.

5.3.6 Unit Pricing

The unit pricing is based on 2016 and 2017 Oregon Department of Transportation (ODOT) weighted average item prices and 2018 ODOT Standard Specifications.

5.3.7 Pipe Replacement

In order to minimize cost, the costs for pipe replacement projects assumed minor adjustments to the existing manholes, wherever possible, instead of proposing new structures.

5.3.8 Twin Barrel Culvert under Sandy Boulevard

The work to replace the existing twin barrel culvert under Sandy Boulevard assumes that pavement replacement will require a 2" grind and inlay.

5.4 Prioritization Criteria and Scoring

All CIPs – Existing, New, and Updated – have been scored and prioritized using the matrix outlined in Table 5-2. This table was originally developed by the City of Fairview and Brown and Caldwell in October 2007.

Table 5-2 Prioritization Criteria Matrix

Prioritization Criteria Matrix				
Criteria	Weight	Score		
		3	2	1
1. Cost	0.2	< 100,000	> 100,000 and <250,000	>250,000
2. Potential Funding Source	0.4	Possible grant/SRF/FEMA funding	Joint/Jurisdictional Funded project; Non-	No likely outside funding source
3. Mandates	0.8	Federal or State Mandate with deadline	Mandated with flexible timeline over 2 FY's	No Mandate
4. Special Interest	0.8	Pet project, City Council directed	-	-
5. Safety/ Livability	1	Significant Hazard, threat to life and limb and/or property	-	-
6. Complexity	0.6	May be done by small crew in less than a months time	Typical moderate level of difficulty	Requires significant design, contract SP's,
7. Impact	1	Affects region-wide with significant downstream	Affects small sub-basin	Affects only 1 or 2 individual properties
8. Concurrence	0.4	Required/ pre-requisite project for other budgeted	Related work within 2-3 FY's	No related/ dependent work
9. Environmental Benefit	0.8	Significantly improves water quality and wildlife habitat	Moderately improves water quality and wildlife	None
10. Permitting	0.6	No permitting issues	Potential permitting issues	Significant issues. Possibly not permissible
11. Sustainability	0.8	No imbalance.	-	Imbalance
12. Livability	0.8	"This is what our grandkids would want."	"This will work for my generation."	"Okay for now."
Criteria Definition				
1. Cost	Total estimated cost of the CIP.			
2. Potential Funding Source	Is the cost supported by grant money or is there an opportunity for a joint project?			
3. Mandates	Is the project mandated by the state or federal government, or under court order?			
4. Special Interest	Is this project directed by the City Council?			
5. Safety/ Livability	What potential safety and/or liability issues are involved?			
6. Complexity	How quickly can the solution be implemented and with what level of effort?			
7. Impact	How large an area and/or how many people does the project directly benefit?			
8. Concurrence	Does the work coincide with other City work or another jurisdiction's scheduled work?			
9. Environmental Benefit	Are there direct environmental benefits associated with the projects?			
10. Permitting	In the current permitting environment, will this project have difficulties in obtaining local, federal or state permits?			
11. Sustainability	Can the project be done without causing an imbalance in resources (i.e., funding, manpower, environment, etc.)?			
12. Livability	Are we improving the quality of life for the people of Fairview? Is this what our grandkids would want?			

5.5 Recommended Project Prioritization and Final CIP Priority Ranking

The final scoring and recommended project priority is outlined in Table 5-3.

Table 5-3 - Prioritized Projects

Ranking Matrix		Performance Criteria Scores												
ID	Project Name	Cost (in 1,000's)	Rating	Cost	Funding Source	Mandate	Special Interest	Safety Liability	Complexity	Impact	Environ. Impact	Permitting	Sustainability	Livability
				1	0.4	0.4	0.3	1	0.6	1	0.4	0.4	0.4	0.4
GN-1	CCTV Inspection	\$ 18	15.6	3	1	2	2	3	3	2	2	3	2	3
GN-2	Pipe Replacement and Rehabilitation Over 15 Years*	\$ 49	13.4	3	1	1	2	2	3	2	1	3	2	2
FV-8	Fairview Village Detention Ponds	\$ 17	13.3	3	1	2	1	1	3	2	2	3	3	2
RT-1	Railroad Crossing	\$ 32	13.0	3	1	1	2	3	2	2	1	2	2	1
GN-3	Catch Basin Retrofits Over 10 Years*	\$ 18	13.0	3	1	3	2	1	2	2	2	3	2	2
NN-4b	Undersized culverts at Fairview Woods Appartments	\$ 115	12.9	2	1	1	1	3	1	3	1	2	2	3
FV-5	Old Town Green Streets Over 10 Years*	\$ 73	12.3	3	1	2	1	1	2	2	3	3	1	2
NN-4a	Undersized pipes at NE 227th Ave.	\$ 251	11.9	1	1	1	1	3	1	3	1	2	2	3
FV-10	Cedar St. Between Fairview Ave. & 3rd St.	\$ 135	11.5	2	1	1	1	2	2	2	1	3	2	2
NN-5	Undersized pipe at Townsend Way	\$ 50	11.1	3	1	1	1	1	3	1	1	3	3	1
NN-1a	Undersized Culvert at Sandy	\$ 448	10.8	1	2	1	2	3	1	2	1	2	1	2
FV-11	1st St. from Depot St. to Main St.	\$ 107	10.5	2	1	1	1	1	2	2	1	3	3	1
FV-1	Fairview Creek between Halsey and I-84	\$ 705	9.9	1	3	1	1	3	1	1	1	1	3	1
FV-9	Lincoln St Between Fairview Ave. & 4th St.	\$ 287	9.5	1	1	1	1	1	2	2	1	3	3	1
FV-3d	S of Halsey & W of 207th 3ac floodplain City Banking	\$ 417	8.3	1	1	1	1	1	1	1	3	1	2	3
FV-3e	S of Halsey & W of 207th 5ac floodplain Private Banking	\$ 645	8.3	1	1	1	1	1	1	1	3	1	2	3
NN-1b	Undersized Culvert at Sandy Bypass	\$ -	0.0	0	0	0	0	0	0	0	0	0	0	0
Total:		\$ 3,367												

Notes:

Grey fill means not paid for by Stormwater Fund (Private, County, Parks)

* The cost for these projects are per year

5.6 CIP Maps and Cost Estimates

The projects listed below were analyzed as part of the Fairview Creek Stormwater Master Plan Update, as well as existing projects listed in the Consolidated Stormwater Master Plan that are currently ongoing or not yet completed. These projects, developed in 2007, have not been updated as part of this project.

The following analysis sheets include information on existing conditions, problem analysis, modeling information, proposed solutions, design assumptions, project benefits, and estimated project costs. Each project has an associated figure that illustrates the conceptual project elements.

5.6.1 Project List

General/Programmatic Projects (GN)

- > *GN-1: Closed-Circuit Television Inspection (Existing Project)*
- > *GN-2: Pipe, manhole, and catch basin rehabilitation (Existing Project)*
- > *GN-3: Catch basin retrofit program (Existing Project)*

Fairview Creek Projects (FV)

- > *FV-1: Fairview Creek between Halsey Street and Interstate 84*
- > *FV-3: South of Halsey Street and west of 207th Ave, riparian vegetation, floodplain storage, or wetland banking on private or public property (Existing Project)*
- > *FV-5: Old Town Green Streets Opportunities (Existing Project)*
- > *FV-8: Fairview Village Detention Ponds (Existing Project)*
- > *FV-9: Lincoln Street between Fairview Ave and 4th Street*
- > *FV-10: Cedar Street between Fairview Ave and 3rd Street*
- > *FV-11: 1st Street from Depot Street to Main Street*

No-Name Creek Projects (NN)

- > *NN-1: Undersized culvert for No-Name Creek at Sandy Blvd*
- > *NN-4: Replacement of undersized pipes and storm sewer extension at NE 227th Ave*
- > *NN-5: Townsend Way*

Raintree Sub-Basin Projects (RT)

- > *RT-1: Raintree Creek culvert under Railroad (Existing Project)*

Project Name: CCTV Inspection	Project Number: GN-1
Project Type: Flood hazard reduction	Sub-Basin: General or city-wide

Existing Conditions: As storm sewer pipes are aging and reaching the end of their expected lifespan their condition is deteriorating. The City is currently resurfacing streets on an annual basis and replacement of aging pipe could occur concurrently. The City would like to establish a pipe rehabilitation program to provide funding for replacing pipes according to age and condition or as opportunities arise during street work.

Problem Analysis: There are 72,000 feet of storm sewer culverts, inlet leaders, and pipe in the City of Fairview (according to the GIS coverages) that are not considered private. The expected life of corrugated steel and metal pipe is 25 years. The expected lifespan of concrete, ductile iron and plastic (ABS, ADS, HDPE, PVC, RCSP) sewer pipe is usually estimated at 75-100 years. 12,000 feet of the City's storm system is older than 25 years and 1,100 feet of pipe are of unknown age. To determine if replacement of pipe is necessary, check for cross connections with the sanitary sewer and look for pipe settlement, an inspection program should be completed. Recommend inspecting pipes that have a high consequence of failure first.

Modeling Information: No modeling was performed for this analysis.

Proposed Solution/Project Description: Inspection of all pipes that are older than 25 years or have an unknown age, a total of 13,100 feet.

Design Assumptions: Assumed closed circuit television inspection of all pipes over 25 years and of unknown age. Inspection and cleaning costs approximately \$1.50/ft, assuming easy access and no traffic control requirements. Cost can go up if access is difficult.

	*Project Costs				
Project Benefit to City	Item	Unit	Unit Cost	Quantity	Cost
During pipe inspection, crews can check for cross connections with sanitary sewer. Eliminating cross connections will reduce bacteria.	CCTV Inspection	LF	\$ 1.50	13,100	\$ 19,650
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
				Total	\$ 19,650
				Contingency (20%)*	\$ -
				Sub-Total	\$ 19,650
				Engineering and Administration (**%)	\$ 6,878
				Total Land Costs	\$ -
				*Project Cost	\$ 26,528

** 35% for construction costs up to \$100,000

25% for construction cost over \$100,000

* The estimated costs are based on year 2007 dollars

Project Name: <u>Catch basin retrofits</u> Project Type: <u>Water quality</u>	Project Number: <u>GN-3</u> Sub-Basin: <u>General or city-wide</u>
<p>Existing Conditions: The 6/7/06 "Development of Retrofit Options" memo from GeoSyntec recommends catch basin retrofits (under Site X, city-wide) and parking lot retrofits (under Site V, city-wide) for water quality improvement in Fairview.</p> <p>Problem Analysis: The City currently has 449 catch basin sumps, 2 water quality manholes, and 48 catch basins. Based on the 6/7/06 memo from GeoSyntec, we recommend adding sumps to the 48 remaining catch basins. The proposed catch basin retrofits in the GeoSyntec memo include replacement of existing self cleaning catch basins with sumped catch basins (also known as water quality inlets) to provide for storage and removal of sediment loads from publicly owned catch basins in higher pollutant source areas; and addition of catch basin inserts to publicly owned catch basins. The proposed parking lot retrofits include installation of oil/water separators; catch basin inserts; and swales in publicly owned parking lots. Catch basin inserts evaluated for both options included grate inlet skimmer boxes, filtration units, and throat openings to capture oil.</p> <p>Modeling Information: No modeling was performed for this analysis.</p> <p>Proposed Solution/Project Description: Catch basin retrofit program of \$18,023 per year to replace approximately 5 catch basins with sumped catch basins, resulting in 50 new sumped catch basins over ten years for a total project cost of \$180,023 over ten years.</p> <p>Design Assumptions: Design assumptions for catch basin retrofits based on the 6/7/06 GeoSyntec memo. City recommended using a unit cost of \$500 for removal of self-cleaning inlets and \$1500 for replacement of catch basins with sumped catch basins. Based on the high maintenance efforts required, we are not recommending catch basin inserts.</p>	

<p>Project Benefit to City</p> <p>Self cleaning catch basins do not function as effective sediment traps, therefore retrofit of catch basins in higher pollutant load areas will improve water quality. Water quality benefits which may be achieved through catch basin retrofits include reductions in the following TMDL parameters: TSS and nutrients (TP and TN).</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">*Project Costs</th> </tr> <tr> <th style="width: 30%;">Item</th> <th style="width: 10%;">Unit</th> <th style="width: 15%;">Unit Cost</th> <th style="width: 10%;">Quantity</th> <th style="width: 35%;">Cost</th> </tr> </thead> <tbody> <tr> <td>Mobilization (per 5 catch basins)</td> <td>LS</td> <td>\$ 1,000</td> <td>1</td> <td>\$ 1,000</td> </tr> <tr> <td>Traffic Control (per 5 catch basins)</td> <td>LS</td> <td>\$ 125</td> <td>1</td> <td>\$ 125</td> </tr> <tr> <td>Removal of self cleaning inlets</td> <td>EA</td> <td>\$ 500</td> <td>5</td> <td>\$ 2,500</td> </tr> <tr> <td>Catchbasins (Concrete sumped inlets,</td> <td>EA</td> <td>\$ 1,500</td> <td>5</td> <td>\$ 7,500</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">\$ -</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">\$ -</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">\$ -</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">\$ -</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">Total</td> <td style="text-align: right;">\$ 11,125</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">Contingency (20%)</td> <td style="text-align: right;">\$ 2,225</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">Sub-Total</td> <td style="text-align: right;">\$ 13,350</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">Engineering and Administration (**%)</td> <td style="text-align: right;">\$ 4,673</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">Total Land Costs</td> <td style="text-align: right;">\$ -</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">*Project Cost</td> <td style="text-align: right;">\$ 18,023</td> </tr> </tbody> </table> <p style="margin-top: 10px;"> ** 35% for construction costs up to \$100,000 25% for construction cost over \$100,000 * The estimated costs are based on year 2007 dollars </p>	*Project Costs					Item	Unit	Unit Cost	Quantity	Cost	Mobilization (per 5 catch basins)	LS	\$ 1,000	1	\$ 1,000	Traffic Control (per 5 catch basins)	LS	\$ 125	1	\$ 125	Removal of self cleaning inlets	EA	\$ 500	5	\$ 2,500	Catchbasins (Concrete sumped inlets,	EA	\$ 1,500	5	\$ 7,500					\$ -					\$ -					\$ -					\$ -				Total	\$ 11,125				Contingency (20%)	\$ 2,225				Sub-Total	\$ 13,350				Engineering and Administration (**%)	\$ 4,673				Total Land Costs	\$ -				*Project Cost	\$ 18,023
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			Total Land Costs	\$ -																																																																													
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Project Name: Fairview Creek Between Halsey and I-84

Project Number: FV-1

Project Type: Flood Hazard Reduction

Sub-Basin: Fairview Creek

Existing Conditions: A study completed by CH2M Hill, "Assessment of Fairview Creek Flow Control Options" (July, 2000) indicates that during the 100-year storm Fairview Creek has the potential to cause localized flooding of houses and private property along the 223rd reach of Fairview Creek between Halsey Street and Bridge Street. This was confirmed by Brown and Caldwell in 2007, and recommended a 48" high-flow bypass pipe along 223rd/Fairview Road.

Problem Analysis: The XP-SWMM model was updated with more detailed information for this reach and confirmed the flood risk. Furthermore, it was shown that flow from Fairview Creek was escaping the channel and draining east to No-Name Creek along Halsey. The model showed that shallow channel grades between 223rd/Fairview and Matney were a major contributor to high water surface elevations. The alternative proposed by Brown and Caldwell (Project number FV-1) was analyzed as a solution.

Modeling Information: The reach in question is between Halsey and just downstream of Matney street on Fairview Creek. During the 100-year event for future conditions, flows range between 337 cfs and 340 cfs. The slope of the creek ranges between 4% and 0.3%.

Proposed Solution/Project

Description: High flow bypass between Halsey and Matney.

Design Assumptions: Assume southbound lane of 223rd Ave will require 2" grind and inlay and an 8' wide trench for pipe installation.

Project Benefit to City

Protect private homes from flooding.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 43,000	1	\$ 43,000
48" RCP	LF	\$ 250	805	\$ 201,250
Erosion control	LS	\$ 8,000	1	\$ 8,000
2" grind and inlay	SY	\$ 60	1800	\$ 108,000
Video inspection	LF	\$ 20	805	\$ 16,100
Sawcut pavement	LF	\$ 10	1650	\$ 16,500
72" Manhole	EA	\$ 12,000	2	\$ 24,000
Outfall protection	EA	\$ 10,000	1	\$ 10,000
Trench resurfacing	SY	\$ 60	720	\$ 43,200
				\$ -
			Total	\$ 470,050
			Contingency (35%)*	\$ 164,518
			Sub-Total	\$ 634,568
			Engineering and Administration (**%)	\$ 158,642
			Total Land Costs	\$ -
			*Project Cost	\$ 793,209

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: South of Halsey and west of 207th - 3 acre floodplain storage on existing City property	Project Number: FV-3d
Project Type: Water Quality and Flood Hazard Mitigation	Sub-Basin: Fairview Creek

Existing Conditions: Opportunity to improve water quality through implementation of constructed wetland or wetpond on land owned by City. There is existing wetland vegetation on the land, indicating that development of the parcel could require expensive mitigation. Site recommended for constructed wetland, expansion of existing wetland, or wetpond in 6/7/06 GeoSyntec retrofit memo (Site V, FV Site 9).

Problem Analysis: The City-owned property south of Fieldstone Apartments has an existing lightly forested area bordered by open grassy fields which have pockets of wetland vegetation (sedges and rushes). The open field north of the West Salish Pond could be recontoured to provide additional off-channel floodplain storage for high flow events. Providing additional floodplain storage in this location has not been shown through modeling to reduce downstream flooding problems in Fairview Creek.

Modeling Information: Future flows - Node Glisan8: 100-year (4.9 in) max flow 113 cfs, max WSEL 199.6'; Node Glisan9: flow of 117 cfs, WSEL of 197.1' (197 confirms the floodplain evaluation from the FEMA maps) Max WSEL similar for all storms (water quality through 100-year).

Proposed Solution/Project Description: Using City-owned land, re-contour 3 acres of the open field area north of the West Salish Pond to provide off-channel floodplain storage, from 199 to 195.7 feet (to provide 10 acre-ft of storage) north of West Salish Pond. Enhance water quality treatment by planting 3 acres with native wetland and upland vegetation.

Design Assumptions: Recontouring project: 3 acres
404 wetland permit may be required to re-contour existing wetland area.

Project Benefit to City

The modeling results indicate that projects which include recontouring the fields to provide additional off-channel floodplain storage for high-flow events, may reduce peak flood volumes by up to 10 cfs but will not create a significant reduction in peak water surface elevations during the 100-year storm. Therefore, focusing work on revegetation only (for water quality) will likely be a more cost effective use of the site.

Additional water quality benefits which may be achieved through the overflow of Fairview Creek into the enhanced vegetation of the wetland area include reductions in nutrients (TP and TN), bacteria, and TSS.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	acre	\$ 15,000	3.0	\$ 45,000
Grading	acre	\$ 30,000	3.0	\$ 90,000
Erosion Control	acre	\$ 5,000	3.0	\$ 15,000
404 wetland permitting (possible cost)	project	\$ 50,000	1	\$ 50,000
Planting	acre	\$ 15,000	3.0	\$ 45,000
Planting irrigation	acre	\$ 11,000	3.0	\$ 33,000
				\$ -
				\$ -

Total	\$ 278,000
Contingency (20%)	\$ 55,600
Sub-Total	\$ 333,600
Engineering and Administration (**%)	\$ 83,400
Total Land Costs	\$ -
*Project Cost	\$ 417,000

** 35% for construction costs up to \$100,000

25% for construction cost over \$100,000

* The estimated costs are based on year 2007 dollars

Project Name: South of Halsey and west of 207th - 5 acre floodplain storage on existing private property
Project Type: Water Quality & Flood Hazard Reduction

Project Number: FV-3e
Sub-Basin: Fairview Creek

Existing Conditions: Opportunity to improve water quality through implementation of constructed wetland or wetpond on land north of Salish ponds that is not currently owned by the City but could be acquired (via donation). There is existing wetland vegetation on the land, indicating that development of the parcel could require expensive mitigation. Site recommended for constructed wetland, expansion of existing wetland, or wetpond in 6/7/06 GeoSyntec retrofit memo (Site V, FV Site 9).

Problem Analysis: The property south of Fieldstone Apartments has an existing lightly forested area bordered by open grassy fields which have pockets of wetland vegetation (sedges and rushes). If the non-City owned parcel north of the East Salish Pond is acquired, it would provide an excellent location for a re-contouring project to provide enhanced wetland functions and off-channel floodplain storage. Providing additional floodplain storage in this location has not been shown through modeling to reduce downstream flooding problems in Fairview Creek.

Modeling Information: Future flows - Node Glisan8: 100-year (4.9 in) max flow 113 cfs, max WSEL 199.6'; Node Glisan9: flow of 117 cfs, WSEL of 197.1' (197 confirms the floodplain evaluation from the FEMA maps) Max WSEL similar for all storms (water quality through 100-year).

Proposed Solution/Project Description: Re-contour 5 acres of the field north of East Salish Pond to provide off-channel floodplain storage, from 196 to 194 feet (to provide 10 acre-ft of storage). Enhance water quality treatment by planting 5 acres with native wetland and upland vegetation.

Design Assumptions: Recontouring project: 5 acres
404 wetland permit may be required to re-contour existing wetland area.

Project Benefit to City

The modeling results indicate that projects which include recontouring the fields to provide additional off-channel floodplain storage for high-flow events, may reduce peak flood volumes by up to 10 cfs but will not create a significant reduction in peak water surface elevations during the 100-year storm. Therefore, focusing work on revegetation only (for water quality) will likely be a more cost effective use of the site.

Additional water quality benefits which may be achieved through the overflow of Fairview Creek into the enhanced vegetation of the wetland area include reductions in nutrients (TP and TN), bacteria, and TSS.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	acre	\$ 15,000	5.0	\$ 75,000
Grading	acre	\$ 30,000	5.0	\$ 150,000
Erosion Control	acre	\$ 5,000	5.0	\$ 25,000
404 wetland permitting (possible cost)	project	\$ 50,000	1	\$ 50,000
Planting	acre	\$ 15,000	5.0	\$ 75,000
Planting irrigation	acre	\$ 11,000	5.0	\$ 55,000
				\$ -
				\$ -
				\$ -

Total	\$ 430,000
Contingency (20%)	\$ 86,000
Sub-Total	\$ 516,000
Engineering and Administration (**%)	\$ 129,000
Total Land Costs	\$ -
*Project Cost	\$ 645,000

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2007 dollars

Project Name: Old Town Green Streets Opportunities
Project Type: Water Quality Retrofit

Project Number: FV-5
Sub-Basin: Fairview Creek

Existing Conditions: The City is repaving streets in Old Town and there are opportunities to simultaneously improve water quality through implementation of Green Streets and other low impact development features. Green Streets use vegetated facilities to manage stormwater runoff at its source. The Old Town streets already provide some management of stormwater using vegetated areas, primarily lawns adjacent to streets and swales in alleys. Most streets in Old Town do not have sidewalks or curb and gutter systems. Alleys between streets are grassy swales and gravel roads. The area is very flat and generally has low infiltration, and there may be large boulders. Bioretention is a possibility.

Problem Analysis: Ahead of re-paving projects, evaluate opportunities for systematic retrofits throughout Old Town. There is an opportunity to add bioretention planting strips, vegetated swales, and other low impact development (LID) features (similar to City of Portland vegetated stormwater facilities) to the streets as they are repaved. Design alternatives vary depending upon whether curb & gutter systems are added. These systems would primarily serve as water quality features to contribute to meeting TMDL requirements, with some limited uptake of flow potentially reducing flood flows in Fairview Crk.

Modeling Information: No modeling was performed for this analysis.

Proposed Solution/Project Description: Establish a Green Streets retrofit program of \$73,000 per year. In first year, develop City of Fairview design standards for pass-through bioretention planting strips and construct 2 pilot study sites. In following 9 years, construct an average of 4 sites per year. The number of pass-through bioretention planting strips that can be constructed each year will depend on the size of the facilities and complexity of the installation. Program could begin with Lincoln Street during repaving in 2008.

Design Assumptions: Assume construction costs for bioretention planting strips or flow-through planter boxes are approximately \$10,000 each, based on average drainage area of approximately 1 to 1.5 acres of mixed residential and light commercial land use. Construction costs will vary depending on sizing and complexity of installation. There are approximately 28 blocks in the Old Town area, ranging in size from 2 to 4 acres. Approximately 2 bioretention planting strips could be used per block to treat the runoff from the block, resulting in a potential opportunity for installation of up to 56 bioretention planting strips total. However, it is estimated that site constraints and other conditions will limit application to approximately 38 sites. Cost estimate does not include re-paving (due to expectation that work will be performed in conjunction with planned street repaving projects) or significant modifications to existing storm sewer pipe. This project will have a high up front engineering cost however this will reduce to a standard drawing once the City has installed a few of the retrofits.

Project Benefit to City

Water quality benefits from bioretention planting strips or boxes which may contribute toward addressing TMDLs include reductions in nutrients (TP and TN), bacteria, and TSS. The additional soil filtration of stormwater and street shading provided through planting strips or boxes that include street trees could also potentially provide limited credit towards addressing the temperature TMDL. This program primarily benefits water quality but, through infiltration, could also slightly reduce peak flows during high storm events.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Bioretention planting strip or box (4 per year for 10 years)	each	\$ 10,000	4	\$ 40,000
Mobilization (1 per year for 10 years)	LS	\$ 5,000	1	\$ 5,000
				\$ -
			Total	\$ 45,000
			Contingency (20%)	\$ 9,000
			Sub-Total	\$ 54,000
			Engineering and Administration (**%)	\$ 18,900
			Total Land Costs	
			*Project Cost	\$ 72,900

** 35% for construction costs up to \$100,000

25% for construction cost over \$100,000

* The estimated costs are based on year 2007 dollars

Project Name: Fairview Village Detention Ponds - Market, Chinook, Multnomah
Project Type: Water Quality Retrofit

Project Number: FV-8
Sub-Basin: Fairview Creek

Existing Conditions: Market Drive Detention Pond – currently maintaining to bring back to grade. The swale has a clay bottom and there is no infiltration. Will operate as a retention pond. Chinook Detention Pond – Pond with swale in the bottom. Multnomah Pond – Used to be an agricultural pond. Evaluate design for improvements. Very shallow, there may be opportunities for retrofits.

Problem Analysis: The Market Drive Pond is maintained by mowing short due to recreational use of the area by residents and dogs. Although there would be greater water quality treatment if the vegetation were allowed to grow taller, mowing is preferred because residents are more likely to pick up after their dogs if the grass is short. "Dogi Pot" waste removal bags are provided. There is some dry weather flow through the pond, likely to due groundwater infiltration into the storm drainage pipes and runoff from lawn irrigation. There is a swale around the outside of the pond area that is intended to receive low flows. Low flows are currently bypassing the swale until the vegetation is fully re-established in it. The inflow manhole may need to have a flow bypass weir installed to direct low flows to the swale. Rock weirs could be added to the swale to reduce flow velocities. The berm between the pond and Fairview Creek was evaluated to determine how flow would leave the pond if the outlet became plugged during a high flow event (due to consideration over how such an event would affect the adjacent home). There is a low point in the berm that appears to provide an emergency overflow point.
The Chinook Detention Pond and the Multnomah Pond both contain forested areas and appear to be functioning well. There is blackberry invading both sites, which the City pays for mowing and removal of periodically. Both ponds contain standing water and function as wetlands at low points. The Multnomah Pond would benefit from additional native plantings.

Modeling Information: Detailed modeling of the ponds was not performed.

Proposed Solution/Project Description: For the Market Drive Pond, add 5 rock weirs to the swale to reduce flow velocities and enhance water quality treatment through extended residence time. Install bypass weir in inflow manhole after vegetation in swale is established to provide low flow routing through swale. For Multnomah Pond, plant 0.2 acres of native trees and shrubs in open area adjacent to flow.

Design Assumptions: Assume cost of rock weirs = \$1,000 each. Assume installation of bypass weir = \$1,000. These estimated costs include mobilization, materials, equipment, and time. Assume no irrigation required for plantings.

Project Benefit to City

Water quality benefits which may be achieved through increasing the detention time of stormwater in the Market Drive swale using rock weirs and increased shrub vegetation include reductions in the following TMDL parameters: nutrients (TP and TN), bacteria, and TSS.

Additional water quality benefits which may be achieved through the overflow of Fairview Creek into the enhanced vegetation of the pond include reductions in nutrients (TP and TN), bacteria, and TSS.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Rock weirs (Market Pond & Swale)	each	\$ 1,000	5	\$ 5,000
Bypass weir in manhole (Market Pond)	each	\$ 1,000	1	\$ 1,000
Planting (Market Pond & Swale)	acre	\$ 15,000	0.1	\$ 1,500
Planting (Multnomah Pond)	acre	\$ 15,000	0.2	\$ 3,000
				\$ -
				\$ -

Total	\$ 10,500
Contingency (20%)	\$ 2,100
Sub-Total	\$ 12,600
Engineering and Administration (**%)	\$ 4,410
Total Land Costs	
*Project Cost	\$ 17,010

** 35% for construction costs up to \$100,000

25% for construction cost over \$100,000

* The estimated costs are based on year 2007 dollars

Project Name: Lincoln Street between Fairview Ave. and 4th St.

Project Number: FV-9

Project Type: Flood Hazard Reduction

Sub-Basin: Fairview Creek

Existing Conditions: The existing 12" pipe that runs under Lincoln Street will not provide sufficient capacity for future build-out flows per City standards.

Problem Analysis: The updated XP-SWMM model showed that localized flooding could occur if the basins draining to this system were to be built to the maximum extent allowable.

Modeling Information: Modeled 25-year flows to increase ~80% between existing and future conditions.

Proposed Solution/Project

Description: Replace existing pipe with new pipe to fully convey the future flows to City standards.

Design Assumptions: Cost estimate assumes the existing manholes will be reused. Erosion control should consist of inlet protection for the existing storm catch basins along Lincoln Street.

Project Benefit to City

Reduce potential flood risk.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 18,000	1	\$ 18,000
15" RCP	LF	\$ 90	690	\$ 62,100
18" RCP	LF	\$ 100	145	\$ 14,500
Erosion control	LS	\$ 6,000	1	\$ 6,000
Remove existing pipe	LF	\$ 15	835	\$ 12,525
Trench resurfacing	SY	\$ 75	420	\$ 31,500
Video inspection	LF	\$ 20	835	\$ 16,700
Major adjustment of manhole	EA	\$ 2,000	4	\$ 8,000
Sawcut pavement	LF	\$ 10	1700	\$ 17,000
Outfall protection	EA	\$ 5,000	1	\$ 5,000
				\$ -
			Total	\$ 191,325
			Contingency (20%)*	\$ 38,265
			Sub-Total	\$ 229,590
			Engineering and Administration (**%)	\$ 57,398
			Total Land Costs	\$ -
			*Project Cost	\$ 286,988

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: Cedar St. Between Fairview Ave. and 3rd Street

Project Number: FV-10

Project Type: Flood Hazard Reduction

Sub-Basin: Fairview Creek

Existing Conditions: Existing flows present in the storm system along Cedar Street results in a deficiency in 3rd Street. This is made worse by projected future flows. The existing pipe in Cedar Street has been in place for over 60 years.

Problem Analysis: The updated XP-SWMM model shows that the entire line between 3rd Street and Fairview Avenue is not adequately sized to convey future flows.

Modeling Information: The future flows through Cedar Street at 3rd Street range from 10 cfs to 13 cfs. Localized flooding is expected to occur for all events from the 2-year event.

Proposed Solution/Project

Description: Need to replace the storm pipe in Cedar Street with pipe to adequately convey flow to City standards.

Design Assumptions: Cost estimate assumes reuse of existing storm manholes and erosion control consisting of inlet protection for catch basins along Cedar St.

Project Benefit to City

Replacement of aging storm sewer pipes will reduce the risk of pipe collapse and potential associated flooding issues. Reduces the risk of potential flooding due to potential development. Brings the storm system up to City standards.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 18,000	1	\$ 18,000
18" RCP	LF	\$ 100	370	\$ 37,000
24" RCP	LF	\$ 120	445	\$ 53,400
Erosion control	LS	\$ 6,000	1	\$ 6,000
Remove existing pipe	LF	\$ 15	815	\$ 12,225
Trench resurfacing	SY	\$ 75	440	\$ 33,000
Video inspection	LF	\$ 20	815	\$ 16,300
Major adjustment of manhole	EA	\$ 2,000	4	\$ 8,000
Sawcut pavement	LF	\$ 10	1650	\$ 16,500
Outfall protection	EA	\$ 5,000	1	\$ 5,000
				\$ -
			Total	\$ 205,425
			Contingency (20%)*	\$ 41,085
			Sub-Total	\$ 246,510
			Engineering and Administration (**%)	\$ 61,628
			Total Land Costs	\$ -
			*Project Cost	\$ 308,138

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: 1st St. from Depot St. to Main St.

Project Number: FV-11

Project Type: Flood Hazard Reduction

Sub-Basin: Fairview Creek

Existing Conditions: The future build-out flows expected along Depot Street result in deficiency in the system. The existing pipes in the Depot Street System are 40+ years old.

Problem Analysis: The updated XP-SWMM model shows that a 15" pipe segment in 1st Street between Depot and Main acts as a constriction. Localized flooding is expected for the 25-year storm.

Modeling Information: The existing 15" storm line has a capacity of 5.6 cfs. The future build-out 25-year flow rate of 8.2 cfs. The existing 25-year flow rate through the pipe is 6 cfs, with a future build-out rate expected to increase to 8.2 cfs. This pipe acts as a constriction and causes issues in the upstream Depot Street system.

Proposed Solution/Project

Description: To resolve deficiency issues, the existing 15" pipe will need to be replaced with an 18" pipe to prevent a flow restriction.

Design Assumptions: Cost estimate assumes the existing manholes will be reused. Erosion control should consist of inlet protection for the existing storm catch basins along 1st St.

Project Benefit to City

Reduce potential flood risk.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 10,000	1	\$ 10,000
18" RCP	LF	\$ 100	210	\$ 21,000
Erosion control	LS	\$ 500	1	\$ 500
Remove existing pipe	LF	\$ 20	210	\$ 4,200
Trench resurfacing	SY	\$ 100	105	\$ 10,500
Video inspection	LF	\$ 35	210	\$ 7,350
Major adjustment of manhole	EA	\$ 3,000	2	\$ 6,000
Sawcut pavement	LF	\$ 15	430	\$ 6,450
				\$ -
			Total	\$ 66,000
			Contingency (20%)*	\$ 13,200
			Sub-Total	\$ 79,200
			Engineering and Administration (**%)	\$ 27,720
			Total Land Costs	\$ -
			*Project Cost	\$ 106,920

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: Undersized culvert for No-Name Creek at Sandy Blvd

Project Number: NN-1a

Project Type: Flood Hazard Reduction

Sub-Basin: No-Name Creek

Existing Conditions: The existing twin barrel 30" culvert near Townsend Farms on Sandy Blvd is currently undersized and causes flooding during high intensity storm events. Multnomah County has plans to widen Sandy Blvd. however, increasing culvert capacity is not part of the project scope. Most of this culvert lies on private property within a 20' wide slope and drainage easement dedicated to Multnomah County.

Problem Analysis: An existing pair of 30" CMP pipes, with a capacity of 55 cfs, conveys No-Name Creek under Sandy Boulevard. The existing 100-year flow rate upstream of the crossing is 94 cfs with future flows expected to increase to 111 cfs.

Modeling Information: This alternative considers replacing the existing culvert, as Brown and Caldwell determined previously that an upstream diversion would not replace the need of a new culvert.

Proposed Solution/Project

Description: Assuming that an upstream diversion is not constructed prior to the culvert replacement, a culvert was sized to accommodate the full flow of No-Name Creek. Additionally, the culvert alignment was designed to better align it with No-Name Creek, and bring it out of private property for better access and maintenance. Due to shallow cover, a dual pipe system was sized as opposed to a single pipe.

Design Assumptions: Assume 2" grind and inlay 20' on either side of culvert. Unit cost for arch culvert is based on the inflation adjusted unit cost for 78-inch diameter culvert pipe provided in ODOT's 2016 Weighted Average Item Price Report. Easement coordination for new arch culvert not included in cost estimate.

Project Benefit to City

This alternative would eliminate a flooding hazard and maintenance issue present at Sandy Boulevard.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 27,000	1	\$ 27,000
43" Rise x 34" span arch culvert	LF	\$ 355	360	\$ 127,800
Erosion control	LS	\$ 5,000	1	\$ 5,000
Trench resurfacing	SY	\$ 100	370	\$ 37,000
Traffic control	LS	\$ 15,000	1	\$ 15,000
2" grind and inlay	SY	\$ 100	460	\$ 46,000
Sawcut pavement	LF	\$ 15	730	\$ 10,950
Removal of existing utility vault	EA	\$ 10,000	1	\$ 10,000
72" manhole	EA	\$ 10,000	2	\$ 20,000
				\$ -

Total	\$ 298,750
Contingency (20%)*	\$ 59,750
Sub-Total	\$ 358,500
Engineering and Administration (**%)	\$ 89,625
Total Land Costs	\$ -
*Project Cost	\$ 448,125

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: Replacement of undersized pipes and storm sewer extension at NE 227th Ave.

