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See RCW 42.56.260 and 42.56.280

# Fort Lawton Redevelopment Alternatives Assessment

October 2023

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H E A R T L A N D

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# EXECUTIVE SUMMARY



# Executive Summary

## Assessment

The Consultant Team assessed infrastructure cost assumptions and a range of development programs for the Fort Lawton redevelopment. Fort Lawton is comprised of approximately 31 acres in the Magnolia neighborhood of Seattle. The assessment included:

- Review of housing development configuration and development capacity
- Review of the infrastructure cost estimates
- Analysis of associated procedural steps

The construct of the alternatives provides relevant information for Fort Lawton stakeholders to assess the best path forward for the site's redevelopment.



\* Under current zoning designation

# Executive Summary

## Current 2019 Plan



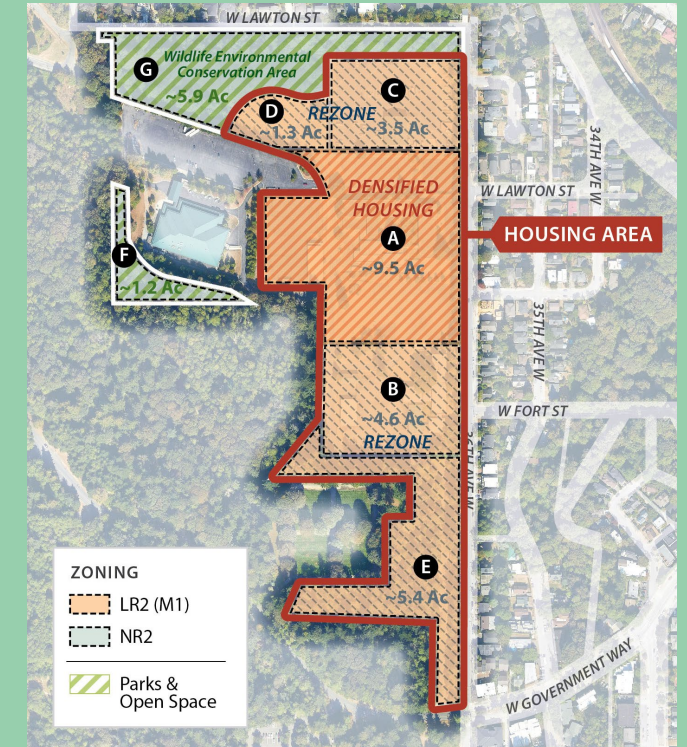
This is the baseline for all alternatives. It reflects the Fort Lawton Redevelopment Plan ("2019 Plan").

## Alt. 1: Density Base Case



This alternative modifies the 2019 Plan slightly by adding denser housing types in the existing housing area.

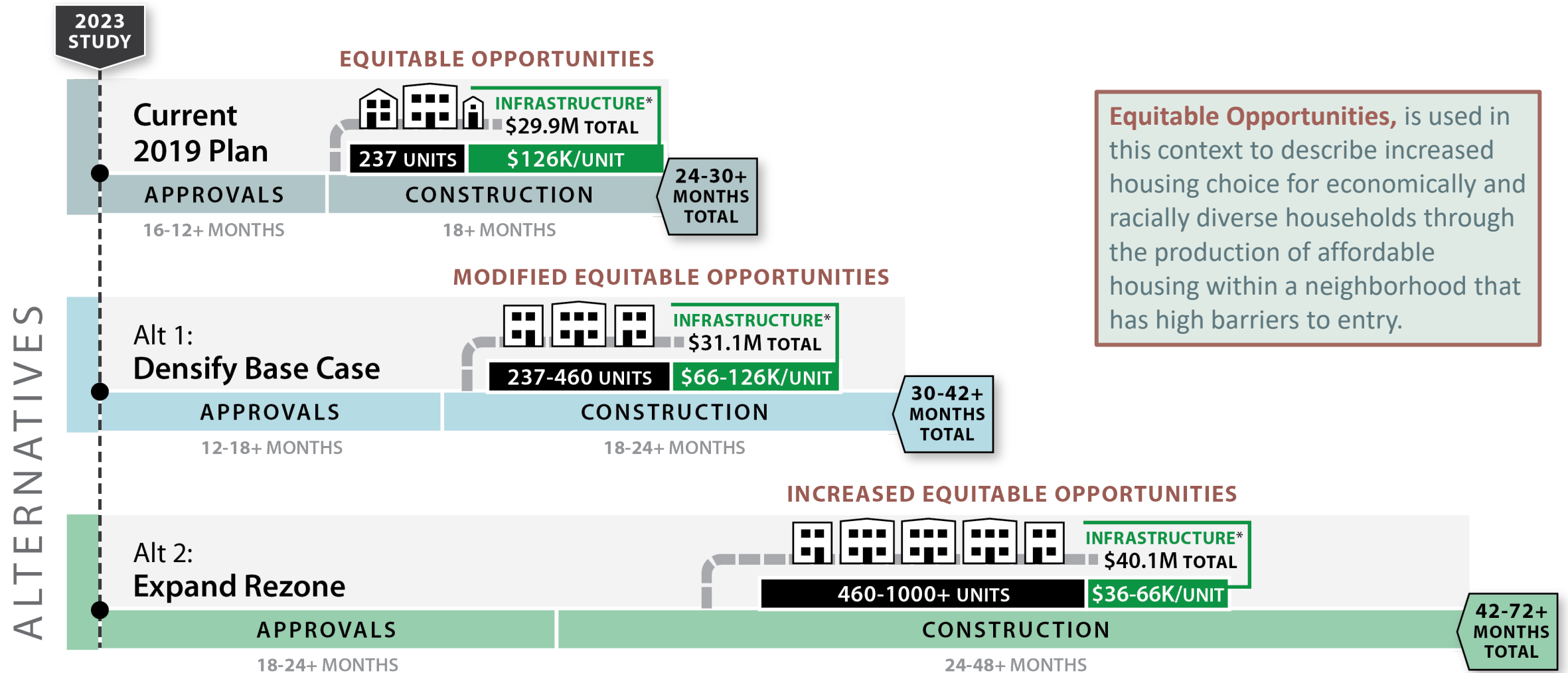
## Alt. 2: Expand Rezone



This alternative contemplates a rezone and housing development within other areas of the Property.



# Executive Summary



Note: All timeframes are approximate and are presented for discussion only. Approval timeframes represent a best case scenario. \*All infrastructure costs are from the 2023 estimate.

# Executive Summary

## Key Findings/Conclusions

**Additional Housing Capacity:** The review of the existing development proposal concluded that the site has capacity to add approximately 225 units of housing to the 2019 Plan under the current zoning designation.

**Infrastructure Scope Reduction:** Further analysis suggests the scope of street and utility improvements may be reduced while still meeting regulatory and functional requirements of future development.

**Equitable Opportunities:** Fort Lawton's redevelopment represents an opportunity for equitable housing opportunities for diverse communities within the Magnolia neighborhood where otherwise high barriers of entry exist. Providing additional housing beyond the 2019 Plan provides additional housing opportunities for diverse individuals and families.

**Fair Market Land Value & Highest and Best Use:** If Fort Lawton was sold to the open market, it would likely have a value in the range of approximately \$70M to \$85M for market rate housing. Market rate development would likely include a combination of townhomes and detached single family homes with or without one or two accessory dwelling units.

**Net Cost Savings:** Fort Lawton provides an opportunity to acquire land for affordable housing at a significant discount. When accounting for the potentially extraordinary infrastructure cost to develop the site there would still be an estimated \$105,000 in net savings per unit in comparison to buying equivalent land elsewhere.



\* Under current zoning designation

\*\* For 2019 Plan



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# ALTERNATIVES ANALYSIS



# Scope & Methodology

## Scope

The City of Seattle (“City”) sought to assess the financial feasibility of the 2019 Fort Lawton Redevelopment Plan (“2019 Plan” or “Plan”), as well as evaluate potential alternative development programs. The Plan was approved by City Council and includes a range of uses including affordable and supportive housing, parks, and forest preservation.

Despite continued support for the elements identified in the Plan, recent cost estimates for infrastructure have raised questions about the financial feasibility of the development project. The analysis in this report is intended to build upon the years of study on Fort Lawton’s (“Property”) development potential and help City decision-makers to identify the best path forward for the Property given the City’s policy goals.

## Methodology

The purpose of this analysis is to provide a set of alternatives for the Office of Housing to demonstrate development options that could potentially mitigate and/or reduce the cost per unit of developing on site infrastructure.

The alternatives were constructed to provide contextual framework for development, which explores the number of housing units as the sole variable. The primary considerations when assessing the development options were infrastructure costs, regulatory approval process, economic and racial equity, and housing typology.

# Neighborhood Context

## Economic Equity

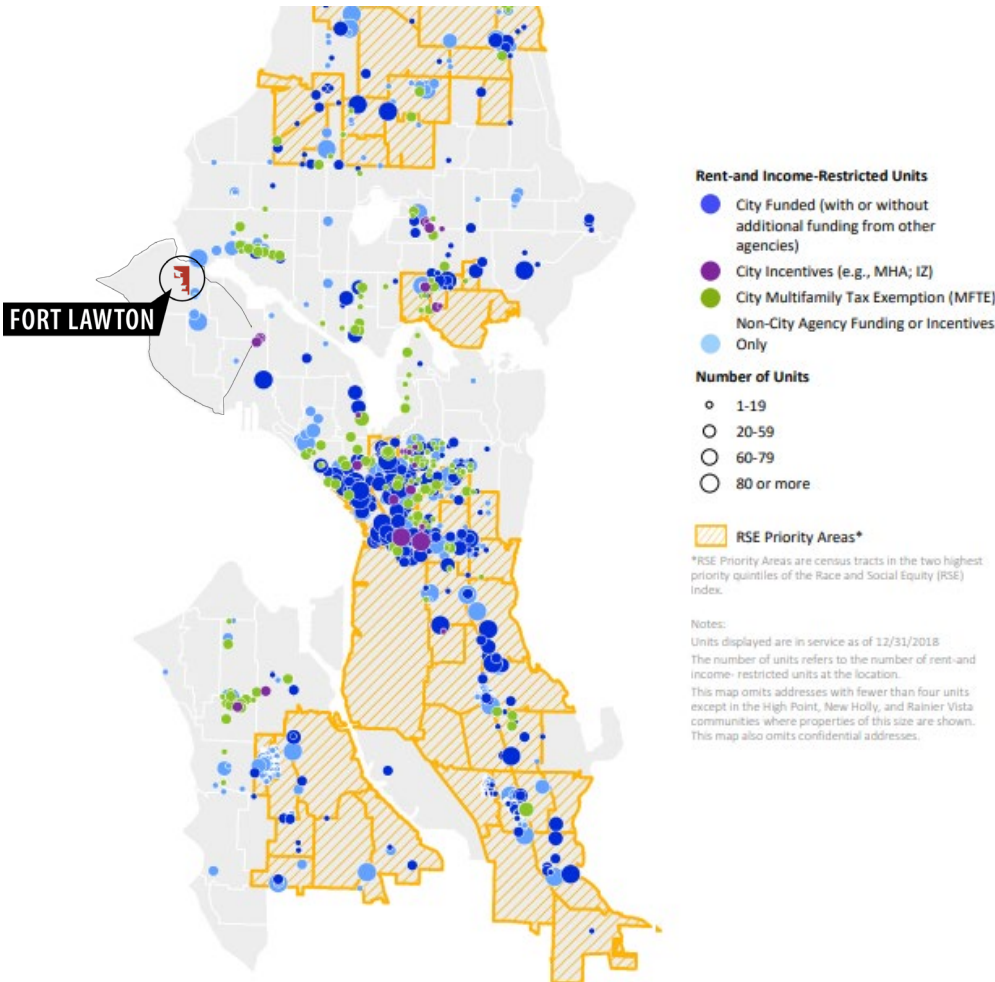
The map to the right demonstrates the distribution of affordable housing within the City. Options for affordable housing within the Magnolia neighborhood are limited. The lack of housing choice within Magnolia is further limited by high barriers of entry, demonstrated by high median home values and homeownership rates.

## Demographic Metrics

	Seattle	Magnolia
Median Home Value	\$880,000	\$1,100,000
% Homeownership	45%	63%
Population per Housing Unit	2.00	2.23
Median Household Income	\$116,000	\$160,000
% Households Earning > \$200K	27%	38%
Median Household Net Worth	\$152,000	\$564,000

Source: Esri, ACS, U.S. Census: 2023, 2017-2021, 2010

## Location of Rent and Income Restricted Units



Source: Seattle Office of Housing 2020 Equitable Development Community Indicators Report

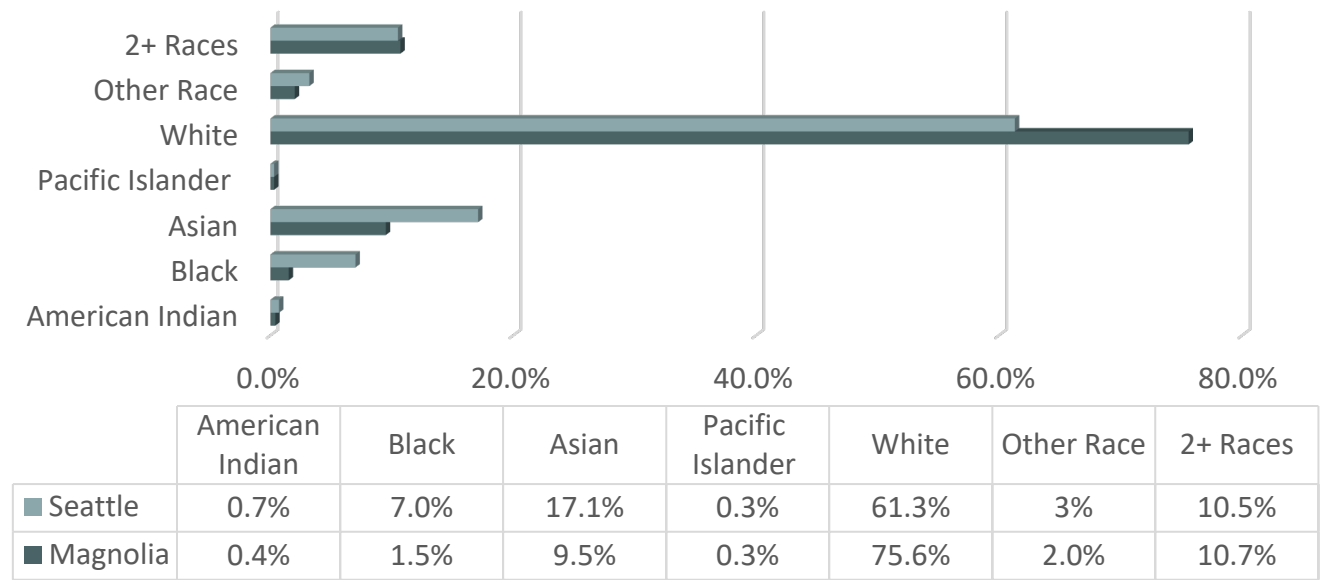


# Neighborhood Context

## Racial Equity

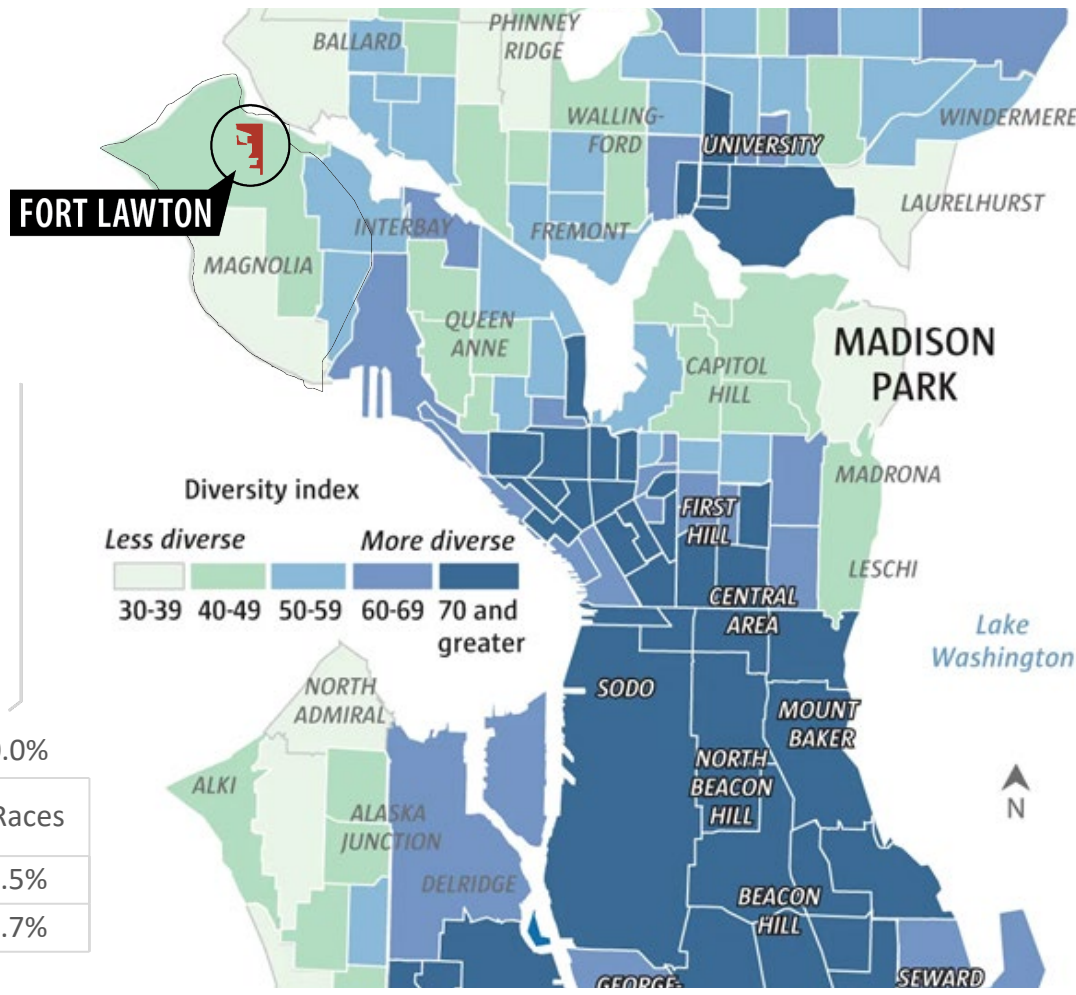
The map to the right depicts the distribution of racial diversity within the City of Seattle. The Magnolia neighborhood has lower levels of diversity than other Seattle neighborhoods and is significantly less diverse than Seattle as a whole.

## Total Population by Race



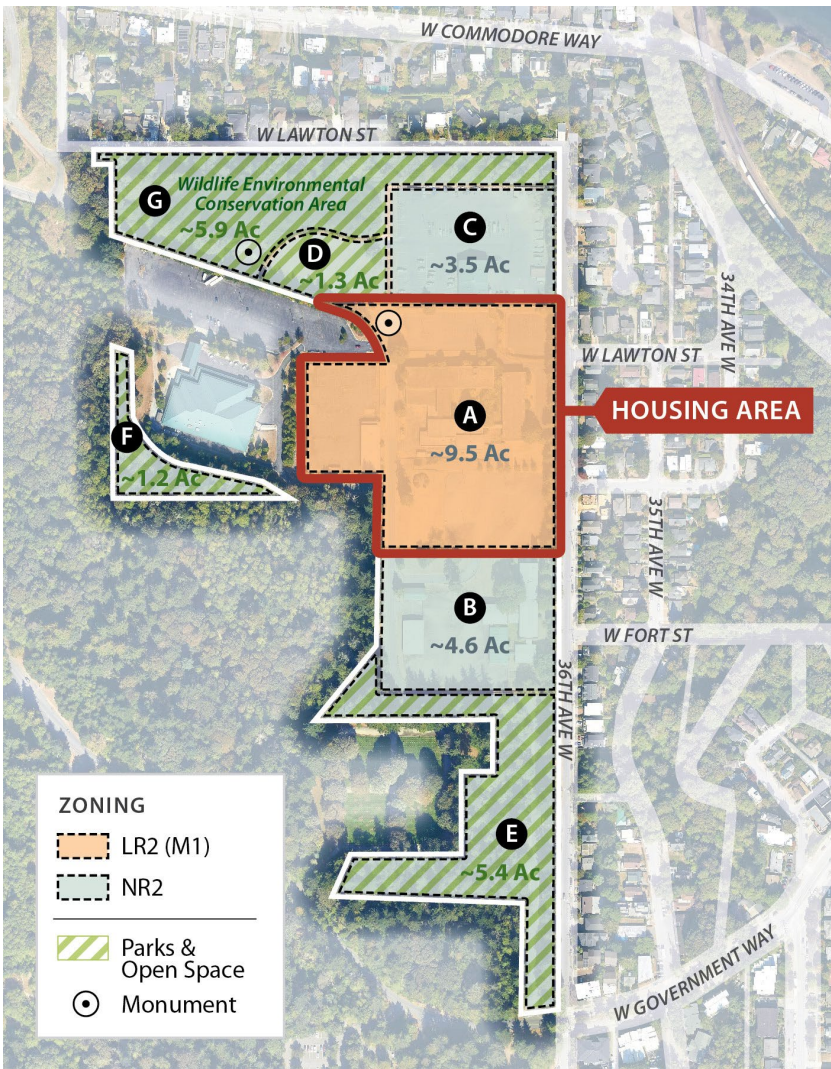
Source: Esri, ACS, U.S. Census: 2023, 2017-2021, 2010

## Seattle's Racial Diversity



Source: Seattle Times, US Census Bureau Data

# Current Redevelopment Plan (“2019 Plan”)



**Summary:** The 2019 Plan was created to outline the redevelopment of Fort Lawton. The plan creates affordable housing opportunity with multiple development partners and housing types, outlined on the following page. This plan is the baseline for all other alternatives.

Land Use Summary				
Label	Use	Acres	Zoning	Housing Units
A	Housing	9.5	LR2	237
B	SPS Play Fields	4.6	NR2	0
C	SPR Maintenance	3.5	NR2	0
D	Open Space	1.3	NR2	0
E	Parks	5.4	NR2	0
F	Parks	1.2	NR2	0
G	Parks - Forest Conservation	5.9	NR2	0
Total		31.4		237
Total Infrastructure Cost*				\$29,900,000
Infrastructure Cost Per Unit				\$126,000

*\*Based on 2023 updated scope and associated estimate*



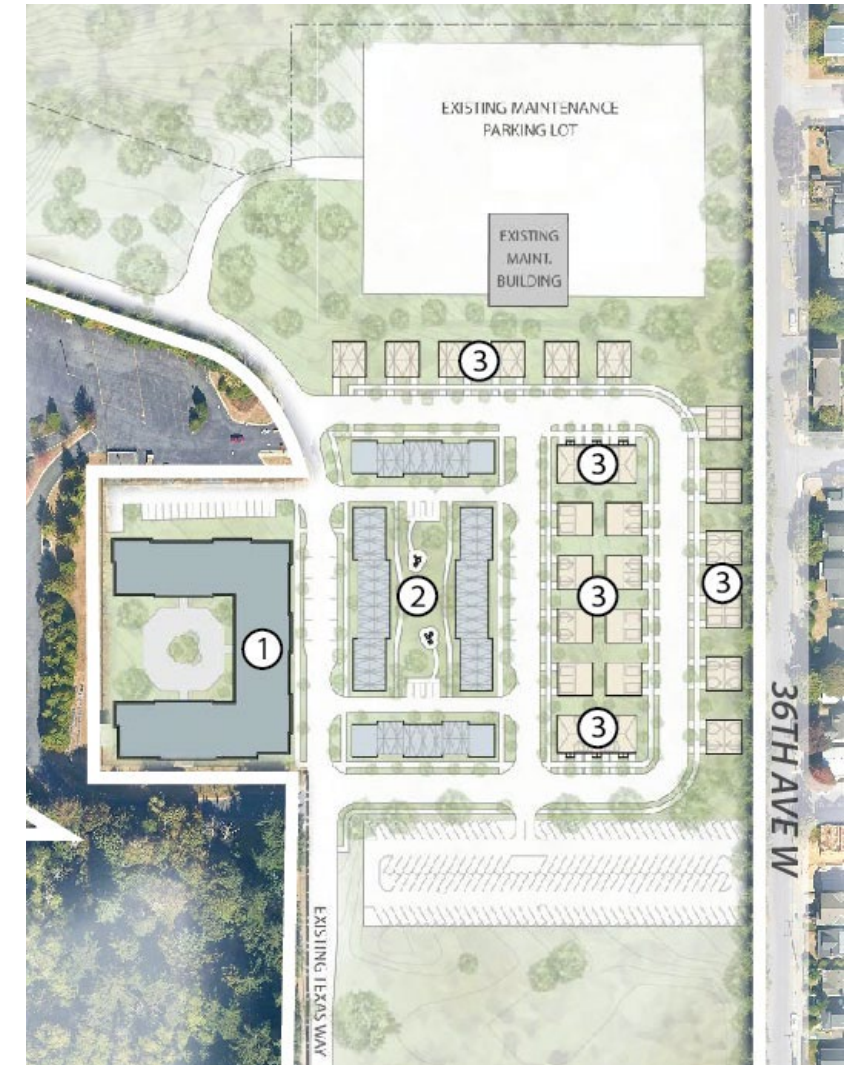
# Current Redevelopment Plan (“2019 Plan”)

## Housing Typologies & Affordability

The table below summarizes the housing components of the 2019 Plan. Affordable housing opportunities are provided for a range of household income levels including supportive housing, 60% and 80% area median income (AMI).

