DuPont Old Fort Lake Subarea Plan

Overview of Environmental Impacts

Planning Commission Meeting – July 8, 2024

AHBL

D.E. Sherrard & Associates

FEHR PEERS

Raedeke Associates, Inc.

Agenda

DuPont Comprehensive Plan:

1. Guiding Principles

Old Fort Lake Subarea Plan:

2. Overview of Environmental Impacts
3. Next Steps

Environmental Impact Statement Process

- ✓ EIS Scoping Period: June 9 – July 14)

- ✓ EIS Public Meeting: June 20, 2023
  - ✓Approximately 20 people attended

- ✓ EIS Agency Meeting: June 29, 2023
  - ✓WSDOT, NWL ROA/COA, Pierce County, Nisqually Tribe, PSE, WDFW

- ✓ EIS Scoping Determination: August 2023

- ✓ Existing Conditions Analyses: August - November 2023

- ✓ Land Use Densities and Zoning Established by Planning Commission – Feb. 2024

- **Analyses of Alternatives: March 2024 - Present**

Environmental Impact Statement Process

Scoping Determination:

Elements of the Environment to be Analyzed

- Earth
- Air Quality
- Surface Water and Groundwater
- Plants and Animals
- Hazardous Materials
- Noise
- Land and Shoreline Use
- Aesthetics
- Cultural Resources
- Transportation
- Public Services and Utilities
- Economy, Social Factors, Social Policy

Environmental Impact Statement Process: Information Resource to be Used in Decision Making

1. Scoping
2. EIS Preparation based on two alternatives
3. Draft EIS Issuance and Public/Agency Review
4. Review of comments
5. Final EIS
   - Short Form – Response to Comment
   - Substantive Revision
     - Changes in proposal to mitigate impacts
     - Comments indicate deficiencies in analysis