Project Number: NN-4a

Project Type: Flood Hazard Reduction

Sub-Basin: No-Name Creek

Existing Conditions: Flooding consistently occurs at the Fairview Woods Apartments along No-Name Creek. City crews have been called to sand-bag the banks to prevent the floodwaters from reaching floor level apartments.

Problem Analysis: The XP-SWMM model was updated to analyze this area and confirmed that structures along No-Name creek are acting as flow restrictions.

Modeling Information: The reach in question is north of Halsey and south of Bridge Street. During the 100-year event for future flow conditions, flows range between 41 cfs and 48 cfs. The slope of the creek ranges between 10% and 0.7%.

Proposed Solution/Project

Description: Several alternatives were considered to address the issues including (1) the redesign of a flow splitter downstream of the Fairview Woods Apartments, (2) replacement of the existing culvert in the Fairview Woods Apartments, and (3) the construction of a high-flow bypass which diverts flow from No-Name Creek and redirects it to Fairview Creek. No single alternative proved to address the problems completely so a combination of the three is proposed. This sheet outlines the high-flow bypass portion of this project.

Design Assumptions: Cost estimate includes replacement of existing 15-inch pipe, storm sewer extension to south end of Halsey, new 48" manhole at the north end of Halsey and a ditch inlet on the south end of Halsey.

Project Benefit to City

Protect private apartments from flooding.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 15,000	1	\$ 15,000
12" RCP	LF	\$ 75	105	\$ 7,875
18" RCP	LF	\$ 100	600	\$ 60,000
Erosion control	LS	\$ 6,000	1	\$ 6,000
Trench resurfacing	SY	\$ 60	400	\$ 24,000
Video inspection	LF	\$ 20	705	\$ 14,100
Sawcut pavement	LF	\$ 10	1450	\$ 14,500
Major adjustment of manhole	EA	\$ 3,000	3	\$ 9,000
48" manhole	EA	\$ 7,000	1	\$ 7,000
Remove existing pipe	LF	\$ 15	310	\$ 4,650
Ditch inlet	EA	\$ 5,000	1	\$ 5,000
				\$ -
			Total	\$ 167,125
			Contingency (20%)*	\$ 33,425
			Sub-Total	\$ 200,550
			Engineering and Administration (**%)	\$ 50,138
			Total Land Costs	\$ -
			*Project Cost	\$ 250,688
			Total Cost	\$ 366,072

** 35% for construction costs up to \$100,000
25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: Replacement of undersized Culverts at Fairview Woods Apartments
Project Type: Flood Hazard Reduction

Project Number: NN-4b
Sub-Basin: No-Name Creek

Existing Conditions: Flooding consistently occurs at the Fairview Woods Apartments along No-Name Creek. City crews have been called to sand-bag the banks to prevent the floodwaters from reaching floor level apartments.

Problem Analysis: The XP-SWMM model was updated to analyze this area and confirmed that structures along No-Name creek are acting as flow restrictions.

Modeling Information: The reach in question is north of Halsey and south of Bridge Street. During the 100-year event for future flow conditions, flows range between 41 cfs and 48 cfs. The slope of the creek ranges between 10% and 0.7%.

Proposed Solution/Project

Description: Several alternatives were considered to address the issues including (1) the redesign of a flow splitter downstream of the Fairview Woods Apartments, (2) replacement of the existing culvert in the Fairview Woods Apartments, and (3) the construction of a high-flow bypass which diverts flow from No-Name Creek and redirects it to Fairview Creek. No single alternative proved to address the problems completely so a combination of the three is proposed. This sheet outlines the flow splitter redesign and the culvert replacement.

Design Assumptions: Cost estimate assumes location of proposed improvements is accessible.

Project Benefit to City

Protect private apartments from flooding.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 30,000	1	\$ 30,000
12" RCP	LF	\$ 75	25	\$ 1,875
36" RCP	LF	\$ 180	20	\$ 3,600
53" elliptical culvert	LS	\$ 300	40	\$ 12,000
Erosion control	LS	\$ 6,000	1	\$ 6,000
Trench resurfacing	SY	\$ 100	30	\$ 3,000
Sawcut pavement	LF	\$ 15	70	\$ 1,050
Removal of curb	LF	\$ 15	20	\$ 300
Remove existing culvert	LF	\$ 40	85	\$ 3,400
Restore private property	LS	\$ 10,000	1	\$ 10,000
				\$ -
			Total	\$ 71,225
			Contingency (20%)*	\$ 14,245
			Sub-Total	\$ 85,470
			Engineering and Administration (**%)	\$ 29,915
			Total Land Costs	\$ -
			*Project Cost	\$ 115,385
			Total Cost	\$ 366,072

** 35% for construction costs up to \$100,000
 25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

Project Name: Townsend Way
Project Type: Flood Hazard Reduction

Project Number: NN-5
Sub-Basin: No-Name Creek

Existing Conditions: Existing flows present in Townsend Way east of 230th cause localized flooding along an adjacent private property.

Problem Analysis: The updated XP-SWMM model shows that a 12" line downstream of a private connection in the cul-de-sac of Townsend Way is not adequately sized to receive the overflow from the private stormwater facility.

Modeling Information: The existing 12" pipe has a capacity of 5.6 cfs. The 25-year flow from the upstream site is 10 cfs. The downstream system has sufficient freeboard to convey the full flow within City standards.

Proposed Solution/Project

Description: Replace the 12" public pipe segment with an 18" pipe segment.

Design Assumptions: Cost estimate assumes the existing manholes will be reused. Erosion control to consist of inlet protection for the existing storm catch basins at the start of the cul-de-sac bulb.

Project Benefit to City

Eliminate a potential flood hazard, and reduce the risk of potential future flood issues.

***Project Costs**

Item	Unit	Unit Cost	Quantity	Cost
Mobilization	LS	\$ 10,000	1	\$ 10,000
18" RCP	LF	\$ 100	50	\$ 5,000
Erosion control	LS	\$ 1,000	1	\$ 1,000
Remove existing pipe	LS	\$ 20	50	\$ 1,000
Trench resurfacing	SY	\$ 150	25	\$ 3,750
Video inspection	LF	\$ 55	50	\$ 2,750
Major adjustment of manhole	EA	\$ 3,000	2	\$ 6,000
Sawcut pavement	LF	\$ 15	110	\$ 1,650
				\$ -
			Total	\$ 31,150
			Contingency (20%)*	\$ 6,230
			Sub-Total	\$ 37,380
			Engineering and Administration (**%)	\$ 13,083
			Total Land Costs	\$ -
			*Project Cost	\$ 50,463

** 35% for construction costs up to \$100,000
 25% for construction cost over \$100,000

* The estimated costs are based on year 2018 dollars

City of Fairview
Project: GN-1, 2

Infrastructure Repair and Rehabilitation

Legend

- City Pipe Age**
- Unknown
 - 1957
 - 1971-74
 - 1975-79
 - 1985-89
 - 1990-94
 - 1995-99
 - 2000-04
 - 2005-07
- CMP/Steel Pipe
 - Fairview City Limits
 - Basins
 - taxlots
 - City property
 - Catchbasins
 - Manholes
 - Private MHs, CBs
 - Private pipe
 - Pipe
 - Bridge; Box Culvert
 - Private Box Culvert
 - Tributary
 - Pond
 - Swale
 - Pond and Swale
 - Proposed Project Features
 - Existing Project Features

0 500 1,000 2,000 Feet

1 inch equals 1,000 feet

Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS

GN-1. The City has approximately 12,000 feet of pipe that is over 25 years old (built before 1982) and an additional 1,100 feet of pipe has an unknown age. Inspection of the pipes older than 25 years will provide insight into when they may need to be replaced and help eliminate sanitary sewer cross connections to reduce bacteria.

GN-2. The City has 1,800 feet of metal pipe that is over 25 years old and 500 feet of metal pipe with an unknown age. Since metal pipe has an expected lifespan of 10-35 years, these pipes should be considered for repair and rehabilitation. Manholes and catchbasins should be replaced in concert with pipe replacement.

Project Purpose: Improve water quality and reduce flood hazards through regular inspection and repair of stormwater pipes, manholes and catch basins. Regular inspection of critical pipes is recommended. A starting point is to inspect pipes that are more than 25 years old (built before 1982) to determine if they need to be repaired or replaced.

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City of Fairview
Project: GN-3

Catch basin retrofits

Legend

-  CBs that need sumps
-  Fairview City Limits
-  Basins
-  taxlots
-  City property
-  Catchbasins
-  Manholes
-  Private MHs, CBs
-  Private pipe
-  Pipe
-  Bridge; Box Culvert
-  Private Box Culvert
-  Tributary
-  Pond
-  Swale
-  Pond and Swale
-  Proposed Project Features
-  Existing Project Features



0 500 1,000 2,000 Feet

1 inch equals 1,000 feet

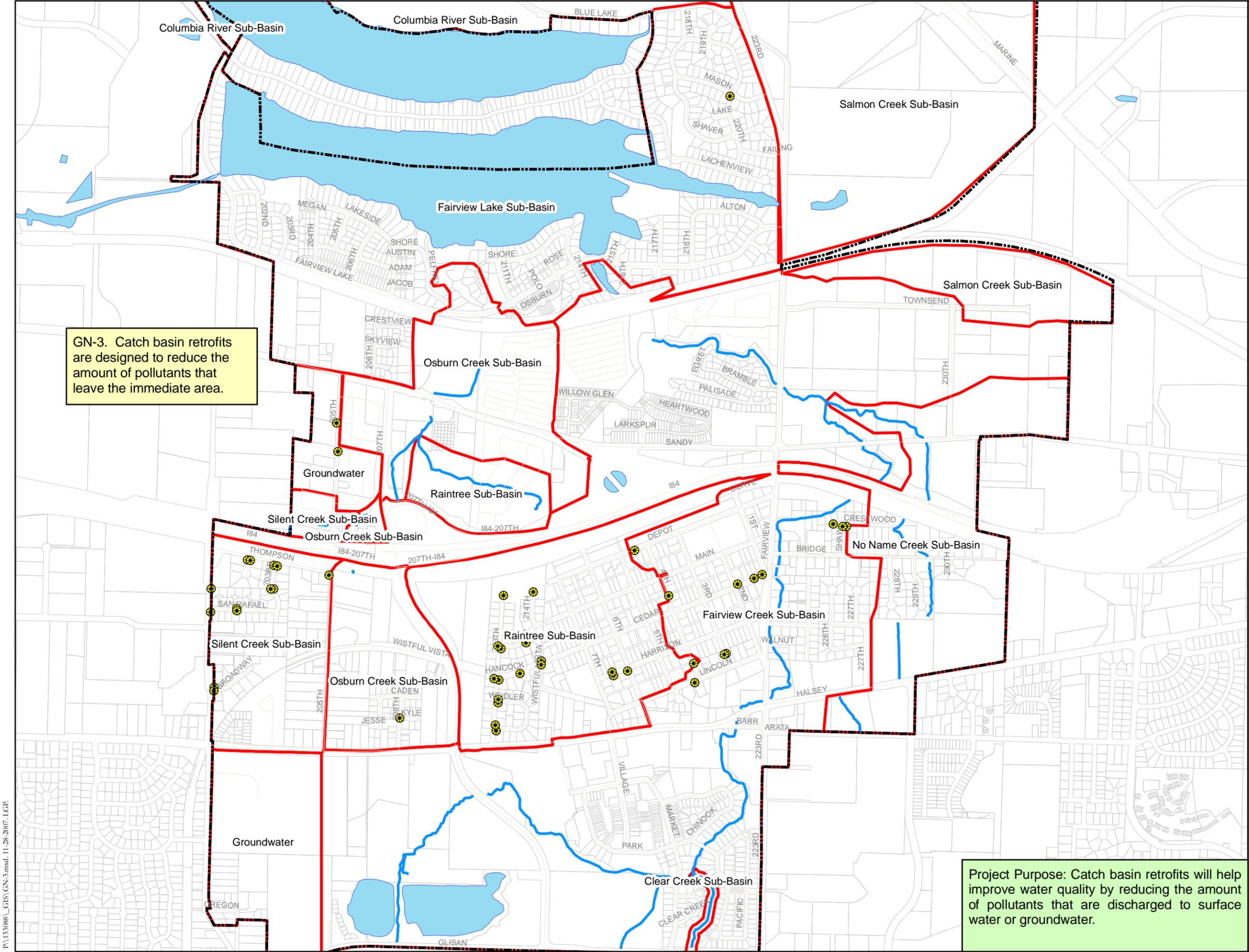
Consolidated Stormwater
Master Plan

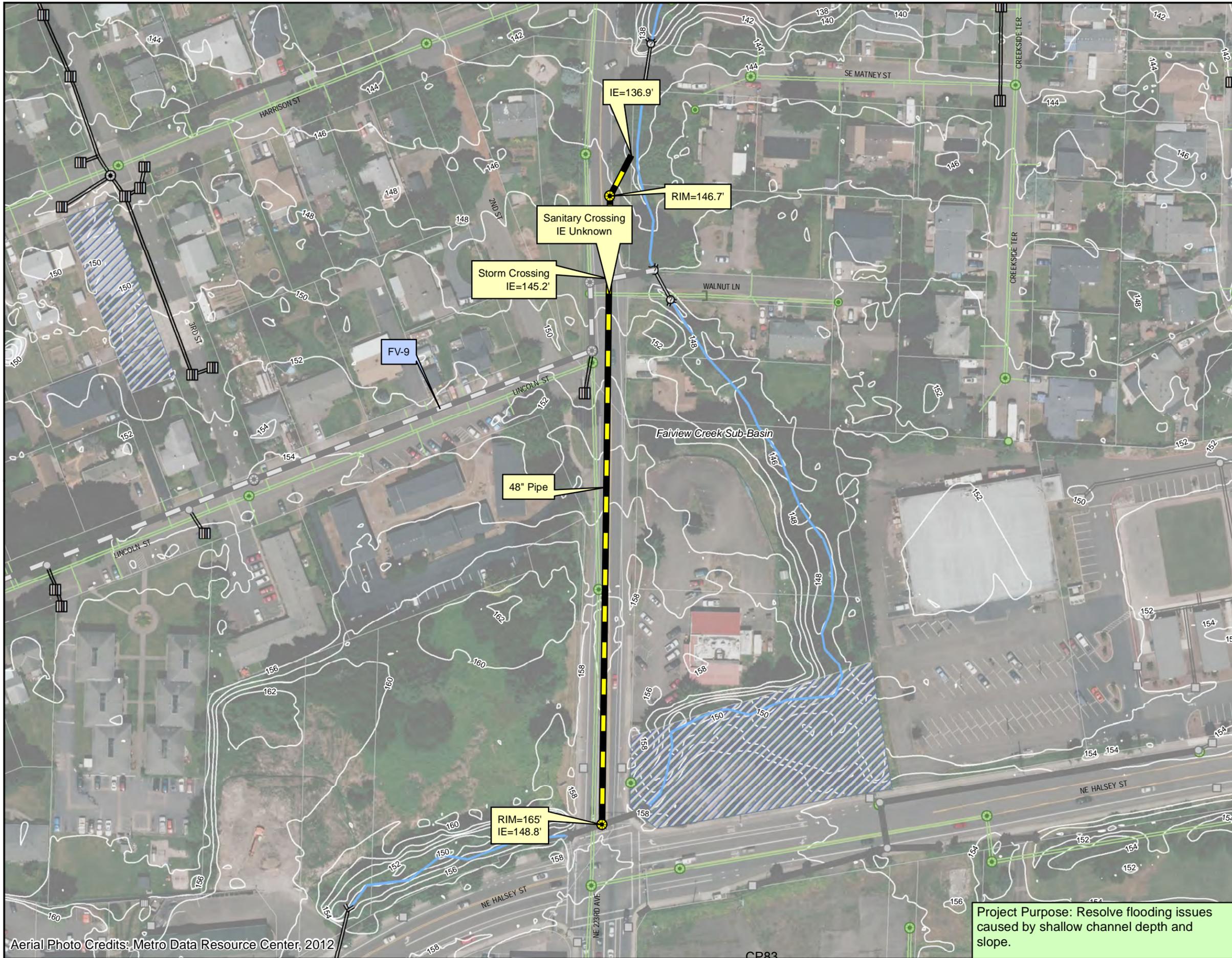


Data Source: City of Fairview GIS

GN-3. Catch basin retrofits are designed to reduce the amount of pollutants that leave the immediate area.

Project Purpose: Catch basin retrofits will help improve water quality by reducing the amount of pollutants that are discharged to surface water or groundwater.





Fairview Creek
Project: FV-1

Fairview Creek between
Halsey and I-84

Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary

Sanitary Sewer

- Cleanout
- Manhole
- Other Feature
- Plug
- Pump Station
- Valve
- Sanitary Lateral
- Sanitary Pipe



0 50 100 200 Feet

1 inch equals 100 feet

Consolidated Stormwater
Master Plan

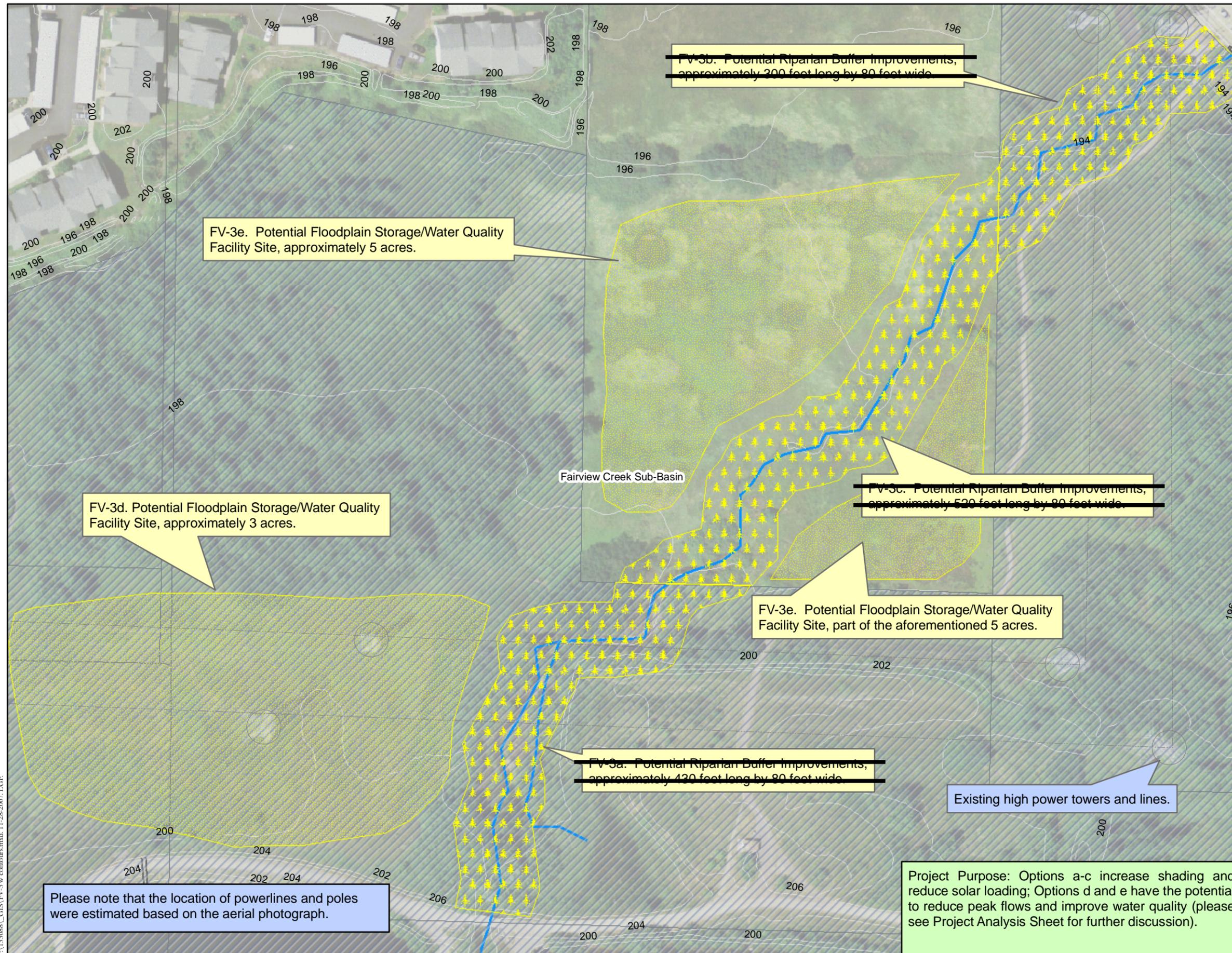


Data Source: City of Fairview GIS

Project Purpose: Resolve flooding issues
caused by shallow channel depth and
slope.

Fairview Creek
Project: FV-3

South of Halsey, West of 207th:
Options for riparian planting
and flood storage/water
quality facilities



Legend

- Fairview City Limits
- Basins
- taxlots
- City property
- Catchbasins
- Manholes
- Private MHs, CBs
- Private pipe
- Pipe
- Bridge; Box Culvert
- Private Box Culvert
- Tributary
- Pond
- Swale
- Pond and Swale
- Proposed Project Features
- Existing Project Features



1 inch equals 100 feet

**Consolidated Stormwater
Master Plan**



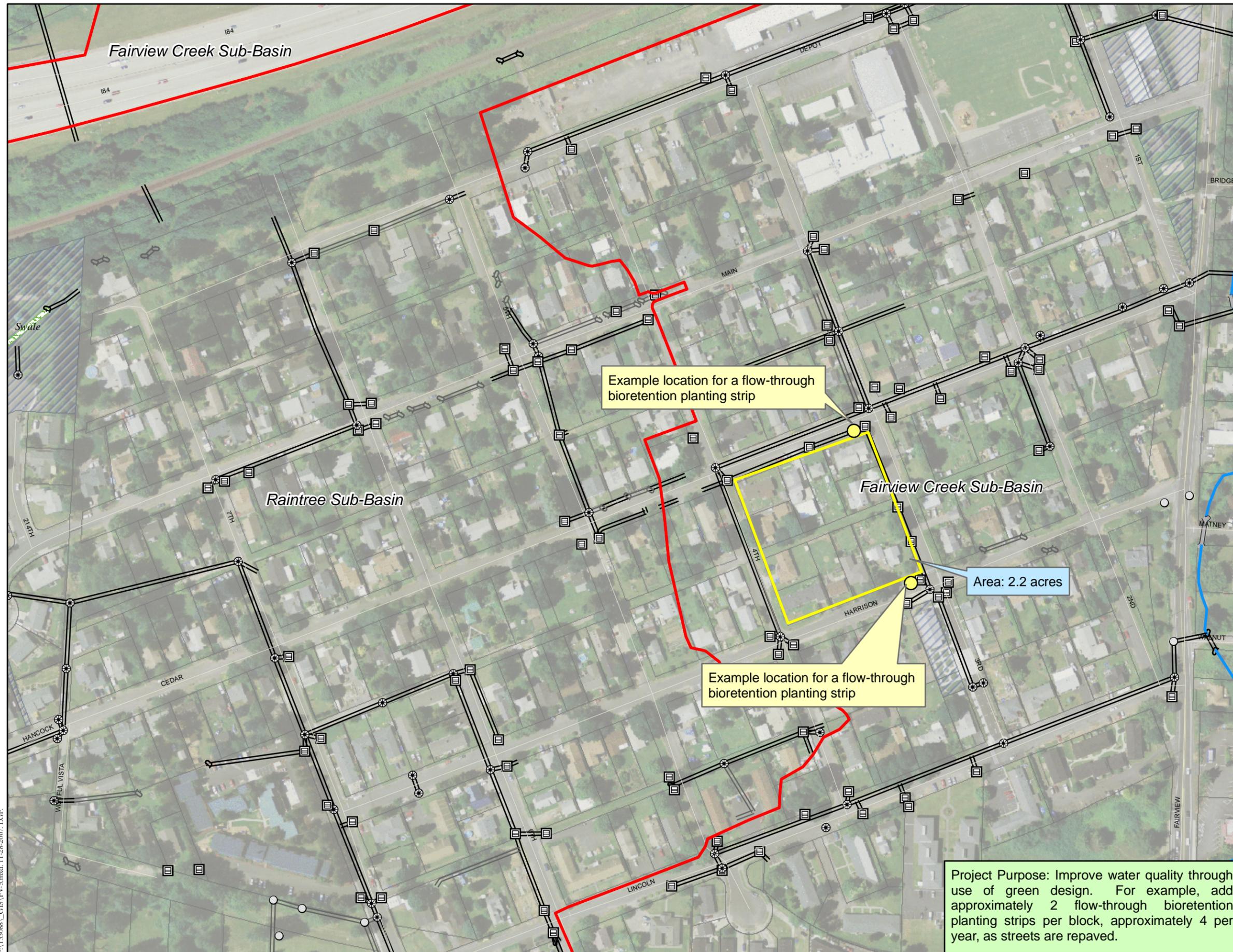
Data Source: City of Fairview GIS

Please note that the location of powerlines and poles were estimated based on the aerial photograph.

Project Purpose: Options a-c increase shading and reduce solar loading; Options d and e have the potential to reduce peak flows and improve water quality (please see Project Analysis Sheet for further discussion).

Fairview Creek
Project: FV-5

Old Town Green Streets
Opportunities



Legend

- Fairview City Limits
- Basins
- taxlots
- City property
- Catchbasins
- Manholes
- Private MHs, CBs
- Private pipe
- Pipe
- Bridge; Box Culvert
- Private Box Culvert
- Tributary
- Pond
- Swale
- Pond and Swale
- Proposed Project Features
- Existing Project Features



1 inch equals 200 feet

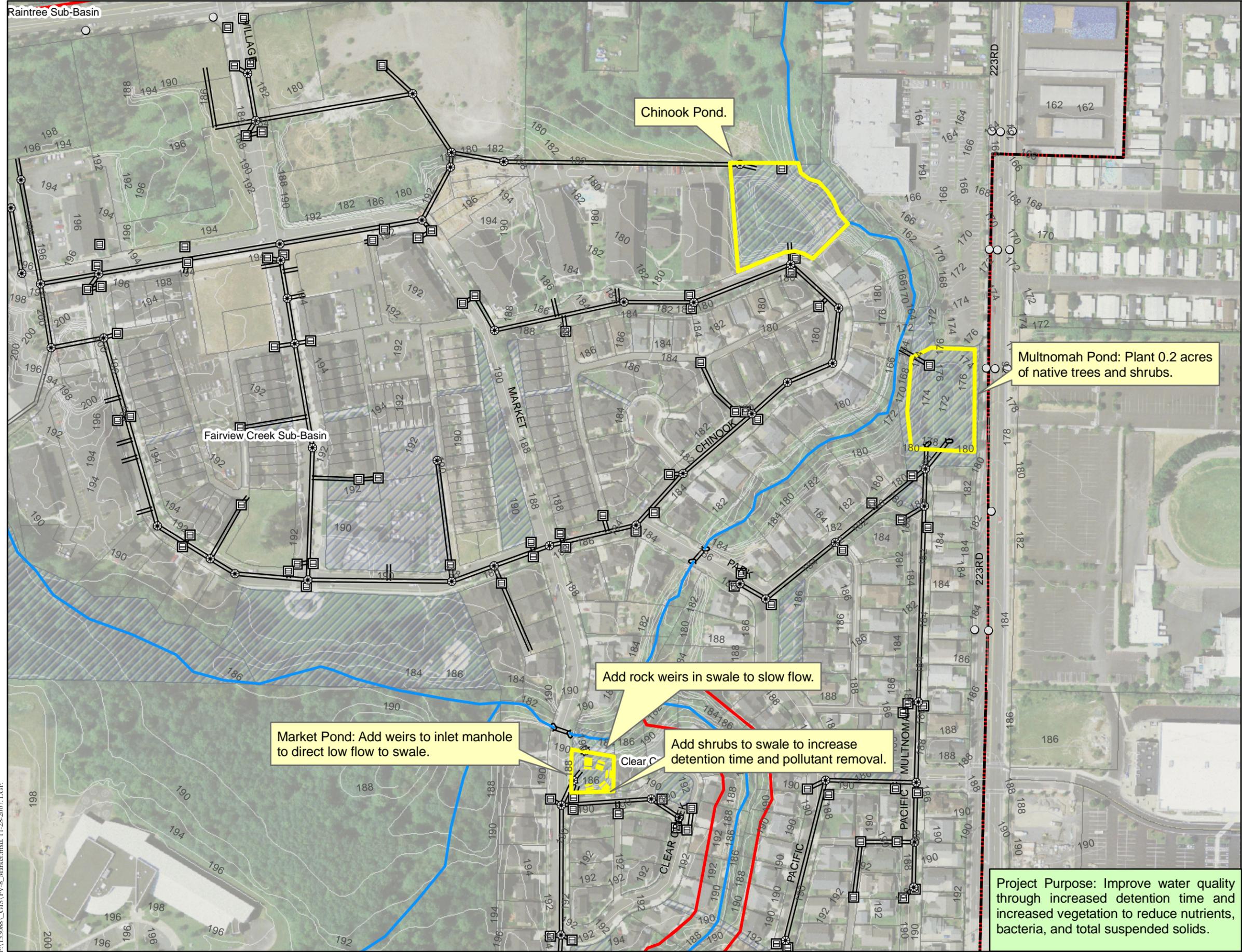
Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS

Project Purpose: Improve water quality through use of green design. For example, add approximately 2 flow-through bioretention planting strips per block, approximately 4 per year, as streets are repaved.

PA1330881_CGIS\FV-5.mxd, 11-28-2007, LGP.

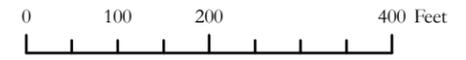


Fairview Creek Project: FV-8

Fairview Village Detention Ponds

Legend

- Fairview City Limits
- Basins
- taxlots
- City property
- Catchbasins
- Manholes
- Private MHS, CBs
- Private pipe
- Pipe
- Bridge; Box Culvert
- Private Box Culvert
- Tributary
- Pond
- Swale
- Pond and Swale
- Proposed Project Features
- Existing Project Features



1 inch equals 200 feet

Consolidated Stormwater Master Plan



Project Purpose: Improve water quality through increased detention time and increased vegetation to reduce nutrients, bacteria, and total suspended solids.

Fairview Creek
Project: FV-9

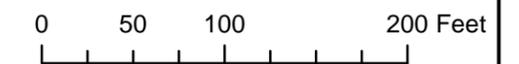
Lincoln Street between
Fairview Ave and 4th Street

Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary

Sanitary Sewer

- Cleanout
- Manhole
- Other Feature
- Plug
- Pump Station
- Valve
- Sanitary Lateral
- Sanitary Pipe

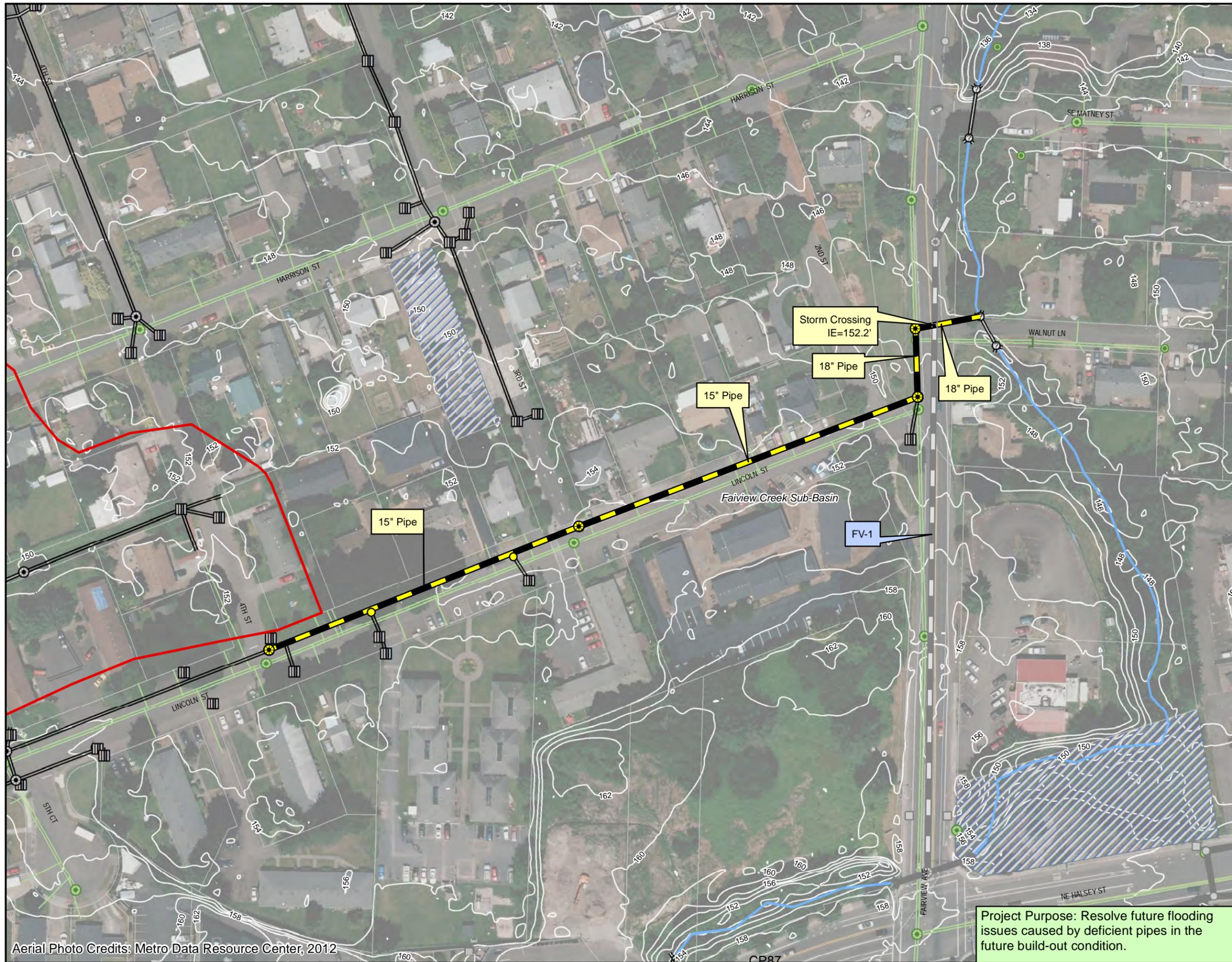


1 inch equals 100 feet

Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS



Aerial Photo Credits: Metro Data Resource Center, 2012

Project Purpose: Resolve future flooding
issues caused by deficient pipes in the
future build-out condition.