### 2019 Plan Housing Components

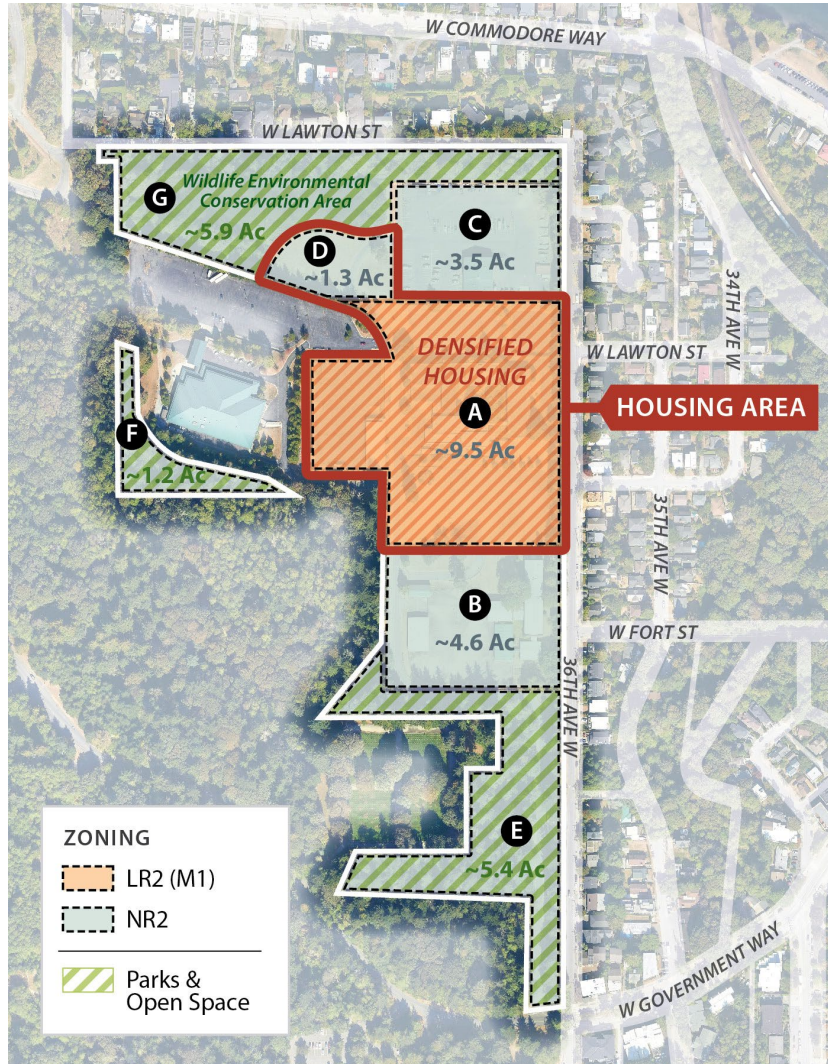
Map ID	Housing Type	Affordability	Housing Units	Development Partners
1	Supportive Housing Apartments (55+)	For those, including veterans, who have experienced homelessness	~85	Catholic Housing Services and United Indians of All Tribes
2	Multi-family	Up to 60% AMI	~100	Catholic Housing Services
3	Rowhouses and Townhomes	Up to 80% AMI	~50	Habitat for Humanity



Source: 2019 Redevelopment Plan for Fort Lawton



# Alt. 1: Densify 2019 Plan



**Summary:** Alternative 1 increases development density without changing the uses identified in the 2019 Plan program or the underlying zoning designations. The increased density within the current housing development footprint is maximized without the need for additional land area.

**Alt. 1: Land Use Summary**

Label	Use	Acres	Zoning	Housing Units
A	Densified Housing	9.5	LR2	237 - 460*
B	SPS Play Fields	4.6	NR2	0
C	SPR Maintenance	3.5	NR2	0
D	Housing**	1.3	NR2	0
E	Parks	5.4	NR2	0
F	Parks	1.2	NR2	0
G	Parks - Forest Conservation	5.9	NR2	0
<b>Total</b>		<b>31.4</b>		<b>237 - 460</b>

\*Assumes average unit size of 750SF

\*\*Area D could be used to accommodate a more intense development in the LR2 zone without impacting 2019 Plan program (i.e., by serving as open space).

**Total Infrastructure Cost\*** \$31,100,000

**Infrastructure Cost Per Unit** \$68,000

# Alt. 1: Densify 2019 Plan

## Unit Capacity Calculation

The unit capacity of 460 units reflects a conceptual upper bound. It assumes all units are multifamily units with an average size of 750 net rentable square feet. This is roughly 15% larger than the median unit size in Seattle, and therefore would reflect a unit mix with more one- and two-bedroom units.

Actual site configurations and unit types may vary. The housing on site could be developed in a range of typologies as reflected in the 2019 Plan, including townhomes and rowhouses. Because of this, the unit count has been presented as a range.

Any opportunities to densify the housing development would come with associated tradeoffs regarding the types of households being served and the number of units provided.

## Economic Equity:

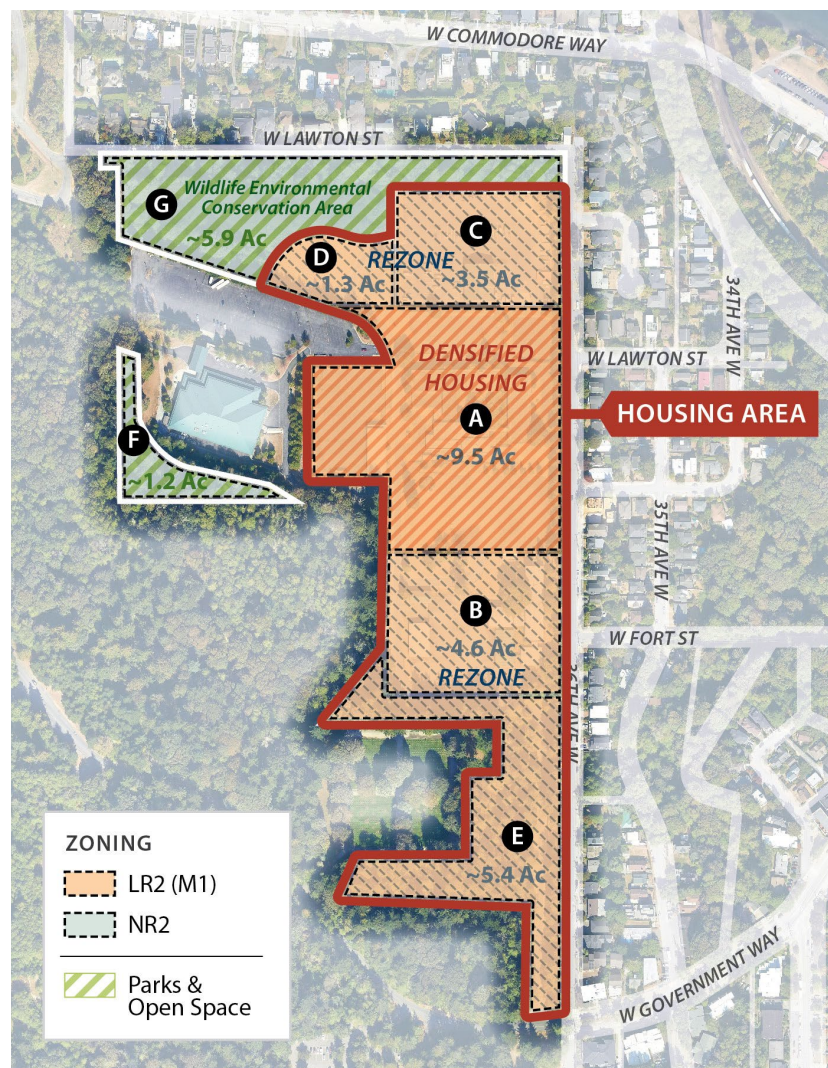
Affordable housing development at Fort Lawton provides opportunity for individuals and families to reside in a Seattle neighborhood with historically limited affordable housing options. Increasing the number of units will serve more households, though densifying within the 2019 Plan housing development area may also result in a reduction in unit size. Smaller unit sizes can serve lower area median income (AMI) levels with less subsidy. However, smaller units are less suitable for families or households with more individuals.

## Racial Equity:

Magnolia is one of the least diverse areas of Seattle, according to the US Census Bureau. New housing provides entry opportunities for diverse populations. Considerations should be made to ensure the associated change in unit typology, due to a densification of the housing development, meets the needs of diverse groups.



# Alt. 2: Expand Rezone



**Summary:** Alternative 2 includes an expanded area for housing development and assumes the expanded housing area would be rezoned to LR2 zoning. Area A could proceed with the 2019 Plan or a densified housing development. Areas B, C, D or E could proceed as proposed in the 2019 Plan or be developed as housing.

Alt. 2: Land Use Summary				
Label	Use	Acres	Zoning	Housing Units
A	Densified Housing	9.5	LR2	237 – 460*
B	Housing or SPS Play Fields	4.6	LR2	195*
C	Housing or SPR Maintenance	3.5	LR2	149*
D	Housing	1.3	LR2	55*
E	Housing or Parks	5.4	LR2	137**
F	Parks	1.2	LR2	0
G	Parks - Forest Conservation	5.9	LR2	0
Total		31.4		292 – 996+
*Assumes average unit size of 750SF				
**Assumes approximately 40% loss due to irregular shape				
Total Infrastructure Cost*				\$40,100,000
Infrastructure Cost Per Unit				\$40,200

\*Based on 2023 updated scope and associated estimate



# Alt. 2: Expand Rezone

## Unit Capacity Calculation

The unit capacity of 996 units assumes development under the same set of assumptions as Alternative 1, which included a multifamily typology and an average unit size of 750 net square feet. Also consistent with Alternative 1, the actual unit types may vary.

**Zoning Assumption:** The LR2 zone was used for this analysis because it represents the next step in density and is the most consistent with surrounding uses and the 2019 rezone. There are currently three zoning designations in the Magnolia neighborhood: Neighborhood Residential (NR), Low-Rise (LR) and Neighborhood Commercial (NC). LR and NC zones include a range of associated housing densities which are greater than the current NR2 zoning.

This analysis demonstrates a rezone under the next increment in zoning to demonstrate a baseline of benefits associated with a rezone alternative. A rezone to LR3 or NC zones could yield a significantly higher number of housing units and may involve a more time intensive process.

**Housing Area Expansion without Rezone:** The consultant team assessed a modification of this alternative which included the expansion of the housing area without a rezone. This variation would likely pose similar procedural complexity with a lower housing yield.

## Economic Equity:

An expanded LR2 zone within Fort Lawton could provide a significant increase in the households served. An expanded rezone would more easily provide additional units with the ability to maintain larger unit sizes that may be able to serve more families than densification under the current zoning designation within the current housing area.

## Racial Equity:

An expanded rezone would provide the ability to increase housing opportunities and regulatory flexibility to accommodate a range of unit types, which could be developed to best serve the needs of diverse populations.

# ENGINEERING OPINION OF PROBABLE COST REVIEW

# Opinion of Probable Costs: **Overview**

## 2022 Estimate

In 2022 an estimate was prepared for a range of infrastructure improvements for Fort Lawton. That work produced an estimate of between approximately \$51M and \$157M, as summarized in the table below.

	On-Site Earthwork & Roads	Stormwater	Water	Sanitary Sewer	Road & Frontage	SCL Overhead	Soft Cost	Contingency	Accuracy Range	TOTAL
<b>2022 Est. High</b>	\$11,671,394	\$5,114,242	\$1,865,602	\$1,608,276	\$23,442,288	\$12,020,277	\$39,268,357	\$13,089,452	\$52,358,000	<b>\$157,073,000</b>
<b>2022 Est. Low</b>	\$8,064,413	\$4,052,777	\$1,673,164	\$1,185,784	\$23,442,288	\$6,607,637	\$18,843,376	\$10,767,643	\$(21,804,000)	<b>\$50,877,000</b>

## 2023 Estimate

KPFF has prepared an engineering opinion of probable cost (2023 Estimate), Appendix A, that was conducted to provide guidance for refining the scope of work to more precisely and sustainably meet the needs of the 2019 Plan. The 2023 Estimate concluded a total infrastructure cost of \$29.9M. The project cost estimate has been assessed in relation to the following primary component categories:

1. *General Assumptions*
2. *Right of Way Improvements*
3. *On-site Infrastructure*



# Opinion of Probable Costs: **General Assumptions**

## What stays the same with 2023 Opinion:

- **Sales Tax** is applied to all hard costs.
- With a few exceptions, 2022 unit costs are carried over to the 2023 Estimate.

## What has changed with 2023 Opinion:

- Erosion & Sediment Control Multiplier Decreased.
- Mobilization Multiplier Decreased.
- Permitting Fee Multiplier Increased.
- Design and “Other” expenses Multiplier Decreased.
- Contingency Multiplier Increased.
- No "Accuracy Range" Multiplier, we rely on the contingency.
- Infrastructure alternatives were generally eliminated under a simplified scope of work.

**The opinion of cost to do the work is substantially the same.**

**What has changed is the scope of work and the multipliers.**

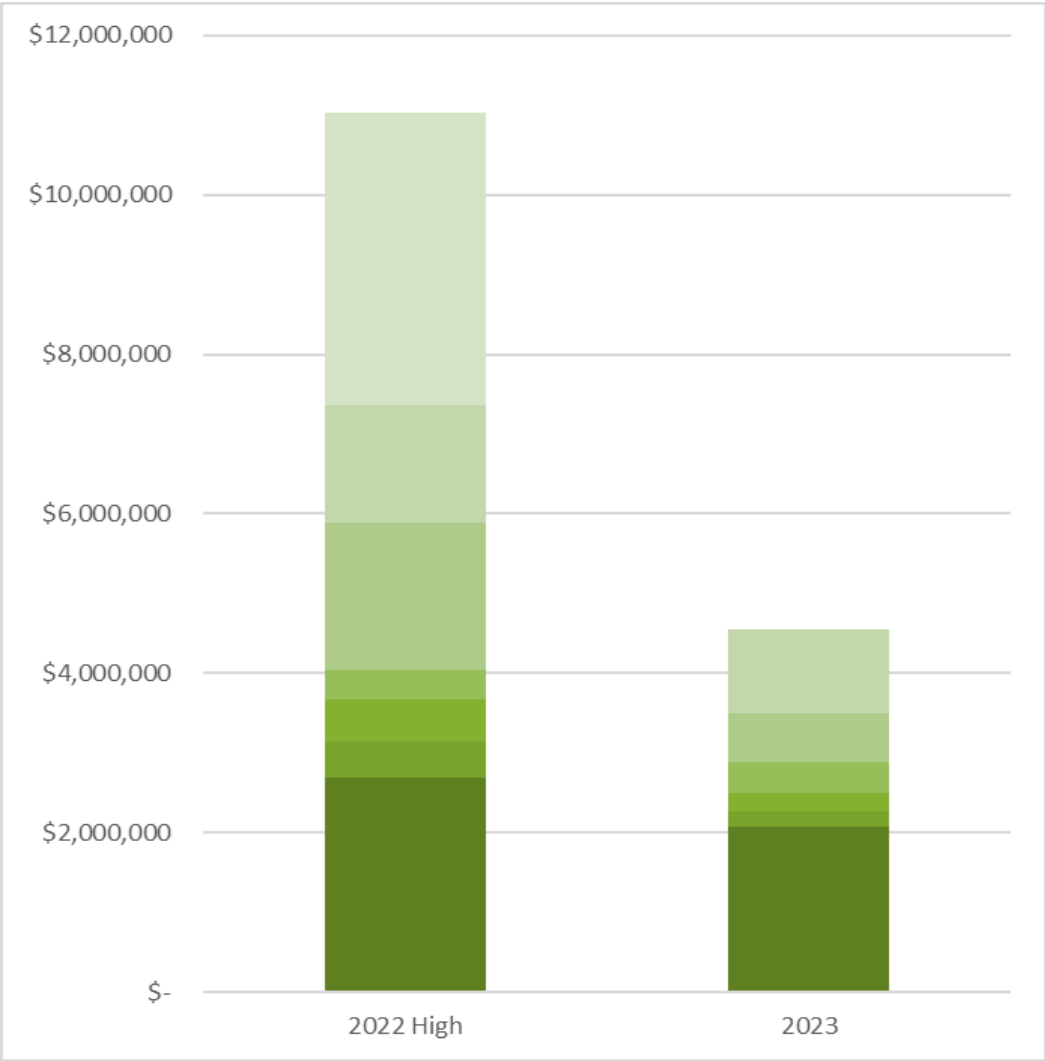
# Opinion of Probable Costs: **General Assumptions**

Multipliers	2022 Estimate	2023 Estimate
Tax	10.25%	10.25%
Erosion & Sediment Control	15%	10%
Mobilization	15%	10%
Permit Fees	5-10%	15%
Design & "Other"	30-50%	25%
Contingency	25%	30%
Accuracy Range	-30% , +50%	n/a

# Opinion of Probable Costs: General Assumptions

## Stormwater Example:

	2022 High	2023
Hard Cost	\$2,687,693	\$2,070,467
Erosion & Sediment Control	\$459,672	\$207,047
Mobilization	\$528,623	\$227,751
Permit Fees	\$367,599	\$375,790
Design Costs	\$1,837,994	\$626,316
Contingency	\$1,470,395	\$1,052,212
Accuracy Adjustment	\$3,675,988	\$ -
Total	\$11,027,964	\$4,559,583





# Opinion of Probable Costs: Right of Way Improvements

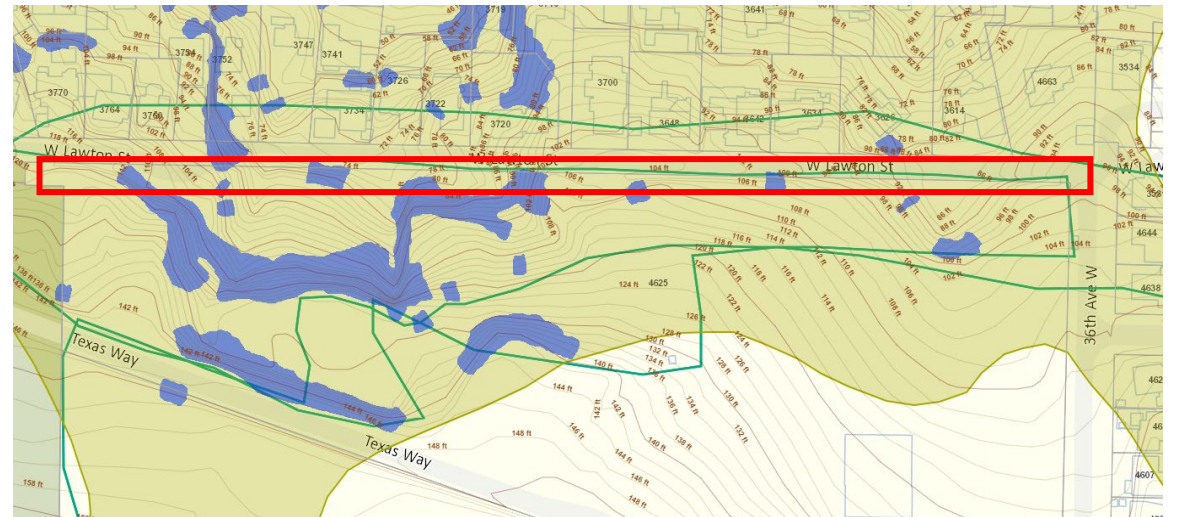
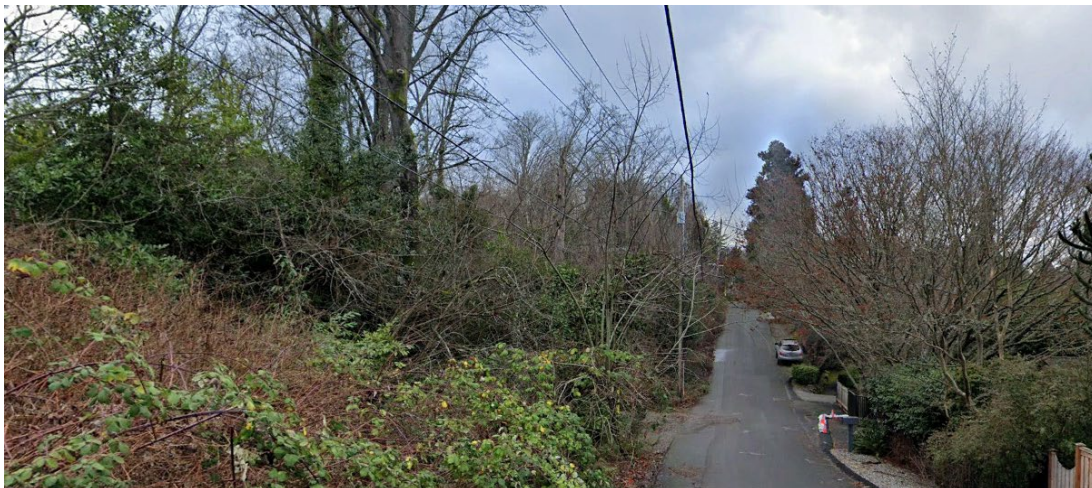
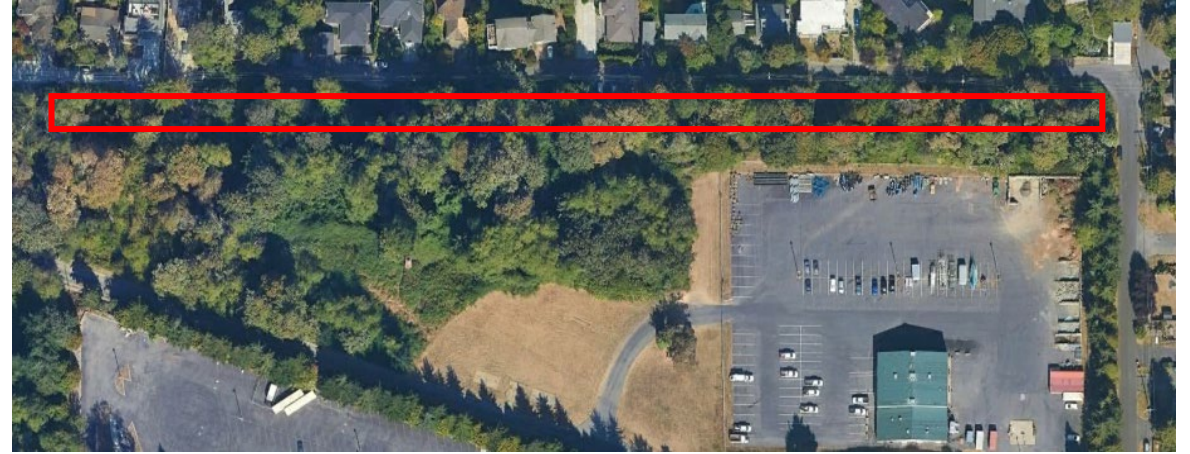
## W. Lawton St.

### 2022 Estimate Right of Way Approach

Clear and grade a ¼-mile long, 25-ft swath through Environmental Conservation Area (ECA) and tree canopy, build a retaining wall, and move overhead power to complete road improvements.

### 2023 Estimate Right of Way Approach

Transfer undisturbed open space and trees (Area G) to Seattle Parks and Recreation (SPR) through a lot boundary adjustment (LBA), and do NO road improvements on W Lawton St.





## Opinion of Probable Costs: Right of Way Improvements

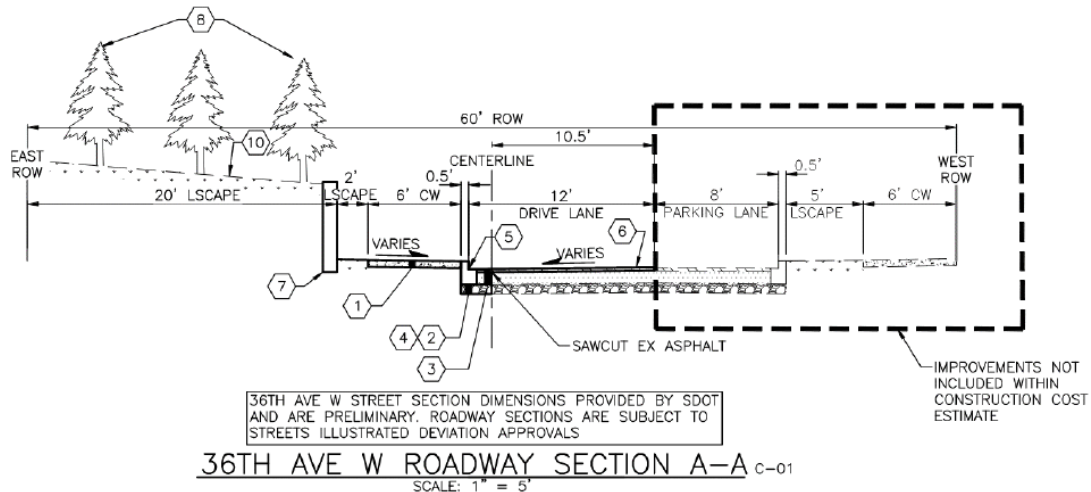
## 36<sup>th</sup> Avenue W.

## 2022 Estimate Right of Way Approach

Clear a ½-mile long line of mature conifer trees, and build a retaining wall to construct a sidewalk along the west edge of 36<sup>th</sup> Ave W.

## 2023 Estimate Right of Way Approach

Apply for a Right of Way (ROW) deviation to preserve mature conifer canopy and build a hard-surface pedestrian trail behind the line of existing trees.





# Opinion of Probable Costs: Right of Way Improvements

## Texas Way

### 2022 Estimate Right of Way Approach

Demolish existing Texas Way roadway (> ½-mile), including a 700-ft long line of conifers, and build a new 70-ft wide arterial road through the park and new housing.