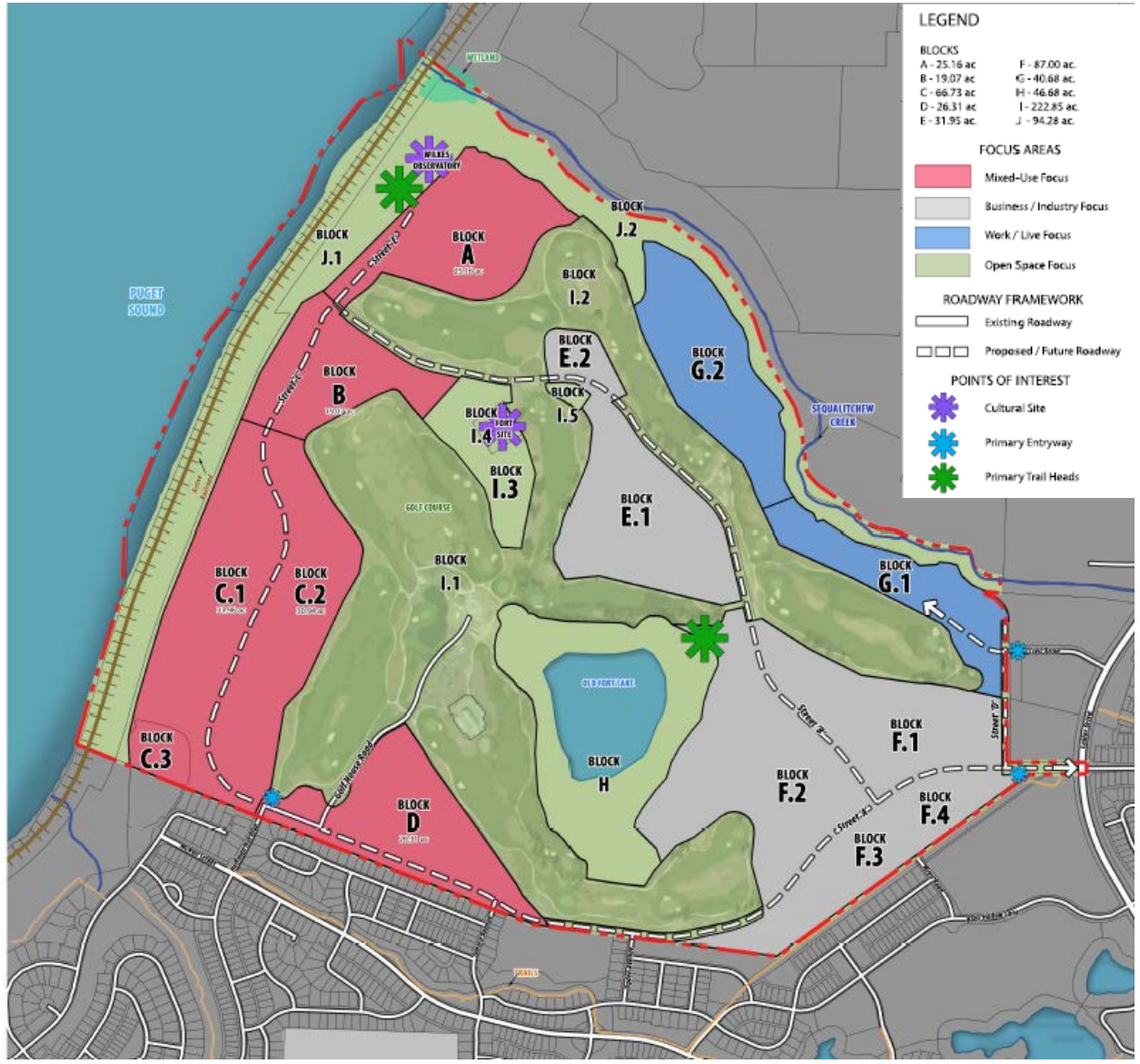
o Planned Action Ordinance

Environmental Impact Statement Process

Alternatives:

1. Existing Plan and Zoning
2. Proposed Subarea Plan Revisions and Zoning
   - Two Density Options Moderate and High reflect different intensity choices a developer might make
   - Analysis is of the higher more conservative High Density Option

Current Plan and Zoning



Current Plan Proposal – Concept G

Environmental Impacts Overview

Land Use and Housing: Residential: Projections based on allowed uses

Land Use	Population Multiplier	Existing Plan/Zoning		Proposed OFL Subarea Plan and Zoning Amendments (Concept G)						
					Moderate Allowed Zoning Density			Maximum Allowed Zoning Density		
		UNITS	Popula-tion	Land Area	Units/ Acre	Units	Popula-tion	Units/ Acre	Total Units	Popula-tion
Single Family	2.7	100	270	70	6	420	1,134	8	560	1,512
Middle Housing	2.3	0		95	16	1,695	3,899	20	1,860	4,278
Multi Family	2.2	1,000	2,200	34	30	1,020	2,244	40	1,360	2,992
Total Housing Units		**1,100**				**3,135**			**3,780**	
Population			**2,400**				**7,277**			**8,782**