CP87

Fairview Creek
Project: FV-10

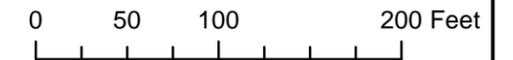
Cedar Street between
Fairview Ave and 3rd Street

Legend

-  Fairview City Limits
-  Basins
-  Taxlots
-  City Property
-  Private CBs
-  Catch Basins
-  Private MHs
-  Manholes
-  Private Box Culvert
-  Bridge; Box Culvert
-  Private Pipe
-  Pipe
-  Tributary

Sanitary Sewer

-  Cleanout
-  Manhole
-  Other Feature
-  Plug
-  Pump Station
-  Valve
-  Sanitary Lateral
-  Sanitary Pipe

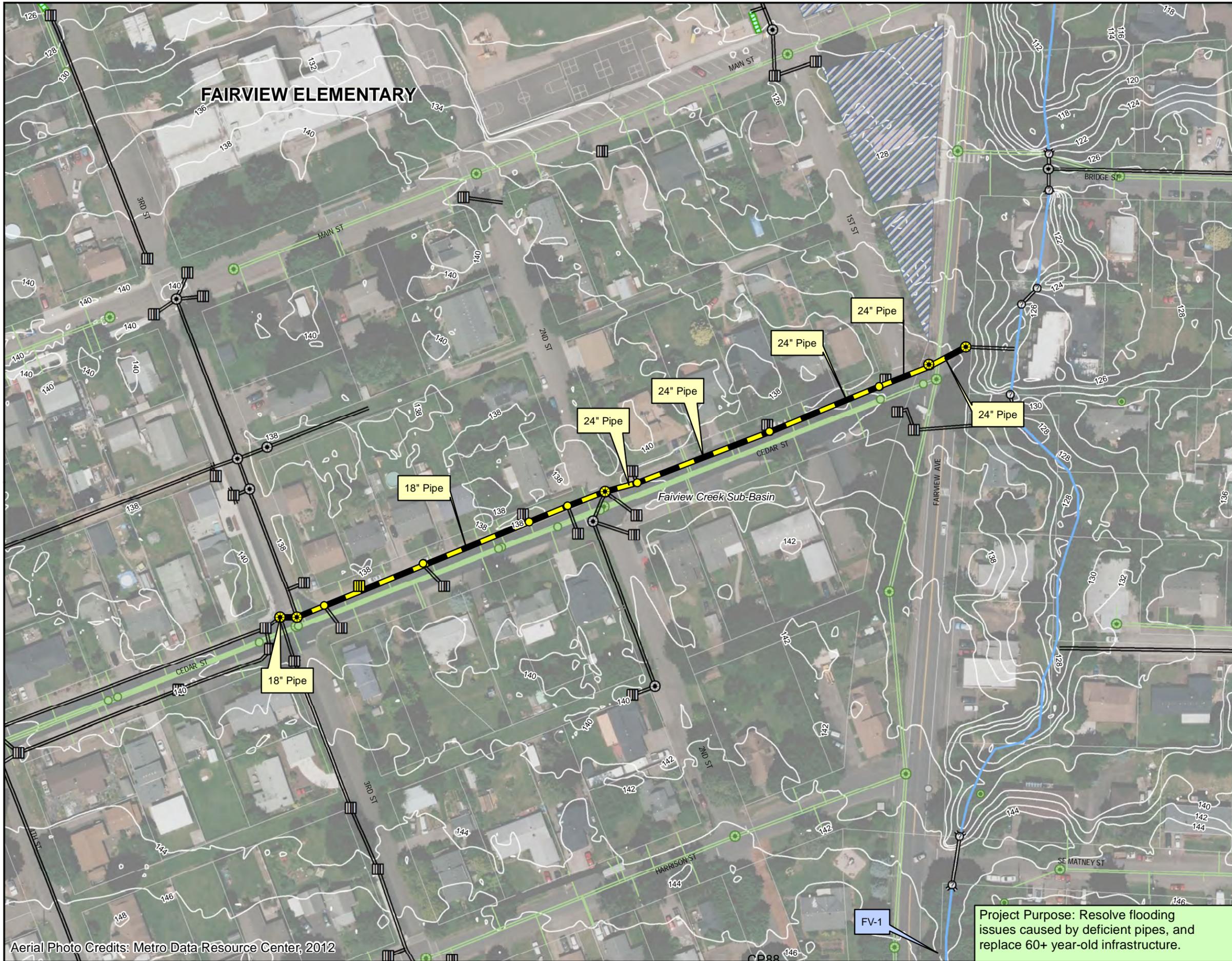


1 inch equals 100 feet

Consolidated Stormwater
Master Plan



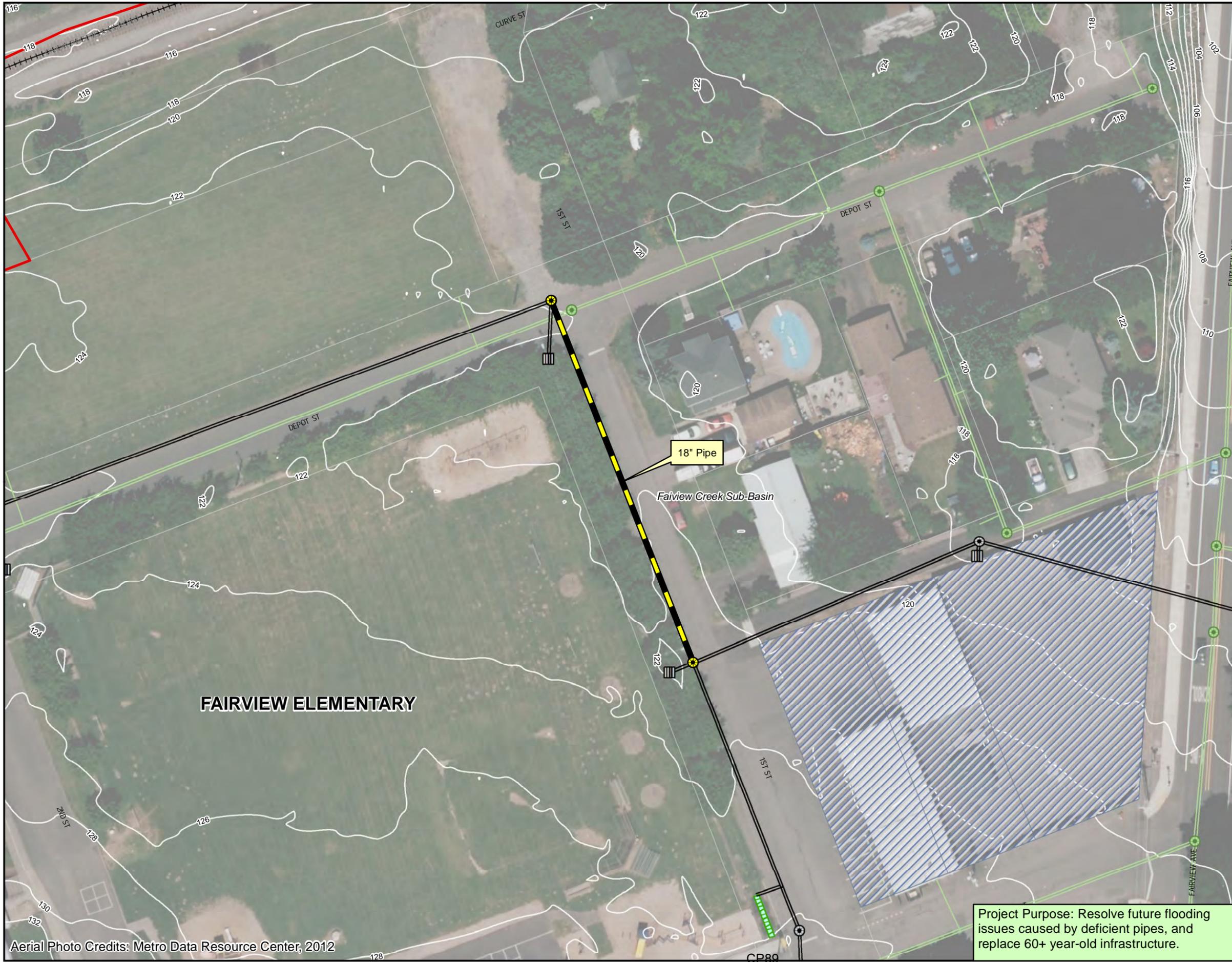
Data Source: City of Fairview GIS



Aerial Photo Credits: Metro Data Resource Center, 2012

Project Purpose: Resolve flooding
issues caused by deficient pipes, and
replace 60+ year-old infrastructure.

CP88



Fairview Creek
Project: FV-11

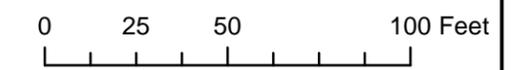
1st Street from Depot Street to Main Street.

Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary

Sanitary Sewer

- Cleanout
- Manhole
- Other Feature
- Plug
- Pump Station
- Valve
- Sanitary Lateral
- Sanitary Pipe



1 inch equals 50 feet

Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS

Aerial Photo Credits: Metro Data Resource Center, 2012

Project Purpose: Resolve future flooding issues caused by deficient pipes, and replace 60+ year-old infrastructure.

Fairview Creek
Project: NN-1a

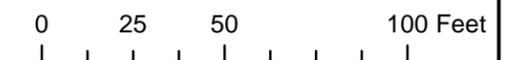
Undersized culvert for No-Name
Creek at Sandy Blvd

Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary

Sanitary Sewer

- Cleanout
- Manhole
- Other Feature
- Plug
- Pump Station
- Valve
- Sanitary Lateral
- Sanitary Pipe

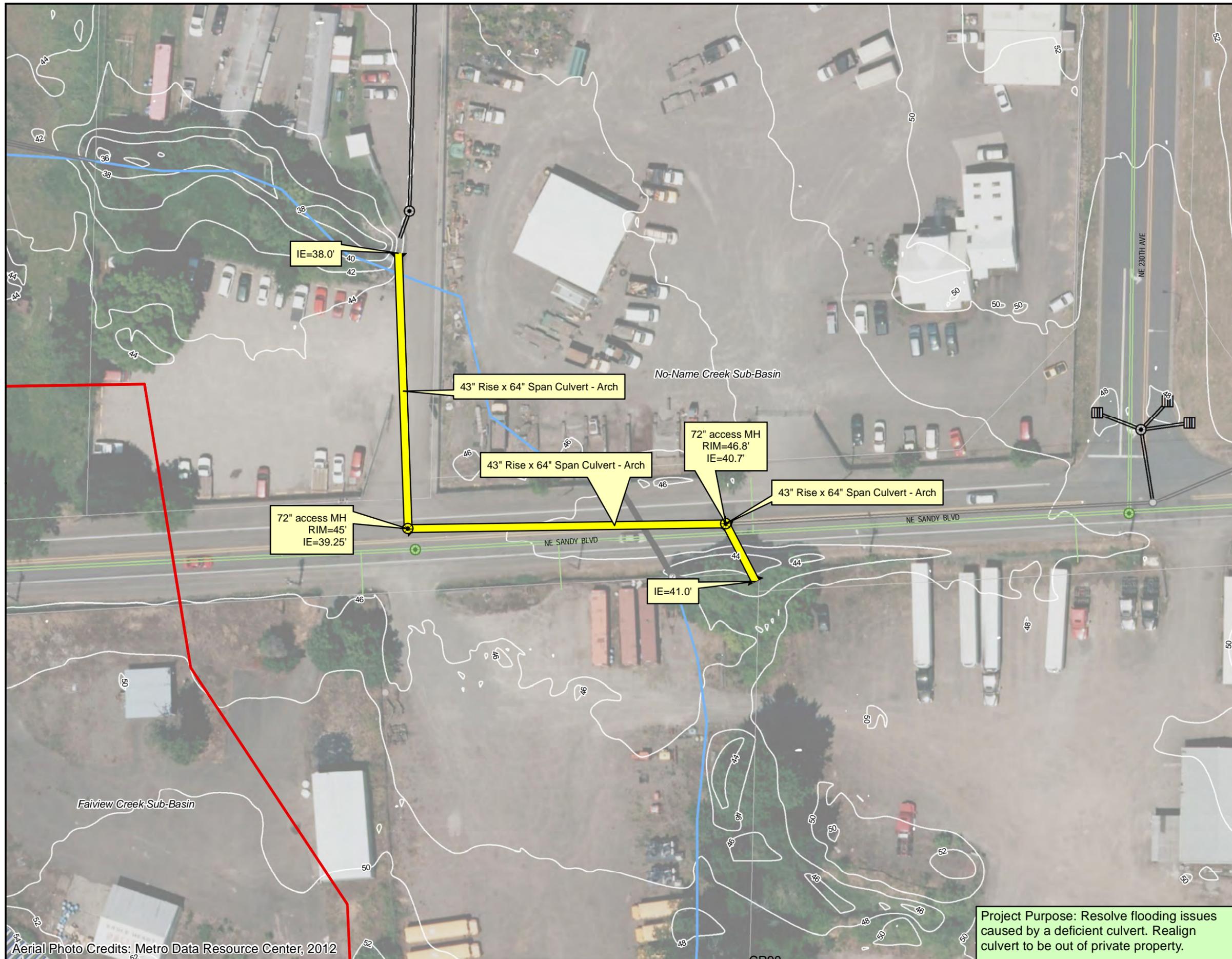


1 inch equals 50 feet

Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS



Project Purpose: Resolve flooding issues caused by a deficient culvert. Realign culvert to be out of private property.

Fairview Creek
Project: NN-4a & 4b

Replace undersized pipes and storm extension at NE 227th Ave

Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary

Sanitary Sewer

- Cleanout
- Manhole
- Other Feature
- Plug
- Pump Station
- Valve
- Sanitary Lateral
- Sanitary Pipe



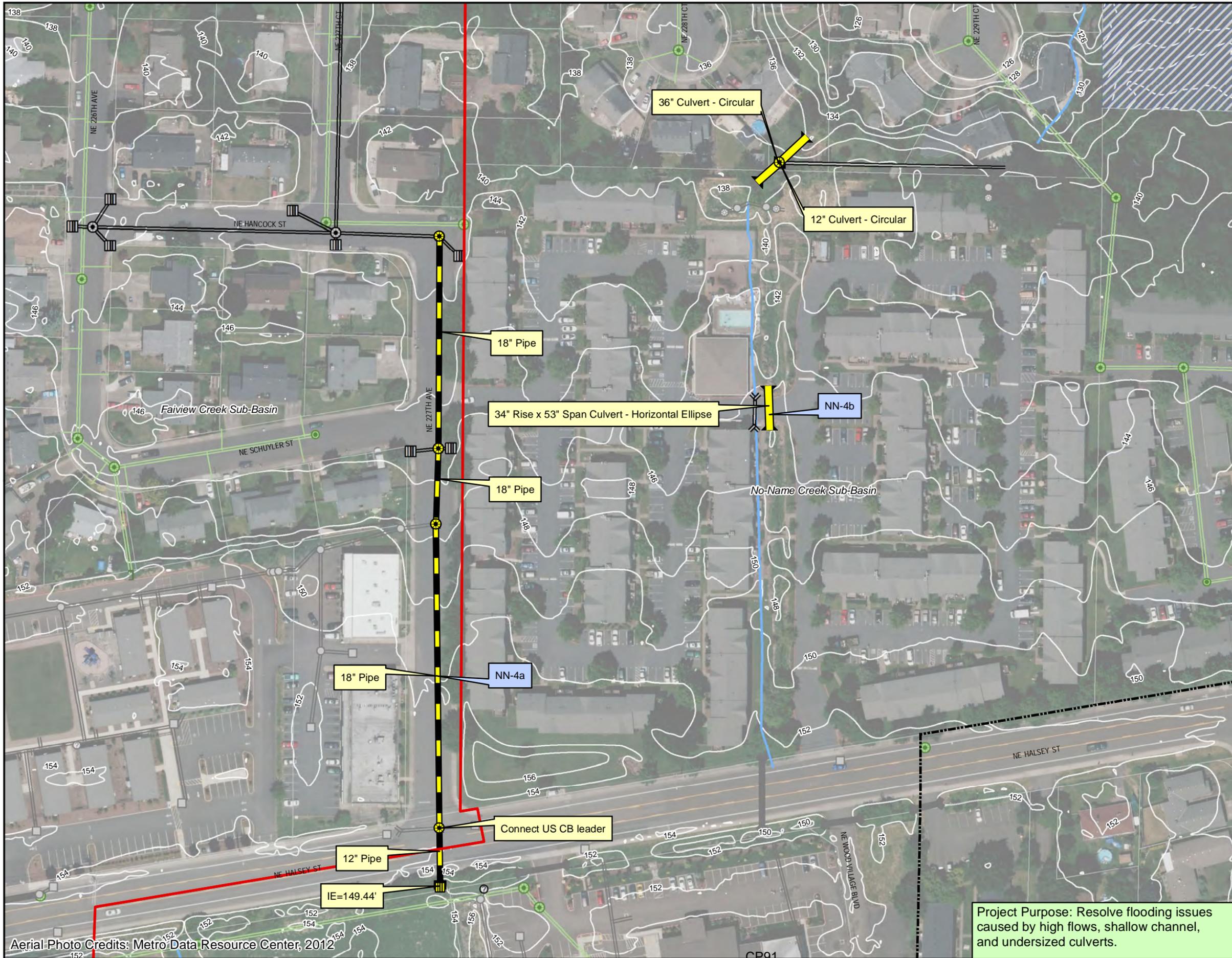
0 50 100 200 Feet

1 inch equals 100 feet

Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS



Aerial Photo Credits: Metro Data Resource Center, 2012

CP01

Fairview Creek
Project: NN-5

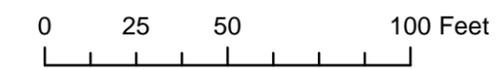
Townsend Way

Legend

-  Fairview City Limits
-  Taxlots
-  City Property
-  Private CBs
-  Catch Basins
-  Private MHs
-  Manholes
-  Private Box Culvert
-  Bridge; Box Culvert
-  Private Pipe
-  Pipe
-  Tributary

Sanitary Sewer

-  Cleanout
-  Manhole
-  Other Feature
-  Plug
-  Pump Station
-  Valve
-  Sanitary Lateral
-  Sanitary Pipe



1 inch equals 50 feet

Consolidated Stormwater
Master Plan



Data Source: City of Fairview GIS



Project Purpose: Resolve flooding issues caused by a deficient pipe.

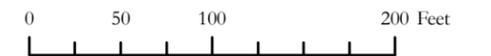
Raintree Creek
Project: RT 1, 2

Raintree Railroad Crossing,
Park Cleone Detention Pond
Retrofit, Daylight Pipe



Legend

- Fairview City Limits
- Basins
- taxlots
- City property
- Catchbasins
- Manholes
- Private MHS, CBs
- Private pipe
- Pipe
- Bridge; Box Culvert
- Private Box Culvert
- Tributary
- Pond
- Swale
- Pond and Swale
- Proposed Project Features
- Existing Project Features



1 inch equals 100 feet

**Consolidated Stormwater
Master Plan**



Data Source: City of Fairview GIS

Fairview Creek Stormwater Master Plan Addendum

Appendix A

Model Development

- > Exhibit 1-A: USDA Hydrologic Soil Group
- > Exhibit 1-B: Vegetative Cover
- > Exhibit 1-C: NRCS Curve Numbers

- > Exhibit 2: Bridge/Culvert Location Map
- > Bridge/Culvert Summary Table

- > Exhibit 3: Detention Facility Location Map
- > Detention Summary Table

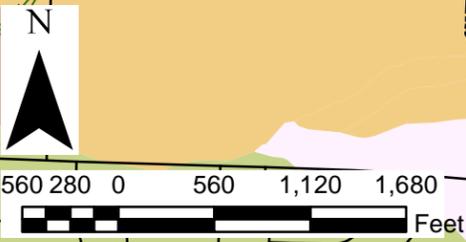
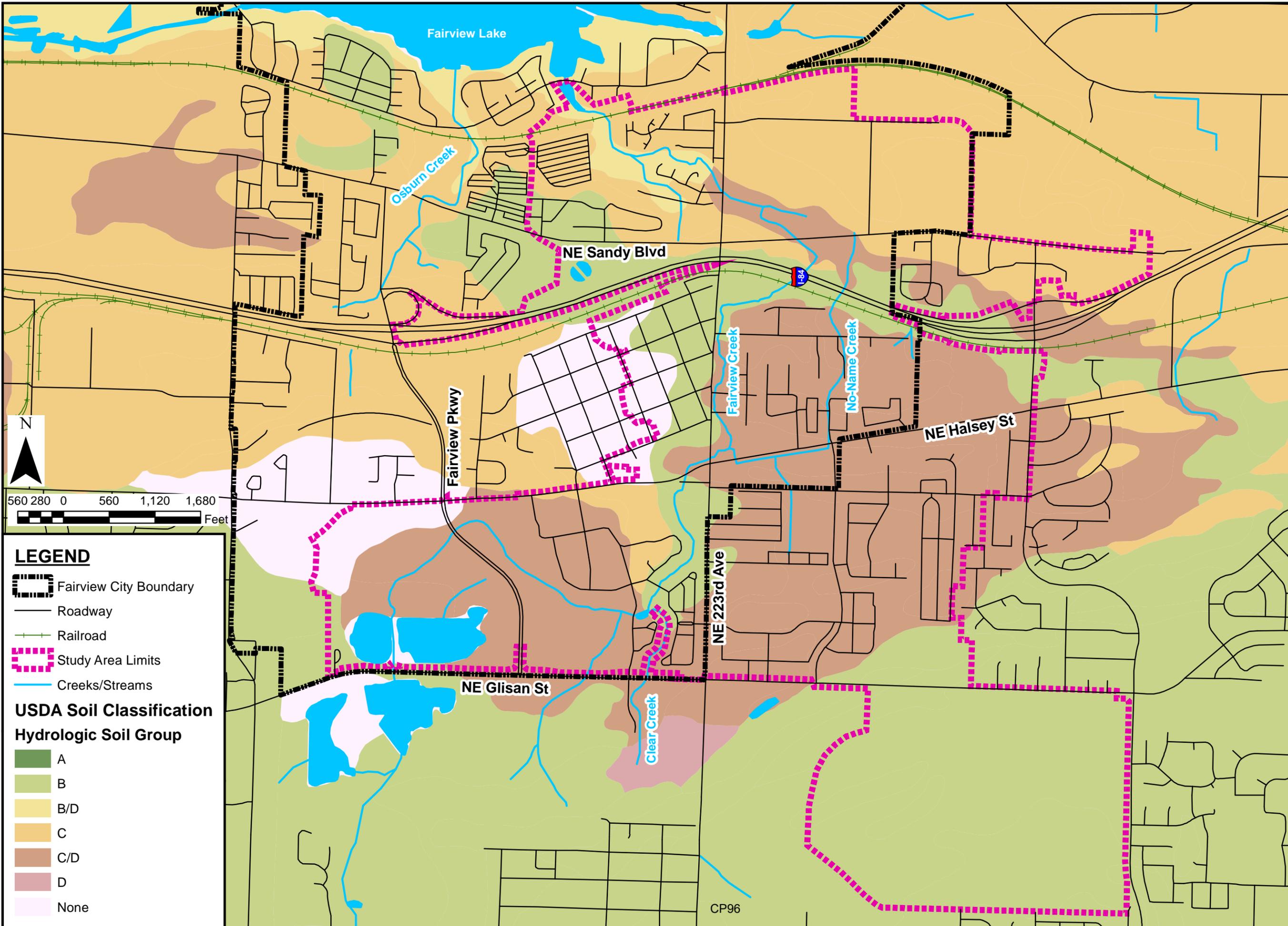
- > Exhibit 4: Gauge Location Map

- > Exhibit 5: Fairview Creek Basin Delineation
- > Fairview Creek Summary Table

- > Exhibit 6: No-Name Creek Basin Delineation
- > No-Name Creek Summary Table

- > Exhibit 7: Excluded Sub-Basins

- > Standards Tables
 - Table 3-1 - Manning's "n" Values
 - Table 6-3 Entrance Loss Coefficient for Pipe Culverts
 - Table 6-4 Entrance Loss Coefficient for Reinforced Concrete Box Culverts



LEGEND

- Fairview City Boundary
- Roadway
- Railroad
- Study Area Limits
- Creeks/Streams

USDA Soil Classification
Hydrologic Soil Group

	A
	B
	B/D
	C
	C/D
	D
	None

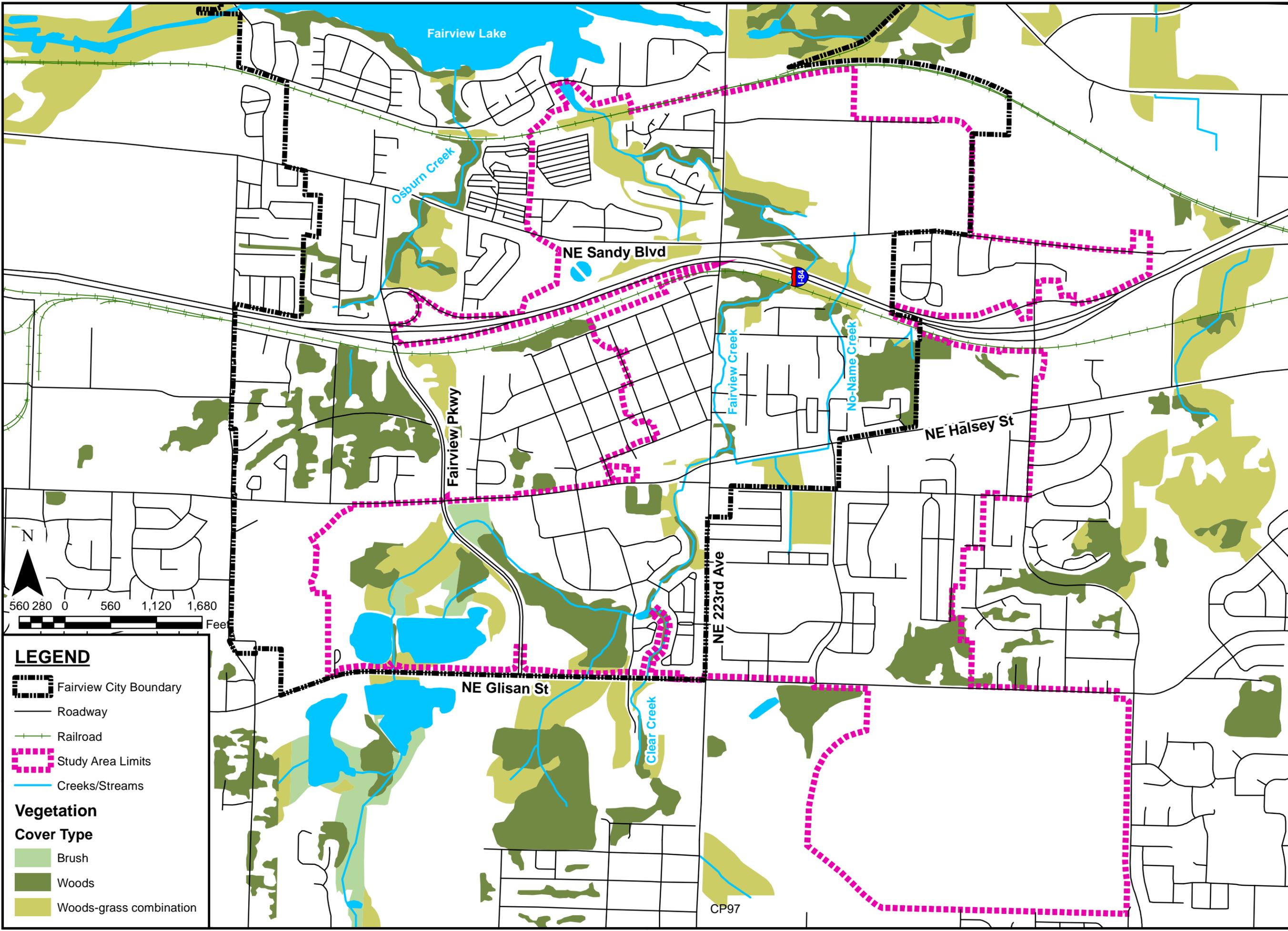
EXHIBIT 1-A

**USDA HYDROLOGIC SOIL GROUP
FAIRVIEW CREEK STORMWATER MASTER PLAN**



City of Fairview, Oregon





LEGEND

- Fairview City Boundary
- Roadway
- Railroad
- Study Area Limits
- Creeks/Streams

Vegetation Cover Type

- Brush
- Woods
- Woods-grass combination

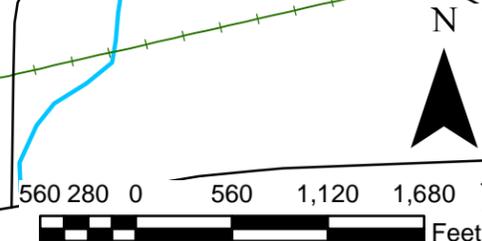
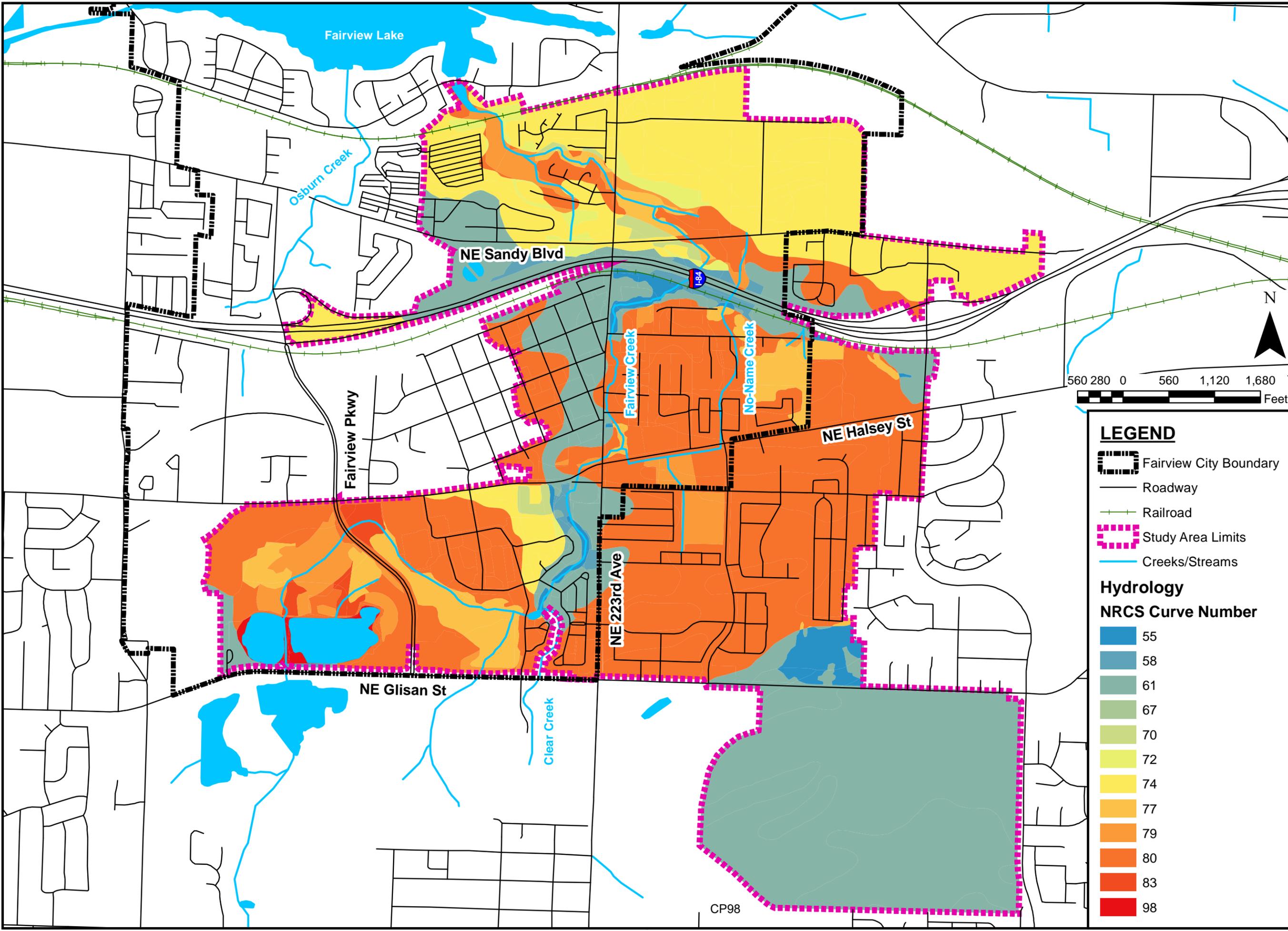
EXHIBIT 1-B

**VEGETATIVE COVER
FAIRVIEW CREEK STORMWATER MASTER PLAN**

City of Fairview, Oregon



CP97



LEGEND

- Fairview City Boundary
- Roadway
- Railroad
- Study Area Limits
- Creeks/Streams

Hydrology

NRCS Curve Number

	55
	58
	61
	67
	70
	72
	74
	77
	79
	80
	83
	98

EXHIBIT 1-C

**NRCS CURVE NUMBERS
FAIRVIEW CREEK STORMWATER MASTER PLAN**



City of Fairview, Oregon



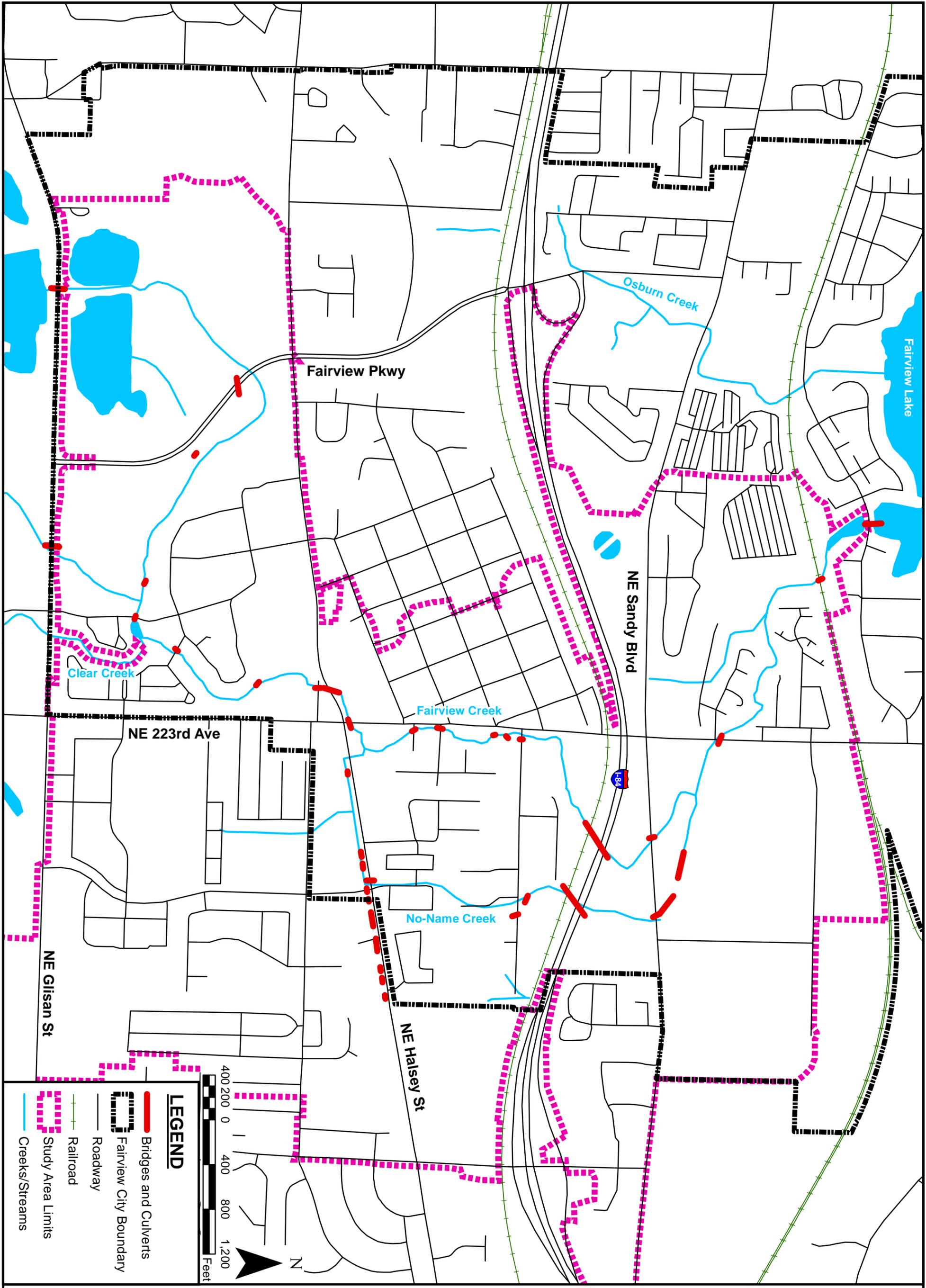


EXHIBIT 2

**BRIDGE/CULVERT LOCATION MAP
FAIRVIEW CREEK STORMWATER MASTER PLAN**



Fairview - No-Name Creek - Culvert and Bridge Summary Table

ID	Crossing Type	Inlet Type	Entrance Loss	Exit Loss	Manning's 'n'
1277	Bridge	None (,)	0.3	1.0	0.030
3721	Bridge	None (,)	0.0	0.0	0.020
980a1	Bridge	None (,)	0.0	0.0	0.015
ECovBrg	Bridge	None (,)	0.0	0.0	0.020
FootBrg	Bridge	None (,)	0.0	0.0	0.020
FVC_0010	Bridge	None (,)	0.0	0.0	0.014
FVC_0040	Bridge	None (,)	0.0	0.0	0.014
9	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.013
88	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.013
318	Culvert	30 to 75 deg Wingwall Flares (Rect, Conc)	0.4	1.0	0.013
544	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.013
546	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.013
571	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
589	Culvert	30 to 75 deg Wingwall Flares (Rect, Conc)	0.4	1.0	0.019
918	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.017
920	Culvert	Mitered to Slope (Circ, Corr Metal)	0.7	1.0	0.020
949	Culvert	0 deg Wingwall Flares (Rect, Conc)	0.7	1.0	0.030
950	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.018
951	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.014
956	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.013
957	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.013
1182	Culvert	90 and 15 deg Wingwall Flares (Rect, Conc)	0.5	1.0	0.013
1478	Culvert	Groove End with Projecting (Circ, Conc)	0.5	1.0	0.015
1479	Culvert	Groove End with Projecting (Circ, Conc)	0.5	1.0	0.015
953b	Culvert	0 deg Wingwall Flares (Rect, Conc)	0.7	1.0	0.015
978b	Culvert	Groove End with Projecting (Circ, Conc)	0.5	1.0	0.013
980a2	Culvert	Groove End with Projecting (Circ, Conc)	0.5	1.0	0.015
980b2	Culvert	Groove End with Projecting (Circ, Conc)	0.5	1.0	0.015
Culv #1	Culvert	Groove End with Projecting (Circ, Conc)	0.2	1.0	0.012
Culv #2	Culvert	Groove End with Projecting (Circ, Conc)	0.2	1.0	0.012
Culv #3	Culvert	Groove End with Projecting (Circ, Conc)	0.2	1.0	0.012
Culv #4	Culvert	Groove End with Projecting (Circ, Conc)	0.2	1.0	0.012
Culv #5	Culvert	Groove End with Projecting (Circ, Conc)	0.2	1.0	0.012
Glisan_1	Culvert	30 to 75 deg Wingwall Flares (Rect, Conc)	0.4	1.0	0.035
Glisan_2	Culvert	30 to 75 deg Wingwall Flares (Rect, Conc)	0.4	1.0	0.035
Halsey_1	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.013
L166	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L38	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L40	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L45	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L47	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L49	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L52	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L54	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014
L56	Culvert	Projecting (Circ, Corr Metal)	0.9	1.0	0.014