### 2023 Estimate Right of Way Approach

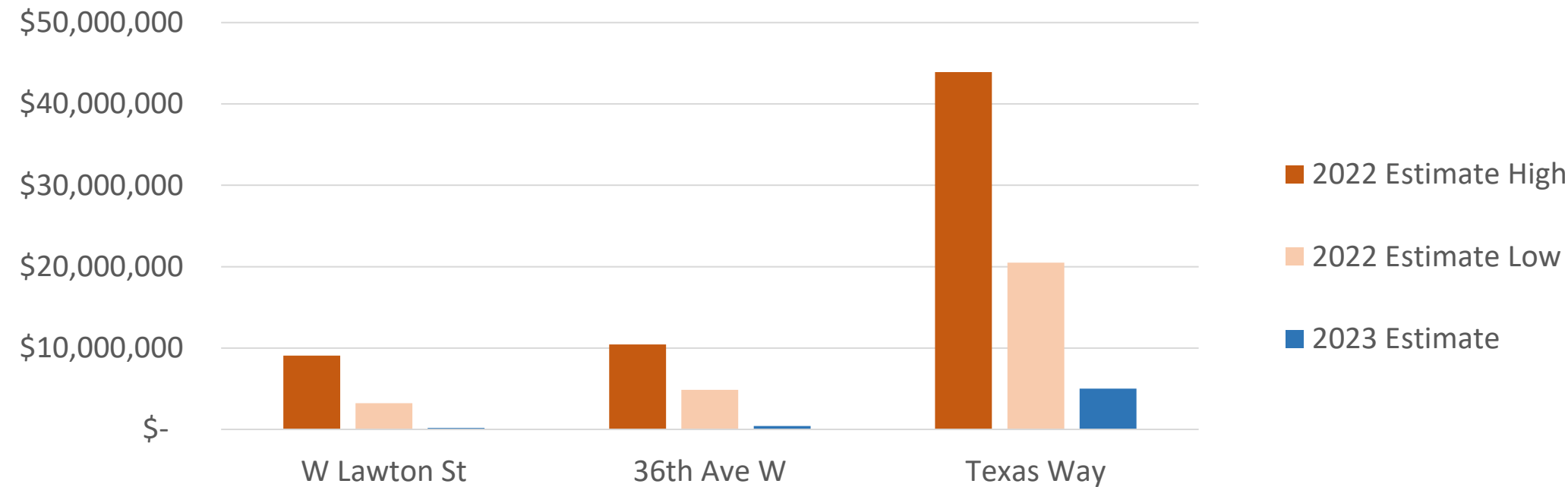
Maintain the existing Texas Way roadway but add street trees and a sidewalk on the east side adjacent to the new housing. Budget is also included for pavement repair as well as accessibility and transit improvements





# Opinion of Probable Costs: Right of Way Improvements

## ROW Infrastructure Cost Comparison



# Opinion of Probable Costs: On-Site Infrastructure

## 2022 On-Site Infrastructure Estimate

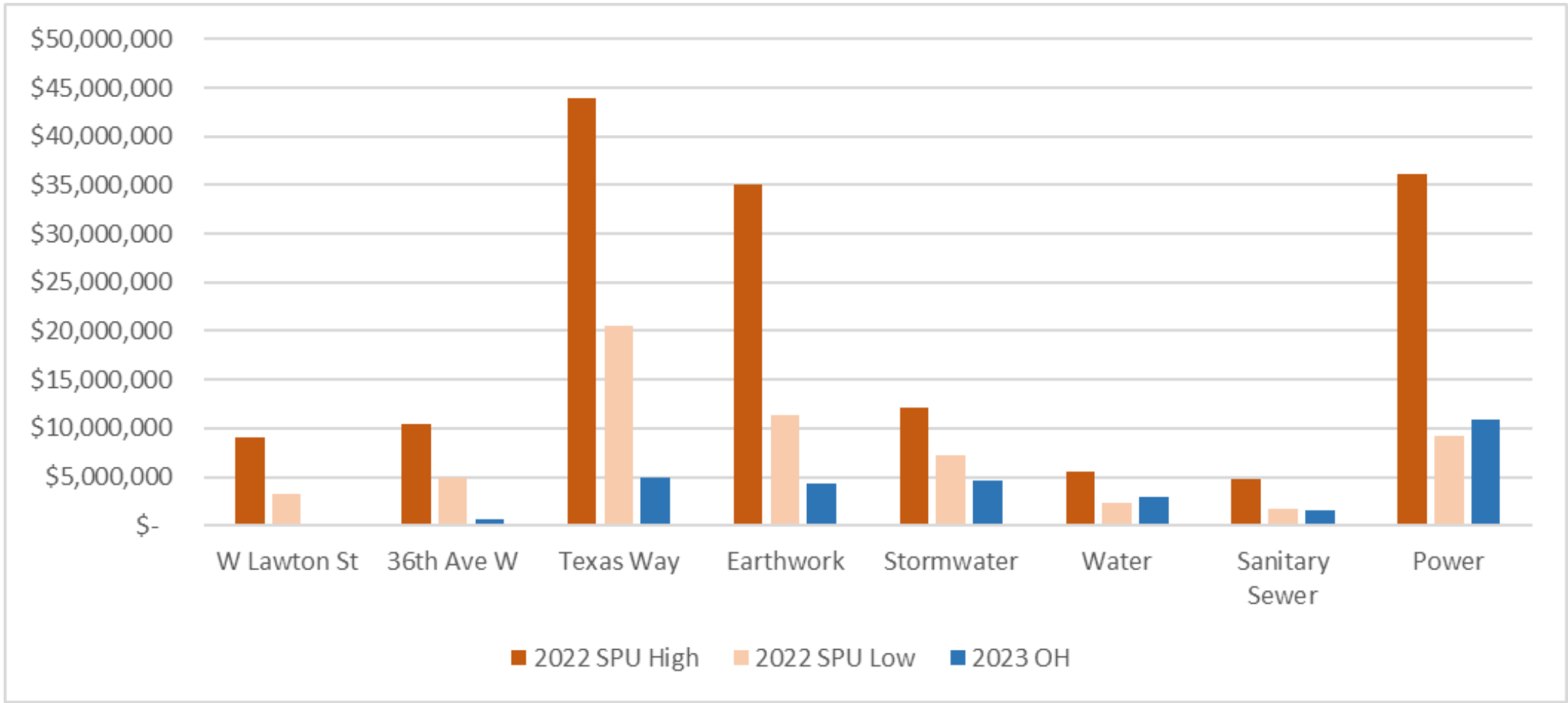
- Export of 36,000 cubic yards of earthwork.
- Construct cast-in-place concrete retaining walls.
- Stormwater bioretention area for infrastructure and for vertical construction.
- Centralized detention and infiltration facilities are considered as alternatives.
- Alternative water main replacement scenarios.
- 1,200-ft of sewer main repair/replacement with no clear nexus.
- 600-ft of sewer main extension with no clear nexus.
- Power is extended underground.

## 2023 On-Site Infrastructure Estimate

- Balance the site earthwork to avoid haul off.
- Construct manufactured block retaining walls.
- Stormwater bioretention only applied to infrastructure for this estimate. Bioretention for buildings in building costs.
- Only the detention facility (higher cost) option was considered for conservatism.
- Only the minimum water main replacement.
- No sewer main repair/replacement without clear nexus.
- No sewer main extension without clear nexus.
- Power is extended overhead.

# Opinion of Probable Costs: On-Site Infrastructure

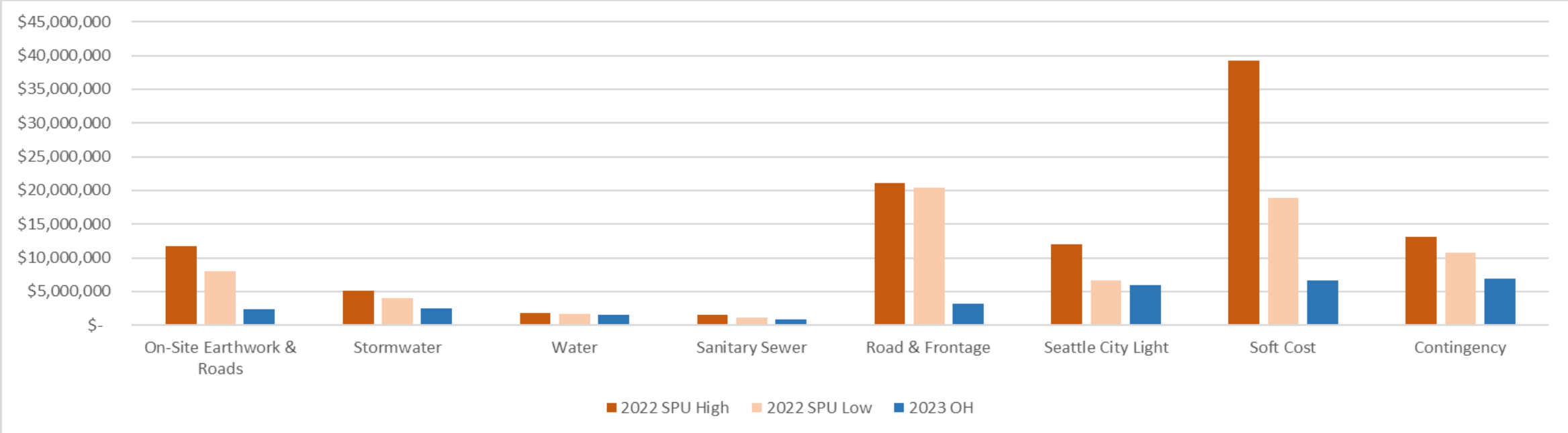
Site Infrastructure Cost Comparison





# Opinion of Probable Costs: Summary

## Estimate Comparison



	On-Site Earthwork & Roads	Stormwater	Water	Sanitary Sewer	Road & Frontage	SCL Overhead	Soft Cost	Contingency	Accuracy Range	TOTAL
2022 Estimate High	\$11,671,394	\$5,114,242	\$1,865,602	\$1,608,276	\$21,139,485	\$12,020,277	\$39,268,357	\$13,089,452	\$52,358,000	\$157,073,00
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2023 Estimate	\$ 2,361,384	\$2,505,265	\$1,600,418	\$841,161	\$3,126,470	\$6,001,487	\$6,574,474	\$6,903,198	n/a	\$29,913,857

\*See Appendix A for KPFF's Full Engineering Estimate Review

# FAIR MARKET VALUE

# Fair Market Value

## Fair Market Value

**Definition:** Fair market value (FMV) reflects a transactional price for real property in which each party is not obligated to transact, has no prior relationship or agreements that might influence the transaction negotiation, and is well informed. It reflects the value if the property were sold on the open market.

### Relevance:

- **Acquisition Price:** In most federal dispositions, the federal agency selling the property is required to seek FMV. However, certain federal statutes (through the BRAC process and otherwise) allow the federal government to dispose of property for less than FMV when certain specified requirements are met. The FMV provides a baseline understanding of the acquisition price.
- **Market Context:** FMV provides context for Fort Lawton's likely redevelopment if the City does not move forward with the acquisition and the Property is sold to the open market.
- **Value Add Opportunities:** The FMV is also provided to demonstrate the change in value associated with a rezone of the Property or the construction of the infrastructure improvements.
- **Opportunity Cost:** The FMV of the site can also be used to compare against the cost of acquiring other sites for similar uses.
- **Land Basis for Affordable Housing:** FMV may inform the value of collateral that is available for affordable housing development financing.





# Fair Market Value

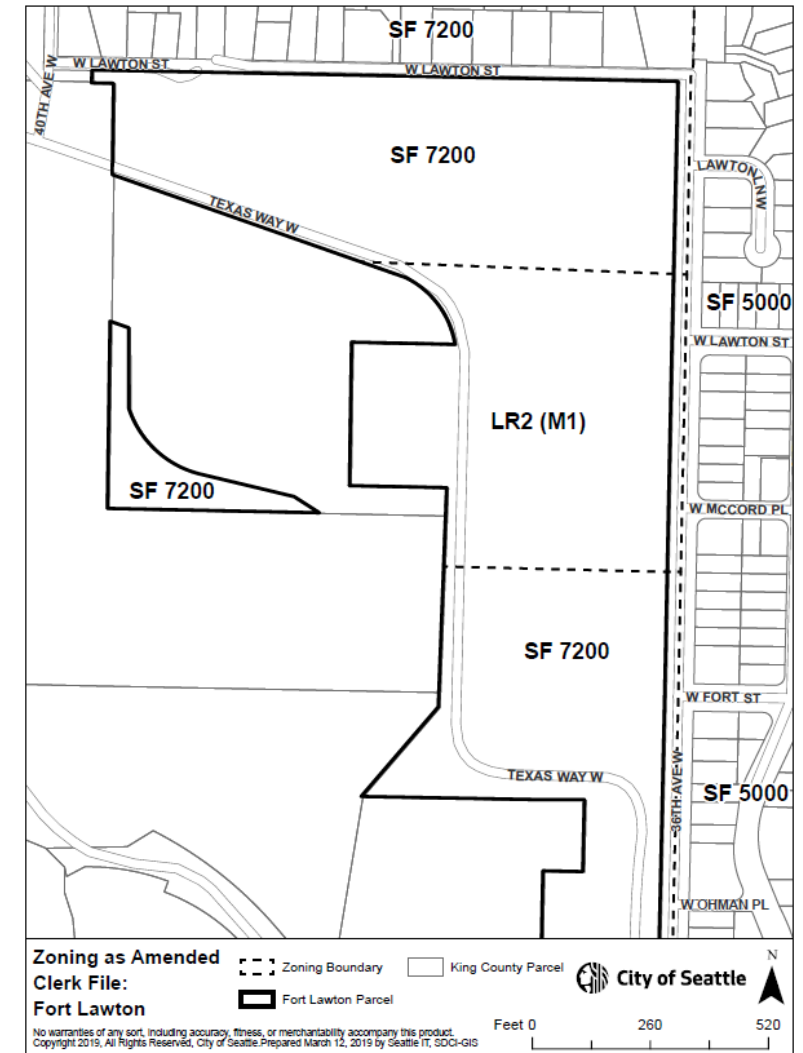
## Highest and Best Use (HBU)

**LR2 Zone:** Fort Lawton is comprised of two zoning designations as depicted in the figure to the right. The low-rise 2 (LR2) zone allows a range of residential typologies from detached single-family to low-rise multi-family. The LR2 zoning designation at Fort Lawton covers the area designated for housing development under the 2019 Plan, approximately 9.5 acres. Due to the low density of multi-family allowed within the LR2 zone, the highest and best use determined for the LR2 zone was a townhome style development.

**NR2 Zone (SF-7200):** The remainder of the site is zoned for Neighborhood Residential 2 (NR2) which allows lower density residential development with a minimum lot size of 7,200 square feet. Three units per lot can be achieved if attached additional dwelling units (AADU's) and detached additional dwelling units (DADU's) are constructed on site. The highest and best use (HBU) in the NR2 zone is presumed to be detached single-family unit with an AADU and a DADU.

<b>Highest and Best Use*</b>  <i>Reflects likely development if property was sold to market</i>	LR2 Zone	<b>Townhomes</b>
	NR2 Zone (SF-7200)	<b>Single-Family with AADU &amp; DADU</b>

\*HBU in relation to FMV is specific to the uses that would support the highest market value



# Fair Market Value

## Comparable Sales Approach

**Definition:** The comparable sales approach to valuation values real estate based on recent transactions with similar characteristics.

### Analysis:

- **LR2 Zone:** Large development sites greater than one acre are limited for properties within LR2 zones. Sales of land for smaller infill style developments are more common. Due to a lack of infill development land sales in the Magnolia neighborhood, sales from Ballard were prioritized due to their proximity.
- **NR2 Zone:** Land sales within NR2 zones are limited to small infill developments and were less available than LR2 sales. A larger geographic area was used to find comparable sales.

See *Appendix B* for a full list of comparable sales.

## Land Sale Example, LR2 Zoning



### McGraw Square, Queen Anne

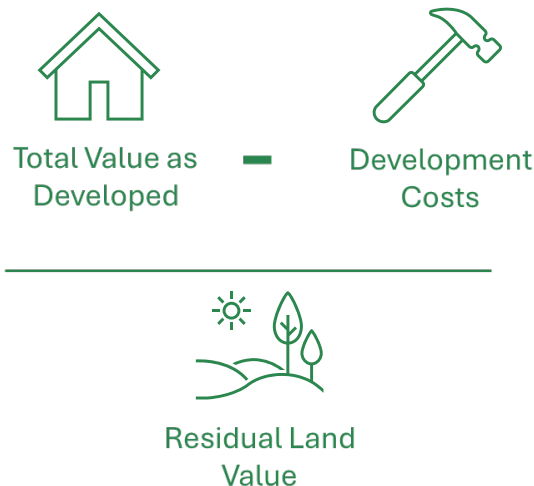
Sold Price	\$14M
Sale Year	2016
Units / Type	89 / Townhomes
Price per Unit	\$245k



Image Source: Urbanlivn

# Fair Market Value

## Residual Land Value Approach



**Definition:** The residual land value (RLV) approach estimates land value by comparing the current price of new construction to the cost to build.

**Analysis:** A review of recent market rate new townhome and single-family sales indicates a finished value in the range of approximately \$750 to \$800 per square foot for townhomes and \$700 to \$750 for detached single-family homes. For comparison, the median home price per square foot in Seattle is approximately \$600 for all new construction. These values were used in combination with development cost assumptions to approximate land value. A detailed summary of the RLV calculation and new home sales can be found in *Appendix B*.



New Construction Examples (Market Rate)		
\$725K	Sold Price	\$2.67M
2023	Sale Year	2023
1,175	Square Footage	3,650
\$617	Price per Square Foot	\$750



Source: Zillow

# Fair Market Value

## Conclusion of Value

### Comparable Sales Approach:

Concluded values for the LR2 and NR2 zones are summarized in the table below. Due to the limited data, large adjustments were used to conclude value and therefore the validity of this approach is reduced. A combination of infill and subdivision sales were used with more weight given to subdivision sales. Subdivision sales represent larger land area and therefore a more comparable level of improvements, such as internal roads, sidewalks, and lighting.

### Residual Land Value (RLV) Approach:

Values for the LR2 and NR2 zones are summarized in the table below. The RLV approach is often used when comparable sales are limited or there are unique conditions effecting the Property. Given the unique attributes of Fort Lawton, including its size and level of improvement, we have used a RLV analysis to inform value. We expect this method to be most indicative of value.

## Conclusion of Value Summary

Zoning	Land Value	Comparable Sales Approach		<i>Preferred</i> RLV Approach	
		<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
LR2	per Unit	\$200,000	\$250,000	\$200,000	\$250,000
	per Acre	\$5,000,000	\$6,250,000	\$5,100,000	\$6,300,000
NR2	per Unit	\$575,000	\$600,000	\$850,000	\$1,020,000
	per Acre	\$3,450,000	\$3,600,000	\$4,700,000	\$5,600,000



# Fair Market Value

**Value Summation:** The table below summarizes value for the Fort Lawton Property. The concluded values were adjusted for absorption and time value of money. This adjustment was made to reflect a sale of the property at one time to a single purchaser. Area G was not assigned a market value due to its classification as a conservation area, challenging topography and dense tree canopy. Area F was also assumed to have a negligible market value given its topography and access.

**Value with Improved Infrastructure:** Included in the table below is an opinion of value of the property with infrastructure improvements as outlined in the 2023 Estimate. The improved value reflects both the cost of construction plus profit, overhead and financing costs.

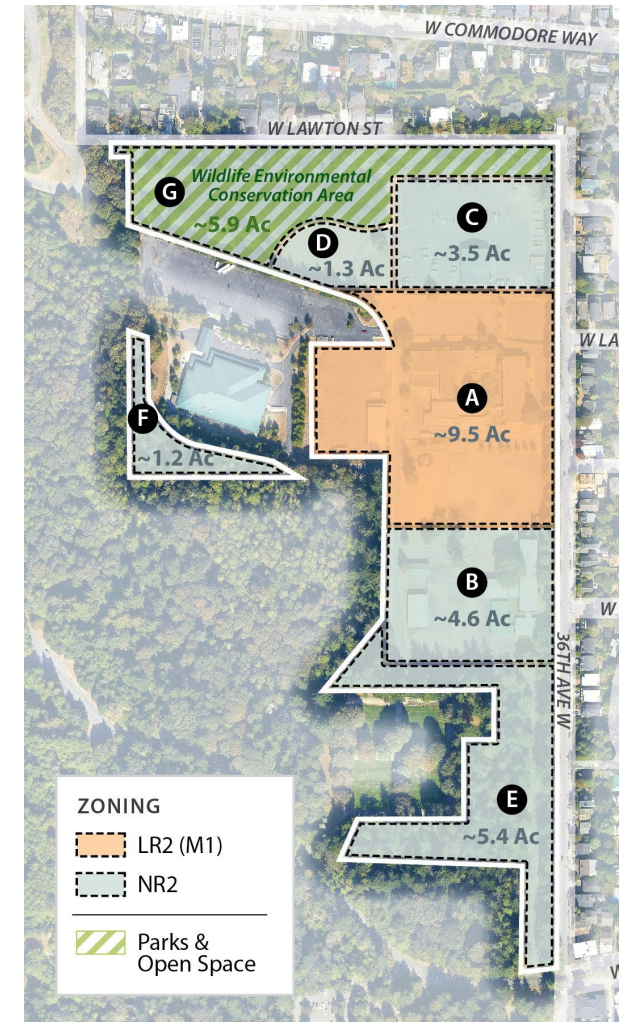
**Value with Rezone to LR2:** Also included in the table below is an opinion of value as if the property was zoned LR2 today. The improved value is reflective of the additional housing density that would be allowable under the new zoning designation.

Label	Acres	Zoning	As - Is				Improved Infrastructure			
			\$/Acre		Total*		\$/Acre		Total*	
			Low	High	Low	High	Low	High	Low	High
A	9.5	LR2	\$3,800,000	\$4,700,000	\$30,900,000	\$38,200,000	\$5,300,000	\$6,300,000	\$43,000,000	\$50,900,000
B	4.6	NR2	\$3,500,000	\$4,200,000	\$13,800,000	\$16,400,000	\$5,300,000	\$6,000,000	\$20,600,000	\$23,500,000
C	3.5	NR2	\$3,500,000	\$4,200,000	\$10,500,000	\$12,500,000	\$5,300,000	\$6,000,000	\$15,600,000	\$17,900,000
D	1.3	NR2	\$3,500,000	\$4,200,000	\$3,900,000	\$4,700,000	\$5,300,000	\$6,000,000	\$5,800,000	\$6,600,000
E**	5.4	NR2	\$3,500,000	\$4,200,000	\$9,700,000	\$11,600,000	\$5,300,000	\$6,000,000	\$24,100,000	\$27,500,000
F	1.2	NR2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
G	5.9	NR2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>31.4</b>	<b>NR2</b>			\$69,000,000	\$83,000,000			\$95,700,000	\$110,300,000
<i>Total w/ Rezone to LR2</i>					\$70,000,000	\$87,000,000			\$100,500,000	\$117,100,000

\*Assumes 15% loss due to ROW

\*\*Assumes 60% of site developable due to irregular shape

\*\*\*Values are discounted to reflect a sale of the entire property at one time to one purchaser.



# Fair Market Value: Fort Lawton Cost Savings

**Fort Lawton Discounted Land Cost:** As part of the BRAC disposition process the following discounts to FMV would apply to the acquisition cost of Fort Lawton:

- 100% discount for areas dedicated to parks or affordable housing serving below 60% AMI residents.
- 75% discount for areas dedicated to affordable home ownership.
- 50% discount for affordable housing serving 60% AMI and above.

The central estimate of the acquisition costs for Fort Lawton is \$16M, which equates to \$68,500 per unit.

**Extraordinary Infrastructure Cost:** The total infrastructure costs for the 2019 Plan, which included 237 units, is estimated to be approximately \$126,000 per unit based on the 2023 estimate. A typical development containing this type of housing could conservatively expect to spend \$80,000 per unit on infrastructure improvements. Thus, the infrastructure cost for the 2019 plan would be more than a typical development by approximately \$50,000, this is the extraordinary infrastructure cost. The sum of the extraordinary infrastructure and acquisition cost represents the total cost land cost of Fort Lawton and is approximately \$120,000 per unit. This sum of land costs can be used to compare against other land opportunities.

**Net Cost Savings:** If the City pursued an affordable housing development at a new location that was equivalent to Fort Lawton in its zoning, neighborhood character, barriers to entry, and proximity to parks, open space, and amenities, then its market value would also presumably be similar. Per our conclusion of value, we would expect a similar land opportunity to cost approximately \$225,000 per unit. We are using the LR2 zone for comparison since the housing development is concentrated in that zone under the 2019 Plan. Thus, the net total land cost savings of the 2019 Plan when compared with the equivalent alternative is approximately \$105,000 per unit (this is a central figure within an estimated range of costs and value).

**Fort Lawton Land Cost Comparison**

	Land Acquisition	Extraordinary Infrastructure	Total
Fort Lawton	\$68,500	\$50,000	\$120,000
Equivalent Alternative	\$225,000	\$0	\$225,000
Net Cost Savings			\$105,000

\* All costs are per unit and represent a central figure within an estimated range.