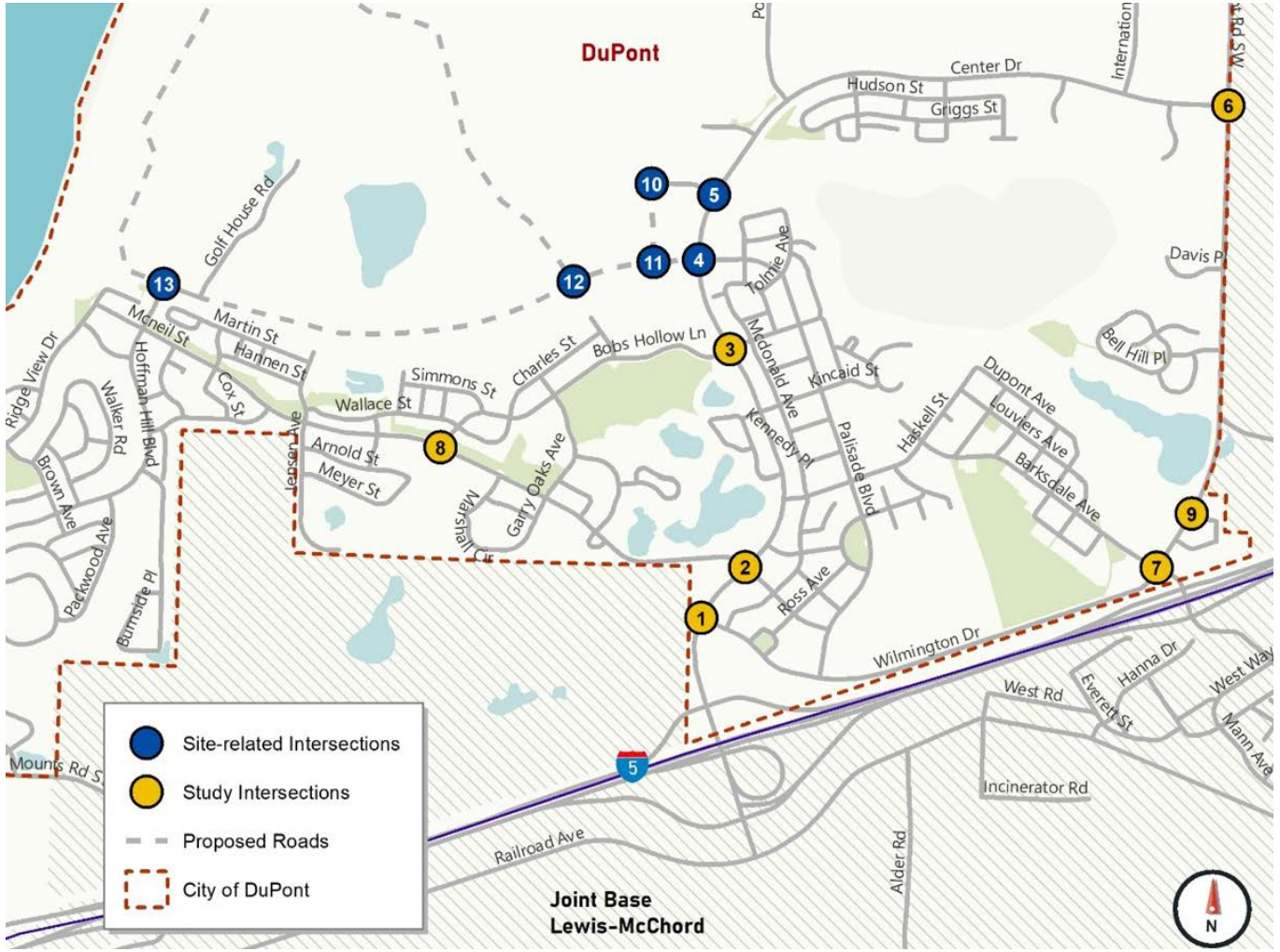
Land Use and Housing: Non-Residential Projections

Lands Use	Existing Plan/Zoning	Proposed OFL Subarea Plan and Zoning Amendments			
		Moderate Intensity		High Intensity	
	Floor Area	Acres	Floor Area	Acres	Floor Area
Retail	70,700	12.7	175,000	12.7	175,000
Service	70,800	2.5	40,000	2.5	40,000
Restaurant	20,000	7.3	61,500	7.3	61,500
Office Use & Research & Dev	1,532,700	2	40,000	1.8	40,000
Light Manufacturing	550,000	1.0	20,000	1.0	20,000
Hotel Rooms	90	7.0	300	7.0	300
Other		7.0	93,000	7.0	93,000
School - Students		10.0	500	10.0	500
Total Non- Residential Use *(except school)*	**1,764,290**	**49.3**	**409,800**	**49.3**	**409,800**

Transportation: Sequence of Analysis

1. Trip Generation
2. Distributions to System
3. Impacts in terms of Level of Service
4. Mitigation of Individual Intersection LOS
5. Evaluate Practicality/Desirability of Mitigation
6. Consider Alternative Mitigation
    - Change Trip Generation Based on Lower Land Use
    - Make Individual Intersection Improvements
    - Change Trip Distribution - Adjust Improvements to Encourage or Discourage Specific Routes

Transportation: Study Intersections



Transportation: Trip Generation - Residential

Use	Existing Subarea Plan/Zoning				Proposed OFL Subarea Plan and Zoning (High Intensity)			
	Number	Daily	AM Peak	PM Peak	Number	Daily	AM Peak	PM Peak
Single-family	100	943	79	93	560	5,282	393	527
Middle housing	0				1,860	13,392	893	1060
Multifamily	1,000	6,740	400	510	1,360	9,166	544	694
TOTAL	**1,100**	**7,683**	**479**	**603**	**3,780**	**27,840**	**1,830**	**2,281**