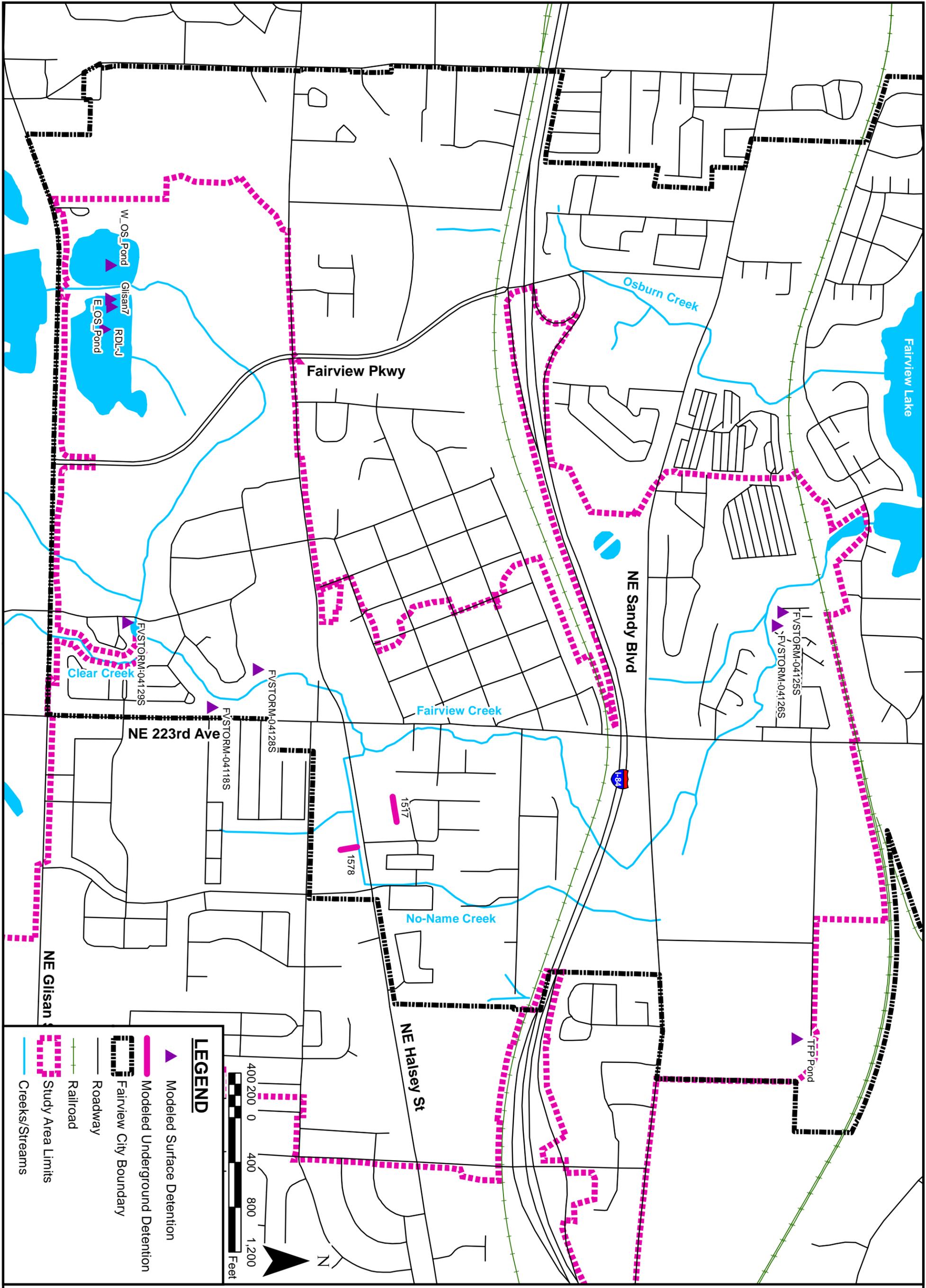


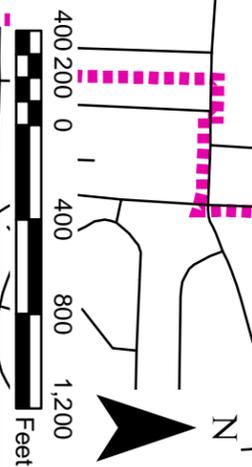
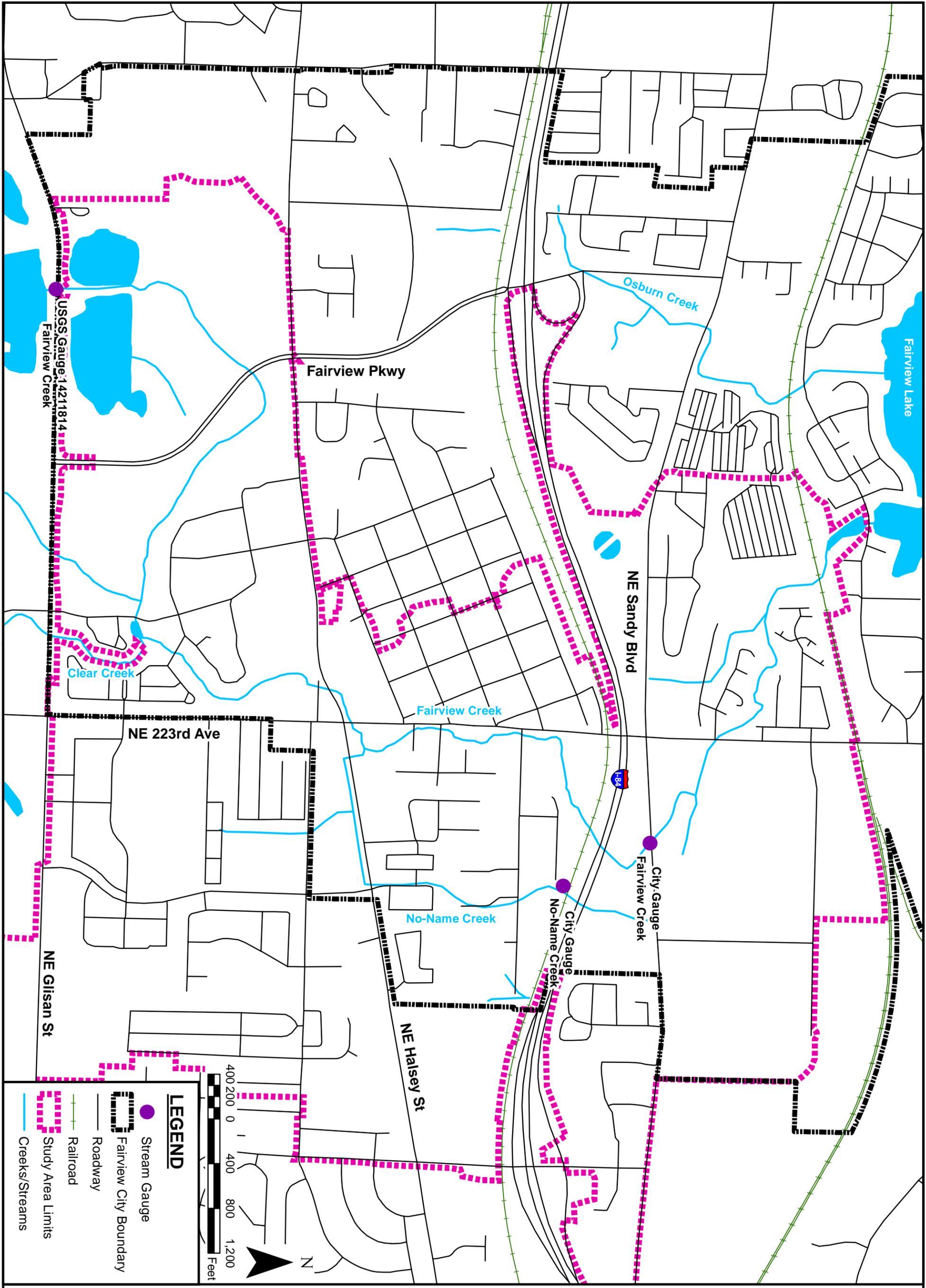
EXHIBIT 3

**DETENTION FACILITY LOCATION MAP
FAIRVIEW CREEK STORMWATER MASTER PLAN**



Fairview - No-Name Creek - Detention Summary Table

ID	Detention Type	Detention Volume (cu-ft)	Depth/Diameter (feet)
FVSTORM-04118S	Surface Detention	41,529	4.11
FVSTORM-04125S	Surface Detention	40,868	5.50
FVSTORM-04126S	Surface Detention	4,356	4.00
FVSTORM-04128S	Surface Detention	186,642	12.50
FVSTORM-04129S	Surface Detention	23,397	5.90
TFP Pond	Surface Detention	22,539	6.00
RDL-J	Surface Detention	858,000	10.00
Glisan7	Surface Detention	1,484,340	17.30
W_OS_Pond	Surface Detention	3,808,668	15.00
E_OS_Pond	Surface Detention	7,546,116	15.00
1578	Pipe Detention	1,885	4.00
1517	Pipe Detention	2,702	4.00



LEGEND

- Stream Gauge
- Fairview City Boundary
- Roadway
- Railroad
- Study Area Limits
- Creeks/Streams

EXHIBIT 4

**GAUGE LOCATION MAP
FAIRVIEW CREEK STORMWATER MASTER PLAN**



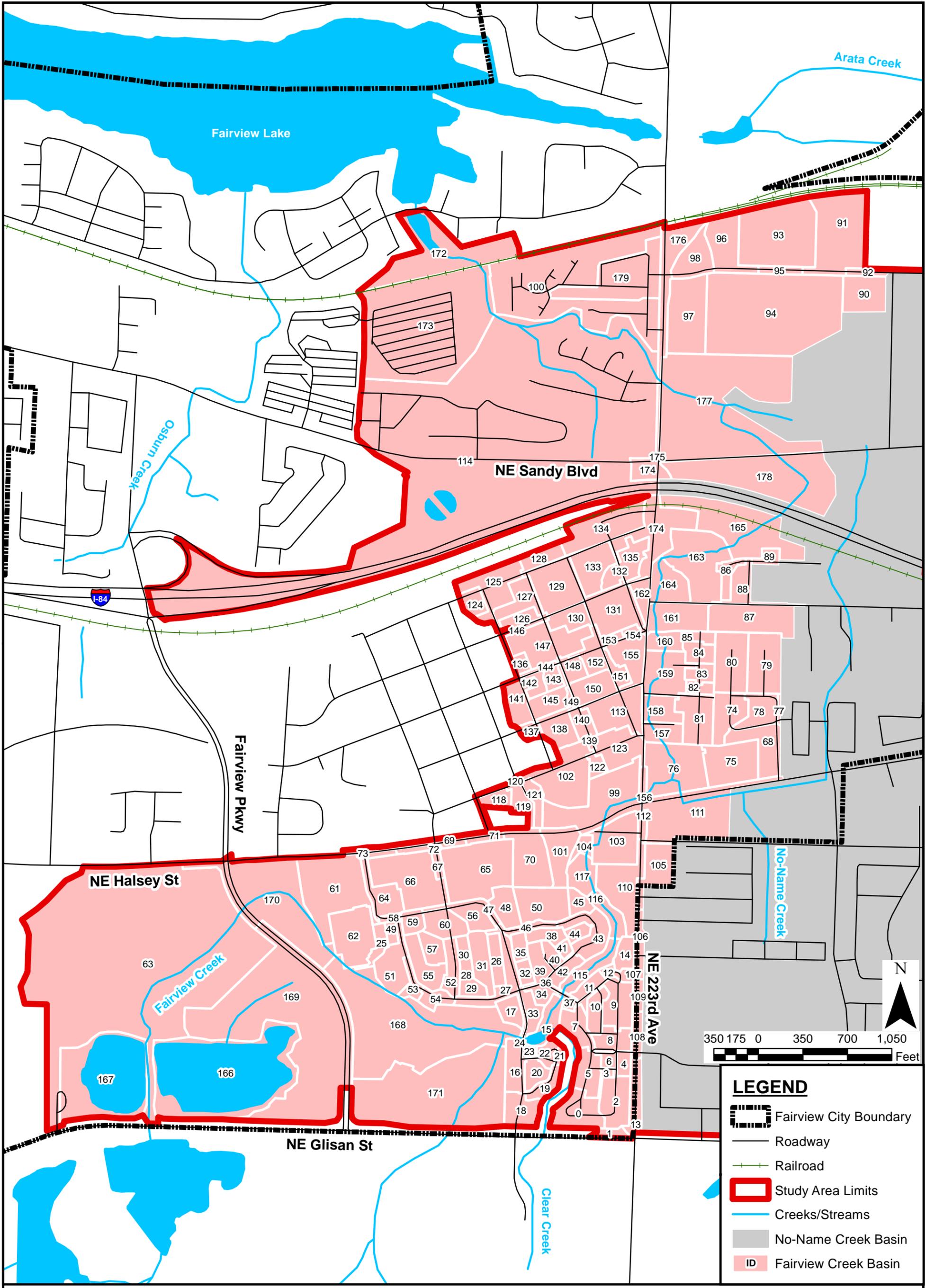


EXHIBIT 5

**FAIRVIEW CREEK BASIN DELINEATION
FAIRVIEW CREEK STORMWATER MASTER PLAN**



Fairview Creek - 1D Model Sub-Basin Table

FID	Assigned Node	Area, ac	Existing Impervious %	Build-Out Impervious %	Width, ft	Slope, ft/ft	Pervious Curve Number
0	FVSTORM-01015S	2.223	71	95	378	0.0169	80
1	223RD_0080	0.458	85	95	82	0.0058	80
2	FVSTORM-01527S	2.066	71	95	263	0.0116	80
3	FVSTORM-01090S	0.226	71	95	35	0.0110	80
4	FVSTORM-01526S	0.514	71	95	134	0.0195	80
5	FVSTORM-01016S	1.558	71	95	263	0.0117	77
6	FVSTORM-01525S	0.425	71	95	153	0.0301	80
7	FVSTORM-01030S	1.345	71	95	234	0.0114	61
8	FVSTORM-00005N	1.197	71	95	216	0.0126	78
9	FVSTORM-01520S	2.152	71	95	336	0.0134	63
10	FVSTORM-01121S	0.979	71	95	101	0.0072	62
11	FVSTORM-01121S	0.650	71	95	118	0.0135	61
12	FVSTORM-01519S	0.546	71	95	183	0.0203	61
13	223RD_0060	1.377	85	95	145	0.0120	80
14	FVSTORM-04118S	0.817	0	0	228	0.0293	58
15	FVC_N_0800	1.334	0	95	229	0.0348	63
16	FVSTORM-01167S	1.400	71	95	188	0.0083	79
17	FVSTORM-01695S	0.857	71	95	110	0.0042	80
18	FVSTORM-01162S	1.556	71	95	200	0.0124	79
19	FVSTORM-01169S	0.877	71	95	233	0.0168	80
20	FVSTORM-01167S	0.836	71	95	147	0.0081	80
21	FVSTORM-01169S	0.249	71	95	66	0.0093	67
22	FVSTORM-01168S	0.614	71	95	86	0.0045	76
23	FVSTORM-04129S	0.177	0	95	164	0.0709	80
24	FVSTORM-01037S	0.147	71	95	64	0.0331	80
25	FVSTORM-01540S	0.719	90	95	47	0.0033	80
26	FVSTORM-01189S	0.908	90	95	99	0.0043	80
27	FVSTORM-01695S	2.169	50	95	263	0.0078	80
28	FVSTORM-01142S	0.115	85	95	78	0.0106	80
29	FVSTORM-01187S	0.644	71	95	154	0.0072	80
30	FVSTORM-01143S	0.634	90	95	95	0.0036	80
31	FVSTORM-01189S	1.545	90	95	192	0.0077	80
32	FVSTORM-01190S	0.505	90	95	115	0.0097	74
33	FVSTORM-01190S	0.919	71	95	158	0.0101	75
34	FVSTORM-01191S	0.564	71	95	186	0.0178	66
35	FVSTORM-01210S	0.581	90	95	54	0.0048	76
36	FVSTORM-01191S	0.099	85	95	48	0.0235	61
37	FVSTORM-01123S	0.326	71	95	97	0.0174	61
38	FVSTORM-01199S	0.781	90	95	82	0.0077	74
39	FVSTORM-01192S	1.014	71	95	245	0.0202	73
40	FVSTORM-01199S	0.559	71	95	103	0.0145	71
41	FVSTORM-01199S	0.301	71	95	76	0.0144	73
42	FVSTORM-01199S	0.749	71	95	132	0.0115	61
43	FVSTORM-01203S	2.015	71	95	280	0.0089	64
44	FVSTORM-01013S	0.493	90	95	150	0.0178	71
45	FVSTORM-04128S	0.690	0	0	345	0.1087	64
46	FVSTORM-01210S	0.590	85	95	80	0.0203	76
47	FVSTORM-01210S	0.216	85	95	78	0.0119	80
48	FVSTORM-01407S	1.336	71	95	13	0.0011	77
49	FVSTORM-01537S	0.340	90	95	93	0.0061	80
50	FVSTORM-01408S	2.508	71	95	320	0.0212	74
51	FVSTORM-01125S	2.090	90	95	152	0.0046	80
52	T-001	1.161	85	95	171	0.0056	80

Fairview Creek - 1D Model Sub-Basin Table

FID	Assigned Node	Area, ac	Existing Impervious %	Build-Out Impervious %	Width, ft	Slope, ft/ft	Pervious Curve Number
53	FVSTORM-01127S	0.665	71	95	65	0.0059	80
54	FVSTORM-01133S	0.734	71	86	59	0.0035	80
55	FVSTORM-01105S	1.643	90	95	193	0.0050	80
56	FVSTORM-01533S	1.511	85	95	9	0.0004	80
57	FVSTORM-01104S	0.955	90	95	178	0.0047	80
58	FVSTORM-01531S	0.233	85	95	1	0.0001	80
59	FVSTORM-01126S	0.716	90	95	6	0.0003	80
60	FVSTORM-01145S	1.470	85	95	9	0.0001	80
61	FVSTORM-01541S	5.841	90	95	45	0.0004	80
62	FVC_N_0940	3.080	100	100	42	0.0005	80
63	FVC_N_0960	50.049	21	21	419	0.0012	79
64	FVSTORM-01530S	1.629	85	95	164	0.0071	80
65	FVSTORM-01406S	5.258	0	95	182	0.0054	76
66	FVSTORM-01401S	4.444	90	90	271	0.0142	80
67	FVSTORM-01403S	0.322	85	95	134	0.0199	78
68	FVSTORM-04337N	2.356	42	90	367	0.0197	80
69	FVSTORM-00550S	0.805	85	95	29	0.0146	74
70	FVSTORM-00544S	3.100	21	95	26	0.0028	73
71	FVSTORM-00546S	0.554	85	95	23	0.0041	77
72	FVSTORM-00490S	0.400	85	95	69	0.0384	74
73	FVSTORM-00560S	0.501	85	95	11	0.0015	76
74	FVSTORM-00836S	1.920	42	83	111	0.0066	80
75	FVSTORM-04321N	3.038	90	95	127	0.0021	80
76	FVC_N_0580	4.210	42	78	251	0.0073	77
77	FVSTORM-00835S	0.165	85	95	45	0.0159	80
78	FVSTORM-00833S	1.526	42	86	194	0.0097	80
79	FVSTORM-00830S	2.902	42	83	337	0.0104	80
80	FVSTORM-00831S	2.850	42	83	164	0.0055	80
81	FVSTORM-00971S	2.364	42	85	272	0.0129	80
82	FVSTORM-00971S	0.482	42	85	123	0.0124	80
83	FVSTORM-01475S	0.691	42	84	162	0.0117	80
84	FVSTORM-01479S	0.912	42	83	155	0.0056	80
85	FVSTORM-01476S	0.539	42	83	54	0.0043	80
86	FVSTORM-00867S	0.749	42	85	101	0.0370	80
87	FVSTORM-01483S	3.593	42	82	178	0.0054	80
88	FVSTORM-01484S	1.431	42	88	137	0.0180	80
89	FVSTORM-01484S	0.507	42	88	34	0.0025	80
90	FVSTORM-04017S	2.244	90	90	144	0.0062	74
91	FVSTORM-04014S	5.934	90	90	162	0.0031	74
92	FVSTORM-04007S	0.472	85	95	72	0.0203	74
93	FVSTORM-04216S	6.820	90	90	213	0.0034	74
94	FVSTORM-04065S	14.929	50	90	790	0.0156	74
95	FVSTORM-04005S	0.478	85	95	82	0.0157	74
96	FVSTORM-04003S	2.601	21	91	182	0.0213	74
97	FVSTORM-04370N	4.169	90	90	447	0.0085	74
98	FVSTORM-04001S	1.898	21	91	176	0.0277	74
99	FVSTORM-04343N	5.281	42	95	27	0.0005	74
100	FVSTORM-04125S	14.117	42	64	584	0.0104	74
101	FVSTORM-00543S	2.061	21	95	10	0.0010	66
102	FVSTORM-00504S	3.998	42	83	188	0.0024	70
103	00821	2.900	90	95	285	0.0113	65
104	FVC_N_0710	0.520	0	95	136	0.0412	59
105	FVSTORM-00001N	2.075	85	95	203	0.0148	62

Fairview Creek - 1D Model Sub-Basin Table

FID	Assigned Node	Area, ac	Existing Impervious %	Build-Out Impervious %	Width, ft	Slope, ft/ft	Pervious Curve Number
106	FVSTORM-00002N	0.362	85	95	14	0.0032	75
107	FVSTORM-00003N	0.568	85	95	29	0.0033	61
108	FVSTORM-00006N	0.731	85	95	83	0.0070	80
109	FVSTORM-00004N	0.495	85	95	58	0.0050	64
110	223RD_0040	3.182	90	95	204	0.0112	61
111	FVSTORM-03101	6.229	50	95	26	0.0003	80
112	223RD_0030	0.384	85	95	97	0.0086	79
113	FVSTORM-01429S	2.832	42	86	22	0.0008	65
114	FVSTORM-01382N	84.779	50	64	1134	0.0200	69
115	FVC_N_0760	1.521	0	0	180	0.0266	57
116	FVC_N_0740	1.124	0	0	176	0.0388	56
117	FVC_N_0720	1.374	0	95	229	0.0421	59
118	FVSTORM-00764S	0.851	42	86	150	0.0273	80
119	FVSTORM-00764S	0.891	42	86	204	0.0277	80
120	FVSTORM-00506S	0.226	42	95	43	0.0165	80
121	FVSTORM-00652S	0.799	42	86	93	0.0200	80
122	FVSTORM-00505S	0.502	42	82	74	0.0037	61
123	FVSTORM-00840S	2.281	42	85	34	0.0015	61
124	FVSTORM-00487S	0.813	42	84	158	0.0224	80
125	FVSTORM-00756S	2.814	63	89	241	0.0162	73
126	FVSTORM-00756S	0.714	42	89	60	0.0021	69
127	FVSTORM-00756S	1.524	42	89	184	0.0244	72
128	FVSTORM-00661S	1.007	90	91	169	0.0065	73
129	FVSTORM-00609S	3.128	85	91	359	0.0262	63
130	FVSTORM-00904S	1.177	42	84	57	0.0012	61
131	FVSTORM-00904S	3.010	42	84	261	0.0158	61
132	FVSTORM-00659S	0.535	50	91	129	0.0196	61
133	FVSTORM-00485S	2.152	21	91	287	0.0144	61
134	<i>Excluded</i>	-	-	-	-	-	-
135	FVSTORM-00822S-D	1.262	42	61	215	0.0173	61
136	FVSTORM-00793S	0.441	42	83	132	0.0088	80
137	FVSTORM-00804S	0.452	42	90	102	0.0098	80
138	FVSTORM-00785S	1.547	42	84	137	0.0061	80
139	FVSTORM-02069S	0.137	42	95	74	0.0200	61
140	FVSTORM-02066S	0.825	42	88	154	0.0102	69
141	FVSTORM-00634S	1.595	42	84	237	0.0168	80
142	FVSTORM-00633S	0.525	42	84	120	0.0146	80
143	FVSTORM-03344S	0.553	42	82	151	0.0132	80
144	FVSTORM-00495N	0.216	42	95	38	0.0072	80
145	FVSTORM-00632S	1.328	42	84	176	0.0145	80
146	FVSTORM-00797S	0.420	42	95	23	0.0008	72
147	FVSTORM-00790S	3.401	42	83	329	0.0033	77
148	FVSTORM-00495S	0.795	42	85	171	0.0106	80
149	FVSTORM-00784S	0.159	42	90	32	0.0122	80
150	FVSTORM-00783S	1.583	42	85	330	0.0154	64
151	FVSTORM-00781S	0.634	42	85	81	0.0063	61
152	FVSTORM-00493S	1.306	42	87	179	0.0057	66
153	FVSTORM-02109S	0.233	42	86	47	0.0088	61
154	FVSTORM-02110S	0.202	50	87	46	0.0085	61
155	FVSTORM-00895S	1.921	42	87	13	0.0006	62
156	FVSTORM-00964S	0.385	85	95	12	0.0004	76
157	FVC_N_0560	1.146	42	83	324	0.0162	74
158	FVSTORM-01431S	1.420	42	83	292	0.0170	80

Fairview Creek - 1D Model Sub-Basin Table

FID	Assigned Node	Area, ac	Existing Impervious %	Build-Out Impervious %	Width, ft	Slope, ft/ft	Pervious Curve Number
159	FVSTORM-01481N	2.730	42	82	193	0.0138	79
160	FVSTORM-02113N	0.989	42	81	34	0.0038	79
161	FVSTORM-02112N	2.464	42	82	109	0.0058	77
162	FVSTORM-00969N	0.878	50	50	25	0.0043	62
163	FVSTORM-00902N	4.704	42	80	442	0.0401	68
164	FVSTORM-00969N	1.994	42	50	109	0.0153	65
165	FVC_N_0340	6.375	21	88	111	0.0055	60
166	E_OS_Pond	15.628	85	85	1136	0.0095	94
167	W_OS_Pond	9.799	21	30	886	0.0184	87
168	FVC_N_0880	15.682	0	15	648	0.0079	78
169	FVC_N_0920	21.910	50	50	606	0.0062	80
170	FVC_N_0950	9.145	50	50	173	0.0038	81
171	FVC_N_0871	13.818	50	50	606	0.0085	79
172	FVC_N_0020	6.866	21	52	498	0.0345	76
173	FVC_N_0050	17.440	42	66	952	0.0206	75
174	FVSTORM-00327S	4.891	42	88	37	0.0042	62
175	223RD_0090	0.374	85	95	35	0.0623	76
176	223RD_0110	2.945	85	93	100	0.0107	74
177	FVC_N_0150	17.552	21	91	1049	0.0359	75
178	FVC_N_0280	8.767	21	83	224	0.0277	71
179	FVSTORM-01382S	4.876	42	80	246	0.0072	74

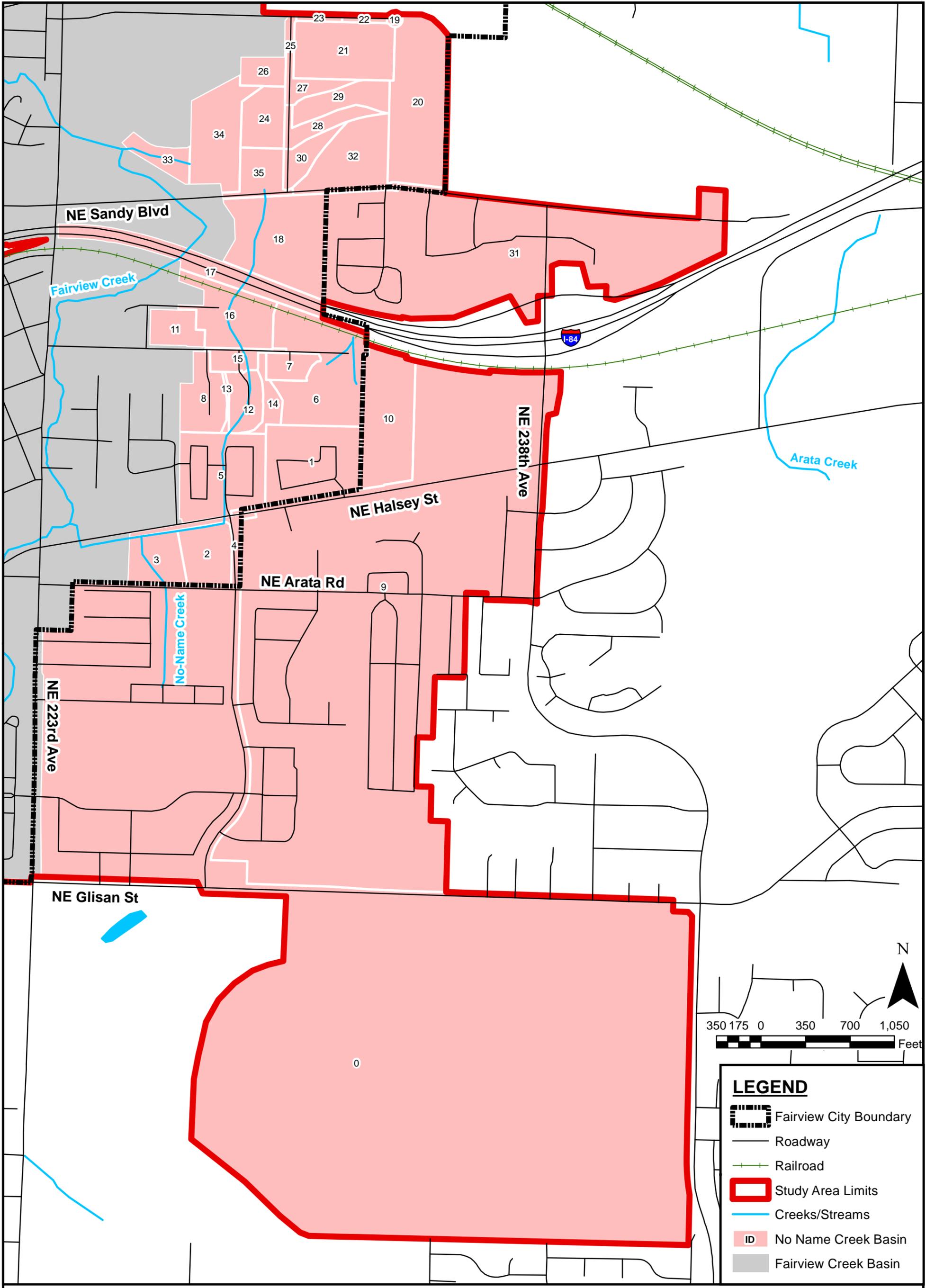


EXHIBIT 6

**NO-NAME CREEK BASIN DELINEATION
FAIRVIEW CREEK STORMWATER MASTER PLAN**



No-Name Creek - 1D Model Sub-Basin Table

FID	Assigned Node	Area, ac	Existing Impervious %	Build-Out Impervious %	Width, ft	Slope, ft/ft	Pervious Curve Number
0	NNC_N_0160	306.944	33.8	33.8	1929	0.0314	66
1	<i>Excluded</i>	-	-	-	-	-	-
2	FVSTORM-03426S	4.177	90	95	327	0.0139	80
3	N40	3.846	0	95	377	0.0225	79
4	FVSTORM-00943S	1.909	85	95	155	0.0164	80
5	FVSTORM-00942S	10.090	71	80	474	0.0196	80
6	<i>Excluded</i>	-	-	-	-	-	-
7	<i>Excluded</i>	-	-	-	-	-	-
8	FVSTORM-00842S	4.268	42	83	386	0.0346	80
9	59-A	151.567	49.9	80	1889	0.0328	76
10	<i>Excluded</i>	-	-	-	-	-	-
11	FVSTORM-01659N	2.658	42	80	189	0.0328	80
12	FVSTORM-00978S	2.896	42	83	183	0.0243	80
13	N_55	0.271	42	80	32	0.0560	80
14	FVSTORM-00921N	1.520	0	36	156	0.0579	78
15	FVSTORM-00828S	1.751	42	85	151	0.0187	80
16	FVSTORM-00912N	6.774	21	85	223	0.0181	71
17	FVSTORM-01467S	7.030	90	94	393	0.0373	61
18	NNC_N_0060	11.736	21	94	639	0.0541	72
19	FVSTORM-04020S	0.263	85	95	31	0.0083	74
20	TFP Pond	13.270	85	90	682	0.0171	74
21	FVSTORM-04177S	8.155	90	90	321	0.0067	74
22	FVSTORM-04019S	0.487	85	95	58	0.0089	74
23	FVSTORM-04018S	0.496	85	95	59	0.0088	74
24	FVSTORM-02044S	3.579	0	90	377	0.0349	74
25	FVSTORM-02057S	0.539	85	94	70	0.0154	74
26	FVSTORM-02056S	1.936	85	90	286	0.0224	74
27	FVSTORM-02053S	1.798	21	95	221	0.0387	74
28	FVSTORM-02038S	2.313	21	95	180	0.0422	74
29	FVSTORM-02048S	3.454	0	95	205	0.0212	74
30	FVSTORM-02032S	2.167	21	95	218	0.0422	74
31	16-C	54.681	78.6	78.6	1122	0.0155	74
32	FVSTORM-02031S	7.456	21	95	537	0.0405	74
33	NNC_N_0010	2.318	21	90	239	0.0434	78
34	NNC_N_0011	7.458	85	90	402	0.0178	76
35	FVSTORM-01470S	3.258	90	95	218	0.0133	75

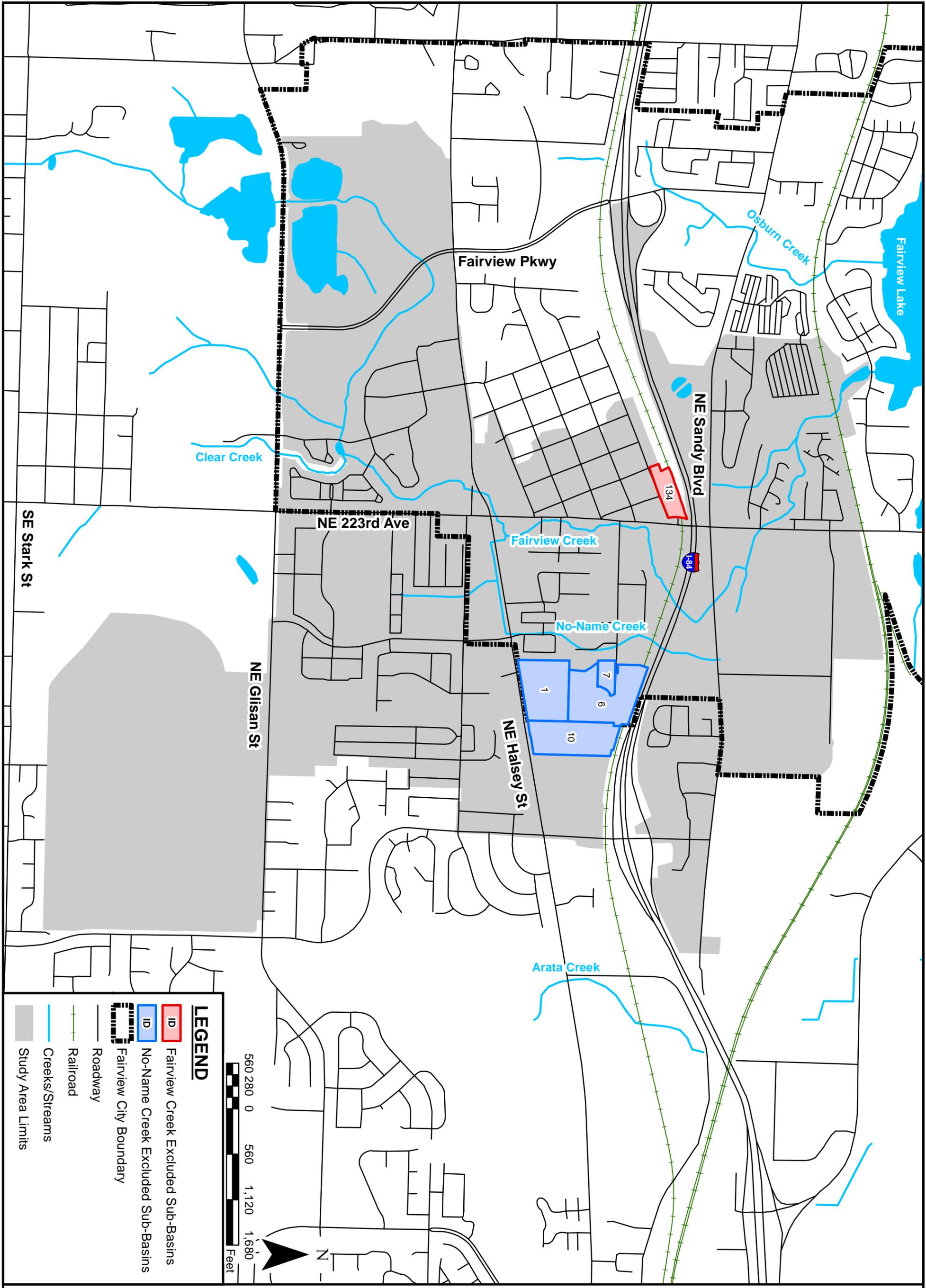


EXHIBIT 7

**EXCLUDED SUB-BASINS
FAIRVIEW CREEK STORMWATER MASTER PLAN**



Table 3-1 Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
<i>A. Natural Streams</i>			
1. Main Channels			
a. Clean, straight, full, no rifts or deep pools	0.025	0.030	0.033
b. Same as above, but more stones and weeds	0.030	0.035	0.040
c. Clean, winding, some pools and shoals	0.033	0.040	0.045
d. Same as above, but some weeds and stones	0.035	0.045	0.050
e. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
f. Same as "d" but more stones	0.045	0.050	0.060
g. Sluggish reaches, weedy, deep pools	0.050	0.070	0.080
h. Very weedy reaches, deep pools, or floodways with heavy stands of timber and brush	0.070	0.100	0.150
2. Flood Plains			
a. Pasture no brush	0.025	0.030	0.035
1. Short grass	0.030	0.035	0.050
2. High grass			
b. Cultivated areas	0.020	0.030	0.040
1. No crop	0.025	0.035	0.045
2. Mature row crops	0.030	0.040	0.050
3. Mature field crops			
c. Brush	0.035	0.050	0.070
1. Scattered brush, heavy weeds	0.035	0.050	0.060
2. Light brush and trees, in winter	0.040	0.060	0.080
3. Light brush and trees, in summer	0.045	0.070	0.110
4. Medium to dense brush, in winter	0.070	0.100	0.160
5. Medium to dense brush, in summer			
d. Trees	0.030	0.040	0.050
1. Cleared land with tree stumps, no sprouts	0.050	0.060	0.080
2. Same as above, but heavy sprouts	0.080	0.100	0.120
3. Heavy stand of timber, few down trees, little undergrowth, flow below branches	0.100	0.120	0.160
4. Same as above, but with flow into branches			
5. Dense willows, summer, straight	0.110	0.150	0.200
3. Mountain Streams, no vegetation in channel, banks usually steep, with trees and brush on banks submerged			
a. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
b. Bottom: cobbles with large boulders	0.040	0.050	0.070

Table 3-1 (Continued) Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
B. Lined or Built-Up Channels			
1. Concrete			
a. Trowel finish	0.011	0.013	0.015
b. Float Finish	0.013	0.015	0.016
c. Finished, with gravel bottom	0.015	0.017	0.020
d. Unfinished	0.014	0.017	0.020
e. Gunite, good section	0.016	0.019	0.023
f. Gunite, wavy section	0.018	0.022	0.025
g. On good excavated rock	0.017	0.020	
h. On irregular excavated rock	0.022	0.027	
2. Concrete bottom float finished with sides of:			
a. Dressed stone in mortar	0.015	0.017	0.020
b. Random stone in mortar	0.017	0.020	0.024
c. Cement rubble masonry, plastered	0.016	0.020	0.024
d. Cement rubble masonry	0.020	0.025	0.030
e. Dry rubble on riprap	0.020	0.030	0.035
3. Gravel bottom with sides of:			
a. Formed concrete	0.017	0.020	0.025
b. Random stone in mortar	0.020	0.023	0.026
c. Dry rubble or riprap	0.023	0.033	0.036
4. Brick			
a. Glazed	0.011	0.013	0.015
b. In cement mortar	0.012	0.015	0.018
5. Metal			
a. Smooth steel surfaces	0.011	0.012	0.014
b. Corrugated metal	0.021	0.025	0.030
6. Asphalt			
a. Smooth	0.013	0.013	
b. Rough	0.016	0.016	
7. Vegetal lining			
	0.030		0.500

Table 3-1 (Continued) Manning's 'n' Values

Type of Channel and Description	Minimum	Normal	Maximum
<i>C. Excavated or Dredged Channels</i>			
1. Earth, straight and uniform			
a. Clean, recently completed	0.016	0.018	0.020
b. Clean, after weathering	0.018	0.022	0.025
c. Gravel, uniform section, clean	0.022	0.025	0.030
d. With short grass, few weeds	0.022	0.027	0.033
2. Earth, winding and sluggish			
a. No vegetation	0.023	0.025	0.030
b. Grass, some weeds	0.025	0.030	0.033
c. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
d. Earth bottom and rubble side	0.028	0.030	0.035
e. Stony bottom and weedy banks	0.025	0.035	0.040
f. Cobble bottom and clean sides	0.030	0.040	0.050
3. Dragline-excavated or dredged			
a. No vegetation	0.025	0.028	0.033
b. Light brush on banks	0.035	0.050	0.060
4. Rock cuts			
a. Smooth and uniform	0.025	0.035	0.040
b. Jagged and irregular	0.035	0.040	0.050
5. Channels not maintained, weeds and brush			
a. Clean bottom, brush on sides	0.040	0.050	0.080
b. Same as above, highest stage of flow	0.045	0.070	0.110
c. Dense weeds, high as flow depth	0.050	0.080	0.120
d. Dense brush, high stage	0.080	0.100	0.140

Other sources that include pictures of selected streams as a guide to n value determination are available (Fasken, 1963; Barnes, 1967; and Hicks and Mason, 1991). In general, these references provide color photos with tables of calibrated n values for a range of flows.