# Conclusion

## Alternatives



	2019 Plan	Alt. 1: Density Base Case	Alt. 2: Expand Rezone
Housing Capacity Units	237	237 - 460	290- 996+
Total Infrastructure Cost*	\$29,900,000	\$31,100,000	\$40,100,000
Infrastructure Cost per Unit	\$126,000	\$66,000 - \$126,000	\$36,000 - \$66,000
Years to Complete Regulatory Approvals	6-12 months (best case scenario)	12-18 months (best case scenario)	18-24 months (best case scenario)
Economic & Racial Equity	Baseline	Modified	Improved

\*Values from KPFF study have been rounded to the nearest hundred thousand

# APPENDIX

Appendix A – Infrastructure Opinion of Probable Cost Memo

Appendix B – Comparable Sales Analysis and Residual Land Value Calculation



# APPENDIX A - INFRASTRUCTURE OPINION OF PROBABLE COST MEMO

# MEMO



*Date:* October 24, 2023  
*Subject:* Fort Lawton Redevelopment  
Alternative Development Assessment  
and Opinion of Probable Cost  
*To:* Evan Schneider, Heartland LLC  
*From:* Jeremy Febus, PE  
Katarina Kubiniec, PE



10/24/2023

The Seattle Office of Housing (OH) has requested assistance in re-considering the assumed scope of work necessary to support the proposed 2019 Redevelopment Plan as well as providing an opinion of probable cost for higher density and/or larger development site alternatives.

Seattle Public Utilities (SPU) previously retained a third-party consultant, Davido Consulting Group (DCG), to complete an opinion of probable cost for the 2019 Redevelopment Plan. The DCG opinion was completed for SPU in 2022 (2022 Estimate). It was not within our scope, nor was it our intent, to redo the SPU and DCG effort, rather with the support of OH, Heartland, and HCMP, and using the thorough work began by SPU and DCG, we have undertaken to look for alternative approaches that could reduce the scope of requisite infrastructure and, if possible, make for a viable affordable housing project on this site (2023 Estimate).

This memo details our findings and conclusions for each major development category analyzed in the 2022 Estimate (e.g., right-of-way improvements, sanitary sewer, stormwater, etc.) related to the 2019 Redevelopment Plan. We then extrapolate these findings to provide a rough order of magnitude opinion of probable costs for increased density and/or larger development site alternatives.

## General Approach and Assumptions

Our opinion of probable cost also considers some alternative approaches to overall assumptions or methodology used in the 2022 Estimate. These are important because they represent overall percentage increases in the bottom-line costs with significant impact on total cost. These are as follows:

- The 2022 Estimate applies a 15% markup to all hard costs for Temporary Erosion and Sediment Control. In our experience this component of development is typically 5-10% of hard costs, and so we have used 10% in the 2023 Estimate.
- The 2022 Estimate applies a 15% markup to all hard costs for mobilization. In our experience, for a project of this size, mobilization would typically be 7-10% (WSDOT methodology, for comparison, recommends 7-10% for this scale of contract). We have used 10% in the 2023 Estimate.
- The 2022 Estimate projected design and “other” expenses to be 30-50% of hard costs at a range of \$16.1 to \$32.7 million. For comparison, the sum of consultant costs on the

Highway 520 Floating Bridge project was approximately \$22 million in 2016 dollars. Adjusted for inflation, the Highway 520 Floating Bridge total consultant costs would be approximately \$27 million in 2023. We don't bring up the Highway 520 Floating Bridge here because it is a comparable effort; we bring it up precisely because it is NOT a comparable effort, and the fact that the design costs were estimated in 2022 to be comparable, in our opinion, should give pause. In our experience, design and consultant costs are typically 15-25% of hard costs. We have used 25% in the 2023 Estimate. Lastly, it is unclear what is intended by "other" in this category, and in our opinion, design costs can be estimated, and unknowns should be wrapped into the contingency.

- Like the 2022 Estimate, our opinion includes sales tax applied to all hard costs.
- The 2022 Estimate includes a 25% contingency applied to the bottom-line estimate. In our opinion, at a concept stage, a 30% contingency would be more appropriate, and we have used a 30% contingency in the 2023 Estimate.
- The 2022 Estimate also applies an "accuracy range" of -30% to +50% in addition to the aforementioned contingency. For the high-end of the 2022 Estimate this adds roughly \$50 million dollars to the project cost on top of built-in conservatism and the 25% contingency. In our opinion, this is resulting in an overly conservative outcome that is beyond what can be reasonably expected for a project of this scope and scale in this location. We have chosen NOT to include this added layer of contingency in the 2023 Estimate. In our opinion, it is up to OH and the City Administration to determine any additional budgeting conservatism, time-value-of-money adjustments, or accuracy range factor they may choose to employ based on their own risk assessment and other factors outside of our engineering expertise.

## Right of Way Infrastructure Costs

The 2022 Estimate included substantial project costs for right-of-way improvements to W Lawton Street at the north edge of the site, 36<sup>th</sup> Avenue W at the east edge of the site, and Texas Way through the site (Figure 1). Texas Way is not technically a dedicated public right-of-way; however, it functions as such, and implementation of the 2019 Redevelopment Plan will likely include formal establishment of Texas Way as public right of way (ROW) by dedication or easement. We agree therefore that it makes sense for Texas Way to be included in this category. For our analysis, we met three times with SDOT Planning staff to discuss the alternatives presented here to solicit their feedback, and SDOT provided a memo dated October 18, 2023, that provides their feedback on an earlier draft version of this memo.

This memo does not attempt to answer the question as to whether or not the previously anticipated scope of ROW improvements would be of some benefit or desirable. Rather, this memo aims to answer:

1. What is an appropriate infrastructure with a nexus with the scope and scale of proposed development, and
2. Are there code compliant and responsible alternatives that would make affordable housing development financially feasible at this location?

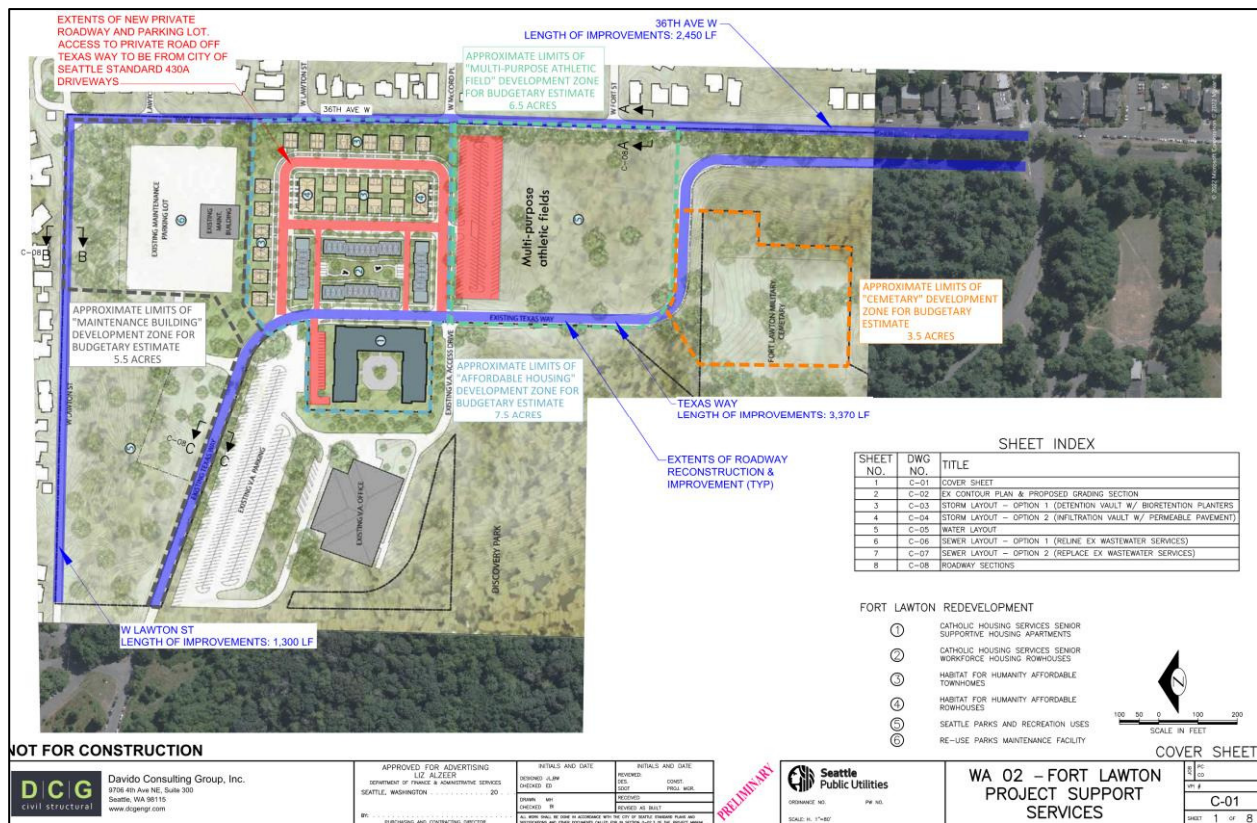


Figure 1 – DCG Civil Site Plan from 2022 Estimate

## West Lawton Street

The 2022 Estimate anticipates roughly a quarter mile off approximately 25-feet of road widening with either a cul-de-sac or road connection/extension at the west end. The 25-foot widening would require a retaining wall and relocation of overhead power lines and would provide a wider vehicle travel way, a parking lane, planter strip, and a sidewalk adjacent to the Ft Lawton site (Figure 2).

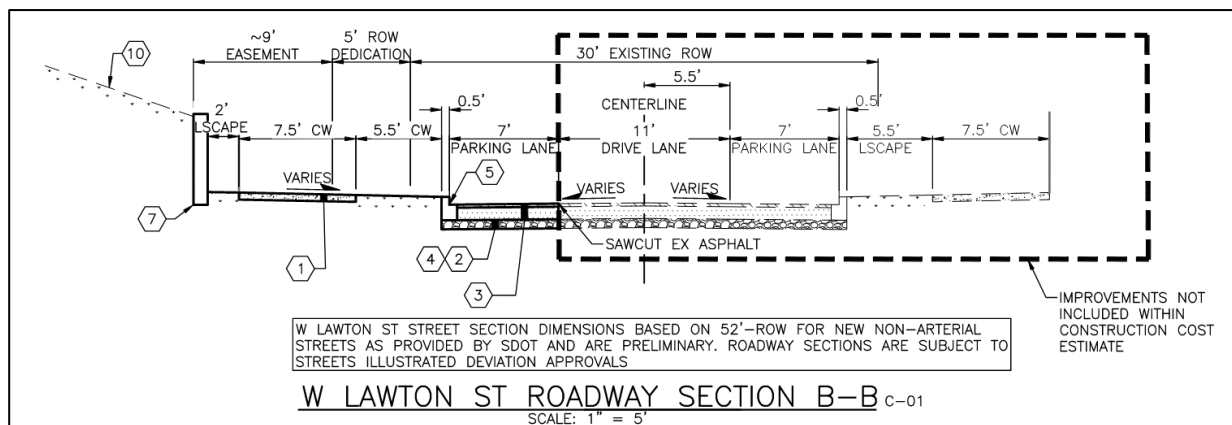


Figure 2 – DCG W Lawton Roadway Section from 2022 Estimate



# MEMO



The area where the widening is proposed is physically disconnected from the proposed affordable housing development adjacent to an area intended to be transferred to Seattle Parks and Recreation (SPR) to add to Discovery Park green space. The area is defined by regulated Environmentally Critical Areas (ECA's) and existing mature deciduous and conifer trees (Figure 3). The proposed work would impact multiple ECA's along the entire length of roadway and would certainly reduce tree canopy on public land and ROW. Impacts to the ECA's would require SDCI approval, and according to current Urban Forestry policy, removal of trees would require a 14-day public posting on every affected tree followed by a 10-day appeal period. Based on our experience in Seattle, we expect that there would be public objection to the tree removal which may inhibit permitting the scope of improvements currently planned.



**Figure 3 – View from east end of W Lawton Street facing west (Google Street View)**

In our opinion, it is not in the public interest to impact these ECA's or remove tree canopy, and this area would qualify for a ROW exception under SMC 23.53.015D(3) to preserve those areas. In discussions with SDOT planners, a ROW exception would be moot if the adjacent area can be transferred to SPR through a Lot Boundary Adjustment (LBA) prior to proceeding with any development actions.

With application of all of the hard cost multipliers previously mentioned in this report, the 2022 Estimate anticipated \$3.2 to \$9.0 million for this work in W Lawton Street. By City codes and policies, ROW improvements are only required for ROW adjacent to the parcel being developed. This work and the associated impacts can be eliminated by an LBA and is therefore not included in the 2023 Estimate. An allowance of \$221k is included in the 2023 estimate for invasive species removal and native planting enhancements to this area.

## **36th Avenue West**

The 2022 Estimate anticipates approximately a half-mile long stretch of half street improvements (Figure 4) which would require the removal of over one hundred mature conifer trees (Figure 5) and a costly retaining wall. Given the expressed concern of the surrounding neighborhood already in the public record and given the previously mentioned signage and

# MEMO



appeal procedures for tree removal in the ROW, removing a half-mile long stretch of mature conifers is in our opinion effectively infeasible.

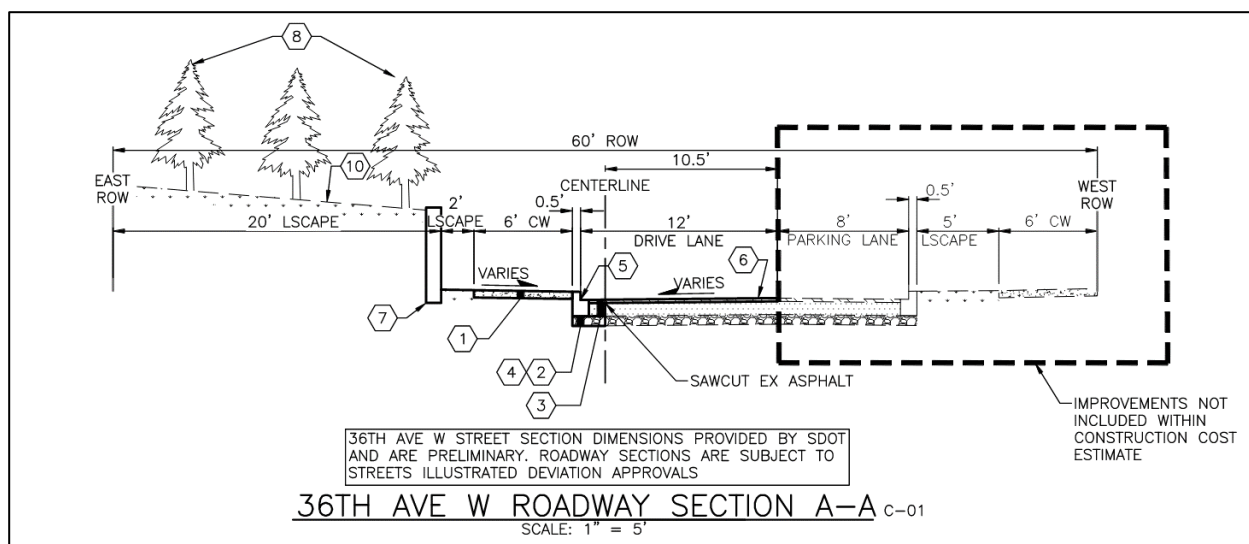


Figure 4 – DCG 36<sup>th</sup> Ave W Roadway Section from 2022 Estimate



Figure 5 – View from south end of 36<sup>th</sup> Avenue W facing north (Google Street View)

This area would also qualify for consideration for a ROW exception under SMC 23.53.015D(3). In our opinion, it is not in the public interest to remove this extensive tree canopy when reasonable and permissible alternatives with significantly less impacts exist.

In discussions with SDOT planners, they understandably could not guarantee that a ROW Exception would be approved (ROW Exceptions are approved by SDCI with SDOT input), but they did agree that retention of mature conifers in the right-of-way was a paramount concern of the department at this time, and the exception would have considerable merit. They suggested



# MEMO



that construction of public pedestrian facilities west of the tree line may be a condition of approval if the exception were to be approved. We appreciated this input and incorporated this suggested improvement into our 2023 Estimate.

With application of all of the hard cost multipliers previously mentioned in this report, the 2022 Estimate anticipated \$4.9 to \$10.4 million for the 36<sup>th</sup> Avenue W work. In our opinion this scope of work can be substantially eliminated through a ROW Exception and is therefore not included in the 2023 Estimate. We included a \$614k allowance for invasive species removal and landscape improvements along 36<sup>th</sup> Ave W along with addition of a quarter mile long, 10-ft wide hard surface trail with pedestrian level lighting west of the line of the existing trees. Existing trees would be protected and remain.

## Texas Way

The 2022 Estimate anticipates greater than a half-mile stretch of full demolition of existing roadway, roadside retaining walls, tree removal, and street light removal, and replacement of these existing improvements with a new approximately 70-ft wide arterial street section (Figure 6). This new arterial roadway would be one of the largest in the Magnolia area comparable to the total ROW width of 32<sup>nd</sup> Avenue W, 34<sup>th</sup> Avenue W, and W McGraw Street in the Magnolia Village area. These 3 roadways for comparison are primary arterials, forming in our opinion, a much more critical part of the urban street grid serving and connecting much larger population, education, housing, and retail centers.

We acknowledge that this 2022 Estimate scope of work is consistent with the EIS, and it is not our role to provide legal opinions regarding the EIS. Our goal here is to propose what scope of improvements to Texas Way are consistent with SDOT standards and proportional to the affordable housing project scope and scale and impacts.

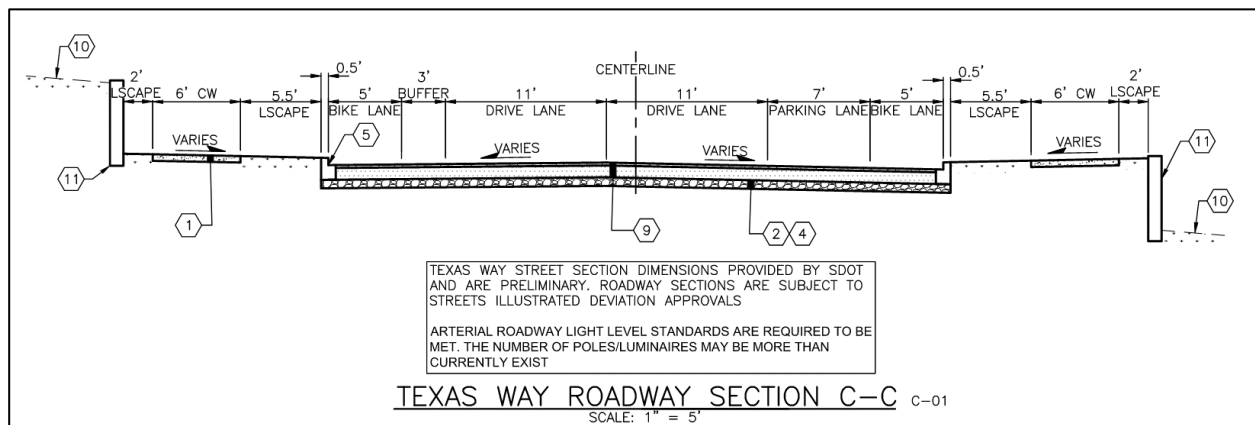


Figure 6 – DCG Texas Way Section from 2022 Estimate

In the previously mentioned SDOT memo, SDOT recommended against reducing the Texas Way road section. The concerns cited were loss of transit facilities, stranded sidewalk, athletic field parking pushed into adjacent neighborhoods, and deficient bicycle facilities for future affordable housing residents. We agree that these are all very important considerations, and they have been addressed in the 2023 Estimate scope of work.



- There is no proposed reduction in transit facilities on Texas Way, and the 2023 Estimate includes scope for connectivity improvements from Texas Way to 36<sup>th</sup> Avenue W.
- There is no stranded sidewalk in this proposal. The 2023 Estimate protects the continuous sidewalk on the west side of Texas Way and includes scope for a new uninterrupted sidewalk (with street trees) on the east side of Texas Way from the north edge of the proposed affordable housing development to Discovery Park Boulevard and then connecting to existing sidewalk in 36<sup>th</sup> Avenue W.
- The 2019 Redevelopment Plan, in concept, proposes over 120 stalls in a parking lot on-site to serve an estimated 2 athletic fields on 4 acres. Industry practice varies widely, but 50-100 parking stalls per athletic field are a common range for new athletic field design. This proposal is well within those parameters.
- Lastly, as previously noted, the 2023 Estimate includes scope for a new 10-foot wide, hard surface trail along 36<sup>th</sup> Avenue W connecting the affordable housing development to Discovery Park Boulevard. This is in addition to the proposed new sidewalk on Texas Way and the existing travel lanes. This would provide a quality bicycle connection from the development to the public street grid on a much shorter route than bicycle facilities in Texas Way. In our opinion, bicycle facilities in Texas Way would be beneficial, but primarily to the adjacent neighborhoods and Discovery Park visitors, not the affordable housing development.

In our opinion, the formal recognition of Texas Way should be that of “Park Boulevard” as defined by SMC 15.02.046. This would be consistent with other vehicle travel ways through Discovery Park. The Park Boulevard designation provides flexibility for Texas Way to meet the mobility needs of existing and future public access and adjacent residents while maintaining an aesthetic that is respectful of the park users, open space, and history. Under the Park Boulevard designation, the existing roadway, retaining walls, adjacent trees, and streetlights on Texas Way could largely remain (Figure 7).



Figure 7 – View from south end of middle section of Texas Way facing north (Google Street View)

# MEMO

The arterial road section, by contrast, would require removal of a 700-foot-long line of conifer trees adjacent to the VA Site (Figure 8), would require substantial earthwork including retaining walls, would add a significant number of new vehicle parking stalls, and the demolition, haul-off of material, and reconstruction would come with a significant but avoidable carbon footprint.



Figure 8 – View from far west end of Texas Way facing east (Google Street View)

For the south approximately 800-feet of Texas Way where it connects to Discovery Park Boulevard (Figure 9), the existing road section is less than 40-feet wide. The available land is less than the 70-feet necessary to accomplish the new roadway. Significant earthwork and tree removal would be necessary, and it may not even be feasible to construct the proposed roadway section.



Figure 9 – View from south end of Texas Way facing north (Google Street View)

# MEMO



In our opinion, the 70-foot-wide arterial road section is disproportional to the neighborhood and the need, carries with it avoidable environmental impacts, and is therefore not in the public interest. A Park Boulevard would be a more nimble, sustainable, and appropriate roadway section for this location and the intended uses. To this end, our revised cost opinion proposes to maintain the existing Texas Way corridor but add a 6-foot planting strip with street trees and a 6-foot sidewalk on the east side of the roadway adjacent to the majority of the affordable housing redevelopment. Sidewalk alignment adjustments may be made as necessary to maintain existing mature trees near the roadway edge.

With all of the bottom-line adjustments and additions previously mentioned in this report, the 2022 Estimate anticipated approximately \$20.5 to \$43.9 million for this work, which in our opinion can be substantially reduced through a Park Boulevard approach. In our opinion, reducing the Texas Way scope of work to pedestrian and street tree improvements on one-side, along with an allowance for pavement repair/replacement in Texas Way, and pedestrian, accessibility, and transit improvements at the intersection with Discovery Park Boulevard could be completed for approximately \$4.9 million.

## On-Site Infrastructure Costs

While the largest suggested reduction in scope and costs is in the ROW infrastructure, our analysis did result in alternatives and recommendations regarding the on-site scope of work as well. We have met one time with SPU technical staff to review our findings, and SPU has provided a memo dated October 18, 2023 which provides comments on an earlier draft of this memo. We have incorporated their feedback on project scope into analysis.

### Earthwork and Site Preparation

The 2022 Estimate anticipates that an excess of 36,000 cubic yards of earthwork will be excavated and hauled to an off-site location for disposal. Assuming 10 cubic yards per truck, this would require approximately 7,200 dump truck trips through Magnolia and through the main entrance to Discovery Park.

In our opinion, given the substantial amount of already cleared land area available, the site should be able to balance its earthwork. For example, simply leveling this excess material over the future athletic fields would raise the athletic fields approximately 5-feet and avoid the costly haul off and disposal of material. Also, the 2022 Estimate anticipates concrete retaining walls. Our 2023 Estimate proposes manufactured blocks at considerably less cost which would be more common for a housing project of this scope and scale. Lastly, we have a difference of opinion from the 2022 Estimate of the cost of fine grading the development area of the site and adjusted this unit cost from \$1.0/SF (2022 Estimate) to \$1.5/SY (2023 Estimate).

### Stormwater

We have substantially carried forward the opinion of probable costs for individual line items from the 2022 Estimate. The only exception is that the 2022 Estimate includes bioretention costs to meet On-site Stormwater Management (OSM) requirements for the entire redevelopment area. In our experience, vertical construction costs in Seattle include OSM costs for the building.



# MEMO



Moreover, building related OSM would be constructed with the building and by the building general contractor or their sub-contractors both for practical and for operation and maintenance reasons, not as part of the land development. The SDCI grading permits for on-site work would only address OSM requirements for the infrastructure (in this case primarily roadwork), and the site/civil general contractor would only complete infrastructure related OSM under their contract. Therefore, in our 2023 Estimate, we have reduced the bioretention area to only what is required for the infrastructure improvements.

The previously mentioned SPU memo states that the 2023 Estimate proposes discharging stormwater runoff to the sewer system in 36<sup>th</sup> Avenue W. As stated in the paragraph above, the scope of work in the 2023 Estimate is identical to the scope of work in the 2022 Estimate except for the opinion of where OSM facility costs should be assigned. We very much agree with SPU that combined sewer should be avoided wherever feasible and is avoidable here.

The 2022 Estimate included detention as well as infiltration stormwater flow control alternatives. We agree that an infiltration alternative would be preferred from both an ecological and cost standpoint. We are skeptical that infiltration will be feasible at this location, and since it is the lower cost alternative, we have only carried forward the detention alternative in the 2023 Estimate.

## Water

The 2022 Estimate included an alternative that protected and re-used an existing 12-inch water main at the south edge of the affordable housing redevelopment area as well as an alternative that entirely replaced existing water mains. After discussion with SPU and given that the existing water main generally aligns with a proposed roadway, we believe that the affordable housing development can reasonably protect and design the new roadway to incorporate the existing 12-inch water main. Therefore, we have only carried forward the 2022 Estimate re-use alternative in our 2023 Estimate.