Transportation: Trip Generation: Non-Residential

Uses	Existing OFL Subarea Plan and Zoning				Proposed Amendments to OFL Subarea Plan and Zoning			
	Sq. Ft.	Daily	AM Peak	PM Peak	Sq. Ft	Daily	AM Peak	PM Peak
Retail Trade		3850	167	465	145,000	7,896	340	954
Service	70,800	3855	167	466	40,000	2,179	93	264
Restaurant	20,000	2,144	191	181	61,500	6,593	590	557
Office/Research &Development	1,602,700	17,758	1,651	1,571	40,000	444	42	38
Light Manufacturing	250,000	3,156	480	503	20,000	95	14	15
Hotel (Rooms)	90	719	41	53	300	2,398	138	176
Other					253,000	2,119	220	352
Elementary School					500	1,135	370	80
TOTAL Non-Residential		**31,482**	**2,217**	**2,736**		**22,764**	**1,793**	**2,421**
Residential Plus Non-Residential		**39,165**	**2,696**	**3339**		**50,604**	**3,623**	**4,702**
Internalized Trips		1,801	137	167		3,542	471	470
Total External Trips		**37,364**	**2,559**	**3,172**		**46,966**	**3,147**	**4,228**

Transportation: Trip Distribution

Residential

- Based on Projected ***Driver Choice*** of Routes
- Stochastic Distribution
  - *Partially Based on Shortest Distance/Shortest Trip*
  - *Some Proportion of Drivers Take Alternative Routes*
- Will Change in the Future Due to Capacity/Delay
- 71% Oriented to I-5
- 19% to DuPont/Steilacoom Rd