Although there are many factors that affect the selection of the n value for the channel, some of the most important factors are the type and size of materials that compose the bed and banks of a channel, and the shape of the channel. Cowan (1956) developed a procedure for estimating the effects of these factors to determine the value of Manning's n of a channel. In Cowan's procedure, the value of n is computed by the following equation:

Table 6-3 Entrance Loss Coefficient for Pipe Culverts

Type of Structure and Design of Entrance	Coefficient, k_{en}
Concrete Pipe Projecting from Fill (no headwall):	
Socket end of pipe	0.2
Square cut end of pipe	0.5
Concrete Pipe with Headwall or Headwall and Wingwalls:	
Socket end of pipe (grooved end)	0.2
Square cut end of pipe	0.5
Rounded entrance, with rounding radius = 1/12 of diameter	0.2
Concrete Pipe:	
Mitered to conform to fill slope	0.7
End section conformed to fill slope	0.5
Beveled edges, 33.7 or 45 degree bevels	0.2
Side slope tapered inlet	0.2
Corrugated Metal Pipe or Pipe-Arch:	
Projected from fill (no headwall)	0.9
Headwall or headwall and wingwalls square edge	0.5
Mitered to conform to fill slope	0.7
End section conformed to fill slope	0.5
Beveled edges, 33.7 or 45 degree bevels	0.2
Side slope tapered inlet	0.2

Table 6-4 Entrance Loss Coefficient for Reinforced Concrete Box Culverts

Type of Structure and Design of Entrance	Coefficient, k_{en}
Headwall Parallel to Embankment (no wingwalls):	
Square-edged on three edges	0.5
Three edges rounded to radius of 1/12 barrel dimension	0.2
Wingwalls at 30 to 75 degrees to Barrel:	
Square-edge at crown	0.4
Top corner rounded to radius of 1/12 barrel dimension	0.2
Wingwalls at 10 to 25 degrees to Barrel:	
Square-edge at crown	0.5
Wingwalls parallel (extension of sides):	
Square-edge at crown	0.7
Side or slope tapered inlet	0.2

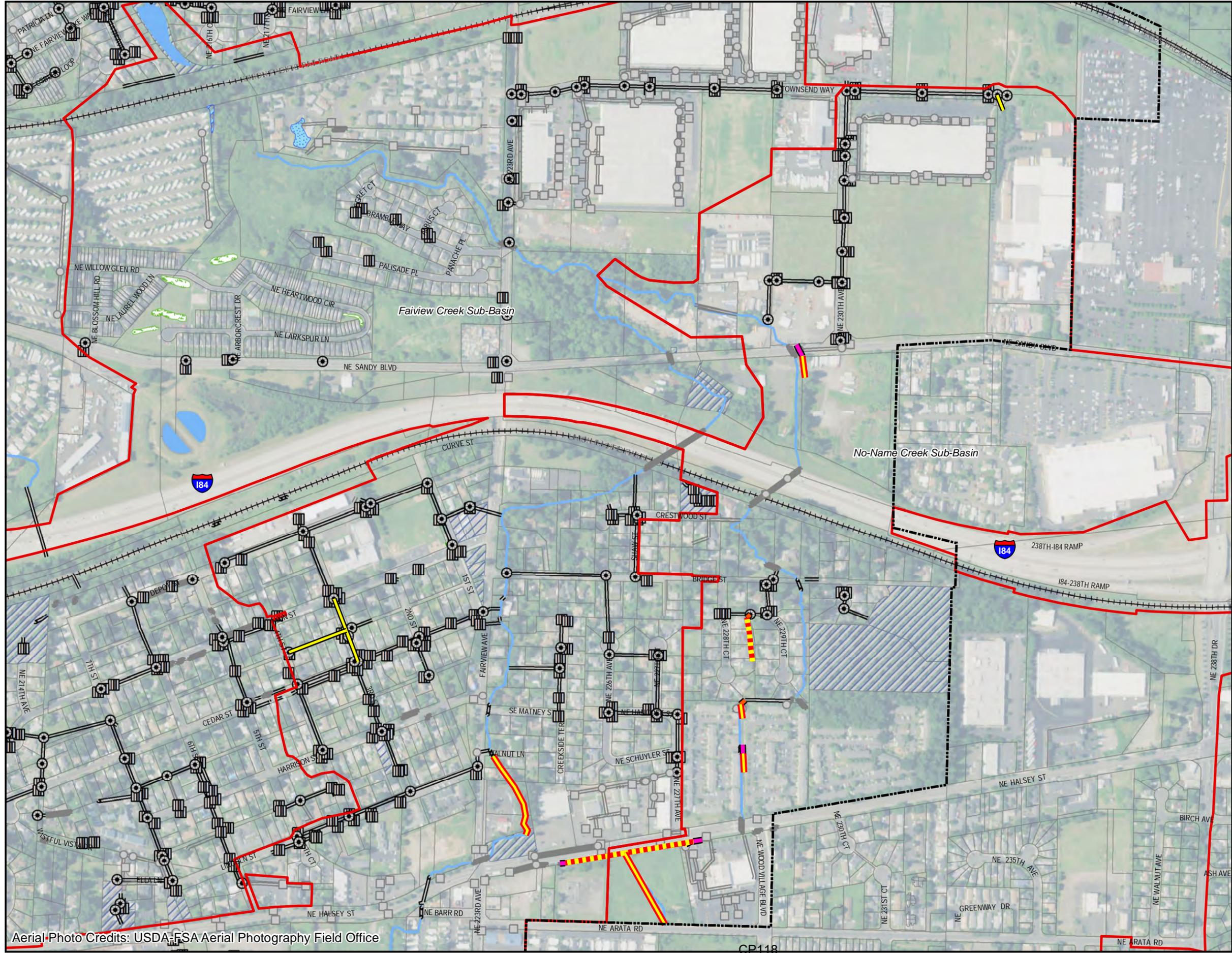
Fairview Creek Stormwater Master Plan Addendum

Appendix B Model Results

- > Existing Deficiency Key Map
- > Existing Deficiency Tables

- > Build-Out Deficiency Key Map
- > Build-Out Deficiency Tables

Existing Deficiency Key Map



Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary
- Pond
- Swale
- Settling Pond

Existing Deficiencies Classification

- Bridge/Culvert
- Pipe - Trunk
- Pipe - Collector
- Creek
- Ditch/Channel



0 250 500 1,000 Feet

1 inch equals 500 feet

Consolidated Stormwater Master Plan

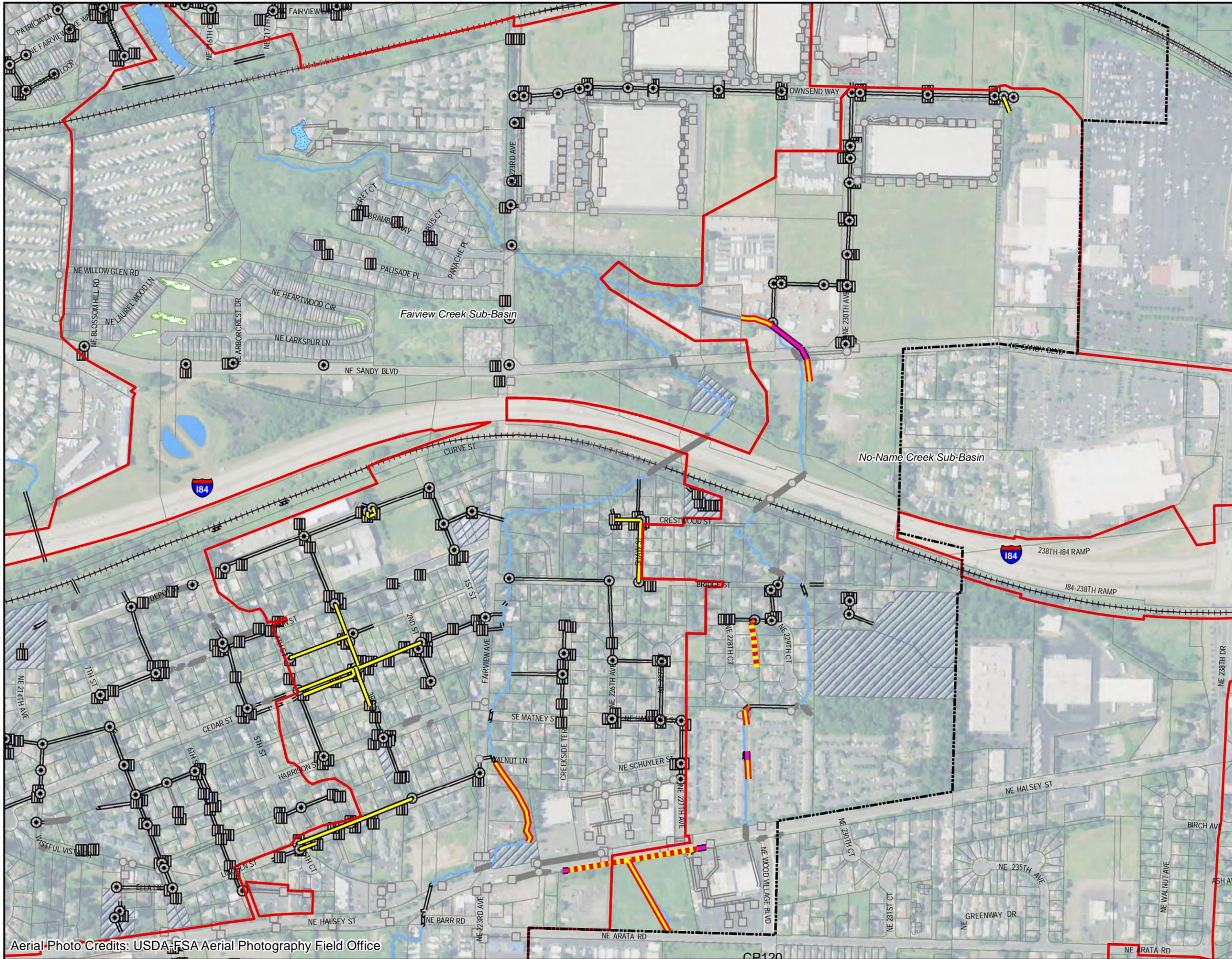


Data Source: City of Fairview GIS

Fairview - No-Name Creek Basin
Existing Deficiencies

xpswmm/GIS ID	Upstream Node Name	Downstream Node Name	Designation	Design Storm	Node Properties				Conduit Properties					Modeled Flows				Upstream Node Freeboard				Downstream Node Freeboard				
					US Invert Elevation, ft	US Ground Elevation, ft	DS Invert Elevation, ft	DS Ground Elevation, ft	Length, ft	Slope %	Depth / Diameter, ft	US Cover, ft	DS Cover, ft	Design Capacity, cfs	10-Yr Flow, cfs	25-Yr Flow, cfs	50-Yr Flow, cfs	100-Yr Flow, cfs	10-Yr Flow, cfs	25-Yr Flow, cfs	50-Yr Flow, cfs	100-Yr Flow, cfs	10-Yr Flow, cfs	25-Yr Flow, cfs	50-Yr Flow, cfs	100-Yr Flow, cfs
980a1	FVSTORM-02062S	FVSTORM-01470S	Bridge/Culvert	100-Yr	37.80	47.35	37.60	47.35	35.00	0.57	2.50	7.05	7.05	26.87	41.34	44.34	46.18	47.52	4.89	4.53	4.30	4.11	4.42	4.00	3.72	3.50
980a2	FVSTORM-01469S	FVSTORM-02062S	Bridge/Culvert	100-Yr	38.00	47.35	37.80	47.35	35.00	0.57	2.50	6.85	6.85	26.87	40.89	43.83	45.56	46.78	4.42	4.00	3.72	3.50	2.39	1.67	1.20	0.85
980b1	FVSTORM-02062S	FVSTORM-01470S	Bridge/Culvert	100-Yr	37.80	47.35	37.60	47.35	35.00	0.57	2.50	7.05	7.05	26.87	41.34	44.34	46.18	47.52	4.89	4.53	4.30	4.11	4.42	4.00	3.72	3.50
980b2	FVSTORM-01469S	FVSTORM-02062S	Bridge/Culvert	100-Yr	38.00	47.35	37.80	47.35	35.00	0.57	2.50	6.85	6.85	26.87	40.89	43.83	45.56	46.78	4.42	4.00	3.72	3.50	2.39	1.67	1.20	0.85
FVW_CULV	FVW_PVT DRIVE_US	FVW_PVT DRIVE_DS	Bridge/Culvert	100-Yr	143.62	147.13	142.84	147.13	37.60	2.07	3.00	0.51	0.51	70.99	34.96	36.05	36.05	36.05	1.85	1.81	1.81	1.81	0.31	0.00	0.00	0.00
Halsey_1	Hlsy_w2	Hlsy_w3	Bridge/Culvert	100-Yr	147.98	155.24	149.12	155.08	62.28	-1.94	1.50	5.76	5.76	14.64	10.27	10.66	10.67	10.66	3.56	1.50	1.07	0.84	2.17	1.56	1.20	0.97
L38	N41	N42	Bridge/Culvert	100-Yr	148.27	154.11	148.20	154.11	46.77	0.15	3.00	2.84	2.84	23.96	35.69	39.23	41.22	42.55	1.99	1.55	1.29	1.14	1.09	0.47	0.10	0.00
FVC_0560	FVC_N_0560	FVSTORM-01432S	Creek	100-Yr	145.24	149.81	144.61	149.81	67.20	0.94	2.97	1.60	1.60	167.68	257.13	310.51	323.87	342.99	1.87	1.46	1.36	1.22	1.04	0.74	0.66	0.55
FVC_0580	FVC_N_0580	FVC_N_0560	Creek	100-Yr	144.08	159.20	145.24	149.81	409.24	-0.28	2.98	12.14	12.14	76.17	257.07	310.45	323.90	343.54	1.04	0.74	0.66	0.55	9.54	9.17	9.08	8.95
NNC_0050	NNC_N_0050	FVSTORM-01469S	Creek	100-Yr	38.20	58.20	38.00	47.35	20.00	1.00	6.00	14.00	14.00	666.54	81.84	87.62	91.14	93.52	2.39	1.67	1.20	0.85	13.24	12.52	12.05	11.70
NNC_0130	FVW_FB1_DS	FVSTORM-00930N	Creek	100-Yr	139.33	143.44	130.30	135.00	88.52	10.20	3.94	0.17	0.17	784.51	38.74	41.11	41.11	41.11	0.21	0.00	0.00	0.00	3.11	3.09	3.09	3.09
NNC_0150	FVW_FB2_DS	FVW_PVT DRIVE_US	Creek	100-Yr	145.82	149.45	143.62	147.13	115.47	1.39	2.37	1.26	1.26	75.88	38.76	43.14	45.33	46.91	0.31	0.00	0.00	0.00	1.66	1.58	1.56	1.54
NNC_0170	NNC_N_0160	N40	Creek	100-Yr	150.00	154.00	149.03	154.94	390.00	0.25	2.82	1.18	1.18	25.89	51.53	59.92	64.93	65.87	1.86	1.26	0.89	0.66	0.33	0.00	0.00	0.00
557a	N_55	FVSTORM-00928N	Ditch/Channel	50-Yr	117.75	120.75	112.89	115.89	392.00	1.24	3.00	0.00	0.00	101.73	15.35	15.86	15.90	15.94	0.54	0.50	0.50	0.50	2.22	2.20	2.20	2.20
L207b	N40	Hlsy_w2	Ditch/Channel	50-Yr	149.03	154.94	147.98	155.24	322.67	-0.14	5.43	0.48	0.48	179.99	11.83	15.78	18.70	20.17	2.17	1.56	1.20	0.97	1.86	1.26	0.89	0.66
L37	N40	N41	Ditch/Channel	50-Yr	149.03	154.94	148.27	154.11	383.70	0.20	3.04	2.87	2.87	58.31	34.82	37.95	39.86	42.84	1.09	0.47	0.10	0.00	1.86	1.26	0.89	0.66
558	FVSTORM-00930N	FVSTORM-00929S	Pipe - Trunk	50-Yr	130.30	135.00	129.38	138.38	20.00	2.10	2.50	2.20	2.20	59.44	38.74	40.05	40.05	40.05	7.93	7.91	7.91	7.91	0.21	0.00	0.00	0.00
601	FVSTORM-00928N	FVSTORM-00927S	Pipe - Trunk	50-Yr	112.89	115.89	108.47	119.22	28.00	13.00	2.00	1.00	1.00	81.57	15.35	15.86	15.90	15.94	9.79	9.76	9.74	9.72	0.54	0.50	0.50	0.50
1577	UBC-DET	N41	Pipe - Lateral	25-Yr	150.66	155.72	148.27	154.11	11.00	0.70	1.00	4.06	4.06	3.40	2.81	3.32	3.64	3.85	1.09	0.47	0.10	0.00	2.69	2.06	1.68	1.45
491	FVSTORM-00790S	FVSTORM-00495S	Pipe - Lateral	25-Yr	134.27	138.58	132.68	139.72	174.97	0.29	1.00	3.31	3.31	1.92	1.53	1.62	1.64	1.63	4.64	2.30	1.29	1.20	3.26	0.87	0.00	0.00
494	FVSTORM-00793S	FVSTORM-00790S	Pipe - Lateral	25-Yr	137.44	140.76	134.27	138.58	329.00	0.75	0.50	2.82	2.82	0.49	0.15	0.24	0.27	0.27	3.26	0.87	0.00	0.00	3.13	2.76	1.60	1.47
497	FVSTORM-00797S	FVSTORM-00790S	Pipe - Lateral	25-Yr	135.03	140.02	134.27	138.58	182.30	0.36	1.00	3.99	3.99	2.14	0.21	0.34	-0.43	-0.52	3.26	0.87	0.00	0.00	4.68	2.31	1.41	1.42
Link1005	Node2150	FVSTORM-04021S	Pipe - Lateral	25-Yr	71.01	74.00	66.72	74.80	77.50	4.49	1.00	1.99	1.99	7.55	8.04	8.09	8.08	8.09	4.64	4.63	4.63	4.63	0.00	0.00	0.00	0.00

Build-Out Deficiency Key Map



Legend

- Fairview City Limits
- Basins
- Taxlots
- City Property
- Private CBs
- Catch Basins
- Private MHs
- Manholes
- Private Box Culvert
- Bridge; Box Culvert
- Private Pipe
- Pipe
- Tributary
- Pond
- Swale
- Settling Pond

Future Deficiencies Classification

- Bridge/Culvert
- Pipe - Trunk
- Pipe - Collector
- Creek
- Ditch/Channel



0 250 500 1,000 Feet

1 inch equals 500 feet

Consolidated Stormwater Master Plan



Data Source: City of Fairview GIS

Aerial Photo Credits: USDA-FSA Aerial Photography Field Office

CP120

Fairview - No-Name Creek Basin
Build-Out Deficiencies

xpswmm/GIS ID	Upstream Node Name	Downstream Node Name	Designation	Design Storm	Node Properties				Conduit Properties					Modeled Flows				Upstream Node Freeboard				Downstream Node Freeboard				
					US Invert Elevation, ft	US Ground Elevation, ft	DS Invert Elevation, ft	DS Ground Elevation, ft	Length, ft	Slope %	Depth / Diameter, ft	US Cover, ft	DS Cover, ft	Design Capacity, cfs	10-Yr Flow, cfs	25-Yr Flow, cfs	50-Yr Flow, cfs	100-Yr Flow, cfs	10-Yr Flow, cfs	25-Yr Flow, cfs	50-Yr Flow, cfs	100-Yr Flow, cfs	10-Yr Flow, cfs	25-Yr Flow, cfs	50-Yr Flow, cfs	100-Yr Flow, cfs
99	FVSTORM-01470S	FVSTORM-02043N	Bridge/Culvert	100-Yr	37.60	47.35	38.00	43.51	177.05	-0.22	3.50	6.25	2.01	47.82	97.76	108.49	116.74	121.41	3.91	2.68	2.26	2.02	1.71	0.88	0.77	0.73
980a1	FVSTORM-02062S	FVSTORM-01470S	Bridge/Culvert	100-Yr	37.80	47.35	37.60	47.35	35.00	0.57	2.50	7.05	7.25	26.87	48.05	53.15	57.08	59.32	3.29	1.92	1.38	1.07	3.91	2.68	2.26	2.02
980a2	FVSTORM-01469S	FVSTORM-02062S	Bridge/Culvert	100-Yr	38.00	47.35	37.80	47.35	35.00	0.57	2.50	6.85	7.05	26.87	45.95	47.47	48.00	48.79	0.78	0.23	0.12	0.06	3.29	1.92	1.38	1.07
980b1	FVSTORM-02062S	FVSTORM-01470S	Bridge/Culvert	100-Yr	37.80	47.35	37.60	47.35	35.00	0.57	2.50	7.05	7.25	26.87	48.05	53.15	57.08	59.32	3.29	1.92	1.38	1.07	3.91	2.68	2.26	2.02
980b2	FVSTORM-01469S	FVSTORM-02062S	Bridge/Culvert	100-Yr	38.00	47.35	37.80	47.35	35.00	0.57	2.50	6.85	7.05	26.87	45.95	47.47	48.00	48.79	0.78	0.23	0.12	0.06	3.29	1.92	1.38	1.07
FVW_CULV	FVW_PVT DRIVE_US	FVW_PVT DRIVE_DS	Bridge/Culvert	100-Yr	143.62	147.13	142.84	147.13	37.60	2.07	3.00	0.51	1.29	70.99	35.66	36.05	36.05	36.05	0.11	0.00	0.00	0.00	1.82	1.81	1.81	1.81
Halsey_1	Hlsy_w2	Hlsy_w3	Bridge/Culvert	100-Yr	147.98	155.24	149.12	155.08	62.28	-1.94	1.50	5.76	4.46	14.64	10.50	10.63	10.62	10.61	1.98	1.41	1.04	0.83	3.44	1.30	0.92	0.70
L38	N41	N42	Bridge/Culvert	100-Yr	148.27	154.11	148.20	154.11	46.77	0.15	3.00	2.84	2.91	23.96	36.83	40.05	42.05	43.44	0.89	0.31	0.00	0.00	1.85	1.44	1.19	1.05
FVC_0560	FVC_N_0560	FVSTORM-01432S	Creek	100-Yr	145.24	149.81	144.61	149.81	67.20	0.94	2.97	1.60	2.23	167.68	258.24	311.78	324.48	338.96	1.04	0.73	0.66	0.58	1.86	1.45	1.36	1.25
FVC_0580	FVC_N_0580	FVC_N_0560	Creek	100-Yr	144.08	159.20	145.24	149.81	409.24	-0.28	2.98	12.14	1.59	76.17	258.17	311.71	324.57	339.91	9.54	9.16	9.07	8.97	1.04	0.73	0.66	0.58
NNC_0020	FVSTORM-02043N	NNC_N_0011	Creek	100-Yr	38.00	43.51	37.60	44.00	169.59	0.24	5.51	0.00	0.89	436.35	119.09	131.78	143.32	149.59	1.71	0.88	0.77	0.73	2.34	1.44	1.34	1.29
NNC_0050	NNC_N_0050	FVSTORM-01469S	Creek	100-Yr	38.20	58.20	38.00	47.35	20.00	1.00	6.00	14.00	3.35	666.54	91.27	101.26	107.09	110.84	11.63	11.08	10.97	10.91	0.78	0.23	0.12	0.06
NNC_0130	FVW_FB1_DS	FVSTORM-00930N	Creek	100-Yr	139.33	143.44	130.30	135.00	88.52	10.20	3.94	0.17	0.76	784.51	40.29	41.11	41.11	41.11	3.10	3.09	3.09	3.09	0.00	0.00	0.00	0.00
NNC_0150	FVW_FB2_DS	FVW_PVT DRIVE_US	Creek	100-Yr	145.82	149.45	143.62	147.13	115.47	1.39	2.37	1.26	1.14	75.88	40.34	44.50	46.65	48.20	1.63	1.57	1.54	1.52	0.11	0.00	0.00	0.00
NNC_0170	NNC_N_0160	N40	Creek	100-Yr	150.00	154.00	149.03	154.94	390.00	0.25	2.82	1.18	3.09	25.89	51.34	59.64	62.90	65.20	0.23	0.00	0.00	0.00	1.67	1.11	0.74	0.52
557a	N_55	FVSTORM-00928N	Ditch/Channel	50-Yr	117.75	120.75	112.89	115.89	392.00	1.24	3.00	0.00	0.00	101.73	15.85	15.94	16.00	16.02	2.20	2.20	2.19	2.19	0.50	0.50	0.50	0.50
L207b	N40	Hlsy_w2	Ditch/Channel	50-Yr	149.03	154.94	147.98	155.24	322.67	-0.14	5.43	0.48	1.83	179.99	12.38	17.27	19.84	21.39	1.67	1.11	0.74	0.52	1.98	1.41	1.04	0.83
L37	N40	N41	Ditch/Channel	50-Yr	149.03	154.94	148.27	154.11	383.70	0.20	3.04	2.87	2.80	58.31	35.75	38.66	41.73	44.05	1.67	1.11	0.74	0.52	0.89	0.31	0.00	0.00
558	FVSTORM-00930N	FVSTORM-00929S	Pipe - Trunk	50-Yr	130.30	135.00	129.38	138.38	20.00	2.10	2.50	2.20	6.50	59.44	40.05	40.05	40.05	40.05	0.00	0.00	0.00	0.00	7.91	7.91	7.91	7.91
601	FVSTORM-00928N	FVSTORM-00927S	Pipe - Trunk	50-Yr	112.89	115.89	108.47	119.22	28.00	13.00	2.00	1.00	8.75	81.57	15.85	15.94	16.00	16.02	0.50	0.50	0.50	0.50	9.76	9.71	9.68	9.67
827	FVSTORM-01406S	FVSTORM-01405S	Pipe - Lateral	25-Yr	170.98	175.90	170.50	176.80	95.00	0.50	0.67	4.25	5.63	0.86	2.59	2.60	2.60	2.60	0.00	0.00	0.00	0.00	4.87	4.81	4.76	4.74
1000	FVSTORM-01484S	FVSTORM-00867S	Pipe - Lateral	25-Yr	111.91	115.45	112.16	114.02	132.00	1.27	1.00	2.54	0.86	4.01	3.13	3.67	3.96	3.96	0.84	0.54	0.00	0.00	1.58	1.56	1.54	1.54
1489	FVSTORM-00495N	FVSTORM-00631S	Pipe - Lateral	25-Yr	136.91	139.14	132.86	139.46	22.85	3.28	1.00	1.23	5.60	6.45	0.90	1.04	1.08	1.07	0.20	0.00	0.00	0.00	0.53	0.32	0.32	0.32
1490	FVSTORM-00631S	FVSTORM-00495S	Pipe - Lateral	25-Yr	132.86	139.46	132.68	139.72	14.47	1.24	1.00	5.60	6.04	3.97	4.99	5.46	5.47	5.48	0.53	0.32	0.32	0.32	1.05	0.89	0.88	0.87
1491	FVSTORM-03344S	FVSTORM-00495N	Pipe - Lateral	25-Yr	137.06	139.26	136.91	139.14	29.41	-1.02	1.00	1.20	1.23	3.60	0.74	0.88	0.97	1.04	0.31	0.10	0.10	0.10	0.20	0.00	0.00	0.00
1494	FVSTORM-00632S	FVSTORM-00631S	Pipe - Lateral	25-Yr	136.96	139.69	132.86	139.46	48.47	1.49	1.00	1.73	5.60	4.34	2.70	3.17	3.47	3.66	0.49	0.18	0.10	0.05	0.53	0.32	0.32	0.32
1577	UBC-DET	N41	Pipe - Lateral	25-Yr	150.66	155.72	148.27	154.11	11.00	0.70	1.00	4.06	4.84	3.40	2.96	3.48	3.77	3.99	2.48	1.90	1.53	1.31	0.89	0.31	0.00	0.00
1579	FVSTORM-03429S	FVSTORM-04346N	Pipe - Lateral	25-Yr	150.69	155.72	150.66	155.72	5.50	0.50	1.00	4.03	4.06	2.63	3.07	3.60	3.93	4.15	0.77	0.67	0.62	0.58	0.81	0.72	0.68	0.65
327	FVSTORM-00661S	FVSTORM-00610S	Pipe - Lateral	25-Yr	122.42	124.63	122.12	123.92	40.00	0.65	0.67	1.54	1.13	0.98	0.73	0.84	0.91	0.95	1.57	0.52	0.49	0.47	0.98	0.00	0.00	0.00
328	FVSTORM-00610S	FVSTORM-00609S	Pipe - Lateral	25-Yr	122.12	123.92	120.48	124.68	41.11	4.23	0.83	0.97	3.37	4.50	0.84	0.95	0.95	0.97	0.98	0.00	0.00	0.00	1.77	0.77	0.76	0.75
329	FVSTORM-00609S	FVSTORM-00486S	Pipe - Lateral	25-Yr	120.48	124.68	119.00	124.98	28.17	3.62	0.67	3.53	5.31	2.30	2.98	3.18	3.17	3.21	1.77	0.77	0.76	0.75	3.73	2.69	2.48	2.33
360	FVSTORM-00506S	FVSTORM-00504S	Pipe - Lateral	25-Yr	149.68	154.42	148.61	153.13	300.70	0.35	1.00	3.74	3.52	2.12	1.07	1.09	1.10	1.10	1.26	1.23	1.21	1.26	0.09	0.00	0.00	0.00
361	FVSTORM-00504S	FVSTORM-00505S	Pipe - Lateral	25-Yr	148.61	153.13	147.14	154.74	354.52	0.39	1.00	3.52	6.60	2.21	2.92	2.93	2.95	2.95	0.09	0.00	0.00	0.00	3.91	3.72	3.65	3.60
363	FVSTORM-00652S	FVSTORM-00764S	Pipe - Lateral	25-Yr	151.34	153.12	149.68	154.61	91.17	1.44	1.00	0.78	3.93	4.27	0.52	-0.62	-0.69	-0.72	0.00	0.00	0.00	0.00	1.45	1.42	1.40	1.42
380	FVSTORM-00495S	FVSTORM-00493S	Pipe - Lateral	25-Yr	132.68	139.72	129.79	139.15	353.17	0.82	1.00	6.04	8.36	3.22	5.03	5.06	5.07	5.07	1.05	0.89	0.88	0.87	6.48	6.03	5.81	5.66
381	FVSTORM-00497S	FVSTORM-00631S	Pipe - Lateral	25-Yr	135.21	143.01	132.86	139.46	332.31	0.71	1.00	6.80	5.60	3.00	1.41	1.68	1.85	1.95	3.59	3.17	3.02	2.92	0.53	0.32	0.32	0.32
442	FVSTORM-00633S	FVSTORM-03344S	Pipe - Lateral	25-Yr	138.18	139.82	137.06	139.26	108.63	0.94	0.67	0.97	1.53	1.17	0.37	0.44	0.48	0.51	0.77	0.53	0.49	0.46	0.31	0.10	0.10	0.10
443	FVSTORM-00634S	FVSTORM-00633S	Pipe - Lateral	25-Yr	139.73	141.88	138.18	139.82	182.83	1.33	0.50	1.65	1.14	0.65	0.00	0.00	0.00	0.01	1.77	1.61	1.38	1.22	0.77	0.53	0.49	0.46
485	FVSTORM-00784S	FVSTORM-00632S	Pipe - Lateral	25-Yr	138.80	142.88	136.96	139.69	181.20	0.99	1.00	3.08	1.73	3.54	1.81	2.11	2.30	2.42	3.24	2.74	2.55	2.41	0.49	0.18	0.10	0.05
491	FVSTORM-00790S	FVSTORM-00495S	Pipe - Lateral	25-Yr	134.27	138.58	132.68	139.72	174.97	0.29	1.00	3.31	6.04	1.92	1.79	1.81	1.82	1.83	0.00	0.00	0.00	0.00	1.05			

About Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm



At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field.

Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	Work Session #6	2019-35

TO: Mayor and City Council

FROM: Nolan K. Young, City Administrator

DATE: February 28, 2019

ISSUE:

Review Goals, Objectives and Tasks for Fiscal Year 2019-20.

PREVIOUS AGENDA STAFF REPORTS:

February 23, 2019 Work Session.

BACKGROUND:

The City Council at their February 23 Work Session considered goals and objectives for Fiscal Year 2019-20. Exhibit A is the information the Council created during the meeting. We have identified the number of dots (votes) each item received. This information was used to create both the goal objective and task lists.

Exhibit B is the list of preferred type of developments identified by the Council at the meeting. Please review it and identify if you wish to make any changes to what we have identified.

Exhibit C is a draft copy of the Goals and Objectives staff prepared from the work session for Fiscal Year 2019-20. There are 21 objectives this year compared to 18 the prior year.

Exhibit D is a list of tasks under each of the goals that are either on-going activity, items to be considered in the budget process, or will be worked on as time and resources allow.