The 2022 Estimate also included costs to extend approximately 1,000 feet of 12-inch water main in Texas Way (Figure 10). This extension does not appear to have any nexus with the affordable housing redevelopment work which has adjacent water of reasonable pressure with multiple potential points of connection along 36<sup>th</sup> Avenue W. After discussion with SPU, we understand that the current water and fire service to the VA Facility west of the subject redevelopment is sub-standard, and this main extension is necessary to bring the VA services up to current standards. The VA Facility is not part of the proposed property acquisition or the 2019 Redevelopment Plan; however, to be conservative, we have included this cost in our 2023 Estimate.

The previously mentioned memo from SPU states that the 2023 Estimate assumes extensive re-use of existing water main infrastructure. This is not the case. In the previous version of this memo the 2023 Estimate scope of work exactly matched the 2022 Estimate re-use alternative scope of work with the exception of the VA Facility main discussed above. That main is now included as noted. The 2023 Estimate scope is therefore matching the 2022 Estimate scope for the re-use alternative.

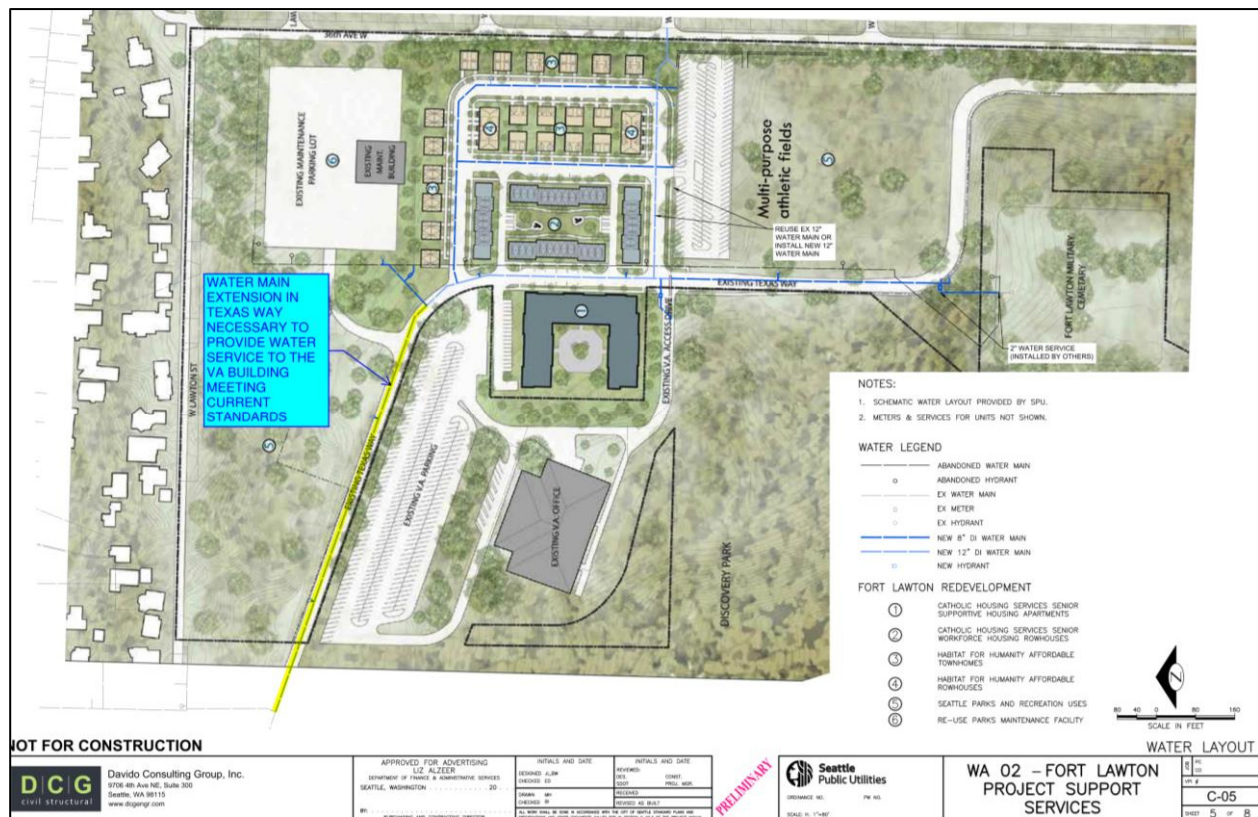


Figure 10 – Markup of DCG's Water Layout from 2022 Estimate

## Sanitary Sewer

The 2022 Estimate includes substantial system improvements on the Maintenance Facility site (Figure 11). There is an existing 8-inch sewer main in 36<sup>th</sup> Avenue W, with capacity for the proposed redevelopment. This existing main is 12-feet deep near the lowest adjacent corner of the redevelopment area. It is our opinion that the affordable housing development would be better served by connecting to this existing main rather than completing replacement or repair of existing shared side sewers across private property and the Maintenance Facility Site. The VA Facility and the SPR Maintenance Building are the only 2 buildings also served by this main. The VA Facility side sewer can be readily connected to the new main to 36<sup>th</sup> Avenue W. The SPR Maintenance building could remain on the existing side sewer to the north or could lift up to the new main in the redevelopment with a fairly simple grinder pump system. We have included costs for an SPU Maintenance Building duplex grinder pump system and force main in the 2023 Estimate but have removed the downstream side sewer improvements.

SPU staff raised some concerns regarding whether or not Ft. Lawton could simply disconnect from a side sewer shared with adjacent property owners to the north with no further obligations. There appear to be 3 single family residences connected to the Ft. Lawton side sewer. However, in our experience this is logical and consistent with SDCL side sewer policies. No property owner is required to continue use of or responsibility for a shared side sewer across a property not their own if they build a new code-compliant connection serving their own property.

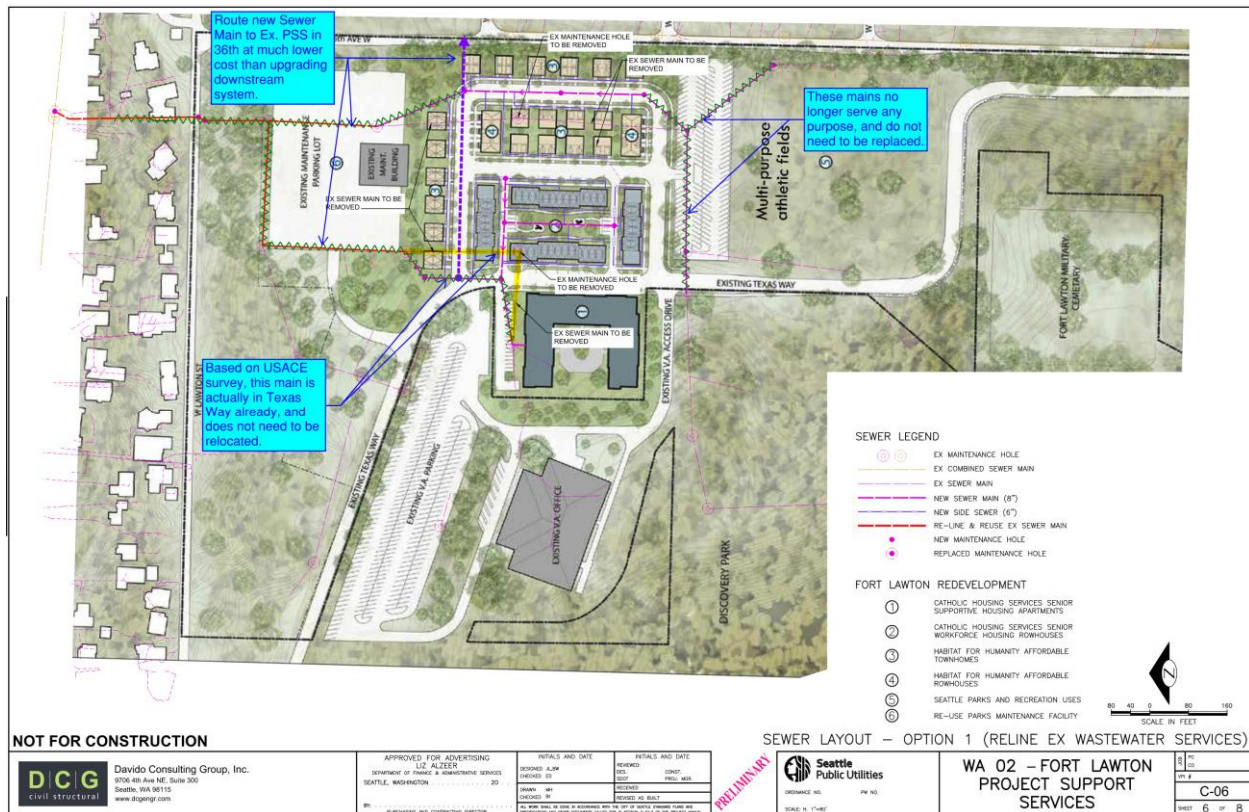


Figure 11 – Markup of DCG's Sewer Layout Option 1 from 2022 Estimate

The 2022 Estimate also includes substantial relocation of existing sewer mains that, from the DCG description and exhibits, appear to conflict with future development. From our review of the 2022 exhibits as well as review of Army Corp as-built drawings and a site visit to confirm structure locations at the ground surface, it does not appear to us that this relocation is necessary. It has been removed from the project scope in the 2023 Estimate.

## Power

We have met one-time with SCL staff to discuss their estimate, and they readily acknowledged that the estimate is conservative, and contains significant elements that would be unnecessary if the ROW improvements scope is reduced as suggested. For example, the SCL estimate includes a half-mile relocation of overhead power and telecommunication lines in W Lawton Street that are not necessary if W Lawton Street is removed from the project scope as previously discussed.

SCL does not have a scope exhibit that accompanies their estimate. There is therefore not enough information available to confidently assess the scope of the SCL cost estimate. Of the alternatives included in the 2022 Estimate, the underground power option was eliminated in the 2023 Estimate to better support affordability goals. The SCL overhead estimate is carried forward in the 2023 Estimate without edit to scope or hard costs. Note that the 2022 Estimate summary



# MEMO



does NOT match SCL cost estimates but are roughly 10% higher without explanation. The 2023 Estimate uses the SCL cost numbers as-is.

## Comparison of 2022 and 2023 Opinion of Costs

This summary compares the 2022 Estimate assumptions conclusions to our updated 2023 Estimate and conclusions. Both of these opinions of cost only apply to the 235 affordable housing unit scenario put forth in the 2019 Redevelopment Plan. Following this section is a further opinion of how the 2023 analysis can be extrapolated to anticipate costs for other development alternatives.

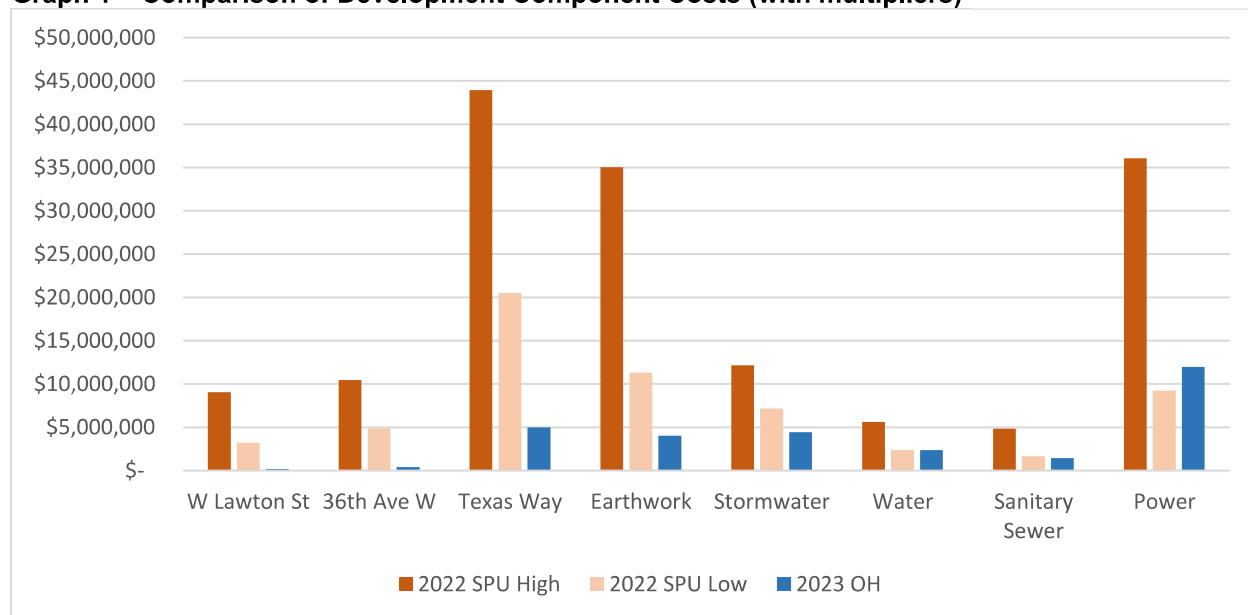
The 2022 Estimate provides an opinion of a total cost of approximately \$50.9 to \$157.1 million. The updated 2023 Estimate provides an opinion of a total construction and soft costs of approximately \$29.9 million. Following this memo is a marked-up copy of the 2022 Estimate with our notes on specific line item and section changes reflecting changes incorporated into the 2023 Estimate. The sections above describe the differences in approach and assumptions. The changes that stand out most prominent to us are:

- Recommended elimination of the “Accuracy Range” assessment in the engineering opinion. The City should apply whatever time-value-of-money or supplemental contingency or budgetary factors it sees fit, but these are NOT part of the engineering opinion.
- Recommended reduction in design costs to 25% as a percentage of hard costs.
- Elimination of all road improvements on W Lawton Street.
- Substantial elimination of road improvements on 36<sup>th</sup> Avenue West.
- Substantial reduction in the scope of road improvements on Texas Way.
- Balancing earthwork on-site, so that there is no costly haul off and disposal.
- Elimination of all utility improvements that are not directly related to the adequacy of existing infrastructure to serve the affordable housing development.

Generally following the development categories put forward in the 2022 Estimate, the table (Table 1) and graph below (Graph 1) represent a side-by-side comparison of the 2022 Estimate High and Low costs besides the 2023 Estimate opinion of costs. Each number below represents the fully burdened cost for that category including soft costs, contingency, and accuracy range (as applied in the 2022 Estimate).

**Table 1 – Comparison of Development Component Costs (all-in)**

	W Lawton St	36 <sup>th</sup> Ave W	Texas Way	Earthwork & Site	Stormwater	Water	Sanitary Sewer	Power
<b>2022 High</b>	\$ 9,050,859	\$10,437,006	\$43,930,590	\$35,014,182	\$12,158,331	\$ 5,596,806	\$ 4,824,828	\$36,060,831
<b>2022 Low</b>	\$ 3,223,924	\$ 4,870,603	\$20,500,942	\$11,290,178	\$ 7,159,939	\$ 2,342,430	\$ 1,660,098	\$ 9,250,692
<b>2023</b>	\$ 220,721	\$ 613,603	\$ 4,855,851	\$ 3,958,956	\$ 4,559,583	\$ 2,912,760	\$ 1,530,913	\$10,922,706

**Graph 1 – Comparison of Development Component Costs (with multipliers)**

## Increased Density and/or Increased Development Area Costs

This analysis up until this point has been completely focused on a comparison of opinions of probable cost for the 2019 Redevelopment Plan. This section assumes the 2023 opinion of probable cost as a baseline and extrapolates rough order of magnitude costs for the development alternatives included in the Heartland analysis.

### Alternative 1

This is the 2019 Redevelopment Plan with the 2023 Estimate scope of infrastructure improvements.

### Alternative 2

This is the same development area and internal road and utility network as the 2019 Redevelopment Plan, but with a higher density of housing on the same footprint, and with the addition of the 1.3-acre Area “D”. In this scenario, ROW costs are unchanged from Alternative 1; however, a 5% cost increase is added to all other categories.

### Alternative 3

In this alternative, the development area is expanded to include Development Areas “C” (Maintenance Facility) and “B” (Athletic Fields) with the same density of development as Alternative 2. In this scenario, stormwater costs are increase 25% to account for additional flow control mitigation, and the Alternative 2 cost per unit is extrapolated to the expanded areas as a ratio of those areas to the original 2019 development area.

# MEMO



**Table 2 – Comparison of Alternative Costs**

	Alternative 1	Alternative 2	Alternative 3
<b>Unit Count</b>	235	460	996
<b>Hard Cost Subtotal</b>	\$ 16,436,185	\$ 17,101,671	\$ 22,032,548
15% Permit Fees	2,465,428	2,565,251	3,304,882
25% Design Fees	4,109,046	4,275,418	5,508,137
<b>Hard &amp; Soft Cost Subtotal</b>	\$ 23,010,659	\$ 23,942,339	\$ 30,845,568
30% Contingency	6,9003,198	7,182,701	9,253,670
<b>Grand Total</b>	\$ 29,913,857	\$ 31,125,041	\$ 40,099,238
<b>Cost per Unit</b>	\$ 127,293	\$ 67,663	\$ 40,260



# MEMO

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## EXHIBIT A - KPFF Markup of 2022 Opinion of Probable Cost

**Project Info:**

**Project Name:** WA 02 - Fort Lawton Project Support Services  
**Owner:** Seattle Public Utilities  
**Date:** 12/2/2022  
**Project PM:** Erik Davido & Ben Iddins

**Description:** Summary of Earthwork, Site Grading, Utilities, Road/Frontage, and SCL Improvement Costs

Opinion of Construction Costs Including Tax w/ No Soft Cost Mark-ups or Contingency								
Development Zone	On-site Earthwork and Roads Options		Stormwater Options		Water Options		Wastewater Options	
	Earthwork incl. detention vault*	Earthwork incl. infiltration vault*	Infiltration vault w/ permeable pavement*	Detention vault w/ non-infiltrating bioretention planters*	Reuse Ex 12" water main segment	Remove and replace Ex 12" water main segment	Reline ex wastewater services	Replace ex wastewater services
Maintenance Building	\$671,246	\$506,270	\$1,028,764	\$1,277,216	\$369,698	\$369,698	\$388,849	\$809,580
Affordable Housing	\$7,886,772	\$4,444,768	\$3,949,402	\$2,639,484	\$1,027,956	\$1,157,001	\$600,463	\$606,579
Multi-purpose Athletic Field	\$3,113,376	\$3,113,376	\$136,076	\$136,076	\$267,169	\$330,563	\$196,472	\$192,116
Cemetery	\$0	\$0	\$0	\$0	\$0	\$8,340	\$0	\$0
Subtotal:	\$11,671,394	\$8,064,413	\$5,114,242	\$4,052,777	\$1,673,164	\$1,865,602	\$1,185,784	\$1,608,276

\*Note: On-Site Earthwork and Roads Options & Stormwater Options are not mutually exclusive. Options must be packaged together when determining high and low cost.

Opinion of Construction Costs Including Tax w/ No Soft Cost Mark-ups or Contingency								
Development Zone	Road and Frontage (% Based on Development Zone Area)							
	W Lawton St (Cul-de-Sac Option) %	W Lawton St (Cul-de-Sac Option) \$	W Lawton St (Connected Rd Option) %	W Lawton St (Connected Rd Option) \$	36th Ave W %	36th Ave W \$	Texas Way %	Texas Way \$
Maintenance Building	24%	\$550,670	24%	\$721,445	24%	\$831,935	24%	\$3,501,714
Affordable Housing	33%	\$750,914	33%	\$983,789	33%	\$1,134,457	33%	\$4,775,064
Multi-purpose Athletic Field	28%	\$650,792	28%	\$852,617	28%	\$983,196	28%	\$4,138,389
Cemetery	15%	\$350,427	15%	\$459,102	15%	\$529,413	15%	\$2,228,363
Subtotal:		\$2,302,803		\$3,016,953		\$3,479,002		\$14,643,530

This entry doesn't match SCL's #, updated to match in our analysis

Opinion of Construction Costs Including Tax w/ No Soft Cost Mark-ups or Contingency - Costs from SCL				
Development Zone	Power (% Based on Development Zone Area)			
	Overhead Lines %	Overhead Lines \$	Underground %	Underground \$
Maintenance Building	24%	\$1,580,087	24%	\$2,874,414
Affordable Housing	33%	\$2,150,664	33%	\$3,919,656
Multi-purpose Athletic Field	28%	\$1,867,876	28%	\$3,397,035
Cemetery	15%	\$607,637	15%	\$1,829,173
Subtotal:		\$6,607,637		\$12,020,277

in our opinion, the range is more typically 10-20%, we use 15% in our analysis

in our opinion, the range is more typically 15-25%, we use 25% in our analysis

Opinion of All Above Construction Costs Incl. SCL					Soft Costs					
	Subtotal Construction Costs		Subtotal w/ Contingency		Permitting Fees		Design and Other Soft Costs		Subtotal % Costs	
Development Zone	Low Range	High Range	Low Range	High Range	5%	10%	30%	50%	Low Range	High Range
			25%	25%						
Maintenance Building	\$8,757,986	\$11,057,249	\$10,947,483	\$13,821,511	\$547,374	\$1,382,153	\$3,284,245	\$6,910,781	\$3,831,619	\$8,292,937
Affordable Housing	\$18,837,689	\$23,102,802	\$23,547,111	\$28,878,502	\$1,177,356	\$2,887,851	\$7,064,133	\$14,439,251	\$8,241,489	\$17,327,101
Multi-purpose Athletic Field	\$11,352,846	\$13,143,368	\$14,191,058	\$16,429,211	\$709,553	\$1,642,921	\$4,257,317	\$8,214,601	\$4,966,870	\$9,857,526
Cemetery	\$4,122,053	\$5,054,391	\$5,152,566	\$6,317,988	\$257,628	\$631,799	\$1,545,770	\$3,158,974	\$1,803,398	\$3,790,793
Subtotal:	\$43,070,575	\$52,357,810	\$53,838,218	\$65,447,262	\$2,691,911	\$6,544,723	\$16,151,465	\$32,723,831	\$18,843,376	\$39,268,357

Development Zone	Subtotal Pre-Accuracy Range		Accuracy Range		Opinion of Total Construction and Soft Cost		Operations and Maintenance	
	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range
			-30%	50%				
Maintenance Building	\$14,779,102	\$22,114,498	-\$4,433,731	\$11,057,249	\$10,345,371	\$33,171,748		
Affordable Housing	\$31,788,600	\$46,205,604	-\$9,536,580	\$23,102,802	\$22,252,020	\$69,308,406	25%	50%
Multi-purpose Athletic Field	\$19,157,928	\$26,286,736	-\$5,747,378	\$13,143,368	\$13,410,550	\$39,430,103		
Cemetery	\$6,955,965	\$10,108,782	-\$2,086,789	\$5,054,391	\$4,869,175	\$15,163,172		
Subtotal:	\$72,682,000	\$104,716,000	-\$21,804,000	\$52,358,000	\$50,877,000	\$157,073,000	\$83,938	\$100,025

\*Note: operations and maintenance costs are estimated for the first year. If using for cost projecting, utilize yearly inflation costs as well as allowance for increased maintenance over time for aging infrastructure; perhaps 5% every 5 years.

Not part of our analysis

**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins

This On-site Earthwork estimates calculate earthwork associated with the detention vault.

**Additional Assumptions:**

- For economies of scale, all site scope will be under 1 contract
- Athletic Fields are just graded, hydroseeded, and then handed off to SPS

use a concrete block wall (much cheaper) only visible to maintenance yard

keep all material on-site

should be SY at this price

more typical in our experience

should be closer to \$300 for traditional road of this type, but keeping premium for pervious pavement

Earth Work and Interior Road Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Excavation for storm vault and haul to fill on-site	CY	\$ 54.00	3,370	\$ 47,185.19	\$ 4,836.48	\$ 52,021.67
2	Soil haul and dispose	CY	\$ 58.00	2,370	\$ 161,185.19	\$ 16,521.48	\$ 177,706.67
3	Surfacing/asphalt patch over detention vault	SY SF	\$ 80.00	1008,400	\$ 252,000.00	\$ 25,830.00	\$ 277,830.00
4	Erosion and Sediment Control	%	10% 15%	1	\$ 69,055.56	\$ 7,078.19	\$ 76,133.75
5	Mobilization & General Conditions (GC's)	%	10% 15%	1	\$ 79,413.89	\$ 8,139.92	\$ 87,553.81
	TOTAL				\$ 608,839.81	\$ 62,406.08	\$ 671,245.90
<b>Affordable Housing</b>							
1	Site cut (incl. truck loading) and haul to fill on-site	CY	\$ 525.00	23,810	\$ 595,250.00	\$ 61,013.13	\$ 656,263.13
2	Site fill (incl. compaction)	CY	\$ 18.00	8,083	\$ 145,494.00	\$ 14,913.14	\$ 160,407.14
3	Soil haul and dispose	CY	\$ 68.00	15,727	\$ 1,069,436.00	\$ 109,617.19	\$ 1,179,053.19
4	Grading and contouring	SY SF	\$ 1.5 1.00	35,000	\$ 311,000.00	\$ 31,877.50	\$ 342,877.50
5	Cast in place 10' avg height retaining wall (incl. excavation and backfill) - echo block wall	LF SF	\$ 30 494.00	4,600	\$ 319,240.00	\$ 32,722.10	\$ 351,962.10
6	Roadway improvements (affordable housing interior road)	LF	\$ 980.00	1,900	\$ 1,862,000.00	\$ 190,855.00	\$ 2,052,855.00
7	Parking Lot	SY SF	\$ 30 20.00	6,200	\$ 1,106,680.00	\$ 113,434.70	\$ 1,220,114.70
8	Erosion and Sediment Control	%	10% 15%	1	\$ 811,365.00	\$ 83,164.91	\$ 894,529.91
9	Mobilization & General Conditions (GC's)	%	10% 15%	1	\$ 933,069.75	\$ 95,639.65	\$ 1,028,709.40
	TOTAL				\$ 7,153,534.75	\$ 733,237.31	\$ 7,886,772.06
<b>Multi-purpose Athletic Field</b>							
1	Site cut (incl. truck loading) and haul to fill on-site	CY	\$ 525.00	18,744	\$ 468,600.00	\$ 48,031.50	\$ 516,631.50
2	Site fill (incl. compaction)	CY	\$ 18.00	686	\$ 12,348.00	\$ 1,265.67	\$ 13,613.67
3	Soil haul and dispose	CY	\$ 68.00	18,058	\$ 1,227,944.00	\$ 125,864.26	\$ 1,353,808.26
4	Grading and contouring	SY SF	\$ 1.5 1.00	29,000	\$ 258,100.00	\$ 26,455.25	\$ 284,555.25
5	Cast in place 6' avg height retaining wall (incl. excavation and backfill) - echo block wall	SF LF	\$ 45 374.00	2,700	\$ 168,300.00	\$ 17,250.75	\$ 185,550.75
6	Erosion and Sediment Control	%	10% 15%	1	\$ 320,293.80	\$ 32,830.11	\$ 353,123.91
7	Mobilization & General Conditions (GC's)	%	10% 15%	1	\$ 368,337.87	\$ 37,754.63	\$ 406,092.50
	TOTAL				\$ 2,823,923.67	\$ 289,452.18	\$ 3,113,375.85
<b>Cemetery</b>							
1	XXXXX						
	TOTAL						
<b>Project Total</b>					\$ 10,586,298.23	\$ 1,085,095.57	\$ 11,671,393.80

more visible so use Echo Block w/ Arch finish

perhaps this should be an Athletic Field cost, or at least shared?