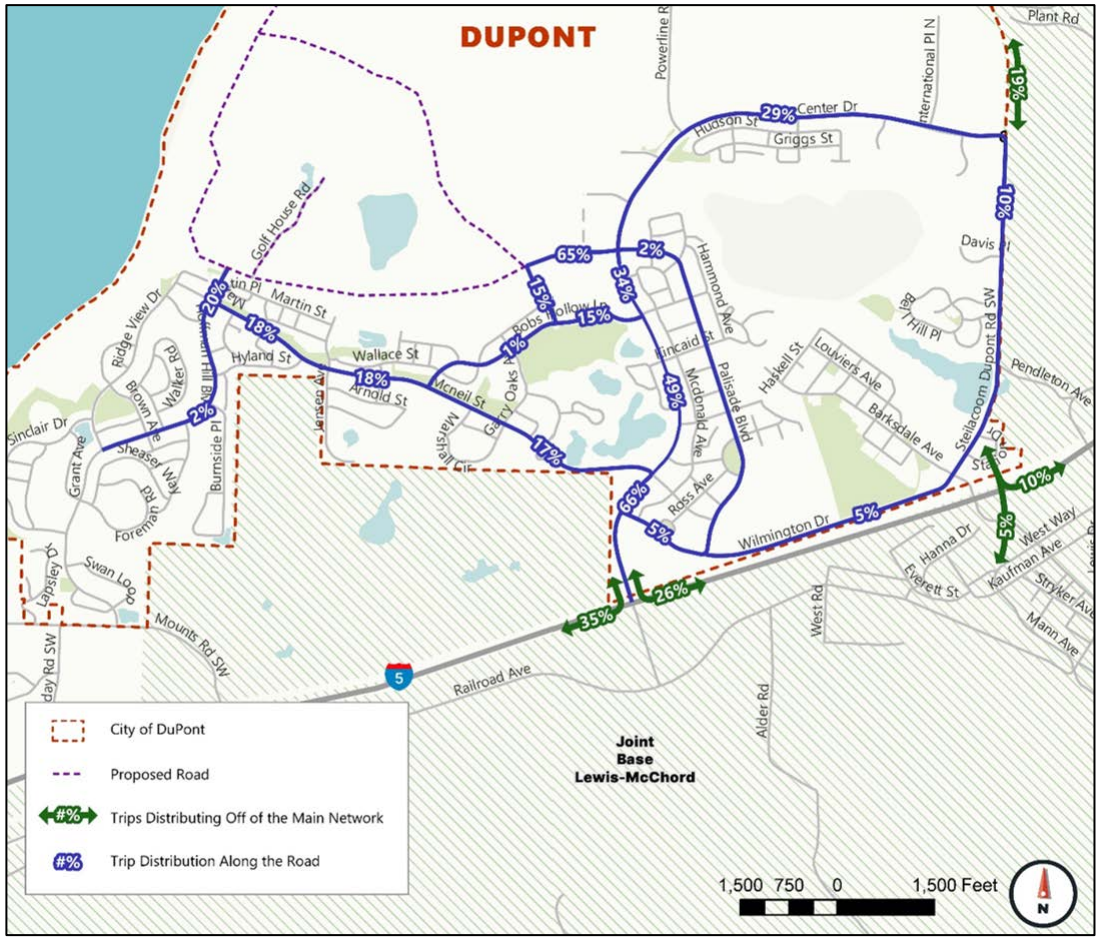
Non-Residential

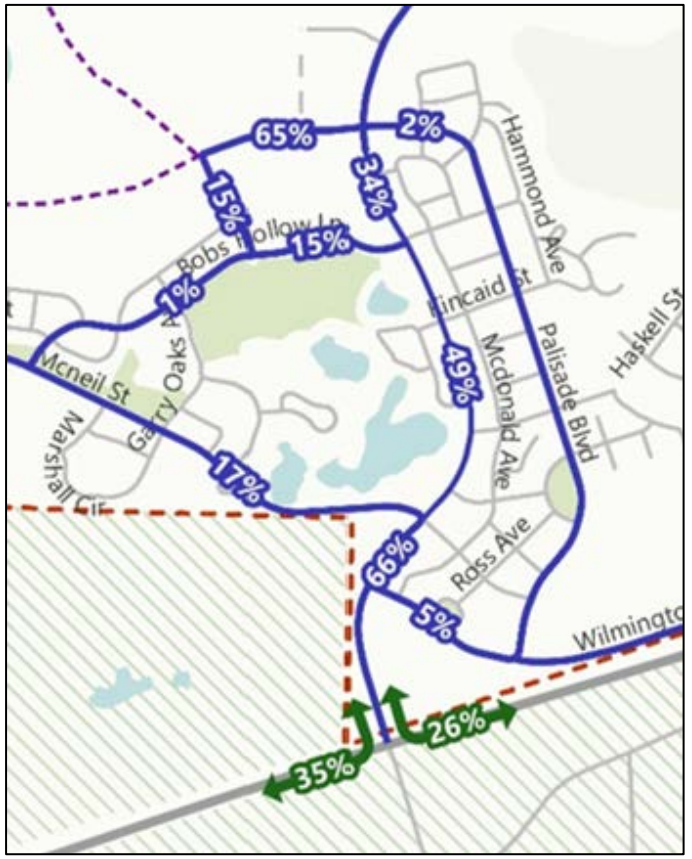
- 60 percent Trips Internal to DuPont
  - 29 percent Internal to OFL
  - 31 percent Balance of City
- 38 percent oriented to I-5
- 2% to DuPont/Steilacoom Rd