During the Work Session the Council will have the opportunity to discuss and consider amendments to both the Goals/Objectives and the Task list staff drafted. Below are some of the items you may wish to look at and consider:

- 1) Did staff capture your intent in each of the Objective and Task statements or do you wish to amend any and/or remove or add any?
- 2) Does the Council wish to mark any additional objectives a priority?
- 3) Does the Council wish to move any of the Tasks to the Objective list or/and Objectives to the Task list?

Goal or Task	# Dots	Brain Storming List	Additional Info/Comments
G		Urban Renewal Project List	
G	4	Beautification/Signage Program - City Wide	Welcoming, Identity, Themes
T	2	Transportation SDC	Prioritize Traffic Corridors, Seed Money for County Facilities
G	3	Seat at Regional Table	EMCTC?JPACT, Get Fairview Issues Out There
G	2	Communication with Renters	Intro Packet to new residents/renters (Welcome Packet), multi-lingual
G	4	City Resource Officer	
G	4	PD Visibility	Cars, Local Response, Level of Patrol, Tracking
		HOA's	Is city covered?, Public Safety Issues
G		MPAC/JPACT	What is our role?
G	4	Engage with Regional Reps	Gorsett, Steman, Craddick (Fairview Message, not just Metro Message
G	2	Economic Development	What do we want?
		Shuttle Bus for City Events	Troutdale has one?
		What Works in Fairview	
T		Celebrate Diversity	
T	1	Success Stories	RSD7
G	4	Long Term Economic Viability	Consolidation of services
T	1	Be Cognizant of Homelessness	
G	6	Sidewalks	Historic Fairview Neighborhood, Pioritized Project List
T		223rd/Halsey to Blue Lake	Lighting too?
G	1	223rd Railroad Overpass Renovation	ADA Ramps (more of them) [staff list #10]
G	2	Public Artwork on FV Parkway/I-84 Overpass	
T	2	State Legislature Pressure for Funds for Fairview Projects	Transportation Issues
		Reader Board	
G	3	Enhance Public Safety Initiatives	Support Neighborhood Watch
	1	MCSO Trading Cards (youth engagement)	
		Data Available to Determine Customer Base/Availability to	
G	3	Attract Businesses/Citizen Salaries	
T	1	Reduce/Streamline Land Development Process	
T	1	Identify Real & Perceived Barriers to Development	
T	1	Farmers' Market	Food Trucks

Goal or Task	# Dots	Brain Storming List	Additional Info/Comments
	2	Specialty Grocer	
		De-Incentivize Apartments/Multi-Dwellings/Rentals	
G	5	Economic Development Incentives	Loan to Grant, SDC Waiver } for what?, Brew Pub, Live-Work, Home Ownership/Condos, Starter Homes, Create Customer Base, Aging Population Accommodations, Garage/Store Front Program, Commercial/Jobs
G	5	Buy Local	Swag
G		Halsey Corridor	
T	1	Shovel Ready	
T	1	Fee Levels	
G	2	Support Recreation & Park Activities	Use of RMS Facilities
G		Increase City Cooperation on Regional Goals (Metro Issues)	
G	2	Encourage More Community Activism/Participation/Volunteerism	
T		Fairview Video to Publicize Opportunities, Activities	Use Metro East? Post to Website?
G	2	Engage More Diverse Residents to City Activities	
T	1	Clear Brush/Visibility at Intersections	
G	4	Investigate Solar Power Options for City Hall	
		Look at Drive-Thru Codes for Potential Business Enticement	
		Pursue Funding Opportunities as it Relates to Updating Comprehensive Plan	

**FAIRVIEW CITY COUNCIL'S
PERFERRED TYPES OF DEVELOPMENTS**

February 23, 2019

The Fairview City Council at its goal work session on February 23, 2019 discussed what type of developments they wanted the City to provide incentives for. The first list below identifies type of developments they wish to provide incentives for. The second list identifies types of development they desired to not provide incentives for.

Preferred Developments:

1. Live- Work Facilities
2. Home Ownership (i.e. condos, single-family and starter homes)
3. Accommodations for Aging Population
4. Brew Pub and other drinking and eating businesses
5. Commercial and industrial businesses that create jobs
6. Garage/Store Front Program

Non-Preferred Development

1. Apartments/Multi- Unit Dwellings
2. Residential Rentals

CITY COUNCIL GOALS: FISCAL YEAR 2019-20
Non Prioritized List

Exhibit C

Goal #1: Improve pedestrian and bicycle access and safety.

- *A. Complete design and pursue construction of narrow railroad bridge undercrossing on NE 223rd Avenue north of Sandy Boulevard.
- *B. Continue implementation of the sidewalk policy for Historic Fairview.
- C. Identify Additional Opportunities to increase Fairview's Bike, and Pedestrian connectivity.

Goal #2: Enhance service levels of public safety programs.

- A. Increase visibility of law enforcement's engagement in the community.
- B. Investigate creating a three Cities MSCO Community Resource Officer position.
- C. Pursue public safety/community policing initiatives.

Goal #3: Increase Fairview's recreational opportunities & park amenities.

- A. Evaluate East County Recreation program and determine whether to continue beyond 3 year pilot period.

Goal #4: Maintain and enhance the city's public infrastructure in a cost efficient manner.

- A. Investigate solar power options for city hall.
- B. Develop a city wide signage and beautification program that creates a community identity and a welcoming environment.
- C. Complete projects on the Capital Improvement Plan (CIP).

Goal #5: Enhance & promote economic development activity.

- *A. Implement Fairview's Main Streets on Halsey project recommendations in coordination with the other project partners
- *B. Create Urban Renewal incentives and opportunities that support Fairview's vision and preferred developments.
- *C. Develop a program to recruit t business development that creates family wage jobs.
- D. Develop a Buy-Local program.
- E. Pursue public use of power transmission property west of Fairview Parkway and north of Halsey.
- G. Investigate use of art to enhance Fairview's uniqueness and economic development.

Goal #6: Promote city's long-term financial stability.

- A. Identify opportunities to streamline policies, and procedures to create efficiencies and cost effectiveness.

Goal #7: Work with other local, regional and state organizations to enhance the community.

- *A. Engage with regional representatives to assure Fairview interests are considered.
- B. Identify and pursue opportunities to consolidate public services with other area providers.
- C. Actively participate in the Columbia River levee recertification and governance process.

Goal #8: Enhance communication and engagement with the community.

- A. Identify and pursue opportunities to increase community communication and engagement.

* High priority.



TASKS ASSOCIATED WITH CITY COUNCIL GOALS: FISCAL YEAR 2019-20

Goal #1: Improve pedestrian and bicycle access and safety

- A. Work to move 223rd Street roadway improvements, from Halsey to Sandy, forward on area (EMCTC) County and Regional (JPACT) plans.

Goal #2: Enhance service levels of public safety programs.

- A. Continue to look for opportunities to deal with homeless issues.
- B. Update Emergency Response Plan information, create leadership checklist tool and plan an emergency preparedness exercise.
- C. Consider a proactive program to clear brush and increase visibility at intersections.

Goal #3: Increase Fairview's recreational opportunities & park amenities.

- A. Develop plan and complete the engineering for restroom(s) (with utilities) at Salish Ponds.
- B. Consider future options for Heslin House maintenance.

Goal #4: Maintain and enhance the city's public infrastructure in a cost efficient manner.

- A. Work with state legislators to obtain funds for Fairview transportation projects.

Goal #5: Enhance & promote economic development activity.

- A. Work with developers to create shovel ready sites.
- B. Review business marketing packet.
- C. Work on community parking issues, including code standards and parking in the Village and other congested areas.
- D. Identify and pursue opportunities for farmer's markets and food carts.
- E. Reduce/streamline land use development process.
- F. Identify real and perceived barriers to development.

Goal #6: Promote City's long-term financial stability.

- A. Complete five year financial projections.
- B. Review service & SDC fees including a transportation fee.

Goal #7: Work with other Local, Regional and State Organizations to enhance the community.

- A. Collaborate with Reynolds School District (RSD) to enhance local K-12 education system.
- B. Investigate and consider adoption of a rental property standards code similar to Gresham (i.e. rental inspections).

Goal #8: Enhance communication and engagement with the community.

- A. Use volunteers to create articles on Fairview's history for inclusion in newsletter and to display at community events.
- B. Display historic pictures at City Hall.
- C. Consider creating Fairview videos to publicize opportunities and activities.
- D. Celebrate diversity and recognize East County success stories.

MINUTES
CITY OF FAIRVIEW
CITY COUNCIL

February 20, 2019

Council Members

Brian Cooper, Mayor
Cathi Forsythe
Mike Weatherby
Keith Kudrna
Balwant Bhullar
Natalie Voruz
Darren Riordan

Staff

Nolan Young, City Administrator
Allan Berry, Public Works Director
Lesa Folger, Finance Director
Joel Wendland, Captain (MCSO)
Heather Martin, City Attorney
Devree Leymaster, City Recorder

WORK SESSION (6:00 PM)

1. BUDGET COMMITTEE CANDIDATE INTERVIEWS

City Recorder Leymaster asked the same seven questions of each candidate. (*Exhibit A*) Below is a brief summary of how each candidate answered. Candidate, Steve Marker, did not attend the interview.

Steven Haschke

1. Retired; opportunity to serve community.
2. Senior Retail Manager for over 20 years; managed budget as part of job.
3. Not familiar.
4. No experience with Oregon Budget Law.
5. Not familiar enough with to answer.
6. Balanced budget is critical.
7. Look at previous years; what was successful. Do what is needed; involve the team; look at options to increase revenue and/or decrease costs.

Will Jones

1. Opportunity to serve.
2. Associate Civil Engineer; family finances and home business bookkeeping.
3. Aware of consolidating police services with MCSO and the SDC waiver program for new development.
4. Somewhat acquainted with in relation to project funding.
5. Don't have enough information to answer.
6. Don't spend what can't afford. Stuff does happen, try to be prepared.
7. Create a priority list; trim on the expense side; no other option look at revenue options.

Erich Mueller

1. Vacancy since last year; opportunity to serve.
2. Finance Director for the City of Troutdale; BS Economic Theory; etc.
3. Well versed – different funds (general, utility, etc.)
4. Very familiar with Oregon Budget Law.
5. Long range – materials, operations, personnel costs/PERS; resources are being squeezed; increased capital costs to maintain infrastructure; etc.
6. Cautious, conservative, under forecast revenue and over forecast expenses.
7. Look at where the shortfall is – one time event or reoccurring; review remedies to resolve; defer short term costs when feasible; etc.

Douglas Walls

1. Available to serve.
2. Land lord for 22 years; helped son start own business; likes budgeting.
3. Not familiar.
4. No experience.
5. Reduce debt; less is more; need vs want.
6. Difference between need and want. Save more, spend less.
7. Don't believe in raising rates. Increase cash flow by reducing debt. Focus on debt.

Councilor Forsythe asked how the candidates would navigate through the learning curve in preparing to make decisions regarding the budget.

- Steven Haschke: network with other Budget Committee members.
- Will Jones: review the document; learn as much as he can.
- Erich Mueller: familiarize once the budget is available; use the budget message as reference tool.
- Douglas Walls: fast learner; ingrain in document and information.

2. CITY HALL MAINTENANCE NEEDS

City Administrator Young explained some existing building systems in city hall are in need of repair or replacement; as is typical for a building approaching 20 years old. The maintenance needs were assessed in 2017 and broken into four areas: access control, HVAC and roof, exterior and lighting, and interior.

A 5 year CIP was developed as a result of the review. The project for FY2018-19 was access control with \$125,000 being budgeted for the project. The city signed a contract for design work, bid documents, and project management. During review, it was discovered the wrong numbers were used for the CIP and the actual cost estimates were more than double the figures being used.

CA Young reviewed options to complete all maintenance needs including acquiring a loan or spreading the projects out over a longer time period. For the access control project he proposed Council consider approving a resolution, at their March 6 meeting, to transfer funds from facility maintenance contingency funds to make up the remaining cost (\$210,000) to proceed with the access control project.

Councilor Weatherby remarked we should not do more than is budgeted, it should go through the budget committee process, and should not "raid" other funds to make up the difference. He asked what the nature of the error was i.e. contractor?

CA Young replied it was human error. The wrong set of numbers were used from the report. He explained all operating funds benefit from the structure and all fund the facilities maintenance fund to set money aside for future needs. Some of the systems are getting close to end of life, others are legacy issues; the obligation is there, the error was in understanding the cost of the obligation.

CA Young commented if directed staff will prepare a Budget Information Paper (BIP) with specific options and hard numbers, for review during the budget process. He noted the engineering for the access controls is complete and paid for. The project is ready to continue to the bid process. Too long of a delay could necessitate the engineering work having to be redone.

Councilor Kudrna asked about the challenges with the access control system. Staff replied some of the inadequacies are convenience issues and others are security issues (ADA issues, fire access, level of access, integration with the Community Center and Public Works Facility, emergency lock in and out features, exit routes, etc.) Councilor Kudrna commented there should be some savings since the need for 24/7 demand in the police area is no longer needed.

Councilor Forsythe remarked this a bigger conversation than times allow; need to determine our priorities. Even though she understands it was a human error; it is a 244% increase Council is being asked to consider. Council just approved a PW facility; need to prevent this from happening again. Need more information before moving forward.

Vice President Voruz agreed. Need to prioritize what is needed, what is nice to have; and costs for each. Councilor Weatherby concurred.

Councilor Forsythe clarified the cost is already built into the PW Facility project. CA Young replied yes.

CA Young summarized staff will inform the engineer the access control project is delayed at least through budget discussions; will identify where there may be potential savings; identify necessity and wants with a cost break downs for each; look at other areas and develop alternatives in a BIP with options; look at the maintenance schedule (don't believe have a robust schedule, will find out); research a future plan/strategy to prevent in future (increase maintenance, work with vendors to identify and maintain schedules). Council agreed.

3. BILLBOARD AMENDMENT DISCUSSION

Council discussed the proposed amendment brought forward by an applicant to amend the City's existing sign regulations concerning billboards. Councilors expressed concern for going against the previous Council's decision on the issue and not wanting to compromise on the vision for the city i.e. visual blight. Another concern was the request to increase the size.

CA Young commented Council does need to base their decision on the standards before them. He proposed, if they choose not to approve this request, an option is to direct staff to work with the Planning Commission to develop other options to present to Council. Councilor Forsythe indicated her support to leave the code as it is now and revisit the issue at a later time. Other Councilor's seemed to concur, though no specific direction was provided.

COUNCIL MEETING (7:00 PM)

1. CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

2. CITIZENS WISHING TO SPEAK ON NON-AGENDA ITEMS

Erich Mueller, Fairview, OR commented on a housing bill in the state legislature, HB2001, and expressed his concerns. The bill applies to cities over 10,000, which Fairview is close to hitting, and requires code amendments be adopted by 2020. The proposed bill allows two to four multi-dwelling units be permitted in all residential zones. It effectively abolishes single family dwelling (SFD) zones, applies to all existing neighborhoods, includes redevelopment, prohibits cities from requiring off street parking or owner occupancy requirements, etc. Mr. Mueller commented this would have a meaningful impact to our neighborhoods and significant impact to city infrastructure and finances. He requested Council consider adopting a resolution in opposition of HB2001 at their next meeting, similar to other cities i.e. Sherwood, Troutdale, etc.

Councilor Kudrna commented on the impact this would have on "home rule" and taking all local authority "of the plate".

Councilor Forsythe asked who is raising concerns at the state level. Mr. Mueller remarked he would defer specifics to the city planning staff, but he is aware the League of Oregon Cities is taking a strong point of opposition to it and is organizing their resources.

Council indicated their support of opposing HB2001 and requested staff prepare a resolution for consideration at their next meeting.

Mr. Robert Wade, Fairview, OR spoke about the Fairview Municipal Code (FMC) and code compliance issues. Per city code, vehicle repairs are not allowed at your home and vehicles must be registered to the residence; a title is not sufficient. He requested Council re-evaluate these codes.

Councilor Kudrna questioned not being able to repair your own vehicle at your residence. CA Young remarked the code allows for basic maintenance, but does prohibit restoration and major repairs. The code section Mr. Wade is referring to is in Chapter 8, Nuisances.

Mayor Cooper requested staff prepare a memo briefing Council about Mr. Wade's situation and what codes apply. CA Young replied staff will do so, but shared this issue is under a court order that has to be followed.

3. CONSENT AGENDA

a. Minutes of February 6, 2019

Councilor Riordan moved to approve the consent agenda and Councilor Bhullar seconded. The motion passed unanimously.

AYES: 7

NOES: 0

ABSTAINED: 0

4. PRESENTATION

a. Introduction(s) New Gresham Fire Chief Mitch Snyder

Chief Snyder introduced himself and shared some background history about his work experience; noting he has had experience working with and serving multiple cities under contract. He shared Gresham is recruiting for new fire fighters; the application process is open through March 29.

Councilor Forsythe asked what his vision is for the future and did he foresee changes to fire service. Chief Snyder replied medical calls are about 80% of the total calls, and many are non-emergency. He explained service models he has seen in practice that align the proper response (staff and vehicle) to the request for service. There are multiple safety nets built in, to verify the type of response needed. This can improve service and provide better value, in more cost effective format. Gresham and the cities have started toward this path with implementing the Quick Response Vehicle (QRV) service.

b. Planning Commission Annual Report to City Council

Russell Williams, Vice Chair, reported the Planning Commission held public hearings for 11 development applications and three work sessions related to development code amendments in 2018. He pointed out, 2018 was the busiest year for land use decisions in many years; same number of applications in 2018 were reviewed in total for 2010 to 2017. Looking forward land use applications are anticipated to slow and the Commission expects more time to work on development code issues. This includes code maintenance amendments to correct and clarify regulations and policy level amendments that make substantive changes to the development regulations. These items will be forwarded to Council for final adoption.

Vice Chair Williams shared in 2019, the Commission would like to meet with Council periodically in work session to discuss and cooperate in setting land use policy direction. Mayor Cooper, and Council, indicated their support in meeting with the Commission.

c. Commute Demand Study

Heidi Beierle, Special Projects Manager, West Columbia Gorge Chamber of Commerce, presented the study results and information as noted in *Exhibit B*. She shared the top recommendation is to initiate a process with Oregon Solutions to address transportation equity and work force access issues.

Councilor Weatherby asked about TriMet and putting pressure on them to provide service. Ms. Beierle replied she is not aware of anything specific, but they are an important piece of the transit system and need to be included.

Councilor Kudrna asked when they expect to hear back from Oregon Solutions. Ms. Beierle answered they have started the conversation. The pre-assessment phase is the next step. Oregon Solutions will decide if it is viable to move forward based on the findings of the pre-assessment.

Councilor Forsythe commented at one time there had been some discussion about a three city collaborative effort for transit similar to SAM in Sandy. She asked if there has been any further discussion. Ms. Beierle replied she is not aware of any discussion.

CA Young summarized Council is interested in engaging in this collaborative effort. Council replied yes. CA Young asked Ms. Beierle to notify the city when and what is needed to help move the dialogue along.

5. CITY ADMINISTRATOR AND DIRECTOR REPORTS

a. MCSO Monthly Report – January (CP 57-61)

Captain Joel Wendland reviewed the monthly report and noted Chief Smith is working with the MCSO analyst to add a couple of categories to the report. He commented on the coordinated efforts regarding speeding in the city in response to complaints. Captain Wendland shared there will be another Citizens on (Park) Patrol training scheduled in March; to date they have received five applications for the Fairview COPP.

Councilor Weatherby inquired about the Fairview speed trailer. CA Young replied the city has a speed trailer and they work with Chief Smith on where to locate it. Mayor Cooper asked about the data. Director Berry replies the city trailer is not placed on main arterials, it is used on city streets that are mainly 20 mph. The collected data is nothing exceptional.

Councilor Weatherby remarked he thought that when Council adopted the resolution to reduce speed in historic Fairview to 20 mph; they also directed all residential areas be standardized to 20 mph. Councilor Riordan commented he would be interested in doing this. Councilor Forsythe remarked she would like to see the data and if the change made a difference. CA Young replied he did not recall the direction to standardize all residential zones to 20 mph, but will look it.

CA Young reminded Council about the February 23 Council Goal Setting Session; 10:00AM to 2:00PM in Council Chambers.

6. MAYOR/COMMITTEE REPORTS AND COUNCIL REPORTS

Councilor Riordan commented Home Forward is handling the funding from the Metro Housing Bond; expect to build 180 units in Gresham and 110 in East County in this grant cycle. The Reynolds School District approved an IGA with East County Recreation for a facility service agreement. The less formal agreement is through June; then will look at a more formal agreement. The ECR is working on multiple fundraising events.

Vice Chair Voruz reported the Parks and Recreation Advisory Committee is extending the Lakeshore Park parking study into the summer months. The study will include a survey and questionnaire with park visitors.

Councilor Kudrna shared the documents for the Public Works facility have been submitted for permits; and the Community Engagement Committee is preparing for a busy year, including an art mural project in the next few months.

Councilor Weatherby commented he is donating a 1914 wall calendar to the East County Historical Organization (ECHO).

Councilor Forsythe shared the Public Safety Advisory Committee is scheduling another shred event, potential date April 27; there is an after action seminar (Eagle Creek fire) scheduled for May 20; the monthly citizen neighborhood watch program meeting is the third Tuesday of each month in the Heslin Conference Room (first floor City Hall); and she encouraged citizens to complete the MCSO Fairview Public Safety Survey before it ends February 28.

Councilor Bhullar reported Dean Hurford was re-elected as the Economic Development Advisory Committee (EDAC) Chair. This is his eighth consecutive term serving as Chair. Per the code, Council must approve a Chair to serve more than two consecutive terms.

Councilor Voruz moved to approve Dean Hurford serving another term as EDAC Chair and Councilor Forsythe seconded. The motion passed unanimously.

AYES: 7
NOES: 0
ABSTAINED: 0

Mayor Cooper commented on the various Home Owner Association meetings he has attended.

7. COUNCIL BUSINESS

a. Appoint Members to the Budget Committee: Resolution 11-2019

Each Councilor identified their three nominations for the open positions via a ballot. CR Leymaster read each ballot into the record as follows. Councilor Bhullar → Erich Mueller, Douglas Walls and Steven Haschke; Councilor Forsythe → Erich Mueller, Douglas Walls and Steven Haschke; Councilor Weatherby → Steven Haschke and Erich Mueller; Councilor Kudrna → Steven Haschke, Will Jones and Erich Mueller; Council President Voruz → Steven Haschke, Erich Mueller and Douglas Walls; Councilor Riordan → Erich Mueller, Steven Haschke and Will Jones; and Mayor Cooper → Steven Haschke, Will Jones and Erich Mueller.

Candidates Steven Haschke and Erich Mueller each received seven nominations and Candidates Will Jones and Douglas Walls each received three nominations. Councilor Weatherby verbally selected Douglas Walls as his third selection.

Councilor Kudrna moved to approve Resolution 11-2019 appointing Douglas Walls to position five, Erich Mueller to position six, and Steven Haschke to position seven. Councilor Weatherby seconded. The motion passed unanimously.

AYES: 7
NOES: 0
ABSTAINED: 0

b. Amend FMC 19.170 Sign Regulations Re: Billboards: Ordinance 1-2019

Council had no discussion and no motion was put forward for a vote.

c. Authorize Transfer of Appropriations in the FY2018-19 Budget for the Recreation Program:
Resolution 12-2019

Finance Director Folger summarized the transfer is between categories within the same fund: Recreation Fund. The transfer is between personnel services and materials and services to accurately reflect the contract services of an interim Recreation Manager.

Councilor Kudrna moved to approve Resolution 12-2019 and Councilor Riordan seconded. The motion passed unanimously.

AYES: 7
NOES: 0
ABSTAINED: 0

8. PUBLIC HEARING

None.

9. ADJOURNMENT

Councilor Kudrna moved to adjourn the meeting and Councilor Weatherby seconded. The motion passed and the meeting adjourned at 8:23PM.

AYES: 7
NOES: 0
ABSTAINED: 0

Devree Leymaster
City Recorder

Brian Cooper
Mayor

Date of Signing

A complete recording and/or video of these proceedings is available.
Contact the City of Fairview City Recorder Office, 1300 NE Village St., Fairview, OR 97024, (503) 674-6224.

BUDGET COMMITTEE INTERVIEW QUESTIONS

February 20, 2019

1. What prompted you to apply for this volunteer position?
2. Please talk about your education and background and how it relates to finance and budgeting.
3. How familiar are you with the services the City of Fairview provides through its' annual budget?
4. Do you have any knowledge of, or experience with, Oregon Budget Law?
5. What do you think is the biggest issue facing Fairview with regard to its budget?
6. Please tell us your philosophy on balancing budgets.
7. If the City of Fairview had a large budget shortfall, how would you propose determining where to make the necessary budget cuts or increase revenues?

West Columbia Gorge Commute Options Demand Study



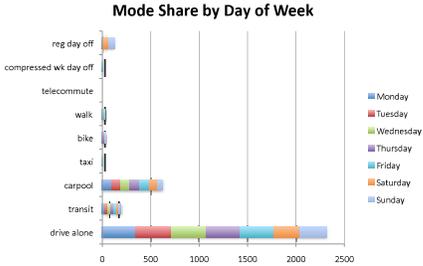
Study Area



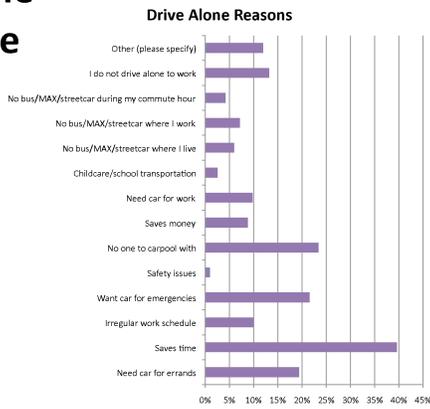
Methods

- Research
- Interviews
- Plan review
- Surveys
 - Employer
 - Employee
 - MHCC student

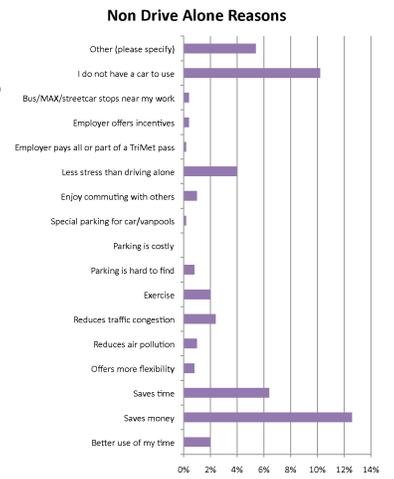
How people get around



Why people drive alone



Why people choose other options



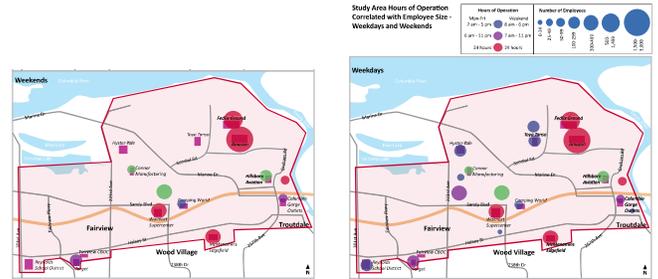
Transit



Bike & Walk – Planned



Hours of operation + employer size

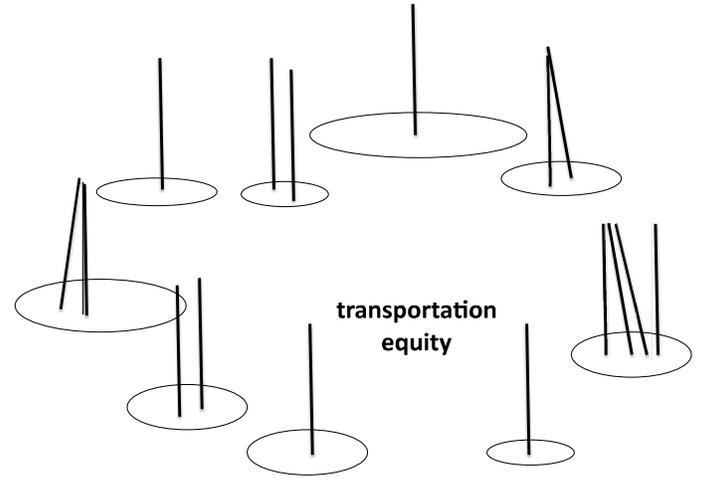


Kitchen Sink approach

- Provide as many transportation options as possible as soon as possible

Organization, Coordination, Advocacy

- Initiate a process, such as Oregon Solutions, that compels entities to agree on how to improve transportation options in the region



Carpooling, Vanshare

- Incentivize carpooling and vanpooling
- Survey WA residents for vanpool interest
- Implement vanshare from Gresham TC to TRIP



Transit

- Provide weekend service from Gresham TC to TRIP
- Align service hours with shift change times
- Bus lane northbound Exit 17
- Improve bus shelters
- Coordinate business shift change times



Active Transportation Facilities

- Complete trails
- Build planned bicycle/ pedestrian improvements
- Plan Troutdale to Gresham Trail
- Study Reynolds Rail Trail



Safety

- Improve lighting
- Fully separate active transportation facilities from roads, especially those with freight traffic



Bike & Scooter Share Micromobility

- Bike/scooter share at:
 - FedEx
 - TRIP
 - East Multnomah County
- Provide quick mobility options between FedEx and Line 81



Telecommuting, Compressed Workweek

- Where appropriate, encourage telecommuting and compressed workweek options



Ride Matching, Challenges

- Encourage use of DriveLessConnect.com for ride matching
- Have on-site ride matching
- Promote participation in Drive Less, Bike More, and other challenges



Financial Incentives

- Pre-tax payroll deduction
- Transportation subsidy
- Employer-provided transit pass
- Shared mobility membership
- Prize incentives for non-drive commutes



Emergency Ride Home, On-Site Facilities

- Implement Emergency Ride Home program
- Provide supportive facilities:
 - Lockers
 - Vending machines, kitchen, prepared food
 - Nap/wellness rooms
 - Shower facilities

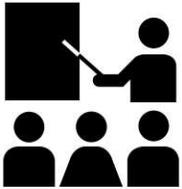


Parking

- Implement parking permit
- Priority carpool/vanpool parking
- Covered/secure bike parking
- On-site loaner bike locks



Orientation



- New employee orientation includes travel options info
- Provide employees blinky lights at orientation and for commute challenges
- Provide safety and training for use of different travel options

Workforce Training



- Travel options training:
 - To TRIP for people living east of I-205
 - For people in workforce/trades training programs
 - For students in community colleges and select high schools
- Add employment recruitment in travel options training

Land Use



- Locate affordable housing in a range of housing sizes
- Allow food carts in TRIP
- Childcare accessible via transit or near affordable housing
- Other opportunities to mix uses in the study area

Questions?

Thank you!

HEIDI BEIERLE
heidi.b@westcolumbiagorgechamber.com
971.280.7702



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	3.b.	2019-29

TO: Mayor and City Council
FROM: Eric Rutledge, Associate Planner
THRU: Allan Berry, Public Works Director
DATE: February 28, 2019

ISSUE:

Meadow Outdoor Advertising has applied for a Type IV text amendment to the City’s sign regulations (FMC 19.170 Sign Regulations). A staff report has been issued on the application and public hearings held by the Planning Commission and City Council.

The application was last discussed at the February 20, 2019 Council Work Session, and considered during the regular meeting as agenda item 7b under “Council Business”. No motions were made to approve or deny the application, and the agenda item was closed.

Although a Type IV application does not require a decision, the Council may choose to approve or deny the application. A decision to approve or deny the application must be based on the approval criteria and include findings. A complete list of Council alternatives is included under “Council Alternatives”.

APPLICATION SUMMARY & HISTORY

Meadow Outdoor Advertising owns and operates a billboard in the Eastwinds Industrial Park located at 21414 NE Sandy Blvd. The City’s existing sign regulations prohibit the construction of new billboards and the replacement of existing billboards. The applicant is proposing an amendment to the City’s sign regulations to allow the City’s three existing billboards to be rebuilt on the same property under certain conditions.

Application timeline:

- December 12, 2017 Planning Commission Work Session
- August 22, 2018 Application Submitted
- October 9, 2018 Planning Commission Hearing
- January 2, 2019 City Council 1st Reading of Ord. 1-2019
- January 16, 2019 City Council 2nd Reading of Ord. 1-2019 w/ Hearing & Deliberation
- February 20, 2019 City Council Work Session Discussion

RECOMMENDED CITY COUNCIL ACTION:

1. Deny application 2018-61-TA and adopt Resolution 20-2019.

ALERNATIVE CITY COUNCIL ACTIONS:

1. Approve application 2018-61-TA and adopt Ordinance 1-2019 with the recommended Planning Commission conditions and findings as described in Exhibit A
2. Approve application 2018-61-TA and adopt Ordinance 1-2019 with council conditions and findings (new conditions and findings required)

EXHIBITS

- A. Planning Commission Minutes (October 9, 2018)
- B. Planning Commission Staff Report (October 2, 2018)
- C. Resolution 20-2019, with City Council Denial Findings
 - a) Denial Findings for Application 2018-61-TA



MINUTES
PLANNING COMMISSION MEETING
1300 NE Village Street
Fairview, OR 97024
Tuesday, October 9, 2018

PRESENT: Ed Jones, Chair
Russell Williams, Vice Chair
Hollie Holcombe
Jeff Dennerline
Steven Hook
Les Bick

STAFF: Sarah Selden, Senior Planner
Eric Rutledge, Associate Planner
Devree Leymaster, City Recorder

1. CALL TO ORDER

Chair Jones called the meeting to order at 6:33 PM.

2. CITIZENS WISHING TO SPEAK ON NON-AGENDA ITEMS

None.

3. PUBLIC HEARING

a. Application 2018-61-TA

Sign Code Text Amendment Request from Meadow Outdoor Advertising

Chair Jones read the Open Hearing Statement for a Legislative Hearing and Associate Planner Rutledge cited the applicable criteria.

AP Rutledge presented the staff report. (*Exhibit A*) The proposal is to amend FMC Chapter 19.170 Sign Regulations to allow legal, non-conforming existing billboards to be reconstructed on the property in order to improve the structural and aesthetic nature of the signs. Amendments would apply to three existing billboards in Fairview. Written testimony from Outfront Media was received in favor of the application. (*Exhibit B*)

Applicant Brian Casady, Meadow Outdoor Advertising, provided a summary of his request and proposed changes to the code. (*Exhibit C*) He noted the purpose of the application is so an old billboard may be rebuilt to be a more attractive structure. He supported staff's proposed changes, but commented staff's proposed language is broader; it allows all three existing billboard structures to be rebuilt. Mr. Casady explained their current State permit is for advertising on one side only. Because the sign is currently nonconforming they are unable to get a permit allowing advertising on both sides of the sign; will need supporting documents from the city.

Chair Jones asked if anyone would like to speak in favor of, neutral to, or opposed to the application.

Dan Dhruva, Pacific Outdoor Advertising, Portland, OR spoke in favor of the proposed amendments. He shared his company has one billboard sign in Fairview and noted the proposal does not increase the number of signs.

Commissioner Bick asked staff why they had no recommendation. Senior Planner Selden replied this is a policy decision for Council. The only recommendation is to review the material and testimony heard and make a recommendation to Council.

Commissioner Hook inquired about the reference in Outfront Media's letter to a revenue source. AP Rutledge clarified there is no ongoing revenue source to the city i.e. recurring permit or license fee.

Commissioner Holcombe asked if the number of times a sign can be rebuilt can be limited. SP Selden replied yes, the Commission could add a limit.

Commissioner Hook clarified the sign may be no more than 40 feet above I-84, not from ground level. AP Rutledge answered yes, the proposed amendment is to allow them to be raised 40 ft. above the adjacent roadway. The applicant's sign is 30 ft. above I-84 and could be raised 10ft. with this amendment.

Commissioner Hook asked the applicant if he had a plan for the second side of the sign. Mr. Casady replied they have no current contract; would sell advertising space when applicable.

Chair Jones closed the public hearing.

Commissioner Dennerline proposed keeping subsections a) and b) in the applicants proposed changes and "by the billboard owner" in staff's recommended text in Exhibit C. Commissioner Holcombe agreed.

AP Rutledge explained the reasoning to remove a) and b) is because the other two existing billboards are already mounted on a single pole with less of a footprint.

Commissioner Hook commented signs can be beneficial. He noted the prior intent was to phase out and not allow billboards. He requested clarification that illuminated billboard signs would not be allowed. SP Selden replied flashing signs, signs with movement, etc. are prohibited in the sign code.

Commissioner Dennerline moved to recommend adoption of application 2018-61TA with staff recommended alternate text and addition of subsection a) and b) from the applicants proposal. Commissioner Holcombe seconded. The motion passed unanimously.

Ayes: 6
Nays: 0
Abstained: 0

4. BRIEFING ON DRAFT URBAN RENEWAL PLAN

Elaine Howard, Consultant, presented a brief review of the draft Urban Renewal Plan and the role of the Planning Commission in the process. (*Exhibit D*) The Commission will be asked to review and confirm the proposed Urban Renewal Plan conforms to the Comprehensive Plan via a motion at their October 23 meeting. She clarified Urban Renewal does not increase property tax; it reallocates what is already being paid.

Chair Jones asked if the taxing districts that will be impacted had been notified. City Administrator Young replied yes, the notices went out Friday.

5. COMMISSION AND STAFF UPDATES

SP Selden shared the Commission is invited to participate in a joint work session with City Council on November 7 at 6:00 PM to review the proposed ADU amendments. Commissioner Dennerline indicated he will not be available and Commissioner's Williams, Jones, Holcombe and Hook believe they will be.