**Project Info:**

**Project Name:** WA 02 - Fort Lawton Project Support Services  
**Owner:** Seattle Public Utilities  
**Date:** 12/1/2022  
**Project PM:** Erik Davido & Ben Iddins  
**Description:** This On-site Earthwork estimates calculate earthwork associated with the infiltration vault.

Earth Work and Interior Road Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Excavation for storm vault	CY	\$ 14.00	2,667	\$ 37,333.33	\$ 4,126.67	\$ 41,160.00
2	Soil haul and dispose	CY	\$ 68.00	1,778	\$ 120,888.89	\$ 13,391.11	\$ 133,280.00
3	Surfacing/asphalt over detention vault	SF	\$ 30.00	6,300	\$ 189,000.00	\$ 19,372.50	\$ 208,372.50
4	Erosion and Sediment Control	%	15%	1	\$ 52,083.33	\$ 5,338.54	\$ 57,421.88
5	Mobilization	%	15%	1	\$ 59,201.39	\$ 6,139.32	\$ 66,035.16
	TOTAL				\$ 409,201.39	\$ 47,068.14	\$ 506,269.53
<b>Affordable Housing</b>							
1	Site cut (incl. truck loading)	CY	\$ 25.00	23,810	\$ 595,250.00	\$ 61,013.13	\$ 656,263.13
2	Site fill (incl. compaction)	CY	\$ 18.00	8,078	\$ 145,494.00	\$ 14,913.14	\$ 160,407.14
3	Soil haul and dispose	CY	\$ 68.00	15,727	\$ 1,069,436.00	\$ 109,617.19	\$ 1,179,053.19
4	Grading and contouring	SF	\$ 1.00	311,000	\$ 311,000.00	\$ 31,877.50	\$ 342,877.50
5	Cast in place 10' avg height retaining wall (incl. excavation and backfill)	LF	\$ 374.00	450	\$ 168,300.00	\$ 17,222.10	\$ 351,962.10
6	Roadway improvement (interior road)					\$ 62,320.00	\$ 670,320.00
7	Erosion and Sediment Control	%	15%	1	\$ 320,292.50	\$ 32,869.46	\$ 504,132.46
8	Mobilization	%	15%	1	\$ 368,337.83	\$ 37,899.88	\$ 579,752.33
	TOTAL				\$ 4,031,535.45	\$ 413,232.38	\$ 4,444,767.83
<b>Multi-purpose Athletic Field</b>							
1	Site cut (incl. truck loading)	CY	\$ 25.00	18,736	\$ 468,600.00	\$ 48,031.50	\$ 516,631.50
2	Site fill (incl. compaction)	CY	\$ 18.00	7,077	\$ 12,348.00	\$ 1,265.67	\$ 13,613.67
3	Soil haul and dispose	CY	\$ 68.00	18,058	\$ 1,227,944.00	\$ 125,864.26	\$ 1,353,808.26
4	Grading and contouring	SF	\$ 1.00	258,100	\$ 258,100.00	\$ 26,455.25	\$ 284,555.25
5	Cast in place 6' avg height retaining wall (incl. excavation and backfill)	LF	\$ 374.00	450	\$ 168,300.00	\$ 17,250.75	\$ 185,550.75
6	Erosion and Sediment Control	%	15%	1	\$ 320,292.50	\$ 32,830.11	\$ 353,123.91
7	Mobilization	%	15%	1	\$ 368,337.83	\$ 37,754.63	\$ 406,092.50
	TOTAL				\$ 2,823,923.67	\$ 284,521.18	\$ 3,113,375.85
<b>Cemetery</b>							
1	XXXX						
	TOTAL						
<b>Project Total</b>					\$ 7,314,660.51	\$ 749,752.70	\$ 8,064,413.21

Infiltration feasibility is questionable. As the less costly alternative, it is ruled out for estimating conservatism at this time. Infiltration feasibility may be investigated as a ecological benefit and value engineering add at a later phase of study.

**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins**Description:** This storm option proposes no infiltration. A detention vault is used for flow control with non-infiltrating bioretention planters used for on-site stormwater management.

This should be 1.2% of treated area, which in this case should just be the internal roadway, assuming vertical construction will provide it's own OSM compliance. Using 1,900 LF of roadway @50ft width for area to be mitigated.

Storm Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Remove drain pipe incl. excavation	LS	\$ 1,020.00	1	\$ 1,020.00	\$ 104.55	\$ 1,124.55
2	Remove structure (CB/MH) incl. haul	LS	\$ 624.00	1	\$ 624.00	\$ 63.96	\$ 687.96
3	Type 2 catch basin (8' depth) incl. excavation and backfill	EA	\$ 4,539.00	2	\$ 9,078.00	\$ 930.50	\$ 10,008.50
4	18" PVC inc. trench and backfill	LF	\$ 110.00	275	\$ 30,250.00	\$ 3,100.63	\$ 33,350.63
5	Stormwater detention vault (excl. excavation)	CF	\$ 13.00	64,000	\$ 832,000.00	\$ 85,280.00	\$ 917,280.00
6	Connect to existing MH	LS	\$ 3,000.00	1	\$ 3,000.00	\$ 307.50	\$ 3,307.50
7	Erosion and Sediment Control	%	10% <del>15%</del>	1	\$ 131,395.80	\$ 13,468.07	\$ 144,863.87
8	Mobilization & General Conditions (GC's)	%	10% <del>15%</del>	1	\$ 151,105.17	\$ 15,488.28	\$ 166,593.45
	TOTAL				\$ 1,158,472.97	\$ 118,743.48	\$ 1,277,216.45
<b>Affordable Housing</b>							
1	Remove drain pipe incl. excavation	LS	\$ 68,000.00	1	\$ 68,000.00	\$ 6,970.00	\$ 74,970.00
2	Remove structure (CB/MH) incl. haul	LS	\$ 18,096.00	1	\$ 18,096.00	\$ 1,854.84	\$ 19,950.84
3	Adjust ex utility to finished grade	EA	\$ 450.00	2	\$ 900.00	\$ 92.25	\$ 992.25
4	Type 1 catch basin (4' depth) incl. excavation and backfill	EA	\$ 2,590.00	22	\$ 56,980.00	\$ 5,840.45	\$ 62,820.45
5	6" PVC incl. trench and backfill	LF	\$ 30.00	5,840	\$ 175,200.00	\$ 17,958.00	\$ 193,158.00
6	12" PVC inc. trench and backfill	LF	\$ 85.00	1,260	\$ 107,100.00	\$ 10,977.75	\$ 118,077.75
7	18" PVC inc. trench and backfill	LF	\$ 110.00	590	\$ 64,900.00	\$ 6,652.25	\$ 71,552.25
8	6" cleanout w/ associated bends and install	EA	\$ 450.00	90	\$ 40,500.00	\$ 4,151.25	\$ 44,651.25
9	Area drain incl. excavation and backfill	EA	\$ 800.00	40	\$ 32,000.00	\$ 3,280.00	\$ 35,280.00
10	Non-infiltrating bioretention planter	SF	\$ 230.00	5,740	\$ 1,246,600.00	\$ 127,776.50	\$ 1,374,376.50
11	Erosion and Sediment Control	%	10% <del>15%</del>	1	\$ 271,541.40	\$ 27,832.99	\$ 299,374.39
12	Mobilization & General Conditions (GC's)	%	10% <del>15%</del>	1	\$ 312,272.61	\$ 32,007.94	\$ 344,280.55
	TOTAL				\$ 2,394,090.01	\$ 245,394.23	\$ 2,639,484.24
<b>Multi-purpose Athletic Field</b>							
1	Remove drain pipe incl. excavation	LS	\$ 27,540.00	1	\$ 27,540.00	\$ 2,822.85	\$ 30,362.85
2	Remove structure (CB/MH) incl. haul	LS	\$ 7,488.00	1	\$ 7,488.00	\$ 767.52	\$ 8,255.52
3	Adjust ex utility to finished grade	EA	\$ 450.00	2	\$ 900.00	\$ 92.25	\$ 992.25
4	Type 1 catch basin (4' depth) incl. excavation and backfill	EA	\$ 2,590.00	4	\$ 10,360.00	\$ 1,061.90	\$ 11,421.90
5	Type 2 catch basin (8' depth) incl. excavation and backfill	EA	\$ 4,539.00	1	\$ 4,539.00	\$ 465.25	\$ 5,004.25
6	12" PVC inc. trench and backfill	LF	\$ 85.00	500	\$ 42,500.00	\$ 4,356.25	\$ 46,856.25
7	Erosion and Sediment Control	%	10% <del>15%</del>	1	\$ 13,999.05	\$ 1,434.90	\$ 15,433.95
8	Mobilization & General Conditions (GC's)	%	10% <del>15%</del>	1	\$ 16,098.91	\$ 1,650.14	\$ 17,749.05
	TOTAL				\$ 123,424.96	\$ 12,651.06	\$ 136,076.02
<b>Cemetery</b>							
1	XXXXX						
	TOTAL				\$ -	\$ -	\$ -
<b>Project Total</b>					\$ 3,675,987.94	\$ 376,788.76	\$ 4,052,776.70

**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins

**Description:** This storm option proposes infiltration. An infiltrating detention vault is used for flow control with permeable pavement surfacing used for all walkways/sidewalks in the affordable housing area for on-site stormwater management.

Storm Items - Cost Estimate							
Item no	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Remove drain pipe incl. excavation	LS	\$ 1,020.00	1	\$ 1,020.00	\$ 100.00	\$ 1,124.55
2	Remove structure (CB/MH) incl. haul	LS	\$ 624.00	1	\$ 624.00	\$ 60.96	\$ 687.96
3	Type 2 catch basin (8' depth) incl. excavation and backfill	EA	\$ 4,539.00	2	\$ 9,078.00	\$ 850.50	\$ 10,008.50
4	Storm sedimentation/pretreatment facility	EA	\$ 100,000.00	1	\$ 100,000.00	\$ 10,250.00	\$ 110,250.00
5	18" PVC incl. trench and backfill	LF	\$ 110.00	275	\$ 30,250.00	\$ 3,100.63	\$ 33,350.63
6	Infiltrating stormwater detention vault (excl. excavation)	CF	\$ 11.70	48,000	\$ 561,600.00	\$ 57,564.00	\$ 619,164.00
7	Connect to existing main	LS	\$ 3,000.00	1	\$ 3,000.00	\$ 307.50	\$ 3,307.50
8	Erosion and Sediment Control	%	15%	1	\$ 1,711.17	\$ 10,848.17	\$ 116,683.97
9	Mobilization	%	15%	1	\$ 1,711.17	\$ 12,475.39	\$ 134,186.56
	TOTAL				\$ 933,118.97	\$ 95,644.69	\$ 1,028,763.66
<b>Affordable Housing</b>							
1	Remove drain pipe incl. excavation	LS	\$ 68,000.00	1	\$ 68,000.00	\$ 6,970.00	\$ 74,970.00
2	Remove structure (CB/MH) incl. haul	LS	\$ 18,096.00	1	\$ 18,096.00	\$ 1,854.84	\$ 19,950.84
3	Adjust ex utility to finished grade	EA	\$ 450.00	2	\$ 900.00	\$ 92.25	\$ 992.25
4	Type 1 catch basin (4' depth) incl. excavation and backfill	EA	\$ 2,590.00	22	\$ 56,980.00	\$ 5,840.45	\$ 62,820.45
5	6" PVC incl. trench and backfill	LF	\$ 425.00	40	\$ 17,000.00	\$ 1,795.80	\$ 18,795.80
6	12" PVC incl. trench and backfill	LF	\$ 1,675.00	60	\$ 100,500.00	\$ 10,977.75	\$ 111,477.75
7	18" PVC incl. trench and backfill	LF	\$ 64,900.00	90	\$ 5,841,000.00	\$ 6,652.25	\$ 5,847,652.25
8	6" cleanout w/ associated bends and	LF	\$ 40,500.00	90	\$ 3,645,000.00	\$ 4,151.25	\$ 3,649,151.25
9	Area drain incl. excavation and backfill	EA	\$ 32,000.00	40	\$ 1,280,000.00	\$ 3,280.00	\$ 1,283,280.00
10	Permeable surfacing incl. aggregate and	EA	\$ 2,145,000.00	900	\$ 1,930,500.00	\$ 219,862.50	\$ 2,150,362.50
11	Erosion and Sediment Control	%	15%	1	\$ 406,301.40	\$ 41,645.89	\$ 447,947.29
12	Mobilization	%	15%	1	\$ 467,246.61	\$ 47,892.78	\$ 515,139.39
	TOTAL				\$ 3,582,224.01	\$ 367,177.96	\$ 3,949,401.97
<b>Multi-purpose Athletic Field</b>							
1	Remove drain pipe incl. excavation	LS	\$ 27,540.00	1	\$ 27,540.00	\$ 2,822.85	\$ 30,362.85
2	Remove structure (CB/MH) incl. haul	LS	\$ 7,488.00	1	\$ 7,488.00	\$ 767.52	\$ 8,255.52
3	Adjust ex utility to finished grade	EA	\$ 450.00	2	\$ 900.00	\$ 92.25	\$ 992.25
4	Type 1 catch basin (4' depth) incl. excavation and backfill	EA	\$ 2,590.00	4	\$ 10,360.00	\$ 1,061.90	\$ 11,421.90
5	Type 2 catch basin (8' depth) incl. excavation and backfill	EA	\$ 4,539.00	1	\$ 4,539.00	\$ 465.25	\$ 5,004.25
6	12" PVC incl. trench and backfill	LF	\$ 85.00	500	\$ 42,500.00	\$ 4,356.25	\$ 46,856.25
7	Erosion and Sediment Control	%	15%	1	\$ 16,050.00	\$ 1,434.90	\$ 17,484.90
8	Mobilization	%	15%	1	\$ 16,050.00	\$ 1,650.14	\$ 17,749.05
	TOTAL				\$ 123,424.96	\$ 12,651.06	\$ 136,076.02
<b>Cemetery</b>							
1	XXXX						
	TOTAL				\$ -	\$ -	\$ -
<b>Project Total</b>					\$ 4,638,767.94	\$ 475,473.71	\$ 5,114,241.65

Infiltration feasibility is questionable and we assumed permeable pavement in our revised interior road estimate already.

**Project Info:**

**Project Name:** WA 02 - Fort Lawton Project Support Services  
**Owner:** Seattle Public Utilities  
**Date:** 12/1/2022  
**Project PM:** Erik Davido & Ben Iddins  
**Description:** This water option assumes the reuse of existing 12" water main pipe between near the affordable housing area and the multi-purpose athletic field.

All 12" main here is for new service to the VA Site which is not part of the Ft. Lawton acquisition. We have kept these costs, but question whether they should be included

Water Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	455	\$ 16,380.00	\$ 1,678.95	\$ 18,058.95
2	Remove fire hydrant excl. haul	EA	\$ 818.00	2	\$ 1,636.00	\$ 167.69	\$ 1,803.69
3	8" water main incl. trench and backfill	LF	\$ 135.00	170	\$ 22,950.00	\$ 2,352.38	\$ 25,302.38
4	12" water main incl. trench and backfill	LF	\$ 210.00	950	\$ 199,500.00	\$ 20,448.75	\$ 219,948.75
5	Fire hydrant (fittings and assembly)	EA	\$ 7,050.00	1	\$ 7,050.00	\$ 722.63	\$ 7,772.63
6	8" gate valve	EA	\$ 4,340.00	1	\$ 4,340.00	\$ 444.85	\$ 4,784.85
7	Thrust block (8" dia)	EA	\$ 125.00	5	\$ 625.00	\$ 64.06	\$ 689.06
8	8" water main tee fitting	EA	\$ 1,466.00	1	\$ 1,466.00	\$ 150.27	\$ 1,616.27
9	8" 45 or 90 degree bend fitting	EA	\$ 880.00	2	\$ 1,760.00	\$ 180.40	\$ 1,940.40
10	12" water main tee fitting	EA	\$ 2,932.00	1	\$ 2,932.00	\$ 300.53	\$ 3,232.53
11	12" 45 or 90 degree bend fitting	EA	\$ 1,700.00	1	\$ 1,700.00	\$ 174.25	\$ 1,874.25
12	Water meter (8" combo)	EA	\$ 28,000.00	1	\$ 28,000.00	\$ 2,870.00	\$ 30,870.00
13	Connect to existing service	EA	\$ 2,000.00	1	\$ 2,000.00	\$ 205.00	\$ 2,205.00
14	Thrust block (12" dia)	EA	\$ 250.00	5	\$ 1,250.00	\$ 128.13	\$ 1,378.13
15	Mobilization & General Conditions (GC's)	%	10% <sup>15%</sup>	1	\$ 43,738.35	\$ 4,483.18	\$ 48,221.53
	TOTAL				\$ 335,327.35	\$ 34,371.05	\$ 369,698.40
<b>Affordable Housing</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	590	\$ 21,240.00	\$ 2,177.10	\$ 23,417.10
2	Remove fire hydrant excl. haul	EA	\$ 818.00	2	\$ 1,636.00	\$ 167.69	\$ 1,803.69
3	1-2" water service incl. trench and backfill	LF	\$ 67.50	2,000	\$ 135,000.00	\$ 13,837.50	\$ 148,837.50
4	Water meter (1")	EA	\$ 640.00	152	\$ 97,280.00	\$ 9,971.20	\$ 107,251.20
5	8" water main incl. trench and backfill	LF	\$ 135.00	1,250	\$ 168,750.00	\$ 17,296.88	\$ 186,046.88
6	12" water main incl. trench and backfill	LF	\$ 210.00	550	\$ 115,500.00	\$ 11,838.75	\$ 127,338.75
7	Fire hydrant (fittings and assembly)	EA	\$ 7,050.00	6	\$ 42,300.00	\$ 4,335.75	\$ 46,635.75
8	8" gate valve	EA	\$ 4,340.00	4	\$ 17,360.00	\$ 1,779.40	\$ 19,139.40
9	Thrust block (8" dia)	EA	\$ 125.00	8	\$ 1,000.00	\$ 102.50	\$ 1,102.50
10	8" water main tee fitting	EA	\$ 1,466.00	1	\$ 1,466.00	\$ 150.27	\$ 1,616.27
11	8" 45 or 90 degree bend fitting	EA	\$ 880.00	4	\$ 3,520.00	\$ 360.80	\$ 3,880.80
12	12" gate valve	EA	\$ 10,083.00	11	\$ 110,913.00	\$ 11,368.58	\$ 122,281.58
13	Thrust block (12" dia)	EA	\$ 250.00	17	\$ 4,250.00	\$ 435.63	\$ 4,685.63
14	12" water main tee fitting	EA	\$ 2,932.00	8	\$ 23,456.00	\$ 2,404.24	\$ 25,860.24
15	12" 45 or 90 degree bend fitting	EA	\$ 1,700.00	3	\$ 5,100.00	\$ 522.75	\$ 5,622.75
16	Water meter (8" combo) - VA building	EA	\$ 28,000.00	1	\$ 28,000.00	\$ 2,870.00	\$ 30,870.00
17	Water meter (8" combo)	EA	\$ 28,000.00	1	\$ 28,000.00	\$ 2,870.00	\$ 30,870.00
18	Connect to existing service	EA	\$ 2,000.00	3	\$ 6,000.00	\$ 615.00	\$ 6,615.00
19	Mobilization & General Conditions (GC's)	%	10% <sup>15%</sup>	1	\$ 121,615.65	\$ 12,465.60	\$ 134,081.25
	TOTAL (Reuse existing 12" Option)				\$ 932,386.65	\$ 95,569.63	\$ 1,027,956.28
<b>Multi-purpose Athletic Field</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	1,100	\$ 39,600.00	\$ 4,059.00	\$ 43,659.00
2	Remove fire hydrant excl. haul	EA	\$ 818.00	1	\$ 818.00	\$ 83.85	\$ 901.85
3	Remove/abandon ex pump station	LS	\$ 50,000.00	1	\$ 50,000.00	\$ 5,125.00	\$ 55,125.00
4	8" water main incl. trench and backfill	LF	\$ 135.00	580	\$ 78,300.00	\$ 8,025.75	\$ 86,325.75
5	Fire hydrant (fittings and assembly)	EA	\$ 7,050.00	3	\$ 21,150.00	\$ 2,167.88	\$ 23,317.88
6	8" gate valve	EA	\$ 4,340.00	2	\$ 8,680.00	\$ 889.70	\$ 9,569.70
7	Thrust block (8" dia)	EA	\$ 125.00	3	\$ 375.00	\$ 38.44	\$ 413.44
8	8" water main tee fitting	EA	\$ 1,466.00	1	\$ 1,466.00	\$ 150.27	\$ 1,616.27
9	8" 45 or 90 degree bend fitting	EA	\$ 880.00	0	\$ -	\$ -	\$ -
10	12" gate valve	EA	\$ 10,083.00	1	\$ 10,083.00	\$ 1,033.51	\$ 11,116.51
11	Thrust block (12" dia)	EA	\$ 250.00	1	\$ 250.00	\$ 25.63	\$ 275.63
12	Mobilization & General Conditions (GC's)	%	10% <sup>15%</sup>	1	\$ 31,608.30	\$ 3,239.85	\$ 34,848.15
	TOTAL				\$ 242,330.30	\$ 24,838.86	\$ 267,169.16
<b>Cemetery</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	160	\$ 5,760.00	\$ 590.40	\$ 6,350.40
2	Remove fire hydrant excl. haul	EA	\$ 818.00	1	\$ 818.00	\$ 83.85	\$ 901.85
3	Mobilization	%	15%	1	\$ 986.70	\$ 101.14	\$ 1,087.84
	TOTAL				\$ 7,564.70	\$ 775.38	\$ 8,340.08
<b>Project Total</b>					\$ 1,517,609.00	\$ 155,554.92	\$ 1,673,163.92

It's not clear that this work is actually necessary, but left in for now



**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins**Description:** This water option assumes new water main pipe throughout the site.

Water Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	455	\$ 16,380.00	\$ 1,678.95	\$ 18,058.95
2	Remove fire hydrant excl. haul	EA	\$ 818.00	2	\$ 1,636.00	\$ 167.69	\$ 1,803.69
3	8" water main incl. trench and backfill	LF	\$ 135.00	170	\$ 22,950.00	\$ 2,352.38	\$ 25,302.38
4	12" water main incl. trench and backfill	LF	\$ 210.00	950	\$ 199,500.00	\$ 20,448.75	\$ 219,948.75
5	Fire hydrant (fittings and assembly)	EA	\$ 7,050.00	1	\$ 7,050.00	\$ 722.63	\$ 7,772.63
6	8" gate valve	EA	\$ 4,340.00	1	\$ 4,340.00	\$ 444.85	\$ 4,784.85
7	Thrust block (8" dia)	EA	\$ 125.00	5	\$ 625.00	\$ 64.06	\$ 689.06
8	8" water main tee fitting	EA	\$ 1,466.00	1	\$ 1,466.00	\$ 150.27	\$ 1,616.27
9	8" 45 or 90 degree bend fitting	EA	\$ 880.00	2	\$ 1,760.00	\$ 180.40	\$ 1,940.40
10	12" water main tee fitting	EA	\$ 2,932.00	1	\$ 2,932.00	\$ 300.53	\$ 3,232.53
11	12" 45 or 90 degree bend fitting	EA	\$ 1,700.00	1	\$ 1,700.00	\$ 174.25	\$ 1,874.25
12	Water meter (8" combo)	EA	\$ 28,000.00	1	\$ 28,000.00	\$ 2,870.00	\$ 30,870.00
13	Connect to existing service	EA	\$ 2,000.00	1	\$ 2,000.00	\$ 205.00	\$ 2,205.00
14	Thrust block (12" dia)	EA	\$ 250.00	5	\$ 1,250.00	\$ 128.13	\$ 1,378.13
15	Mobilization	%	15%	1	\$ 43,738.35	\$ 4,483.18	\$ 48,221.53
	TOTAL				\$ 335,327.00	\$ 34,371.05	\$ 369,698.40
<b>Affordable Housing</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	1,020	\$ 36,720.00	\$ 3,763.80	\$ 40,483.80
2	Remove fire hydrant excl. haul	EA	\$ 818.00	2	\$ 1,636.00	\$ 167.69	\$ 1,803.69
3	1-2" water service incl. trench and backfill	LF	\$ 67.50	2,000	\$ 135,000.00	\$ 13,837.50	\$ 148,837.50
4	Water meter (1")	EA			\$ 97,280.00	\$ 9,971.20	\$ 107,251.20
5	8" water main incl. trench and backfill	LF	\$ 135.00	1,020	\$ 138,600.00	\$ 14,296.88	\$ 152,896.88
6	12" water main incl. trench and backfill	LF	\$ 210.00	1,020	\$ 214,200.00	\$ 21,894.50	\$ 236,094.50
7	Fire hydrant (fittings and assembly)	EA	\$ 7,050.00	1	\$ 7,050.00	\$ 722.63	\$ 7,772.63
8	8" gate valve	EA	\$ 4,340.00	1	\$ 4,340.00	\$ 444.85	\$ 4,784.85
9	Thrust block (8" dia)	EA	\$ 125.00	1,000	\$ 125,000.00	\$ 12,800.00	\$ 137,800.00
10	8" water main tee fitting	EA	\$ 1,466.00	1	\$ 1,466.00	\$ 150.27	\$ 1,616.27
11	8" 45 or 90 degree bend fitting	EA	\$ 880.00	3,520	\$ 3,097,600.00	\$ 315,200.00	\$ 3,412,800.00
12	12" gate valve	EA	\$ 10,083.00	11	\$ 110,913.00	\$ 11,368.58	\$ 122,281.58
13	Thrust block (12" dia)	EA	\$ 250.00	4,250	\$ 1,062,500.00	\$ 108,625.00	\$ 1,171,125.00
14	12" water main tee fitting	EA	\$ 2,932.00	23,456	\$ 69,100,320.00	\$ 7,100,000.00	\$ 76,200,320.00
15	12" 45 or 90 degree bend fitting	EA	\$ 880.00	5,100	\$ 4,497,000.00	\$ 461,250.00	\$ 4,958,250.00
16	Water meter (8" combo) - VA building	EA	\$ 28,000.00	1	\$ 28,000.00	\$ 2,870.00	\$ 30,870.00
17	Water meter (8" combo)	EA	\$ 28,000.00	1	\$ 28,000.00	\$ 2,870.00	\$ 30,870.00
18	Connect to existing service	EA	\$ 2,000.00	1	\$ 2,000.00	\$ 205.00	\$ 2,205.00
19	Mobilization	%	15%	1	\$ 136,882.65	\$ 14,030.47	\$ 150,913.12
	TOTAL (New 12" Option)				\$ 1,062,500.00	\$ 107,566.95	\$ 1,170,066.95
<b>Multi-purpose Athletic Field</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	1,100	\$ 39,600.00	\$ 4,059.00	\$ 43,659.00
2	Remove fire hydrant excl. haul	EA	\$ 818.00	1	\$ 818.00	\$ 83.85	\$ 901.85
3	Remove/abandon pump station	LS	\$ 100,000.00	1	\$ 100,000.00	\$ 10,250.00	\$ 110,250.00
4	8" water main incl. trench and backfill	LF	\$ 135.00	580	\$ 78,300.00	\$ 8,056.75	\$ 86,356.75
5	Fire hydrant (fittings and assembly)	EA	\$ 7,050.00	3	\$ 21,150.00	\$ 2,178.38	\$ 23,328.38
6	8" gate valve	EA	\$ 4,340.00	2	\$ 8,680.00	\$ 885.00	\$ 9,565.00
7	Thrust block (8" dia)	EA	\$ 125.00	3	\$ 375.00	\$ 38.44	\$ 413.44
8	8" water main tee fitting	EA	\$ 1,466.00	1	\$ 1,466.00	\$ 150.27	\$ 1,616.27
9	8" 45 or 90 degree bend fitting	EA	\$ 880.00	0	\$ -	\$ -	\$ -
10	12" gate valve	EA	\$ 10,083.00	1	\$ 10,083.00	\$ 1,033.51	\$ 11,116.51
11	Thrust block (12" dia)	EA	\$ 250.00	1	\$ 250.00	\$ 25.63	\$ 275.63
	Mobilization	%	15%	1	\$ 39,108.30	\$ 4,008.60	\$ 43,116.90
	TOTAL				\$ 299,830.30	\$ 30,732.61	\$ 330,562.91
<b>Cemetery</b>							
1	Remove water main incl. trench and backfill	LF	\$ 36.00	160	\$ 5,760.00	\$ 590.40	\$ 6,350.40
2	Remove fire hydrant excl. haul	EA	\$ 818.00	1	\$ 818.00	\$ 83.85	\$ 901.85
3	Mobilization	%	15%	1	\$ 986.70	\$ 101.14	\$ 1,087.84
	TOTAL				\$ 7,564.70	\$ 775.38	\$ 8,340.08
<b>Project Total</b>					\$ 1,692,156.00	\$ 173,445.99	\$ 1,865,601.99

This alternative is dropped on the assumption that the 2019 Development Plan will be able to make very small adjustments to the south private road alignment to solve tree conflicts with the main that can be re-used.

**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins

**Description:** This sewer option proposes to reline existing service pipes and reuse existing maintenance holes to the maximum extent feasible. Additionally, the shortest amount of sewer main is extended under the roads and service laterals are "spaghettied". Sewer and storm drainage from the site will be combined at the northern property line (and existing 8" service abandoned) and collectively drain to the combined sewer via a new relined pipe.

Sewer Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>Maintenance Building</b>							
1	Abandon sewer pipe	LS	\$ 10,200.00	1	\$ 10,200.00	\$ 1,045.50	\$ 11,245.50
2	Maintenance hole (8' depth)					\$ 927.80	\$ 10,054.80
3	8" PVC incl. trench and backfill					\$ 123.00	\$ 1,323.00
4	8" pipe lining (incl. video)					\$ 12,842.23	\$ 138,132.23
5	18" pipe lining (incl. video)					\$ 6,918.75	\$ 74,418.75
6	Sewer Bypass					\$ 7,687.50	\$ 82,687.50
7	Maintenance hole incl. excavation					-	\$ 20,000.00
8	Mobilization					\$ 4,740.27	\$ 50,986.77
	<b>TOTAL</b>				\$ 354,556.50	\$ 34,292.04	\$ 388,848.54
<b>Affordable Housing</b>							
1	Remove sewer pipe incl. excavation	LS	\$ 49,470.00	1	\$ 49,470.00	\$ 5,070.68	\$ 54,540.68
2	Remove structure (MH) incl. haul	LS	\$ 1,248.00	1	\$ 1,248.00	\$ 127.92	\$ 1,375.92
3	Maintenance hole (8' depth) incl. excavation and backfill	EA	\$ 4,560.00	8	\$ 36,480.00	\$ 3,739.20	\$ 40,219.20
4	6" PVC incl. trench and backfill	LF	\$ 40.00	3,910	\$ 156,400.00	\$ 16,031.00	\$ 172,431.00
5	8" PVC incl. trench and backfill	LF	\$ 80.00	2,000	\$ 120,000.00	\$ 12,300.00	\$ 132,300.00
6	6" cleanout w/ associated bends and install	EA	\$ 500.00	70	\$ 35,000.00	\$ 3,587.50	\$ 38,587.50
7	Sewer Bypass	LS	\$ 75,000.00	1	\$ 75,000.00	\$ 7,687.50	\$ 82,687.50
8	Mobilization & General Conditions (GC's)	%	10% 15%	1	\$ 71,039.70	\$ 7,281.57	\$ 78,321.27
	<b>TOTAL</b>				\$ 544,637.70	\$ 55,825.36	\$ 600,463.06
<b>Multi-purpose Athletic Field</b>							
1	Remove sewer pipe incl. excavation	LS	\$ 19,210.00	1	\$ 19,210.00	\$ 1,969.03	\$ 21,179.03
2	Remove structure (MH) incl. haul				\$ 1,872.00	\$ 191.88	\$ 2,063.88
3	Maintenance hole (8' depth) incl. excavation				\$ 12,680.00	\$ 1,402.20	\$ 15,082.20
4	8" PVC incl. trench and backfill				\$ 45,200.00	\$ 4,633.00	\$ 49,833.00
5	Sewer Bypass				\$ 75,000.00	\$ 7,687.50	\$ 82,687.50
6	Mobilization				\$ 23,244.30	\$ 2,382.54	\$ 25,626.84
	<b>TOTAL</b>				\$ 178,206.30	\$ 18,266.15	\$ 196,472.45
<b>Cemetery</b>							
1	XXXXX				\$ -	\$ -	\$ -
	<b>TOTAL</b>				\$ -	\$ -	\$ -
<b>Project Total</b>					\$ 1,077,400.50	\$ 108,383.55	\$ 1,185,784.05

This work is not necessary if the affordable housing development area is all routed to 36th. Based on discussions with SPU, this is feasible. We have added costs for a grinder pump for the SPR Maintenance Building

After discussion with SPU, and based on USACE as-built survey this work does not appear to be necessary.

Added to account for loss of connection from system improvements on Maintenance site, and for connection in 36th Ave W

**Project Name:** WA 02 - Fort Lawton Project Support Services  
**Owner:** Seattle Public Utilities  
**Date:** 12/1/2022  
**Project PM:** Erik Davido & Ben Iddins  
**Description:** This sewer option proposes all new 8" service pipes and new maintenance holes. Main locations in the roadway are more traditionally located. Sewer and storm drainage from the site will be combined at the northern property line (and existing 8" service abandoned) and collectively drain to the combined sewer via a new 18" to 24" pipe burst.

Sewer Items - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Total	Total
<b>Maintenance Building</b>							
1	Abandon sewer pipe	LS	\$ 10,200.00	1	\$ 10,200.00	\$ 11,045.50	\$ 11,245.50
2	Remove sewer pipe incl. excavation	LS	\$ 34,850.00	1	\$ 34,850.00	\$ 3,572.13	\$ 38,422.13
3	Remove structure (MH) incl. haul	LS	\$ 3,120.00	1	\$ 3,120.00	\$ 319.80	\$ 3,439.80
4	Maintenance hole (8' depth) incl. excavation and backfill	EA	\$ 4,560.00	8	\$ 36,480.00	\$ 3,739.20	\$ 40,219.20
5	8" PVC incl. trench and backfill	LF	\$ 80.00	1,200	\$ 96,000.00	\$ 9,840.00	\$ 105,840.00
6	18" to 24" pipe burst	LF	\$ 1,215.00	300	\$ 364,500.00	\$ 37,361.25	\$ 401,861.25
7	Sewer Bypass	LS	\$ 75,000.00	1	\$ 75,000.00	\$ 7,687.50	\$ 82,687.50
8	Maintenance hole incl. excavation, boring, backfill, and connection	LS	\$ 20,000.00	1	\$ 20,000.00	\$ -	\$ 20,000.00
9	Mobilization	%	15%	1	\$ 96,022.50	\$ 9,842.31	\$ 105,864.81
	TOTAL				\$ 736,172.50	\$ 73,407.68	\$ 809,580.18
<b>Affordable Housing</b>							
1	Remove sewer pipe incl. excavation	LS	\$ 35,870.00	1	\$ 35,870.00	\$ 5,070.68	\$ 54,540.68
2	Remove structure (MH) incl. haul	LS	\$ 1,872.00	1	\$ 1,872.00	\$ 191.88	\$ 2,063.88
3	Maintenance hole (8' depth) incl. excavation and backfill	EA	\$ 3,648.00	1	\$ 3,648.00	\$ 3,739.20	\$ 40,219.20
4	6" PVC incl. trench and backfill	LF	\$ 149,600.00	1	\$ 149,600.00	\$ 15,334.00	\$ 164,934.00
5	8" PVC incl. trench and backfill	LF	\$ 136,000.00	1	\$ 136,000.00	\$ 13,940.00	\$ 149,940.00
6	6" cleanout w/ associated bends and caps	LF	\$ 30,000.00	1	\$ 30,000.00	\$ 3,075.00	\$ 33,075.00
7	Sewer Bypass	LS	\$ 75,000.00	1	\$ 75,000.00	\$ 7,687.50	\$ 82,687.50
8	Mobilization	%	15%	1	\$ 71,763.30	\$ 7,355.74	\$ 79,119.04
	TOTAL				\$ 550,185.30	\$ 56,393.99	\$ 606,579.29
1	Remove sewer pipe incl. excavation	LS	\$ 35,870.00	1	\$ 35,870.00	\$ 3,676.68	\$ 39,546.68
2	Remove structure (MH) incl. haul	LS	\$ 2,496.00	1	\$ 2,496.00	\$ 255.84	\$ 2,751.84
3	Maintenance hole (8' depth) incl. excavation and backfill	EA	\$ 4,560.00	2	\$ 9,120.00	\$ 934.80	\$ 10,054.80
4	8" PVC incl. trench and backfill	LF	\$ 80.00	29	\$ 2,320.00	\$ 2,976.60	\$ 32,016.60
5	Sewer Bypass	LS	\$ 75,000.00	1	\$ 75,000.00	\$ 7,687.50	\$ 82,687.50
6	Mobilization	%	15%	1	\$ 22,728.90	\$ 2,329.71	\$ 25,058.61
	TOTAL				\$ 140,654.90	\$ 17,861.13	\$ 192,116.03
<b>Cemetery</b>							
1	XXXXX						
	TOTAL						
<b>Project Total</b>					\$ 1,460,612.70	\$ 147,662.80	\$ 1,608,275.50

The difference between the 2 sewer alternatives is simply the extents on system repair/replacement on the SPR Maintenance Facility site which is eliminated by the newly proposed connection to 36th

**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins**Description:** This ROW Improvements option assumes standard frontage improvements and that West Lawton St will remain as a dead end street; a cul-de-sac will be. The improvements at the dead end are assumed to be a typical cul-de-sac at the dead end.

ROW Improvements - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
<b>West Lawton St</b>							
1	Frontage improvements (remove ex. and install half street improvements)			140	\$ 1,710,000.00	\$0.00	\$ 1,710,000.00
2	ADA ramp (incl. install)			2	\$ 15,000.00	\$0.00	\$ 15,000.00
3	Right-of-way tree (2-1/2" - 3" cal.)			65	\$ 16,250.00	\$0.00	\$ 16,250.00
4	Erosion and Sediment Control			1	\$ 261,187.50	\$0.00	\$ 261,187.50
5	Mobilization			1	\$ 300,365.63	\$0.00	\$ 300,365.63
	<b>TOTAL</b>				\$ 2,302,803.13	\$ -	\$ 2,302,803.13
<b>36th Ave W</b>							
1	Frontage improvements (remove ex. and install half street improvements)				\$ 2,480,625.00	\$0.00	\$ 2,480,625.00
2	ADA ramp (incl. install)				\$ 150,000.00	\$0.00	\$ 150,000.00
3	Right-of-way tree (2-1/2" - 3" cal.)			0	\$ -	\$0.00	\$ -
4	Erosion and Sediment Control				\$ 394,593.75	\$0.00	\$ 394,593.75
5	Mobilization				\$ 453,782.81	\$0.00	\$ 453,782.81
	<b>TOTAL</b>				\$ 3,479,001.56	\$ -	\$ 3,479,001.56
<b>Texas Way</b>							
1	Roadway improvements (remove ex. and install full street improvements) incl. two retaining walls	LF	\$ 3,640.00	850	\$ 3,094,000.00	\$0.00	\$ 3,094,000.00
2	Roadway improvements (remove ex. and install full street improvements) incl. one retaining wall	LF	\$ 3,202.50	1,535	\$ 4,915,837.50	\$0.00	\$ 4,915,837.50
3	Roadway improvements (remove ex. and install full street improvements)			5	\$ 2,723,525.00	\$0.00	\$ 2,723,525.00
4	ADA ramp (incl. install)			0	\$ 225,000.00	\$0.00	\$ 225,000.00
5	Right-of-way tree (2-1/2" - 3" cal.)			7	\$ 84,250.00	\$0.00	\$ 84,250.00
6	Bus stop	EA	\$ 30,000.00	1	\$ 30,000.00	\$0.00	\$ 30,000.00
7	Erosion and Sediment Control	%	10% 15%	1	\$ 1,660,891.88	\$0.00	\$ 1,660,891.88
8	Mobilization & General Conditions (GC's)	%	10% 15%	1	\$ 1,910,025.66	\$0.00	\$ 1,910,025.66
	<b>TOTAL</b>				\$ 14,643,530.03	\$ -	\$ 14,643,530.03
<b>Project Total</b>					\$ 20,425,334.72	\$ -	\$ 20,425,334.72

Eliminated using LBA, or otherwise apply for ROW Exception based on ECA's and Tree Protection

Apply for ROW Exception based on tree canopy and buffer to neighborhood. 10-ft trail added.

See spreadsheet for alternative re-use approach with reduced scope



**Project Info:****Project Name:** WA 02 - Fort Lawton Project Support Services**Owner:** Seattle Public Utilities**Date:** 12/1/2022**Project PM:** Erik Davido & Ben Iddins**Description:** This ROW Improvements option assumes standard frontage improvements and that the West Lawton St will be connected through the existing dead end.

ROW Improvements - Cost Estimate							
Item no.	Item Description	Unit	Unit Price	Quantity	Item Cost	Total	Total
<b>West Lawton St</b>							
1	Frontage improvements (remove ex. and install half street improvements)	LF	\$ 1,500.00	1,140	\$ 1,710,000.00	\$0.00	\$ 1,710,000.00
2	Frontage improvements (remove ex. and install full street improvements)	LF	\$ 3,375.00	160	\$ 540,000.00	\$0.00	\$ 540,000.00
3	ADA ramp (incl. install)	EA	\$ 7,500.00	2	\$ 15,000.00	\$0.00	\$ 15,000.00
4	Right-of-way tree (2-1/2" - 3" cal.)	EA	\$ 250.00	65	\$ 16,250.00	\$0.00	\$ 16,250.00
5	Erosion and Sediment Control	%	15%		\$ 342,187.50	\$0.00	\$ 342,187.50
6	Mobilization	%	15%		\$ 393,515.63	\$0.00	\$ 393,515.63
	TOTAL (New Road)				\$ 3,016,953.13	\$ -	\$ 3,016,953.13
<b>36th Ave W</b>							
1	Frontage improvements (remove ex. and install half street improvements)	LF	\$ 1,500.00	2,450	\$ 3,675,000.00	\$0.00	\$ 3,675,000.00
2	ADA ramp (incl. install)	EA	\$ 7,500.00	20	\$ 150,000.00	\$0.00	\$ 150,000.00
3	Right-of-way tree (2-1/2" - 3" cal.)	EA	\$ 250.00	0	\$ 0.00	\$0.00	\$ 0.00
4	Erosion and Sediment Control	%	15%	1	\$ 394,593.75	\$0.00	\$ 394,593.75
5	Mobilization	%	15%	1	\$ 453,782.81	\$0.00	\$ 453,782.81
	TOTAL				\$ 3,479,001.56	\$ -	\$ 3,479,001.56
1	Roadway improvements (remove ex. and install half street improvements) incl. two retaining walls	LF	\$ 3,200.00	850	\$ 3,094,000.00	\$0.00	\$ 3,094,000.00
2	Roadway improvements (remove ex. and install full street improvements) incl. one retaining wall	LF	\$ 3,200.00	1,535	\$ 4,915,837.50	\$0.00	\$ 4,915,837.50
3	Roadway improvements (remove ex. and install full street improvements)	LF	\$ 2,765.00	985	\$ 2,723,525.00	\$0.00	\$ 2,723,525.00
4	ADA ramp (incl. install)	EA	\$ 7,500.00	30	\$ 225,000.00	\$0.00	\$ 225,000.00
5	Right-of-way tree (2-1/2" - 3" cal.)	EA	\$ 250.00	336	\$ 84,250.00	\$0.00	\$ 84,250.00
6	Bus stop	EA	\$ 30,000.00	1	\$ 30,000.00	\$0.00	\$ 30,000.00
7	Erosion and Sediment Control	%	15%	1	\$ 1,660,891.88	\$0.00	\$ 1,660,891.88
8	Mobilization	%	15%	1	\$ 1,910,025.66	\$0.00	\$ 1,910,025.66
	TOTAL				\$ 14,643,530.03	\$ -	\$ 14,643,530.03
<b>Project Total</b>					\$ 21,139,484.72	\$ -	\$ 21,139,484.72

The difference between the alternatives is the extents of work on W Lawton St, and it is our opinion that no improvements are necessary on W Lawton St

**Project Name:** FORT LAWTON DEVELOPMENT of LOW INCOME HOUSING  
**Project ID:** UG  
**Project Phase:** N/A  
**Project Manager:** PLANNING/BUDGETARY  
**Cost Estimator:** ALEX KARAKHANOV/Yonas Tesfamichael  
**Est. Reviewer(s):** ANDREW STRONG  
**Date:** 11/30/20

[illegible]

Construction Line Item Pricing	\$	10,628,432
Allowance for Indeterminates		25,000
Construction Bid Amount	\$	13,628,432
Sales Tax %		0.00%
Construction Contract Amount	\$	13,628,432

Last Revised: 11/4/22

## Construction Contract Amount Spreadsheet

FORT LAWTON DEVELOPMENT of LOW INCOME HOUSING

Project Name: OH  
 Project ID: N/A  
 Project Phase: PLANNING/BUDGETARY  
 Cost Estimator(s): ALEX KARAKHANOV  
 Est. Reviewer(s): ANDREW STRONG  
 Date: 11/30/2022

11/30/2022

Item	Bid Item	Bid Item Description	Quantity	Unit	Unit Price	Unit Price Extension
1	107005	SAFETY AND HEALTH PROGRAM	9.00	MO	\$ 2,740.00	\$ 24,660
2	107007	CONTRACTOR'S ON SITE ELECTRICAL LEAD	680.00	HR	\$ 160.00	\$ 108,800
3	109005	MOBILIZATION LARGE SIZE PROJECT-15% MAINTENANCE & PROTECTION OF TRAFFIC CONTROL INCLUDING FLAGGING	1.00	LS	\$ 769,107	\$ 769,107
4	110005	CRITICAL PATCH SCHEDULE UPDATE, MIN. BID=\$300 PER EACH	180.00	DAY	\$ 2,030.00	\$ 365,400
5	107101	UNIFORM POLICE OFFICER	8.00	MO	\$ 300.00	\$ 2,400
6	110020	UNIFORM POLICE OFFICER	240.00	HR	\$ 130.00	\$ 31,200
7	200102	CONSTRUCTION SURVEY (2 MAN CREW)	8.00	DAY	\$ 2,820.00	\$ 22,560
8	203010	DEMOLITION(STRUCTURES& SITE)	1.00	LS	\$ 85,000.00	\$ 85,000
9	202030	REMOVE ASPHALT PAVEMENT	100.00	SY	\$ 42.00	\$ 4,200
10	223100	Potholing Up to 7 FT Deep {QTY<=3 EA}	80.00	HR	\$ 1,260.00	\$ 100,800
11	202145	REMOVE CURB {QTY>100}	700.00	LF	\$ 25.00	\$ 17,500
12	202310	REMOVE Foundation, Street Light Pole {QTY >10}	10.00	EA	\$ 1,500.00	\$ 15,000
13	202395	REMOVE Light Poles	10.00	EA	\$ 500.00	\$ 5,000
14	202405	REMOVE Sign Post	5.00	EA	\$ 250.00	\$ 1,250
16	202330	REMOVE Handhole	10.00	EA	\$ 480.00	\$ 4,800
17	202290	REMOVE Electrical Vault (3'x2'x2'-8")	1.00	EA	\$ 5,340.00	\$ 5,340
18	202685	REMOVE/ SALVAGE Wiring, Street Lighting/Power	1,500.00	LF	\$ 15.00	\$ 22,500
19	202035	REMOVE CEMENT. CONCR. SIDEWALK {QTY >50}	100.00	SY	\$ 42.00	\$ 4,200
20	202692	REMOVE MID VOLTAGE BUCK BOOST TRANSFORMER (0.25-3KVA)	1.00	EA	\$ 2,100.00	\$ 2,100
21	202S01	PROTECT EXISTING TREE	30.00	EA	\$ 750.00	\$ 22,500
22	202S02	PROTECT EXISTING DRAIN	5.00	EA	\$ 2,500.00	\$ 12,500
23	208020	Dewatering - Pumping Water (2" Pump) to Baker Tank - Small Water Flow Capacity	60.00	DAY	\$ 2,660.00	\$ 159,600
24	310900	VIBRATION MONITORING (400 LF Pipe/Weekly)	15.00	WEEK	\$ 5,360.00	\$ 80,400
25	835S01	DEENERGIZE EXISTING DUCTBANK	1.00	LS	\$ 25,000.00	\$ 25,000
26	804005	CURB, CEM CONC {QTY >500LF}	1,200.00	LF	\$ 114.00	\$ 136,800
27	814005	SIDEWALK, CEM CONC {QTY>500 SY}	650.00	SY	\$ 190.00	\$ 123,500
28	814017	CURB RAMP -422 B{QTY >3}	4.00	EA	\$ 2,760.00	\$ 11,040
29	821030	POST, Traffic Sign {QTY >5EA}	10.00	EA	\$ 450.00	\$ 4,500
30	822004	PAVEMENT MARKING, Paint, 4 IN Stripe {QTY >200 LF}	1,500.00	LF	\$ 11.00	\$ 16,500
31	827020	SIGN, INSTALL PROJECT IDENTIFICATION, POST MOUNTED {Size-Large-8'x10'}	2.00	EA	\$ 2,150.00	\$ 4,300
32	832335	POLE, WOOD 55FT	34.00	EA	\$ 8,250.00	\$ 280,500
33	832545	FOUNDATION, STREET Light Pole {QTY >10EA}	34.00	EA	\$ 9,000.00	\$ 306,000
34	832S01	INSTALL CONDUCTOR/ADAPTER ASSEMBLY	1.00	LS	\$ 17,500.00	\$ 17,500
35	832S02	WD POLE DOUG FIR CL1	6.00	EA	\$ 7,850.00	\$ 47,100
36	832S03	INSTALL ARRESTER/CONNECTOR/TERMINAL ASSEMBLY	1.00	LS	\$ 21,000.00	\$ 21,000
37	832S04	CONTROL STREET LIGHT/LUMINAIRE	34.00	EA	\$ 1,850.00	\$ 62,900
38	832S05	INSTALL CARTIGE/CUTOUT/PLUG	1.00	LS	\$ 7,500.00	\$ 7,500
39	832S06	ELBOW/CROSSARM ASSEMBLY	1.00	LS	\$ 45,000.00	\$ 45,000
40	832S07	INSTALL INSULATOR ASSEMBLY	1.00	LS	\$ 6,500.00	\$ 6,500
41	832S08	INSTALL FUSE ASSEMBLY	1.00	LS	\$ 27,500.00	\$ 27,500
42	832S09	PRI UG WIRE, 28KV	1,800.00	LF	\$ 67.50	\$ 121,500
43	835S10	RE-ROUTE EXISTING DUCT BANK-CONCRETE ENCASED JACK AND BORE OR AIR SPADE OR DIRECTIONAL DRILLING, CONDUIT INSTALLATION INCLUDING PITS (Includes cost of launch/retrieval pits.) {QTY>700 LF}	1,000.00	LF	\$ 2,450.00	\$ 2,450,000
44	835S350	PRI OH WIRE/CBL,ACSR	4.00	EA	\$ 4,920.00	\$ 19,680
45	832S11	GROUND WIRE COOPER	1.00	LS	\$ 76,500.00	\$ 76,500
46	833S12	DISTRIBUTION PRIMARY/LOAD BREAK ASSEMBLY	1.00	EA	\$ 53,000.00	\$ 53,000
47	833S14	MISSCELANEOUS BOLTS//WASHER/ANCHORS/CLAMPS	1.00	EA	\$ 115,700.00	\$ 115,700
48	833S15	INSTALL ROD ACCESSORIES	1.00	LS	\$ 3,700.00	\$ 3,700
49	833S16	INSTALL DEAN GUY WIRE ASSEMBLY	1.00	LS	\$ 7,500.00	\$ 7,500
50	833S17	MISSCELANEOUS -SWITCH	1.00	LS	\$ 7,500.00	\$ 7,500
51	833S18	TAG/CLAMPS/BRACKETS/COUPLING	1.00	LS	\$ 4,250.00	\$ 4,250
52	832S05	CONDUIT PVC SCH40, 3 IN-5 IN	170.00	LF	\$ 25.00	\$ 4,250
53	832S06	CONDUIT RIGID STEEL 3-5IN	130.00	LF	\$ 140.00	\$ 18,200
54	830S01	PIPE WATER 2-1/IN SCH 40	50.00	LF	\$ 95.00	\$ 4,750
55	819006	DRIVEWAY, CEM CONC, 6 IN {QTY 50-100 SY}	350.00	SY	\$ 300.00	\$ 105,000
						\$ -
						\$ -
						\$ -
						\$ -

Construction Line Item Pricing \$ 6,001,487

Allowance for Indeterminates 25.00%

Construction Bid Amount \$ 7,501,859

Sales Tax % 0.00%

Construction Contract Amount \$ 7,501,859

Last Revised: 11/30/22

This number was carried forward without the "indeterminates" line item since contingency is added elsewhere, note that the 2022 Estimate adds ~10% to this w/out explanation. The 2023 Estimate uses this number.