Commissioner Dennerline requested an apology from Commissioner Bick related to the actions surrounding Commissioner Bick's application. He didn't appreciate the letter Commissioner Bick sent to the Mayor or the comments he made to the Council during the appeal hearing. He felt insulted and accused of things he did not do. In his opinion there were major differences between the projects, Commissioner Bick referred to; he had no agenda or bias. Commissioner Williams indicated support for Commissioner Dennerline's comments; and that he too felt his integrity had wrongfully been questioned. The discussion continued until Commissioner Holcombe moved to adjourn the meeting.

6. TENTATIVE AGENDA – OCTOBER 23, 2018

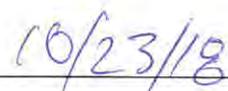
- Public Hearing: Application 2018-62-DR and Application 2018-48-MOD
- Work Session: Urban Renewal Plan Conformance with Comprehensive Plan – Commission agreed this item should be first on the agenda.

7. ADJOURNMENT

Meeting adjourned by consensus at 8:25 PM.


Devree A. Leymaster
City Recorder


Ed Jones
Chair


Date

A complete recording and/or video of these proceedings is available.
Contact the City of Fairview City Recorder Office, 1300 NE Village St., Fairview, OR 97024, (503) 674-6224.



**PLANNING COMMISSION STAFF REPORT
TYPE IV TEXT AMENDMENT
FINDINGS AND STAFF RECOMMENDATION**

Date of Report: October 2, 2018

Staff Contact: Eric Rutledge, Associate Planner
rutledgee@ci.fairview.or.us
503-674-6205

Application Number: 2018-61-TA

Property Owner: Eastwinds Industrial Park, Inc.

Applicant: Meadow Outdoor Advertising

Site Address: 21414 NE Sandy Blvd (1N3E28AC -100)

Text Amendment also impacts 22820 NE Sandy Blvd (1N3E27B -1004) and 23012 NE Sandy Blvd (1N3E27B -1100).

Proposal: Amend Fairview Municipal Code (FMC) Chapter 19.170 Sign Regulations to allow legal, non-conforming billboards to be rebuilt on the same property in order to improve the structural and aesthetic nature of the signs.

Recommendation: Staff recommendation not provided for this application

Exhibits:

A. Application Materials

1. Applicant Narrative
2. Existing Conditions
3. Billboard Elevation Survey
4. ODOT Letter

- B. Background Materials**
 - 1. Map of Existing Billboards
 - 2. Nonconforming Sign Regulation Comparison
 - 3. Ordinance 08-1997

- C. Draft Ordinance**
 - 1. Ordinance 10-2018

- D. Planning Commission Findings**
(reserved for Council hearing)

- E. Minutes**
 - 1. Planning Commission Minutes 12/12/17

- F. Staff Reports**
(reserved for Council hearing)

I. NOTICES & REFERRALS

Application Date:	August 22, 2018
Application Deemed Complete:	September 5, 2018
Public Hearing Date:	October 9, 2018
Public Notice Date/Type:	September 7, 2018 – Notice mailed to property owners impacted by text amendment and affected governmental agencies September 17, 2018 – Notice mailed to property owners within 250 ft. of properties impacted by the text amendment September 18, 2018 – Notice in Gresham Outlook September 28, 2018 – Site posted
Referrals:	The Department of Land Conservation and Development (DLCD) and Metro were sent the

required 35-day notice of public hearing and draft amendments on September 5, 2018. 30-day notice was also sent to the Oregon Department of Transportation's Outdoor Advertising Sign Program.

II. APPLICABLE CRITERIA

- FMC 19.412 Description of Permit Procedures
- FMC 19.413 Procedures
- FMC 19.470 Land Use District Map & Text Amendments
- FMC 19.205 Amendments
- FMC 19.170 Sign Regulations

III. BACKGROUND AND SUMMARY OF ISSUES

Issue

The applicant, Meadow Outdoor Advertising, owns and operates a billboard located in the Eastwinds Industrial Park located at 21414 NE Sandy Blvd. The City's existing sign regulations prohibit the construction of new billboards and the reconstruction of existing billboards. The applicant is proposing an amendment to the City's sign regulations to allow legal, non-conforming billboards to be rebuilt on the same property under certain conditions.

The Planning Commission held a work session on December 12, 2017 to learn about the proposed amendment from the applicant and provide early feedback. The applicant has submitted a complete application in response to the feedback received at the work session (see minutes in Exhibit E1).

Existing Conditions

There are three existing billboards in Fairview, all on the I-84 Corridor (see Exhibit B1). The billboards range in height from 37 feet to 77 feet (height = top of sign face) and in size from 576 SF to 672 SF. All three signs were originally built in the 1970s and two of the signs were rebuilt in the 1990s.

Address / Property	Year Built or Rebuilt	Height (top of sign)	Dimensions	Zone
21414 NE Sandy / Eastwinds Industrial Park*	1975	37 ft.	576 SF	Corridor Commercial
22820 NE Sandy / Townsend	1995	77 ft.	560 SF	General Industrial
23012 NE Sandy / Townsend	1997	69 ft.	672 SF	Corridor Commercial

**Billboard owned by Meadow Outdoor Advertising (applicant)*



Photo 1: Billboard at 21414 NE Sandy Blvd (Eastwinds Industrial Park). The billboard is owned by the applicant. Photo taken from I-84, heading east-northeast.



Photo 2: Two billboards in view located at 22820 NE Sandy Blvd (left) and 23012 NE Sandy Blvd (right). Both properties owned by Townsend Farms. Photo taken from I-84 corridor, heading east-northeast.



Photo 3: Billboard at 23012 NE Sandy Blvd. Photo taken from I-84 corridor, heading east-northeast

Existing Sign Regulations

Signs and billboards within the City of Fairview are regulated by FMC 19.170 “Sign Regulations”. Billboards were first regulated in the City in 1997 by Ordinance 08-1997 (Exhibit B3). This ordinance prohibited the construction of new billboards and the replacement of existing billboards. Billboards that were legal when they were constructed can remain on-site and be maintained in reasonable repair. Billboards are defined as “a freestanding sign over 200 square feet and with display surface or surfaces primarily designed for the purpose of painting or posting a message thereon at periodic intervals”. The following sign code sections pertain to billboards:

FMC 19.170.050 Signing of nonconforming uses

- F. *Billboard Signs. Billboard signs existing at the effective date of the ordinance adopted July 10, 2010, shall be permitted to remain and be maintained in reasonable repair, but may not be replaced, relocated, enlarged, or otherwise structurally modified. Changes in message shall not affect nonconforming status.*

FMC 19.170.070 Hardship relief

- D. *Hardship relief for billboards displaced by public improvement projects may be requested from the planning commission and shall be processed in accordance with Chapter 19.520 FMC.*

FMC 19.170.100 Prohibited signs

- B. *Other Prohibited Signs. The following signs are identified as having unnecessary and adverse visual impact on the community:*
 - 4. *Billboard signs except as provided by FMC 19.170.050 and 19.170.070.*

Proposed Amendment

The applicant has proposed the following text amendment. Added text is underlined and ~~removed text is struckthrough~~.

FMC 19.170.050 Signing of nonconforming uses

- F. *Billboard Signs. Billboard signs existing at the effective date of the ordinance adopted July 10, 2010, shall be permitted to remain and be maintained in reasonable repair ~~but may not be replaced, relocated, enlarged, or otherwise structurally modified.~~ An existing billboard sign may be rebuilt on the same property, and may be modified to improve the structural or aesthetic nature of the signs, including altering the height to be not more than 40 feet above the adjacent roadway, if the following requirements are met:*

- a. The modified structure includes fewer supporting elements and so decrease the visual impact of the supporting structure; and
- b. The modification results in a smaller footprint on the ground.

Changes in message shall not affect nonconforming status.

Issues and Feedback on Proposed Amendment

A. Non-conforming Use

The City's existing sign regulations are intended to phase out all billboards over time. The three existing billboards are classified as 'non-conforming uses' under FMC Section 19.170.050. The purpose of this section is to allow existing, non-conforming billboards to be maintained in reasonable repair but not replaced, relocated, or enlarged. If an existing billboard is removed or structurally damaged, it may not be replaced.

This approach to non-conforming signs is consistent with regulations in other jurisdictions in Oregon (see Exhibit B2). By requiring conformance with current sign standards, the desired changes to the built environment will be accomplished over time. Under current standards, all billboards will be removed from the City over time, depending on factors such as the sign's structural integrity.

The proposed sign code amendment would allow three non-conforming billboards to be rebuilt on the same property indefinitely, until the code is amended otherwise. Allowing non-conforming signs or structures to be rebuilt in perpetuity is uncommon. Most codes require upgrades when the non-conforming structure is destroyed or redeveloped. Some codes are stricter, requiring non-conforming structures to be removed within a specific time (e.g. 6 months or 2 years after the code is changed).

B. Existing and Proposed Height Limits

The proposed text amendment would allow existing billboards to be rebuilt on the same property up to 40 ft. above the adjacent roadway. This would also provide the opportunity for other existing billboard owners to raise their signs between 6-10 ft., depending on their current height. A comparison of billboard heights allowed in other jurisdictions is provided in Exhibit B2. The table below summarizes existing and future height potential in Fairview.

Address / Property	Existing height above grade	Existing height above freeway grade	Allowed height above freeway grade	Change
21414 NE Sandy / Eastwinds Industrial Park	37 ft.	30 ft.	40 ft.	10 ft.
22820 NE Sandy / Townsend	77 ft.	31 ft.	40 ft.	9 ft.
23012 NE Sandy / Townsend	69 ft.	34 ft.	40 ft.	6 ft.

C. Sign Location

The proposed text amendment would allow existing billboards to be rebuilt on the same property up to 40 ft. above the adjacent roadway. All three billboards are located on properties with frontage on I-84 and NE Sandy Blvd. The billboards are currently located adjacent to I-84, advertising to drivers on the interstate (see Exhibit B1).

The proposed amendment would allow a billboard to be moved to the Sandy Blvd. frontage and raised 40 ft. above the adjacent roadway. Other freestanding signs are already allowed in the corridor, however, they are limited to 100 SF in sign face area. The existing billboards are between 560-672 SF. In order to prevent incompatible billboard signs being placed near NE Sandy Blvd, the staff recommendation is to allow billboards to be replaced only in their current location, and not elsewhere on the same property.



Photo 4: View of NE Sandy Blvd. heading east. The properties on the right (south) side of the street are the Townsend parcels with billboards.

D. Sign Structure Requirements

The proposed text amendment would require new billboard structures to include fewer supporting elements and have a smaller footprint on the ground than the structures they are replacing. While this standard would apply well when replacing the applicant's existing billboard with four posts, it may be problematic for the other two billboards that currently have a single metal pole support structure. The visual impact of the single metal poles is small and requiring a smaller footprint in the future may not be practicable. Staff feedback is to remove this language and allow billboard owners to use building techniques that are suitable for the location.

F. Summary of Draft Code Language

If the Planning Commission recommends that City Council approve a code amendment to allow rebuilding of existing billboards, staff suggests the following changes to the applicant's proposed code language: .

Applicant Proposal

"Billboard Signs. Billboard signs existing at the effective date of the ordinance adopted July 10, 2010, shall be permitted to remain and be maintained in reasonable repair ~~but may not be replaced, relocated, enlarged, or otherwise structurally modified.~~ An existing billboard sign may be rebuilt on the same property, and may be modified to improve the structural or aesthetic nature of the signs, including altering the height to be not more than 40 feet above the adjacent roadway, if the following requirements are met:

- a. The modified structure includes fewer supporting elements and so decrease the visual impact of the supporting structure; and*
- b. The modification results in a smaller footprint on the ground.*

Changes in message shall not affect nonconforming status.

Applicant Proposal with Staff Modifications

"Billboard Signs. Billboard signs existing at the effective date of the ordinance adopted October 9, 2018, shall be permitted to remain and be maintained in reasonable repair ~~but may not be replaced, relocated, enlarged, or otherwise structurally modified.~~ Existing billboards can be rebuilt in the same location and may be modified to improve the structural or aesthetic nature of the signs, including altering the height to be not more than 40 feet above the adjacent roadway. Changes in message shall not affect nonconforming status.

V. APPROVAL CRITERIA FINDINGS

Chapter 19.412 Description of Permit Procedures

FINDINGS: This Chapter outlines permit procedures for land use applications. This application has been processed in accordance with this Chapter.

Chapter 19.413 Procedures

19.413.040 Type IV procedures (legislative).

Subsections A-F & H-I

FINDINGS: Legislative amendments are policy decisions made by city council, and are reviewed following the Type IV procedure. The text amendments requested in this application impact the applicant's property (Meadow Outdoor Advertising's billboard) and also impacts the two other billboards located in Fairview. For this reason, the text amendment is legislative in nature. The application, however, is being made by third party with approval by the property owner, and not at the request of the City. For this reason, the land use application is following a quasi-judicial procedure for the *hearing*, to allow the applicant with the opportunity to make the request to the City.

Subsections A-F & H-I pertain to legislative application procedures such as noticing and requiring a hearing before the Planning Commission and City Council. The application was processed in accordance with these requirements.

G. *Decision Making Consideration. The recommendation by the planning commission and the decision by the city council shall be based on consideration of the following factors:*

1. *Statewide planning goals and guidelines.*

FINDINGS: Goal 5 Natural Resources, Scenic and Historic Areas, and Open Spaces. This is the only statewide planning goal that specifically addresses billboards.

"As a general rule, plans should prohibit outdoor advertising signs except in commercial or industrial zones. Plans should not provide for the reclassification of land for the purpose of accommodating an outdoor advertising sign."

All existing billboards are in commercial and industrial zones. Zone changes are not proposed in order to accommodate an outdoor advertising sign. No other statewide planning goals or guidelines are applicable.

2. *Comments from applicable federal or state agencies.*

FINDINGS: The application was routed to ODOT's Outdoor Advertising Sign program and DLCD. No comments were received from either agency. ODOT provided a letter to the applicant stating that if the proposed amendment were approved, a new sign on their property would comply with the state sign program (see Exhibit A4).

3. *Applicable intergovernmental agencies.*

FINDINGS: The application was routed to Metro. Metro reviewed the application and did not provide any comment.

4. *Applicable Comprehensive Plan policies.*

FINDINGS: Compliance with applicable Comprehensive Plan policies is described below, under the findings for FMC 19.470.300.B(1)

Chapter 19.205 Amendments

Sections 19.205.010 & 19.205.030-50

FINDINGS: Sections 19.205.010 & 19.205.030-50 pertain to application procedures and noticing. The application was processed in accordance with these requirements.

19.205.020 Criteria.

Approval of an ordinance text or map amendment shall be based on finding that it complies with the following criteria:

- A. *The amendment will not interfere with the livability, development or value of other land in the vicinity of site-specific proposals when weighed against the public interest in granting the proposed amendment.*

FINDINGS: The proposal will impact three (3) parcels in the commercial and industrial zones between the Sandy Blvd. and I-84 corridors. Freestanding signs are allowed in these zones, however, the existing billboards are larger and taller than signs allowed by the current code. As proposed, the amendment would allow billboards to be rebuilt anywhere on the existing property including near the Sandy Blvd. frontage, impacting the livability of residents who live nearby. If the billboards are only rebuilt in their current location adjacent to I-84, the adverse impacts to residential neighborhoods will be minimized. The eastern-most billboard at 23012 NE Sandy Blvd. (not owned by Meadow) is located adjacent to a manufactured home park. The proposal would allow the billboard

owner to rebuilt 6 ft. taller than the current sign, which could make the sign more visible to adjacent residents.

B. The amendment will not be detrimental to the general interests of the community.

FINDINGS: New billboard signs are currently prohibited by the development code because of “unnecessary and adverse visual impact on the community”. As noted in the applicant’s narrative, the proposed amendment would only apply to existing billboards with an established visual presence. The proposed text amendment will allow existing billboards to be reconstructed and raised between 6-10 ft. Since the existing billboards are already located on I-84 and are between 30-34 ft. above the roadway, allowing an additional 6-10 ft. in height will primarily impact motorists viewing of Fairview from the interstate. As discussed above, there may also be a specific conflict between the eastern-most billboard sign and the abutting residential development.

As noted in the applicant’s narrative, the existing billboards provide an opportunity for businesses to advertise products and services. The applicant’s current billboard advertiser is Action Motor Sports, a local business selling and repairing motorcycles, however, there is no way to ensure the billboards are limited to advertising for local businesses. The other two billboards have advertising for businesses outside of Fairview.

C. The amendment will not violate the land use designations established by the comprehensive land use plan and map or related text.

FINDINGS: The three subject properties are classified as Commercial and Industrial land in the City’s Comprehensive Plan. The proposed amendment does not conflict with the commercial or industrial land use designations and their intended purpose.

D. The amendment will place all property similarly situated in the area in the same zoning designation or in appropriate complementary designations without creating inappropriate “spot zoning.”

FINDINGS: A zone/comprehensive plan change is not proposed. This standard does not apply.

Chapter 19.470 Land Use District Map and Text Amendments

19.470.100 Purpose.

The purpose of this chapter is to provide standards and procedures for legislative and quasi-judicial amendments to this code and the land use district map...

19.470.200 Legislative amendments.

Legislative amendments are policy decisions made by city council. They are reviewed using the Type IV procedure in FMC [19.413.040](#).

19.470.300 Quasi-judicial amendments.

- A. *Quasi-Judicial Amendments. Quasi-judicial amendments are those that involve the application of adopted policy to a specific development application or code revision....*

- B. *Criteria for Quasi-Judicial Amendments. A recommendation or a decision to approve, approve with conditions or to deny an application for a quasi-judicial amendment shall be based on all of the following criteria:*
 - 1. *Demonstration of compliance with all applicable comprehensive plan policies and map designations. Where this criterion cannot be met, a comprehensive plan amendment shall be a prerequisite to approval;*

FINDINGS:

Fairview Comprehensive Plan

Chapter 1 – Community Vision for Sandy Blvd:

The community vision for NE Sandy Blvd. prioritizes job preservation and economic development. Without considering specifics such as sign height or size, the commercial nature of the billboards does not conflict with the vision for the Sandy Blvd. corridor.

Chapter 3 – The Sandy Blvd Area:

This section also addresses future development in the Sandy Blvd. corridor, indicating that demand will grow for commercial and industrial lands but that development must be carefully sited to minimize negative off-site impacts. Within the Sandy Blvd. corridor, residential development is prioritized west of NE 223rd Ave. while industrial development is prioritized east of NE 223rd. The applicant’s billboard is located west of NE 223rd and is currently buffered from surrounding residential development by buildings and open space.

Chapter 5 – Open Spaces, Scenic and Historic Areas, and Natural Resources:

This chapter acknowledges that scenic views of Mt. Hood, the Columbia River, and area lakes and streams are available throughout the city. However, during the 1993 Comprehensive Plan update, the City declared that the topography and urban development patterns in the City limit outstanding views. No scenic protections have been incorporated into the development code to protect view corridors.

Chapter 9 – Economic Development:

This chapter describes Fairview as a small but growing city that is preparing to accommodate commercial and industrial land development and become an important location for jobs, businesses, and trade within the region. The City’s transportation and freight routes are identified as opportunities for attracting businesses. This chapter does not mention billboards or outdoor advertising along these corridors, but does identify NE Sandy Blvd. as a key commercial and industrial corridor.

2. *Demonstration of compliance with all applicable standards and criteria of this code, and other applicable implementing ordinances;*

FINDINGS: The application proposes an amendment to FMC 19.170 Sign Regulations and this staff report discusses compliance with other applicable standards. The application is being processed in compliance with the development code as a Type IV procedure with a quasi-judicial hearing.

3. *Evidence of change in the neighborhood or community or a mistake or inconsistency in the comprehensive plan or land use district map regarding the property which is the subject of the application.*

FINDINGS: Billboards in Fairview have been prohibited since 1997, when the first billboard regulations were adopted. At that time, billboards were prohibited because of their “unnecessary and adverse visual impact on the community”. Since 1997 the City has continued to grow, filling in vacant land with new homes and businesses. While the density in housing and jobs has increased, many residents still value Fairview’s small-town feel. Economic development and maintaining the community’s small-town feel were both expressed as goals in the Fairview 20.30.40 visioning document, completed in December 2017.

19.470.400 Conditions of approval.

A quasi-judicial decision may be for denial, approval, or approval with conditions. A legislative decision may be approved or denied.

FINDINGS: The planning commission and city council can deny, approve, approve with changes, or continue the hearing to a date certain.

19.470.500 Record of amendments.

The city recorder shall maintain a record of amendments to the text of this code and the land use districts map in a format convenient for public use.

FINDINGS: Public records will be maintained for this application and any resulting amendment.

19.470.600 Transportation planning rule compliance.

- A. *When a development application includes a proposed comprehensive plan amendment or land use district change, the proposal shall be reviewed to determine whether it significantly affects a transportation facility consistent with OAR [660-012-0060](#)...*

FINDINGS: No map changes are proposed. This criteria does not apply.

VI. CONCLUSION AND RECOMMENDATIONS

STAFF RECOMMENDATION

A staff recommendation is not provided for this application.

PLANNING COMMISSION ALTERNATIVES

1. Recommend City Council adoption of draft Ordinance 10-2018.
2. Recommend City Council adoption of Ordinance 10-2018, incorporating some or all of staff feedback described in this report, and/or other changes recommended by the Commission.
3. Recommend City Council do not adopt Ordinance 10-2018.
4. Continue the Public Hearing to if additional information is needed.



RESOLUTION
(20 - 2019)

**A RESOLUTION OF THE FAIRVIEW CITY COUNCIL DENYING
APPLICATION 2018-61-TA**

WHEREAS, Ordinance 08-1997 prohibited the construction of new billboards and the replacement of existing billboards; and

WHEREAS, Ordinance 08-1997 is implemented through Fairview Municipal Code Chapter (FMC) 19.170 "Sign Regulations"; and

WHEREAS, Meadow Outdoor Advertising submitted a Type IV application (#2018-61-TA) to amend the City's FMC 19.170 "Sign Regulations" to allow the replacement of existing billboards under certain conditions; and

WHEREAS, the Planning Commission considered the application during a public hearing on October 9, 2019 and recommended approval to the City Council; and

WHEREAS, the City Council considered the application during a public hearing on January 16, 2019 and deliberated on the proposal during a Work Session on February 20, 2019; and

WHEREAS, based on the evidence provided at the public hearing and through the deliberation at the work session meeting, the Council determined the proposed amendment does not meet the requirements of FMC 19.205.020(B) because reconstructed or replaced billboards will have an adverse visual impact and is not in the general interests of the community

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 Application 2018-61-TA is denied based on the findings attached as Exhibit A.

Section 2 This resolution is and shall be effective from the day of its passage.

Resolution adopted by the City Council of the City of Fairview, this 6th day of March, 2019.

Mayor, City of Fairview
Brian Cooper

ATTEST

City Recorder, City of Fairview
Devree Leymaster

Date



**BEFORE THE CITY COUNCIL
CITY OF FAIRVIEW
TYPE IV LAND USE APPLICATION**

AN APPLICATION FOR AN AMENDMENT)
FAIRVIEW MUNICIPAL CODE CHAPTER) 2018-61-TA
19.170 "SIGN REGULATIONS" TO ALLOW) Meadow Outdoor Advertising
NON-CONFORMING BILLBOARDS TO BE) Findings, Conclusion & Order
REBUILT ON THE SAME PROPERTY)
UNDER CERTAIN CONDITIONS)

A public hearing was opened on January 26, 2019 upon a Type IV application from the applicant, Meadow Outdoor Advertising, for legislative text amendments to Fairview Municipal Code Chapter 19.170 "Sign Regulations". The Planning Commission closed the public hearing at the January 26, 2019 meeting.

Brian Cooper, Mayor, presided at the hearing.

A permanent record of this proceeding is to be kept on file in the Fairview City Hall, along with the original of this Type IV City Council Order.

The City Council orders that Land Use Application #2018-61-TA is **denied** based on the following findings.

Standard:

Fairview Municipal Code Section 19.205.020.B provides: "The amendment will not be detrimental to the general interests of the community."

Finding:

The vision of the 1997 sign code amendment (Ord. 08-1997) was to improve neighborhood livability and aesthetic by prohibiting the construction of new billboards and the replacement of existing billboards.

The proposed amendment (Application #2018-61-TA) would allow existing billboards to be replaced and increased in height above their current level.

While recognizing the marketing opportunities that billboards provide, the adverse visual impact created when existing billboards are replaced and increased in height is not in the general interests of the community and is not consistent with the current Code provisions or the intent of the Code provisions when adopted. For this reason, based on the evidence in the record, the City Council finds that approving the application is not in the best interest of the City or the “general interest of the community.” Accordingly, the criterion is not met.

Brian Cooper, City of Fairview Mayor
Signed Original in File

Date

AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	3.e.	2019-30

TO: Mayor and City Council
FROM: Sarah Selden, Senior Planner
THRU: Nolan K. Young, City Administrator
DATE: March 6, 2019

ISSUE:

Adopt Resolution 17-2019, opposing adoption of House Bill 2001 in the 2019 Legislative Session.

BACKGROUND:

House Bill 2001 was introduced by House Speaker Tina Kotek for consideration in the 2019 legislative session. The intent of the bill is to address housing supply shortfalls and housing affordability by increasing housing options in single-family residential zones, which occupy the greatest amount of land in most of Oregon's cities.

The bill would require all cities with populations of 10,000 or greater to adopt the following:

- In all single-family residential zoning districts, allow at least one type of “middle housing” as a permitted use (not a conditional use). Middle housing types include duplexes, triplexes, quadplexes, and cottage clusters.
- Update the Accessory Dwelling Unit (ADU) standards to remove the owner occupancy requirement (either primary or accessory unit must currently be owner occupied), and remove additional off-street parking requirements for ADUs (one additional space currently required per ADU).
- For middle housing types, the City could not require SDCs to be paid prior to issuing a certificate of occupancy.

In Fairview's single-family residential districts, the following middle housing types are allowed today.

- **Standard Residential (R) Zone, Historic Fairview R-7.5, and Low-Density R-10 Zone:** Duplexes are currently conditional uses (require Planning Commission approval)
- **South Fairview Lake Design Overlay Zone:** Allows courtyard clusters, and duplexes as conditional uses
- **Village Single Family Zone:** The same conditional uses as in the R zone (duplexes)

Under this bill, once Fairview's population reached 10,000, the city would be required to revise the zoning regulations in all of the city's single-family residential zones, as well as the ADU standards.

The bill has generated a great deal of feedback from cities, counties, and planning organizations around the state. While there is broad support for the intent of the bill to address the housing needs of Oregonians, many concerns have been raised about the top-down approach, disregard to home rule authority, and lack opportunity for local citizens to participate in this significant land use change. Testimony on this bill, provided to the House Committee on Human Services and Housing, can be found here:

<https://olis.leg.state.or.us/liz/2019R1/Committees/HHS/2019-02-11-13-00/MeetingMaterials>

During citizen comment at the February 20, 2019 City Council meeting, the Council was informed of Troutdale's recent resolution opposing the bill, and was urged to take a similar position. The Fairview Council shared concerns about this bill and wished to adopt a position opposing its passage.

BUDGET IMPLICATIONS:

If the bill is adopted as proposed, once the city's population reaches 10,000 residents, the City would be required to update its development code through a public hearing process. Code updates should consider additional standards needed to address the specific middle housing types, which will require additional staff and/or consultant resources.

COUNCIL ALTERNATIVES:

1. Staff Recommendation: adopt Resolution 17-2019
2. Do not adopt Resolution 17-2019



RESOLUTION
(17 - 2019)

**A RESOLUTION OF THE FAIRVIEW CITY COUNCIL OPPOSING ADOPTION OF
HOUSE BILL 2001 IN THE 2019 LEGISLATIVE SESSION**

WHEREAS, the City of Fairview recognizes the importance of stable, safe and affordable housing for the wellbeing of all community members; and

WHEREAS, the City of Fairview shares in the statewide concern over the cost of housing and impacts that the supply, location, affordability and overall housing security have on our communities; and

WHEREAS, the City of Fairview agrees that all communities share a responsibility to provide opportunities for a range of housing types that meet the financial capabilities of area residents, consistent with our obligations under Statewide Planning Goal 10 (Housing); and

WHEREAS, the success in implementing the statewide Housing goal lies in Oregon's strong emphasis on citizen involvement in land use planning at the local level, established by the Statewide Planning Goal 1. This has given Fairview residents the opportunity to respond to housing needs in a way that is appropriate to Fairview's unique community needs, geography and pattern of development, while meeting state and regional obligations; and

WHEREAS, Fairview had a population of just under 9,000 people in 2018, but anticipates the city's population to surpass 10,000 residents in the near future due to the recent upsurge in mixed-use and multifamily development; and

WHEREAS, the City of Fairview believes it currently provides a diverse mix of housing types, with 60% of the city's housing stock consisting of townhomes, multi-family, and manufactured home units; residential zoning districts designed for cottage clusters and townhomes; and over 700 new multi-family, townhome, and duplex units approved in the last three years; and

WHEREAS, the bill, if passed, would go against this long-held Oregon value of empowering citizens to solve local community planning issues, violating Statewide Planning Goal 1: Citizen Involvement, and creating distrust in land use planning; and

WHEREAS, the bill, if passed, may negatively impact capacity of neighborhood infrastructure and risk teardowns of older small homes, which provide entry-level home ownership opportunities and naturally occurring affordable housing in historic single family neighborhoods; and

WHEREAS, the City of Fairview strongly urges the legislature to work with communities across the state, along with the League of Oregon Cities, Oregon City Planning Director's Association, and Oregon Chapter of the American Planning Association to amend HB 2001 in a way that provides resources, rather than mandates, to assist cities that need or desire a greater balance in their housing options; and

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 The Fairview City Council opposes adoption of House Bill 2001 as originally drafted.

Section 2 The Fairview City Administrator is directed to share this resolution expressing the City's opposition to House Bill 2001 with state representatives and other stakeholders who may have the ability to positively impact this bill and to address the concerns raised by the City.

Section 3 This resolution is and shall be effective from the day of its passage.

Resolution adopted by the City Council of the City of Fairview, this 6th day of March, 2019.

Mayor, City of Fairview
Brian Cooper

ATTEST

City Recorder, City of Fairview
Devree Leymaster

Date

AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	5.b.	2019-22

TO: Mayor and City Council
FROM: Devree Leymaster, City Recorder
THRU: Nolan K. Young, City Administrator
DATE: February 28, 2019

ISSUE:

Amend Fairview City Council Rules: Order of Business.

BACKGROUND:

During the January 16, 2019 Council meeting the absence of the Pledge of Allegiance (Pledge) at the January 2 and January 16 Council meetings was noted and discussed. A motion was made to create a resolution that states the Pledge be at the start of every Council meeting. The motion was approved unanimously.

City Administrator Young clarified following the motion, that the Council would discuss the issue further at their February 9 Goal Setting Session, rescheduled to February 23, and staff would present a resolution for consideration at the February 20 Council meeting, rescheduled to March 6. The Council concurred. Mayor Cooper reinstated the Pledge on the Council Agenda beginning with the February 6 meeting.

Though the intent was to create a resolution that states the Pledge be at the start of every meeting; the Order of Business for Council agendas is outlined in the Rules of the Fairview City Council. To add the Pledge to the Order of Business in the Council Rules requires adoption of an Ordinance.

COUNCIL ALTERNATIVES:

1. Proceed with the first reading of Ordinance 4-2019 to amend the Council Rules item 4.A.
2. Take no action.



ORDINANCE
(4 - 2019)

**AN ORDINANCE OF THE FAIRVIEW CITY COUNCIL AMENDING THE CITY
COUNCIL RULES CONCERNING ORDER OF BUSINESS**

WHEREAS, the Council has a duty under City Charter Section 12 to adopt and modify Council Rules by ordinance; and

WHEREAS, the Council discussed and approved a motion to include the Pledge of Allegiance at the start of each Council meeting at their January 16, 2019 meeting; and

WHEREAS, the City Council desires to amend the Council Rules to add the Pledge of Allegiance to Section 4A, Order of Business as shown in attached Exhibit A.

THE CITY OF FAIRVIEW ORDAINS AS FOLLOWS:

Section 1 The Council hereby adopts Council Rule amendments as shown on Exhibit "A" attached hereto.

Section 2 The ordinance is and shall be effective thirty (30) days from its passage.

Ordinance adopted by the City Council of the City of Fairview, this 6th day of March, 2019.

Mayor, City of Fairview
Brian Cooper

ATTEST

City Recorder, City of Fairview
Devree Leymaster

Date

EXHIBIT A

(deletions in ~~strike~~through and additions in *italics*)

4. Order of business.

- A. Regular meetings shall be conducted in the following order of business, subject to the right of the Mayor, with Council consent, to alter the order of business:
 1. Call to order.
 2. Roll call.
 3. *Pledge of Allegiance.*
 34. Citizens Wishing to Speak on Non-agenda Items. The purpose of this item is to allow citizens to present information or raise an issue regarding items not on the agenda. A time limit of three minutes per citizen shall apply unless the Mayor or presiding officer adjusts the time limit as appropriate. Citizen comment shall not exceed 30 minutes unless the Council votes to suspend the rules.
 45. Consent Agenda. The purpose of the consent agenda is to expedite the Council meeting by grouping routine or uncontested items of business so that they may be approved by one motion. Any Councilor may request removal of any item from the proposed consent agenda for individual consideration. Action on any item requested for discussion will be deferred until after adoption of the consent agenda.
 56. Presentations.
 67. City Administrator/Department Director Reports
 78. Mayor/committee reports and Council comments.
 89. Public hearings.
 910. Council business.
 1011. Adjournment.



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	5.c.	2019-28

TO: Mayor and City Council
FROM: Allan Berry, Public Works Director
THRU: Nolan K. Young, City Administrator
DATE: February 27, 2019

ISSUE:
FMC Chapter 15.05, Building Code Amendments, is out of date.

RELATED COUNCIL GOALS:
N/A

PREVIOUS AGENDA STAFF REPORTS:
November 23, 2010

BACKGROUND:
Periodically, the state building and fire codes are amended, thereby requiring updates to the Fairview Municipal Code in order to ensure compliance with state laws and regulations. The building code amendments cover the building code, and many specialty codes as follows:

- Oregon Specialty Structural Code
- Oregon Mechanical Specialty code
- Oregon Plumbing Specialty Code
- Oregon Electrical Specialty Code
- Oregon Residential Specialty Code
- Oregon Energy Efficiency Specialty Code
- Oregon Manufactured Dwelling and Park Specialty Code

This ordinance will update our Fairview Municipal Code to align with the current version of the state building codes, by the updating, through replacement, of FMC 15.05.030A

RECOMMENDED ACTION:
Approve the proposed ordinance, 5-2019, updating the Fairview Municipal Code to reflect the current version of the state building codes.

BUDGET IMPLICATIONS:
• None

COUNCIL ALTERNATIVES:

1. **Staff Recommendation:** Approve the proposed ordinance, 5-2019.
2. Deny the proposed ordinance.
3. Remand the ordinance to staff for more research.



ORDINANCE
(5 - 2019)

**AN ORDINANCE OF THE FAIRVIEW CITY COUNCIL AMENDING THE
FAIRVIEW MUNICIPAL CODE CHAPTER 15.05 BUILDING CODE
AMENDMENTS TO ADOPT UPDATED OREGON BUILDING AND
SPECIALTY CODES**

WHEREAS, the City of Fairview operates an approved building program in accordance with Oregon Revised Statutes Chapter 445 and Oregon Administrative Rules Section 918 Division 20; and

WHEREAS, the State of Oregon periodically amends building and specialty codes and adopts new specialty codes; and

WHEREAS, such amendments have been made to the Oregon Specialty Structural Code, Oregon Mechanical Specialty Code, Oregon Plumbing Specialty Code, Oregon Electrical Specialty Code, Oregon Residential Specialty Code, Oregon Energy Efficiency Specialty Code, Oregon Manufactured Dwelling and Park Specialty Code, and

WHEREAS, the City of Fairview City Council wishes to adopt amendments to the state building, and specialty fire codes in the interest of the public health, safety and welfare.

NOW, THEREFORE, THE CITY OF FAIRVIEW ORDAINS AS FOLLOWS:

Section 1. Fairview Municipal Code Chapter 15.05.030 Adoption of State Codes, is hereby replaced in its entirety with revised section FMC 15.05.030 Adoption of State Codes, as shown in substantially the same form as the attached Exhibit A.

Section 2. The ordinance is and shall be effective thirty (30) days from its passage.

Ordinance adopted by the City Council of the City of Fairview, this 20th day of March, 2019.

Mayor, City of Fairview
Brian Cooper

ATTEST

City Recorder, City of Fairview
Devree Leymaster

Date

Ordinance 5-2019

Exhibit A

Chapter 15.05 Building Code Amendments

15.05.030 Adoption of State Codes

A. Adoption of the Oregon Structural Specialty Code

(1) The Oregon Structural Specialty Code, as adopted by OAR Chapter 918, as amended or revised by the State of Oregon, is adopted and enforced as part of FMC Chapter 15.05.

(2) Grading: Appendix J of the Oregon Structural Specialty Code, as amended or revised by the State of Oregon, and except as modified in this code, is adopted and enforced as part of FMC Chapter 15.05.

(3) The provisions of the Oregon Structural Specialty Code, in addition to its individual scoping provisions, shall also apply to demolition of structures, equipment and systems regulated by the Oregon Structural Specialty Code.

B. Adoption of the Oregon Mechanical Specialty Code

The Oregon Mechanical Specialty Code, as adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, is adopted and enforced as part of FMC Chapter 15.05.

C. Adoption of the Oregon Plumbing Specialty Code

The Oregon Plumbing Specialty Code, as adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, is adopted and enforced as part of FMC Chapter 15.05.

D. Adoption of the Oregon Electrical Specialty Code

The Oregon Electrical Specialty Code, as adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, is adopted and enforced as part of FMC Chapter 15.05.

E. Adoption of the Oregon Residential Specialty Code

(1) The Oregon Residential Specialty Code, as adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, is adopted and enforced as part of FMC Chapter 15.05.

(2) The provisions of the Oregon Residential Specialty Code, in addition to its individual scoping provisions, shall also apply to demolition of structures, equipment and systems regulated by the Oregon Residential Specialty Code.

F. Adoption of the Oregon Energy Efficiency Specialty Code

The Oregon Energy Efficiency Special Code, as adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified by this code, is adopted and enforced as part of FMC Chapter 15.05.

G. Adoption of the Oregon Manufactured Dwelling and Park Specialty Code

(1) Parks: The manufactured dwelling park and mobile home park rules adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, are adopted and enforced as part of FMC Chapter 15.05.

(2) Manufactured Home Installations: The manufactured dwelling rules adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, are adopted and enforced as part of FMC Chapter 15.05.

(3) Recreational Park and Organization Camp Regulations: The recreational park and organizational camp rules adopted by OAR Chapter 918, as amended or revised by the State of Oregon, and except as modified in this code, are adopted and enforced as part of FMC Chapter 15.05.

H. The city adopts and enforces the Oregon Fire Code as part of FMC 15,05 as adopted and amended by Gresham Fire and Emergency Services.

I. The City adopts and enforces Appendix J (Grading) of the Oregon Structural Specialty Code as amended or revised by the State of Oregon is adopted and enforced as part of FMC Chapter 15.05..



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	5.d.	2019-34

TO: Mayor and City Council
FROM: Lesa Folger, Finance Director
THRU: Nolan K. Young, City Administrator
DATE: March 1, 2019

ISSUE:

To Adjust Grant and Special Project Fund resources and budget appropriations due to the receipt of funding for the Public Works Shop Project.

BACKGROUND:

Council determined the current Public Works shop to be inadequate and that a new facility would better meet the needs of City utility customers as well as eliminate the liability associated with the current facility. After lengthy research, discussion, and community outreach, Council determined it was in the best interest of the residents, businesses, and customers of the City of Fairview to use Full Faith and Credit debt to fund the project. On September 19, 2018, Council adopted resolution 51-2018, authorizing the City Administrator to proceed with bond issuance to fund the Public Works Shop Project.

The City enlisted the services of Piper Jaffray to assist in soliciting and procuring funding. Mersereau Shannon LLP served as Bond Counsel. Funding was procured through First Internet Public Finance Corporation and took place on November 8, 2018.

Resolution 15-2019 increases resources in the Fiscal Year 2018-19 budget for the Grant and Special Projects Fund and makes appropriations as follows:

Recognize \$655,000 in Unanticipated Non-Tax Revenue and Appropriate Associated Expenses			
Grant and Special Projects Fund	Existing Budget	Proposed Change	Adjusted Budget
Resources	\$ (2,746,920)	\$ (655,000)	\$ (3,401,920)
Transfers	\$ 54,454	\$ (26,017)	\$ 28,437
Debt Service	-	51,300	51,300
Capital Outlay *	2,625,022	629,717	3,254,739
Total Appropriations	\$ 2,679,476	\$ 655,000	\$ 3,334,476
<p>* \$3,103,700 was the total amount funded - \$3,103,000 was approved by Council as the "not to exceed" cost for the project. Because the additional funding is de minimis (\$700), it has been added to the Capital Outlay budget.</p>			

BUDGET IMPLICATIONS:

Budgeted resources and expenses in the Grant and Special Projects Fund each increase \$655,000.

COUNCIL ALTERNATIVES:

1. Staff Recommendation: Move to approve Resolution 15-2019, authorizing the proposed budget appropriation resolution for Fiscal Year 2018-19.
2. City Council could vote not to approve Resolution 15-2019. However, increased resources would not have a corresponding budgeted appropriation and would thus be unavailable for potential use in FY2018-19.



RESOLUTION
(15 - 2019)

A BUDGET APPROPRIATION RESOLUTION TO INCREASE REVENUE AND APPROPRIATIONS IN THE GRANT AND SPECIAL PROJECTS FUND DUE TO THE RECEIPT OF FUNDING FOR THE PUBLIC WORKS SHOP PROJECT

WHEREAS, the City Council wishes to comply with Oregon Budget Law; and

WHEREAS, OAR 294.471 allows for an increase in resources and appropriations for an unforeseen occurrence; and

WHEREAS, OAR 294.338(3) allows for an increase in appropriations for unanticipated non-tax revenue via resolution; and

WHEREAS, the City realized unanticipated revenue for the Public Works Shop Project via Full Faith and Credit funding; and

WHEREAS, the City desires to appropriate the corresponding expense in its entirety within the Grant and Special Projects Fund.

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 The City Council hereby authorizes the following proposed budget appropriations resolution to the FY2018-19 Budget:

Recognize \$655,000 in Unanticipated Non-Tax Revenue and Appropriate Associated Expenses			
Grant and Special Projects Fund	Existing Budget	Proposed Change	Adjusted Budget
Resources	\$ (2,746,920)	\$ (655,000)	\$ (3,401,920)
Transfers	\$ 54,454	\$ (26,017)	\$ 28,437
Debt Service	-	51,300	\$ 51,300
Capital Outlay *	2,625,022	629,717	\$ 3,254,739
Total Appropriations	\$ 2,679,476	\$ 655,000	\$ 3,334,476

* \$3,103,700 was the total amount funded - \$3,103,000 was approved by Council as the "not to exceed" cost for the project. Because the additional funding is de minimis (\$700), it has been added to the Capital Outlay budget.

Section 2 This resolution is and shall be effective from the date of its passage.

Resolution adopted by the City Council of the City of Fairview, this 6th day of March, 2019.

Mayor, City of Fairview
Brian Cooper

ATTEST

City Recorder, City of Fairview
Devree Leymaster

Date



AGENDA STAFF REPORT

MEETING DATE	AGENDA ITEM #	REFERENCE NUMBER
March 6, 2019	5.e.	2019-26

TO: Mayor and City Council
FROM: Lesa Folger, Finance Director
THRU: Nolan K. Young, City Administrator
DATE: February 28, 2019

ISSUE:

To transfer appropriations within the General Fund, allowing the City budget authority to provide the Fairview Urban Renewal Agency a bridge loan in Fiscal Year 2018-19.

RELATED COUNCIL GOALS:

Goal #5 Enhance and promote economic development activity.

BACKGROUND:

City Council formed the Fairview Urban Renewal Agency (URA) on June 6, 2018. Also, on the agenda for the March 6, 2019 City Council meeting is consideration of an intergovernmental agreement (IGA) that creates financial arrangements and other operational considerations between the City of Fairview and the new URA, as well as a memorandum of understanding between the two parties authorizing a \$650,000 bridge loan from the City to the URA to jumpstart its activities.

Resolution 14-2019 requests approval to transfer appropriations within the General Fund in the amount of \$650,000 as follows:

Transfer General Fund Appropriations of \$650,000 Between Categories to Fund a Bridge Loan Transfer to The Fairview URA			
General Fund	Current Budget	Transfer	Adjusted Budget
Transfers Out	70,973	650,000	720,973
Contingency - Excess Reserves	1,630,091	(650,000)	980,091
	<u>\$ 1,701,064</u>	<u>\$ -</u>	<u>\$ 1,701,064</u>

RECOMMENDED ACTION:

Staff recommends approval of Resolution 14-2019, authorizing the proposed budget transfer resolution for Fiscal Year 2018-19.

BUDGET IMPLICATIONS:

Total budgeted appropriations do not change.

COUNCIL ALTERNATIVES:

1. **Staff Recommendation:** Move to approve Resolution 14-2019, authorizing the proposed budget transfer resolution for Fiscal Year 2018-19.
2. City Council could amend the resolution to transfer a lesser amount or decline to approve the resolution. However, unless alternative funding is procured, the Fairview Urban Renewal Agency will not have funding to perform scheduled FY 2018-19 projects.



RESOLUTION
(14 - 2019)

**A RESOLUTION AUTHORIZING THE TRANSFER OF BUDGET
APPROPRIATIONS WITHIN THE GENERAL FUND, ALLOWING THE CITY
BUDGETARY AUTHORITY TO PROVIDE THE FAIRVIEW URBAN RENEWAL
AGENCY A BRIDGE LOAN IN FISCAL YEAR 2018-19**

WHEREAS, the City Council wishes to comply with Oregon Budget Law; and

WHEREAS, OAR 150-294.450(3)(1) allows for transfers of appropriation authority via resolution; and

WHEREAS, the budget appropriation transfers provided herein do not change the General Fund by 10% or more from the adopted Fiscal Year 2018-19 Budget; and

WHEREAS, the Fairview City Council has approved an intergovernmental agreement which authorizes the City to provide the Fairview Urban Renewal Agency with financial assistance; and

WHEREAS, the Fairview City Council has approved a memorandum of understanding within which the General Fund will provide the Fairview Urban Renewal Agency with a bridge loan; and

WHEREAS, a resolution to accept the transfer of budgeted appropriations within the City of Fairview Fiscal Year 2018-19 Budget is necessary to continue to manage distribution of those resources and expenditures and to maintain compliance with ORS 294.471(3) (a) and 294.463.

NOW, THEREFORE, BE IT RESOLVED BY THE FAIRVIEW CITY COUNCIL AS FOLLOWS:

Section 1 The City Council hereby authorizes the following proposed budget appropriation transfer to the FY2018-19 Budget:

Transfer General Fund Appropriations of \$650,000 Between Categories to Fund a Bridge Loan Transfer to The Fairview URA			
General Fund	Current Budget	Transfer	Adjusted Budget
Transfers Out	70,973	650,000	720,973
Contingency - Excess Reserves	1,630,091	(650,000)	980,091
	<u>\$ 1,701,064</u>	<u>\$ -</u>	<u>\$ 1,701,064</u>

Section 2 This resolution is and shall be effective from the day of its passage.

Resolution adopted by the City Council of the City of Fairview, this 6th day of March, 2019.

ATTEST

Mayor, City of Fairview
Brian Cooper

City Recorder, City of Fairview
Devree Leymaster

Date



PSAC MEETING MINUTES

January 28, 2019

Members Present: Steven Marker, Russell Williams, Councilor Cathi Forsythe, Deborah Aronson, Grant Murrell, Chief Harry Smith, Lynnia Woods, Terry Hill, Tammi Tlustos-Arnold

Members Absent:

Minutes of prior meeting's minutes were approved.

Citizens Wishing to Speak on Non-Agenda Items:

Mr. Murrell inquired about a transient vehicle on the Hyster loop/Blue Lake Road that he reported to non-emergency line this morning. (Follow up: As of the evening of PSAC the vehicle was gone. The call info had been passed to MCSO Records to pass along to Patrol.)

Councilor Forsythe reported street lights on NE 223rd between the Public Works Shops and Sandy Blvd. were not working at night. She has seen transient activity in the area recently. Chief Smith will pass the info along to Public Works for follow up.

Chief's Report:

Chief Smith reported that the COPP program is now being operated as a part of the MCSO Citizens Patrol. People can sign up at www.mcsocp.com. Fairview residents can participate in the program by only patrolling Fairview parks, or they can take advantage of the many other service options the program has to offer. There will be regular training offered by the program. Members of the MCSO CP will be available and willing to also serve in Fairview. There were a small number of people who came to the first information meeting. Chief Smith will arrange for another meeting in March for interested people. Mr. Marker added that PRAC may use him to staff a fishing booth in Salish Pond Park in the future; adding an extra set of eyes to citizen park patrol.

PSAC requested Chief Smith to arrange for a 2019 ID Theft Prevention Shred Day given the success of last year's event. The date was tentatively set for 4/27/2019 to coincide with "spring cleaning" and post-taxes document shredding.

The city Nuisance Property Ordinance is set for second reading and anticipated passage at Council meeting on 2/6/19. Chief Smith briefed the PSAC on the nature of the ordinance and how it could be used to combat troublesome behaviors stemming from homes in the community. Mr. Hill inquired about how this ordinance would apply to a situation he witnessed where deputies arrested a driver of a dilapidated car in front of his house but didn't tow the car. Chief Smith explained the laws governing vehicle tows in such circumstances and unfortunately the towing of such a car would revert to the regular parking/tow ordinances and laws.

MCSO Planning and Research survey intended to measure residents' perceptions of policing services will go live on February 1, 2019 on-line. There will be paper versions of the survey available in City Hall for anyone who doesn't wish to take the survey on-line. Chief Smith will make efforts to get the survey information out to management of rental complexes so that residents who don't get a water bill or a copy of The Point can access the survey. The Survey will remain live for one month and Chief Smith will report to Council the results at the following month's report.

Old Business:

New thoughts on publicizing PSAC sponsored events: Mr. Marker noted that not many people show interest in PSAC table at City events. He suggested something more interactive such as a prize wheel or quiz for a give-away that will engage citizens. Ms. Woods suggested that she could possibly donate some prizes. Mr. Hill suggested a demonstration of a water filtration system that you could give out glasses of filtered water using a "survival straw" system. Councilor Forsythe suggested obtaining a demonstration pack with survival food and supplies to attract people for conversation. Ms. Arnold suggested having a "checklist" for each event to ensure all known avenues of public communications are completed (Next Door, Facebook, City Website, Outlook, etc.) It was asked if we could publicize on TV station community notices. It was suggested we obtain some more permanent banners for regular events where we only need to change the date for each year; hang the banners at busy intersections. It was asked if the City could obtain an electronic reader board to be placed at a busy intersection inside the city that advertised City events. Mr. Marker made a motion (seconded by Ms. Arnold and Ms. Aronson) that the PSAC request the City to investigate the possibility of obtaining an electronic reader board for the purposes of advertising City events. The motion was passed unanimously. (On 1/29/19 Councilor Forsythe forwarded this PSAC request to City Administrator Young.)

New seminar goals for 2019: PSAC discussed the desire to try to hold a seminar every six months. Discussion was held about having a seminar that centered around a weather-related issue versus the Cascadia earthquake since the "big one" has been talked about but people don't seem to react as if it will happen soon; whereas weather incidents are far more common in Fairview (snow and wind). Ms. Arnold inquired if the County had any interactive on-line training for citizens (Follow up: County doesn't have any right now, but an on-line video is in the works and there are future possibilities with a new employee at MCOEM. FEMA has some on-line trainings for citizens and Chief Smith will send those links out.) The group desired an after-action type seminar on community impacts from the Eagle Creek Fire. Chief Smith will reach out to Alice Busch at MCOEM and Red Cross to get that planning going. Tentative date for the seminar will be Monday, May 20, 2019.

The group acknowledged the value of continuing to hand out the "Neighborhood Ready" booklet at the PSAC table events to hand out to residents.

New Business:

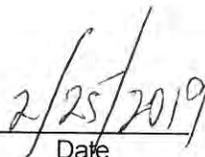
Fairview Neighborhood Watch: Ms. Aronson reported that she has held two meetings of interested Fairview residents to re-establish vibrant neighborhood watches around Fairview. She is working with Chelsea Jones on the effort. She is establishing a master list of interested residents and setting a regular meeting calendar (usually the third Tuesday of each month, City Hall, Heslin Meeting room). She will meet with Chief Smith to establish a list of public training topics (quarterly basis). She is intent on keeping meetings to one hour to respect peoples' time. She stated that she has the ability to obtain signs through the National Neighborhood Watch Association, but the City will do the purchasing. She will get materials and possibly "prizes" to hand out at meetings.

2019 PSAC Chair and Vice-Chair Elections: The committee agreed to hold the election at the next meeting.

The next meeting was set for February 25, 2019 at 6:30 p.m.

Minutes approved:


PSAC Chair or Vice-Chair


Date



By Check Number

Vendor Number Payable #	Vendor Name Payable Type	Payment Date Payable Date	Payment Type Payable Description	Discount Amount Discount Amount	Payment Amount Payable Amount	Number
Bank Code: US BANK-OPERATING ACCOUNT						
00026 16490	ALL COUNTY SURVEYORS & PLANNE Invoice	02/15/2019 01/22/2019	Regular 7TH STREET PROJECT, N. OF MAIN	0.00 0.00	600.00 600.00	66593
00082 INV0030658	BEERY ELSNER AND HAMMOND LLP Invoice	02/15/2019 01/01/2019	Regular LEGAL SERVICES - DEC 2018	0.00 0.00	4,878.16 4,878.16	66594
01659 514135	CARDNO INC Invoice	02/15/2019 02/07/2019	Regular PROFESSIONAL STANDARDS UPDATE - JA	0.00 0.00	3,060.00 3,060.00	66595
00145 94200	CASCADE CENTERS INC Invoice	02/15/2019 02/14/2019	Regular EMPLOYEE ASSISTANCE PROGRAM	0.00 0.00	10.35 10.35	66596
00178 INV0030652	CITY OF GRESHAM Invoice	02/15/2019 01/31/2019	Regular SEWER DISPOSAL - JAN 2019	0.00 0.00	62,516.85 62,516.85	66597
00178 INV0030653	CITY OF GRESHAM Invoice	02/15/2019 02/01/2019	Regular NPDES SW PERMIT	0.00 0.00	2,070.00 2,070.00	66598
01081 INV0030649 INV0030650 INV0030651	COMCAST FINANCIAL AGENCY CORP Invoice Invoice Invoice	02/15/2019 02/04/2019 01/28/2019 01/28/2019	Regular CH - CABLE TV PW - IT SVCS CH - IT SVCS	0.00 0.00 0.00	291.14 11.44 139.85 139.85	66599
01872 256 INV0030646	CUSTOMSOFT TECHNICAL SERVICES Invoice Invoice	02/15/2019 01/27/2019 01/27/2019	Regular CH- ON-SITE IT SUPPORT AD/FIN/ REC- ON-SITE IT SUPPORT	0.00 0.00 0.00	1,305.00 540.00 765.00	66600
00314 ORPOR103085 ORPOR103133 ORPOR103212 ORPOR103233 ORPOR103234 ORPOR103311 ORPOR103312 ORPOR103886	FASTENAL COMPANY Invoice Invoice Invoice Invoice Invoice Invoice Invoice Invoice	02/15/2019 01/25/2019 01/25/2019 01/29/2019 01/31/2019 01/31/2019 02/01/2019 02/01/2019 01/25/2019	Regular STEEL CABINET/LYSOL FOAM CLEAN/URI CH- TOIL STCVR/ C-FOLD PPR TWL PW- EXTERIOR WOOD SCREWS PW -TRASH CAN LINERS CH- CNTPLL PPR TWL/ 2PLY- TP CH- SHT PPR TWL ROLLS PW - LITTER GRABBERS (2) PW - 2-PLY EMBOSSED TP	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	1,320.87 883.26 77.70 17.38 42.63 147.46 16.42 66.90 69.12	66601
01042 INV0030624 INV0030625 INV0030626 INV0030627 INV0030628 INV0030629 INV0030630 INV0030631 INV0030632 INV0030633 INV0030634 INV0030635 INV0030636	FRONTIER COMMUNICATIONS CORP Invoice Invoice Invoice Invoice Invoice Invoice Invoice Invoice Invoice Invoice Invoice Invoice	02/15/2019 01/28/2019 01/25/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019 01/28/2019	Regular TELEPHONE- FV LAKE PS TELEPHONE- CC TELEPHONE- WELL #6 TELEPHONE- BLUE LAKE PS TELEPHONE-GLISAN RESERVOIR TELEPHONE- HALSEY RESERVOIR TELEPHONE- FV LAKE PS TELEPHONE- WELL#8 TELEPHONE- INTERLACHEN PS TELEPHONE- MARINE DR PS TELEPHONE- PW SHOP TELEPHONE- PW SHOP-CC TELEPHONE- CH	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	1,845.68 179.93 101.52 43.68 131.95 43.68 85.99 85.99 89.98 81.15 39.31 400.07 208.97 353.46	66602
00125 94037267	GLACIER NORTHWEST INC Invoice	02/15/2019 01/22/2019	Regular 16 (TONS) 3/4 - SALISH PONDS ACCESS R	0.00 0.00	264.00 264.00	66603
01416	LAKESIDE ESTATES EAST HOA	02/15/2019	Regular	0.00	150.00	66604

Check Register

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
INV0030621	Invoice	02/06/2019	CH CONF RM DEPOSIT REFUND	0.00	150.00	
00280	LINDEN TECHNOLOGIES INC	02/15/2019	Regular	0.00	900.07	66605
9220	Invoice	01/31/2019	MERCHANT FEES- JAN 2019	0.00	900.07	
00806	MULTNOMAH COUNTY SCHOOL DIS	02/15/2019	Regular	0.00	731.65	66606
20191378	Invoice	01/06/2019	CS- FUEL	0.00	73.20	
20191378.	Invoice	01/28/2019	PW - FUEL	0.00	658.45	
00637	NET ASSETS CORPORATION	02/15/2019	Regular	0.00	156.00	66607
39-201901	Invoice	02/01/2019	FINANCE - LIEN SEACHES	0.00	156.00	
00206	OREGON PUBLICATIONS CORP	02/15/2019	Regular	0.00	134.85	66608
121169	Invoice	01/11/2019	PC HEARING -FLOODPLAIN	0.00	134.85	
00757	PORTLAND GENERAL ELECTRIC COM	02/15/2019	Regular	0.00	12,798.95	66609
INV0030590	Invoice	01/28/2019	ELECTRICITY- CC	0.00	91.18	
INV0030591	Invoice	01/28/2019	ELECTRICITY- SCHATZ BARN	0.00	20.92	
INV0030592	Invoice	01/28/2019	ELECTRICITY- IRRIGATION	0.00	30.50	
INV0030593	Invoice	01/28/2019	ELECTRICITY- PARK CLEONE	0.00	20.91	
INV0030594	Invoice	01/28/2019	ELECTRICITY- FAZZETT PARK	0.00	20.52	
INV0030595	Invoice	01/28/2019	ELECTRICITY- STONE PARK	0.00	20.50	
INV0030596	Invoice	01/28/2019	ELECTRICITY- GUMDROP PARK	0.00	59.03	
INV0030597	Invoice	01/28/2019	ELECTRICITY- MARILYN'S PARK	0.00	20.30	
INV0030598	Invoice	01/28/2019	ELECTRICITY- FV COM PARK	0.00	73.07	
INV0030599	Invoice	01/28/2019	ELECTRICITY- FV WOODS PARK	0.00	24.87	
INV0030600	Invoice	01/28/2019	ELECTRICITY- CH PARKING LOT	0.00	34.82	
INV0030601	Invoice	01/28/2019	ELECTRICITY- FV SIGN	0.00	25.50	
INV0030602	Invoice	01/28/2019	ELECTRICITY- BOOSTER PS	0.00	625.12	
INV0030603	Invoice	01/28/2019	ELECTRICITY- WELL #5	0.00	708.67	
INV0030604	Invoice	01/28/2019	ELECTRICITY- WELL #6	0.00	270.33	
INV0030605	Invoice	01/28/2019	ELECTRICITY- GLISAN RESERVOIR	0.00	45.25	
INV0030606	Invoice	01/28/2019	ELECTRICITY- WELL#8	0.00	2,505.29	
INV0030607	Invoice	01/28/2019	ELECTRICITY- WELL#9	0.00	2,338.45	
INV0030608	Invoice	01/28/2019	ELECTRICITY- INTERLACHEN PS	0.00	346.16	
INV0030609	Invoice	01/28/2019	ELECTRICITY- BLUE LAKE PS	0.00	117.40	
INV0030610	Invoice	01/28/2019	ELECTRICITY- MARINE DR PS	0.00	41.11	
INV0030611	Invoice	01/28/2019	ELECTRICITY- FV LAKE PS	0.00	942.38	
INV0030612	Invoice	01/28/2019	ELECTRICITY - SHOP STORAGE	0.00	336.84	
INV0030613	Invoice	01/28/2019	ELECTRICITY- PW SHOP	0.00	236.43	
INV0030614	Invoice	01/28/2019	ELECTRICITY- CH	0.00	3,843.40	
	Void	02/15/2019	Regular	0.00	0.00	66610
02319	ROBERT BARRIE	02/15/2019	Regular	0.00	500.00	66611
201901-009	Invoice	01/31/2019	TUNNEL GRAFFITI PATROL & REMOVAL - J	0.00	175.00	
201901-062	Invoice	01/31/2019	SALISH PONDS GRAFFITI PATROL & REMO	0.00	325.00	
00674	US BANK NATIONAL ASSOCIATION	02/15/2019	Regular	0.00	628.00	66612
376928800	Invoice	01/31/2019	ADMIN/FINANCE- COPIER PAYMENT	0.00	325.00	

Check Register

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
<u>376929196</u>	Invoice	01/31/2019	PW/CD- COPIER PAYMENT	0.00	303.00	

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	68	19	0.00	94,161.57
Manual Checks	0	0	0.00	0.00
Voided Checks	0	1	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	68	20	0.00	94,161.57



By Check Number

Vendor Number Payable #	Vendor Name Payable Type	Payment Date Payable Date	Payment Type Payable Description	Discount Amount Discount Amount	Payment Amount Payable Amount	Number
Bank Code: US BANK-OPERATING ACCOUNT						
02100 5744-646876	ADVANCE STORES COMPANY INC Invoice	02/25/2019 02/07/2019	Regular WIPER BLADES (PW-0818)	0.00 0.00	27.98 27.98	66616
02046 15930972 15930972 15930972	ALLSTREAM BUSINESS US, INC. Invoice Invoice Invoice	02/25/2019 02/11/2019 02/11/2019 02/11/2019	Regular CH- IT SERVICES CH -TELEPHONE CC- TELEPHONE	0.00 0.00 0.00 0.00	1,205.43 244.95 848.83 111.65	66617
02370 INV0030659	AMBER DEMENT Invoice	02/25/2019 02/15/2019	Regular CC DEPOSIT REFUND	0.00 0.00	150.00 150.00	66618
02146 INV0030669	ARIAM LIBERATO Invoice	02/25/2019 02/08/2019	Regular CC DEPOSIT REFUND	0.00 0.00	150.00 150.00	66619
00082 INV0030660	BEERY ELSNER AND HAMMOND LLP Invoice	02/25/2019 02/01/2019	Regular LEGAL SERVICES - JAN 2019	0.00 0.00	4,885.57 4,885.57	66620
00178 46506	CITY OF GRESHAM Invoice	02/25/2019 02/08/2019	Regular PROFESSIONAL BLDG SVCS - 12/21/18- 1/	0.00 0.00	3,617.74 3,617.74	66621
00181 5266	CITY OF TROUTDALE Invoice	02/25/2019 02/06/2019	Regular WINTER REC GUIDE PRINTING / MAILING	0.00 0.00	1,987.00 1,987.00	66622
00195 62605	CODE PUBLISHING INC Invoice	02/25/2019 02/11/2019	Regular MUNICIPAL CODE UPDATE	0.00 0.00	352.50 352.50	66623
00753 6917188	FERGUSON ENTERPRISES, INC Invoice	02/25/2019 01/30/2019	Regular WALL SNAPS (2) / POLYETHYLENE PIPE	0.00 0.00	129.28 129.28	66624
02372 INV0030662	GURPREET DHILLON Invoice	02/25/2019 12/06/2018	Regular REIMB- RU40000951	0.00 0.00	170.00 170.00	66625
02243 INV0030676	JAIRO F. RIOS CAMPOS Invoice	02/25/2019 02/11/2019	Regular MILEAGE- RIOS - CAMPOS	0.00 0.00	34.80 34.80	66626
02371 INV0030661	JEREMY HARLEY Invoice	02/25/2019 12/06/2018	Regular REIMB- RU40001124	0.00 0.00	270.00 270.00	66627
02373 INV0030663	MARIANO RAMOS Invoice	02/25/2019 12/06/2018	Regular REIMB- RU40000747	0.00 0.00	170.00 170.00	66628
00559 179471	MATRIX COMMUNICATIONS CORP Invoice	02/25/2019 02/15/2019	Regular MSA QRTLTY BILLING	0.00 0.00	822.00 822.00	66629
00249 AIA24651	OREGON DEPARTMENT OF ADMINI Invoice	02/25/2019 02/06/2019	Regular ADMIN/FIN - VEHICLE LEASE/ FUEL	0.00 0.00	125.00 125.00	66630
01200 97062 97062	RELAY RESOURCES Invoice Invoice	02/25/2019 01/31/2019 01/31/2019	Regular CC-JANITORIAL SERVICES - JAN 2019 CH-JANITORIAL SERVICES - JAN 2019	0.00 0.00 0.00	2,562.80 225.32 2,337.48	66631
01667 INV0030664	RISE CITY CHURCH Invoice	02/25/2019 02/20/2019	Regular CC DEPOSIT REFUND (RE-ISSUE CK#66263)	0.00 0.00	400.00 400.00	66632
00385 1550020119	SHRED NORTHWEST, LLC Invoice	02/25/2019 02/01/2019	Regular ADMIN/ FIN- SHREDDING+ (25) BOXES	0.00 0.00	114.00 114.00	66633
02060 170253922-0-3	STAPLES CONTRACT & COMMERCIA Invoice	02/25/2019 01/10/2019	Regular FINANCE - OFFICE SUPPLIES	0.00 0.00	1,433.23 494.35	66634

Check Register

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
7210804440-0-1	Invoice	01/07/2019	PW/CS- OFFICE SUPPLIES	0.00	22.36	
7210804440-0-2	Invoice	01/03/2019	PW/CS - OFFICE SUPPLIES	0.00	173.49	
7210804440-0-4	Invoice	01/03/2019	PW/CS- OFFICE SUPPLIES	0.00	42.67	
72108044440-0-6	Invoice	01/10/2019	PW/CS- OFFICE SUPPLIES	0.00	14.35	
7211148698-0-1	Invoice	01/08/2019	ADMIN/FIN/PW -OFFICE SUPPLIES	0.00	190.74	
7211591272-0-1	Invoice	01/15/2019	PW/CS- OFFICE SUPPLIES	0.00	338.88	
7211812346-0-1	Invoice	01/17/2019	ADMIN/FIN- OFFICE SUPPLIES	0.00	156.39	
02374	SUSAN JO SULLIVAN	02/25/2019	Regular	0.00	345.00	66635
INV0030689	Invoice	02/13/2019	CITY COUNCILORS PHOTO SHOOT (5)	0.00	345.00	
02375	TAMARA EMERY	02/25/2019	Regular	0.00	33.33	66636
INV0030690	Invoice	02/13/2019	PIANO CLASS MUS35 (PARTIAL REFUND)	0.00	33.33	

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	31	21	0.00	18,985.66
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	31	21	0.00	18,985.66



City of Fairview

Check Register

Packet: APPKT02624 - 2/21/2019 PO # 19-0026 RA

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: US BANK-OPERATING ACCOUNT 02176	HEAT RELIEF	02/21/2019	Regular	0.00	8,500.00	66615

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	1	1	0.00	8,500.00
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	1	1	0.00	8,500.00



City of Fairview

Check Register

Packet: APPKT02625 - 2/26/2019 CASH DEPOSIT RA

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
Bank Code: US BANK-OPERATING ACCOUNT						
02073	BANK OF THE WEST	02/26/2019	Regular	0.00	43,000.00	66638
INV0030691	Invoice	02/26/2019	CASH DEPOSIT -PAYROLL	0.00	43,000.00	

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	1	1	0.00	43,000.00
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	1	1	0.00	43,000.00



City of Fairview

Check Register

Packet: APPKT02630 - 2/28/2019 PO #19-0019 RA

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
Bank Code: US BANK-OPERATING ACCOUNT						
00389	MACKENZIE ENGINEERING, INC	02/28/2019	Regular	0.00	727.50	66639
<u>1058628</u>	Invoice	02/28/2019	ACCESS CONTROLS DESIGN	0.00	727.50	

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	1	1	0.00	727.50
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	1	1	0.00	727.50



By Check Number

Vendor Number Payable #	Vendor Name Payable Type	Payment Date Payable Date	Payment Type Payable Description	Discount Amount Discount Amount	Payment Amount Payable Amount	Number
Bank Code: US BANK-OPERATING ACCOUNT						
00053 068-88878	ANSWERNET INC Invoice	03/01/2019 02/21/2019	Regular PW SHOP- ANSWERING SERVICE	0.00 0.00	108.00 108.00	66644
00066 9631	BACKFLOW MANAGEMENT INC. Invoice	03/01/2019 02/13/2019	Regular VALVE(3/4") REPAIR KIT	0.00 0.00	56.51 56.51	66645
00207 A0147511	COMPUTER FORMS INC Invoice	03/01/2019 02/15/2019	Regular FINANCE- A/P CHECK STOCK	0.00 0.00	201.75 201.75	66646
00213 IN1912027	CTX BUSINESS SOLUTIONS INC Invoice	03/01/2019 02/15/2019	Regular ADMIN/ FIN- COPIER USAGE - 11/19/2018	0.00 0.00	1,412.19 1,412.19	66647
00230 744144536	DAILY JOURNAL OF COMMERCE INC Invoice	03/01/2019 02/13/2019	Regular AD-RESERVOIR 1 IMPROVEMENTS (BIDDE	0.00 0.00	345.00 345.00	66648
00293 344836 345078 345274 345478	DIAL TEMPORARY HELP SERVICES IN Invoice Invoice Invoice Invoice	03/01/2019 01/30/2019 02/06/2019 02/13/2019 02/20/2019	Regular TEMP/HELP GALLAGHER WEEK ENDING 1 TEMP/HELP GALLAGHER WEEK ENDING 2 TEMP/HELP GALLAGHER WEEK ENDING 2 TEMP/HELP GALLAGHER WEEK ENDING 2	0.00 0.00 0.00 0.00	2,322.24 580.56 580.56 580.56 580.56	66649
01050 87834 87977	FAMILY HOME SERVICES INC Invoice Invoice	03/01/2019 01/29/2019 02/14/2019	Regular CH- SMALL ANT TREATMENT CH-BI-MONTHLY MICE TREATMENT	0.00 0.00 0.00	518.00 399.00 119.00	66650
00314 OPOR103355 ORPOR103459	FASTENAL COMPANY Invoice Invoice	03/01/2019 02/04/2019 02/08/2019	Regular 36" LITTER PICKER (2) CH - C-FOLD PPR TWL/FOAM HANDWASH	0.00 0.00 0.00	445.92 36.79 409.13	66651
00522 201000854390	LES SCHWAB TIRES Invoice	03/01/2019 02/09/2019	Regular RUBBER CHAIN SPIDERS- PW8-18	0.00 0.00	120.10 120.10	66652
00615 INV0030737	MULTNOMAH COUNTY Invoice	03/01/2019 01/31/2019	Regular INMATE WORK CREW - JANUARY 2019	0.00 0.00	3,390.00 3,390.00	66653
00648 INV0030738 INV0030739 INV0030740	NORTHWEST NATURAL GAS COMPA Invoice Invoice Invoice	03/01/2019 02/19/2019 02/19/2018 02/19/2019	Regular CC- GAS HEAT PW SHOP - GAS HEAT CH- GAS HEAT	0.00 0.00 0.00 0.00	530.47 224.02 206.23 100.22	66654
00660 8038	OACWA Invoice	03/01/2019 02/08/2019	Regular OACWA MEMBERSHIP DUES FY 2018/19	0.00 0.00	210.00 210.00	66655
00664 26150	OREGON ASSOCIATION OF WATER U Invoice	03/01/2019 02/28/2019	Regular OAWU MEMBERSHIP RENEWAL FY 19/20	0.00 0.00	718.84 718.84	66656
00747 3308199448	PITNEY BOWES GLOBAL FINANCIAL : Invoice	03/01/2019 12/20/2019	Regular LEASE PAYMENT MAIL/SORTER -12/20/18	0.00 0.00	1,245.00 1,245.00	66657
01984 0000372636	PORTLAND GENERAL ELECTRIC Invoice	03/01/2019 02/15/2019	Regular EXCESS TRANSFORMER CAP- MARINE DRI	0.00 0.00	17.85 17.85	66658
00808 90094	RICH'S TREE SERVICE INC Invoice	03/01/2019 02/13/2019	Regular REMOVED (3) CEDARS- PARK CLEONE	0.00 0.00	1,400.00 1,400.00	66659
01126	TAMIE ARNOLD	03/01/2019	Regular	0.00	25.00	66660

Check Register

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
INV0030720	Invoice	02/27/2019	KEY FOB DEPOSIT REFUND	0.00	25.00	

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	24	17	0.00	13,066.87
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	24	17	0.00	13,066.87



By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Payable #	Payable Type	Payable Date	Payable Description	Discount Amount	Payable Amount	
Bank Code: US BANK-OPERATING ACCOUNT						
02262	RODNEY H. GRAFE	03/01/2019	Regular	0.00	400.00	66643
INV0030744	Invoice	03/01/2019	FY 18/19 MUNICIPAL COURT JUDGE SVCS	0.00	400.00	

Bank Code US BANK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	1	1	0.00	400.00
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	1	1	0.00	400.00