Operations and Maintenance Summary	
Storm and sewer jet & vac	
1 vac truck, operator, and 2 laborers	\$ 2,185.00
# of days for conveyance system	5 d/yr
# of days for detention/infiltration vault	5 d/yr
Cost of vac truck work	\$ 21,850.00
1 flatbed truck and 2 laborers	\$ 1,650.00
# of days for non-infiltrating bioretention planters	5 d/yr
Cost of flatbed and laborer work	\$ 8,250.00
<b>Total cost (1-yr)</b>	<b>\$ 30,100.00</b>
Street sweeping	
1 road sweeper & vac assist, operator, and laborer	\$ 3,200.00
# of days for standard road	4 d/yr
# of days for permeable surfacing road & sidewalk	5 d/yr
<b>Total cost (1-yr)</b>	<b>\$ 28,800.00</b>
Water main flushing	
1 flatbed truck and 2 laborers	\$ 1,650.00
# of days/yr	5 d/yr
<b>Total cost (1-yr)</b>	<b>\$ 8,250.00</b>
<b>Total cost (1-yr)</b>	<b>\$ 67,150.00</b>

This was not part of the 2023 Analysis



# MEMO

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## EXHIBIT B - KPFF 2023 Opinion of Probable Cost

Project Name: Ft. Lawton Affordable Housing  
 Owner: Office of Housing  
 Date: 10/23/2023  
 Prepared by: Jeremy Febus, PE Katarina Kubiniec, PE

Opinion of Probable Cost - Summary						
Development Zone	On-Site Earthwork & Roads	Stormwater	Water	Sanitary Sewer	Road & Frontage	SCL Overhead
Maintenance Building	\$ 26,480.40	\$ 1,168,568.56	\$ 353,624.56	\$ 36,382.50	n/a	n/a
Affordable Housing	\$ 1,989,764.99	\$ 1,212,196.50	\$ 983,262.53	\$ 804,778.47	n/a	n/a
Multi-Purpose Athletic Field	\$ 345,138.95	\$ 124,500.49	\$ 255,553.11	\$ -	n/a	n/a
Cemetery	\$ -	\$ -	\$ 7,977.48	\$ -	n/a	n/a
	\$ 2,361,384.33	\$ 2,505,265.55	\$ 1,600,417.68	\$ 841,160.97	\$ 3,126,469.50	\$ 6,001,487.00

		Alternative 1		Alternative 2		Alternative 3	
			\$/Unit		\$/Unit		\$/Unit
			237		460		996
Hard Cost Subtotal		\$ 16,436,185.03	\$ 69,350.99	\$ 17,101,670.81	\$ 37,177.55	\$ 22,032,548.41	\$ 22,121.03
15%	Permit Fees	\$ 2,465,427.75		\$ 2,565,250.62		\$ 3,304,882.26	
25%	Design	\$ 4,109,046.26		\$ 4,275,417.70		\$ 5,508,137.10	
Hard & Soft Cost Subtotal		\$ 23,010,659.04	\$ 97,091.39	\$ 23,942,339.13	\$ 52,048.56	\$ 30,845,567.77	\$ 30,969.45
30%	Contingency	\$ 6,903,197.71		\$ 7,182,701.74		\$ 9,253,670.33	
Grand Total w/ Contingency		\$ 29,913,856.76	\$ 126,218.80	\$ 31,125,040.87	\$ 67,663.13	\$ 40,099,238.11	\$ 40,260.28
				All categories except ROW increased 5%		Water, Power, and Sanitary increased 46%, Stormwater increased 25%	

Project Name: Ft. Lawton Affordable Housing  
Owner: Office of Housing  
Date: 10/23/2023  
Prepared by: Jeremy Febus, PE Katarina Kubinieć, PE

Earthwork & Interior Road Items - Cost Opinion							
Item No.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
Maintenance Building							
1	Excavation for storm vault & haul to on-site fill	CY	\$ 5.00	3,370	\$ 16,850.00	\$ 1,727.13	\$ 18,577.13
2	Surfacing/asphalt patch over detention vault	SY	\$ 30.00	100	\$ 3,000.00	\$ 307.50	\$ 3,307.50
3	Erosion & Sediment Control	%	10%	1			\$ 2,188.46
4	Mobilization & General Conditions (GC's)	%	10%	1			\$ 2,407.31
	TOTAL				\$ 19,850.00	\$ 2,034.63	\$ 26,480.40
Affordable Housing							
1	Site cut and haul to fill on-site	CY	\$ 5.00	23,810	\$ 119,050.00	\$ 12,202.63	\$ 131,252.63
2	Grading & contouring	SY	\$ 1.50	35,000	\$ 52,500.00	\$ 5,381.25	\$ 57,881.25
3	Echo Block Wall	SF	\$ 40.00	4,600	\$ 184,000.00	\$ 18,860.00	\$ 202,860.00
4	Roadway Improvements (interior road)	LF	\$ 500.00	1,900	\$ 950,000.00	\$ 97,375.00	\$ 1,047,375.00
5	Parking Lot	SY	\$ 30.00	6,200	\$ 186,000.00	\$ 19,065.00	\$ 205,065.00
6	Erosion & Sediment Control	%	10%	1			\$ 164,443.39
7	Mobilization & General Conditions (GC's)	%	10%	1			\$ 180,887.73
	TOTAL				\$ 1,320,000.00	\$ 135,300.00	\$ 1,989,764.99
Multi-purpose Athletic Field							
1	Site cut and haul to fill on-site	CY	\$ 5.00	18,744	\$ 93,720.00	\$ 9,606.30	\$ 103,326.30
2	Grading & contouring	SY	\$ 1.50	29,000	\$ 43,500.00	\$ 4,458.75	\$ 47,958.75
3	Echo Block Wall (w/ Architectural Finish)	SF	\$ 45.00	2,700	\$ 121,500.00	\$ 12,453.75	\$ 133,953.75
4	Erosion & Sediment Control	%	10%	1			\$ 28,523.88
5	Mobilization & General Conditions (GC's)	%	10%	1			\$ 31,376.27
	TOTAL				\$ 258,720.00	\$ 26,518.80	\$ 345,138.95
Cemetery							
Project Total					\$ 1,618,420.00	\$ 165,888.05	\$ 2,361,384.33

Project Name: Ft. Lawton Affordable Housing  
 Owner: Office of Housing  
 Date: 10/23/2023  
 Prepared by: Jeremy Febus, PE Katarina Kubiniec, PE

Stom Drainage Items - Cost Opinion							
Item No.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
Maintenance Building							
1-6	Taken From DCG Estimate As-Is						\$ 965,759.14
7	Erosion & Sediment Control	%	10%	1			\$ 96,575.91
8	Mobilization & General Conditions (GC's)	%	10%	1			\$ 106,233.51
	TOTAL				\$ -	\$ -	\$ 1,168,568.56
Affordable Housing							
1-9	Taken From DCG Estimate As-Is						\$ 621,452.79
10	Non-infiltrating Bioretention Planter	SF	\$ 230.00	1,500	\$ 345,000.00	\$ 35,362.50	\$ 380,362.50
11	Erosion & Sediment Control	%	10%	1			\$ 100,181.53
12	Mobilization & General Conditions (GC's)	%	10%	1			\$ 110,199.68
	TOTAL				\$ 345,000.00	\$ 35,362.50	\$ 1,212,196.50
Multi-purpose Athletic Field							
1-6	Taken From DCG Estimate As-Is				\$ -	\$ -	\$ 102,892.97
4	Erosion & Sediment Control	%	10%	1			\$ 10,289.30
5	Mobilization & General Conditions (GC's)	%	10%	1			\$ 11,318.23
	TOTAL				\$ -	\$ -	\$ 124,500.49
Cemetery							
Project Total							\$ 2,505,265.55





Project Name: Ft. Lawton Affordable Housing  
 Owner: Office of Housing  
 Date: 10/23/2023  
 Prepared by: Jeremy Febus, PE Katarina Kubiniec, PE

Water Items - Cost Opinion							
Item No.	Item Description	Unit	Unit Price	Quantity	Item Cost	Tax	Total
Maintenance Building							
	Duplex Grinder Sump & Pump w/ Radio Telemetry	EA	\$ 25,000	1	\$ 25,000.00	\$ 2,562.50	\$ 27,562.50
	1" PVC Sch 40 Force Main	LF	\$ 25	200	\$ 5,000.00	\$ 512.50	\$ 5,512.50
	Mobilization	%	10%	1			\$ 3,307.50
	TOTAL				\$ 30,000.00	\$ 3,075.00	\$ 36,382.50
Affordable Housing							
1-4, 6-7	Taken From DCG Estimate As-Is						\$ 522,141.79
5	8" PVC inc. trench and backfill	LF	\$ 80.00	2,000	\$ 160,000.00	\$ 16,400.00	\$ 176,400.00
-	Connect to Existing (incl. pavement restoration)	LS	\$ 30,000	1	\$ 30,000.00	\$ 3,075.00	\$ 33,075.00
8	Mobilization & General Conditions (GC's)	%	10%	1			\$ 73,161.68
	TOTAL				\$ -	\$ -	\$ 804,778.47
Multi-purpose Athletic Field							
	TOTAL				\$ -	\$ -	\$ -
Cemetery							
Project Total							\$ 841,160.97

Prepared by: Jeremy Febus, PE Katarina Kubiniec, PE

Project Total						\$ 3,126,469.50
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# APPENDIX B - Comparable Sales Analysis and Residual Land Value Calculation



# Fair Market Value

## Comparable Sales for LR2 Zone

- Comparable sales for LR2 zone are limited for large development sites (over one acre).
- Comparable sales for infill development within the LR2 zones are more readily available however are limited in the Magnolia neighborhood. Sales in Ballard are most indicative of value and were prioritized in the search.
- Based on comparable sales we would expect the value of Fort Lawton to be in the range of **\$200,000 to \$250,000** per lot.

Comparable Sale Summary LR2 Zone [Large Subdivisions]								
Development Name	Neighborhood	Buyer	Land Area AC	Land Area SF	Sale Date	Sale Price	Lots	\$/Unit'
Towns on 45th	Rainier Valley	Intracorp	1.54	67,082	12/2020	\$10,250,000	63	\$162,698
Joya Townhomes	Shoreline	Intracorp	3.00	130,680	2019	\$12,800,000	81	\$158,025
Revenna 88	Revenna	Intracorp	3.62	157,687	11/2017	\$9,700,000	89	\$108,989
McGraw Square	Queen Anne	Toll Brothers	2.20	95,832	10/2016	\$14,000,000	57	\$245,614

Comparable Sale Summary LR2 Zone [Infill Development]								
Property Address	Neighborhood	Buyer	Land Area AC	Land Area SF	Sale Date	Sale Price	Lots	\$/Unit'
3400 E Spring St	Madrona	Ashworth Homes	0.31	13,500	8/10/2022	\$2,225,000	6	\$370,833
8322 NW 16th Ave NW	Ballard	Vitaliy Afichuk	0.40	17,598	4/18/2022	\$2,875,000	9	\$319,444
307 N 138th St	Northgate	American Dream Home Group, LLC	0.21	9,147	1/28/2022	\$1,425,000	8	\$178,125
2029 Yale Ave E	Eastlake	Maxim Aficiuc	0.13	5,502	12/21/2021	\$2,800,000	8	\$350,000
2412 NW 60TH ST	Ballard	New City Homes LLC	0.11	4650	7/10/2023	\$932,000	3	\$310,667
2410 NW 60TH ST	Ballard	New City Homes LLC	0.11	4650	7/10/2023	\$932,000	5	\$186,400
2417 NW 60TH ST	Ballard	2417 NW 60TH ST LLC	0.11	5000	4/27/2023	\$1,300,000	5	\$260,000
821 NW 54TH ST	Ballard	So Chun Ling Junine	0.02	922	3/24/2023	\$850,000	4	\$212,500
837 NW 53RD ST	Ballard	Key Development LLC	0.10	4150	2/23/2023	\$1,050,000	3	\$350,000
2230 NW 60TH ST	Ballard	MRN Homes LLC	0.11	4750	5/25/2022	\$1,160,000	3	\$386,667
2439 NW 62ND ST	Ballard	Lee Charles M C+Lily C+ET AL	0.03	1488	5/18/2022	\$1,270,000	3	\$423,333
2611 NW 60TH ST	Ballard	2611 Ballard Homes LLC	0.08	3417	4/21/2022	\$790,000	4	\$197,500

# Fair Market Value

## Comparable Sales for NR2 Zone

- Land sales with NR2 zoning are limited to small infill developments. A wider geographic area was considered to find comparable sales.
- The Rainier Valley sale is most indicative of value due to its size. We would expect the subject property to sell for a premium due to location.
- Reconciled Value **\$575,000 to \$600,000** per finished lot.

### Comparable Sale Summary NR2 Zone

Property Address	Neighborhood	Buyer	Land Area AC	Land Area SF	Sale Date	Sale Price	Lots	\$/Unit'
3947 W BARRETT LN	Rainier Valley	Shep Dog LLC	0.8	34,665	4/24/2023	\$2,850,000	4	<b>\$712,500</b>
13550 39TH AVE NE	Lake City	Ashworth Homes LLC	0.5	23,739	5/15/2023	\$2,250,000	3	<b>\$750,000</b>
11041 19TH AVE NE	Northgate	McCormick Duncan+Sarah	0.4	17,010	10/3/2022	\$870,000	2	<b>\$435,000</b>
3008 NE 95TH ST	Wedgewood	JLC DEVELOPMENT LLC	0.3	14,824	2/22/2023	\$700,000	2	<b>\$350,000</b>
9745 MARY AVE NW	Crown Hill	LOF HOLDING COMPANY LLC	0.3	13,452	3/21/2023	\$1,210,000	2	<b>\$605,000</b>
3247 NE 97TH ST	Wedgewood	BEITCHMAN MARC+GREENE RACHEL	0.3	12,506	3/30/2020	\$735,000	1	<b>\$735,000</b>

# Fair Market Value

## Single-Family Pricing

Sales of new single-family homes in Magnolia indicate pricing from one to four-million-dollars with the majority falling in the two-million-dollar range. A review of the sales below indicates a significant premium on a dollar per square foot basis for homes with premium views. Homes with premium views achieve a price per square foot in the \$900 range. Although there is some view potential at Fort Lawton, we would not characterize the majority of the development area as having premium views. The sales most indicative of value are those for homes with lot sizes between 5,000 to 7,000 feet without premium views.

Magnolia Single-Family Sales, New Construction									
SOLD DATE	ADDRESS	PRICE	BEDS	BATHS	LOCATION	SQUARE FEET	LOT SIZE	YEAR BUILT	\$/SQUARE FOOT
4/28/2023	3002 W Jameson St	\$2,380,000	4	4	Magnolia	2,560	4,800	2023	\$930
5/8/2023	2809 21st Ave W	\$829,000	2	2.5	Magnolia	1,096	2,001	2023	\$756
6/6/2023	3028 34th Ave W	\$800,000	2	1.5	Magnolia	1,000	1,636	2023	\$800
7/26/2022	2422 Eyres Pl W	\$4,000,000	4	4	Magnolia	4,400	5,642	2022	\$909
11/23/2022	1908 28th Ave W	\$3,150,000	4	5	Magnolia	4,271	5,348	2022	\$738
8/19/2022	3606 32nd Ave W	\$2,800,000	4	4.5	Magnolia	4,159	6,000	2022	\$673
10/21/2022	2115 Montvale Ct W	\$2,940,000	4	3.5	Magnolia	4,006	5,000	2022	\$734
1/12/2023	3417 29th Ave W	\$2,259,875	5	4	Magnolia	4,002	6,000	2022	\$565
8/22/2022	4339 29th Ave W	\$2,450,000	5	4	Magnolia	3,388	3,965	2022	\$723
11/17/2022	3838 36th Ave W	\$1,800,000	4	2.5	Magnolia	2,680	6,240	2022	\$672
1/6/2023	3043 27th Ave W	\$910,000	2	1.5	Magnolia	1,093	1,690	2022	\$833

# Fair Market Value

## New Townhome Pricing

Recent townhome sales for new construction are primarily comprised of two developments. One is on 23<sup>rd</sup> avenue and one is on 34<sup>th</sup>. The development on 34<sup>th</sup> is much closer to Fort Lawton and is expected to be more indicative of value. Adjacency to Discovery Park and potential views would likely support a premium for new townhomes built at Fort Lawton.

Magnolia Townhome Sales, New Construction									
SOLD DATE	ADDRESS	PRICE	BEDS	BATHS	LOCATION	SQUARE FEET	LOT SIZE	YEAR BUILT	\$/SQUARE FOOT
3/7/2023	3414 23rd Ave W	\$1,050,000	4	2.5	Magnolia	1,822	1,500	2023	\$576
3/16/2023	3412 23rd Ave W	\$1,050,000	4	2.5	Magnolia	1,822	1,499	2023	\$576
4/14/2023	3412 34th Ave W Unit A	\$839,950	2	2.5	Magnolia	1,383	10,336	2023	\$607
3/13/2023	3418 A 23rd Ave W	\$1,047,000	4	2.5	Magnolia	1,822	1,499	2023	\$575
3/10/2023	3413 B 23rd Ave W	\$819,950	3	2	Magnolia	1,378	1,030	2023	\$595
8/26/2022	3411 A 23rd Ave W	\$799,950	2	2	Magnolia	1,350	1,028	2022	\$593
8/23/2022	3411 C 23rd Ave W	\$799,950	2	2	Magnolia	1,223	1,468	2022	\$654
2/14/2023	3410 C 23rd Ave W	\$799,950	2	2	Magnolia	1,332	1,101	2022	\$601
10/24/2022	3502 W Emerson St	\$1,480,000	4	3.5	Magnolia	2,410	1,956	2022	\$614
8/31/2022	3422 A 23rd Ave W	\$849,950	2	2	Magnolia	1,395	1,102	2022	\$609
10/19/2022	3502 B W Emerson St	\$787,950	2	2	Magnolia	1,217	1,331	2022	\$647
11/14/2022	3406 34th Ave W Unit A	\$1,060,000	3	2.5	Magnolia	1,846	10,336	2022	\$574
1/25/2022	3416 A 23rd Ave W	\$799,950	2	2	Magnolia	1,395	1,102	2022	\$573
9/15/2022	3411 B 23rd Ave W	\$787,950	2	2	Magnolia	1,223	780	2022	\$644
9/22/2022	3420 B 23rd Ave W	\$1,134,950	4	2.5	Magnolia	1,822	1,499	2022	\$623
10/28/2022	3416 C 23rd Ave W Unit C	\$845,000	2	2	Magnolia	1,332	1,101	2022	\$634
12/22/2022	3420 A 23rd Ave W	\$1,033,000	4	2.5	Magnolia	1,822	1,500	2022	\$567
5/26/2023	3408 34th Ave W Unit A	\$965,000	3	2.5	Magnolia	1,846	10,336	2022	\$523
6/30/2023	3408 34th Ave W Unit B	\$965,000	3	2.5	Magnolia	1,846	10,336	2022	\$523
1/23/2023	3406 34th Ave W Unit B	\$970,000	3	2.5	Magnolia	1,846	10,336	2022	\$525



# Fair Market Value

## Residual Land Value: LR2 Zoning

### Townhome RLV Low

Average Sale Price	\$715,000
Size SF	1,100
Price/SF	\$650
Cost of Sale	8%
Vertical Hard Cost	\$245
Total Vertical Hard Cost	\$269,500
Site Development Cost	\$65,145
Total Hard Cost	\$334,645
Soft Cost % of Hard	27%
Soft Cost	\$90,354
Total Development Cost (TDC)	\$425,000
TDC per SF	\$386.36
Return to Equity % TDC	18%
Equity % of TDC	40%
Residual Land Value per Unit	\$202,200
Units per Acre	25
Total Developable Area Acres	1
<b>Total Residual Land Value</b>	<b>\$5,100,000</b>
<i>Per Unit</i>	<i>\$200,000</i>

### Townhome RLV High

Average Sale Price	\$770,000
Size SF	1,100
Price/SF	\$700
Cost of Sale	8%
Vertical Hard Cost	\$245
Total Vertical Hard Cost	\$269,500
Site Development Cost	\$65,145
Total Hard Cost	\$334,645
Soft Cost % of Hard	27%
Soft Cost	\$90,354
Total Development Cost (TDC)	\$425,000
TDC per SF	\$386.36
Return to Equity % TDC	18%
Equity % of TDC	40%
Residual Land Value per Unit	\$252,800
Units per Acre	25
Total Developable Area Acres	1
<b>Total Residual Land Value</b>	<b>\$6,300,000</b>
<i>Per Unit</i>	<i>\$250,000</i>

# Fair Market Value

## Residual Land Value: NR2 Zoning

### Single Family RLV Low

Average Sale Price	\$2,520,000
Size SF	3600
Price/SF	\$700
Cost of Sale	8%
Vertical Hard Cost	\$235
Total Vertical Hard Cost	\$846,000
Site Development Cost	226,274
Total Hard Cost	\$1,072,274
Soft Cost % of Hard	27%
Soft Cost	\$289,514
Total Development Cost (TDC)	\$1,361,788
TDC per SF	\$378.27
Return to Equity % TDC	18%
Equity % of TDC	40%
Residual Land Value per Unit	\$858,563
Units per Acre	5.5
Total Developable Area Acres	1
<b>Total Residual Land Value</b>	<b>\$4,700,000</b>
<i>Per Unit</i>	<i>\$850,000</i>

### Single Family RLV High

Average Sale Price	\$2,700,000
Size SF	3600
Price/SF	\$750
Cost of Sale	8%
Vertical Hard Cost	\$235
Total Vertical Hard Cost	\$846,000
Site Development Cost	226,274
Total Hard Cost	\$1,072,274
Soft Cost % of Hard	27%
Soft Cost	\$289,514
Total Development Cost (TDC)	\$1,361,788
TDC per SF	\$378.27
Return to Equity % TDC	18%
Equity % of TDC	40%
Residual Land Value per Unit	\$1,024,163
Units per Acre	5.5
Total Developable Area Acres	1
<b>Total Residual Land Value</b>	<b>\$5,600,000</b>
<i>Per Unit</i>	<i>\$1,020,000</i>