Environmental Impacts Overview

Transportation: Trip Distribution

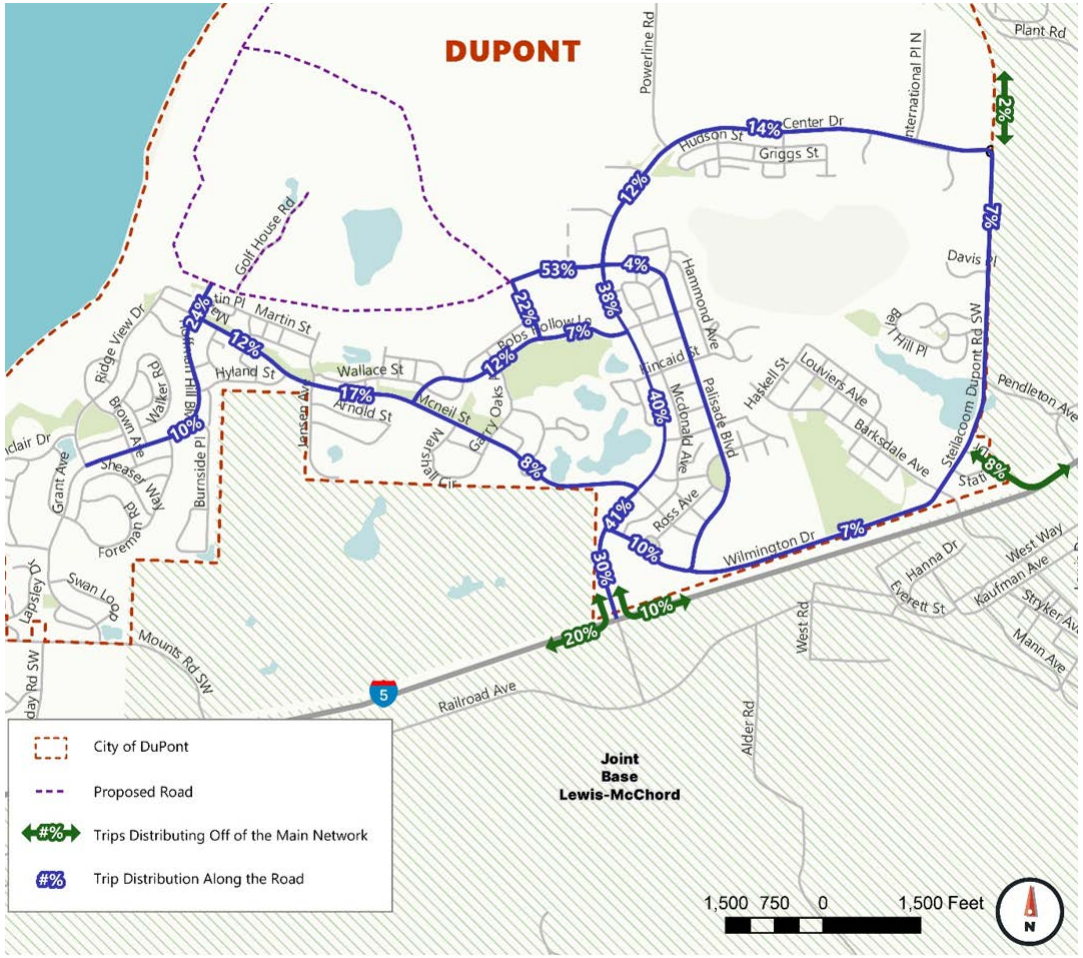
Residential





Transportation: Trip Distribution

Non-Residential



Transportation: Level of Service

LOS	Description	Signalized Intersections Avg. Delay (sec/veh)[1]	Unsignalized Intersections Avg. Delay (sec/veh)[2]
A	*Free Flow / Insignificant Delay* Extremely favorable progression. Individual users are virtually unaffected by others in the traffic stream.	< 10.0	< 10.0
B	*Stable Operations / Minimum Delays* Good progression. The presence of other users in the traffic stream becomes noticeable.	> 10.0 to 20.0	> 10.0 to 15.0
C	*Stable Operations / Acceptable Delays* Fair progression. The operation of individual users is affected by interactions with others in the traffic stream	> 20.0 to 35.0	> 15.0 to 25.0
D	*Approaching Unstable Flows / Tolerable Delays* Marginal progression. Operating conditions are noticeably more constrained.	> 35.0 to 55.0	> 25.0 to 35.0
E	*Unstable Operations / Significant Delays Can Occur* Poor progression. Operating conditions are at or near capacity.	> 55.0 to 80.0	> 35.0 to 50.0
F	*Forced, Unpredictable Flows / Excessive Delays* Unacceptable progression with forced or breakdown of operating conditions.	> 80.0	> 50.0

Transportation: Level of Service

ID	Study Intersection[1]	No Action Unimproved		High-End Unimproved[2]		High-End with Improvements[2,3]	
		AM LOS / Control Delay (s)	PM LOS / Control Delay (s)	AM LOS / Control Delay (s)	PM LOS / Control Delay (s)	AM LOS / Control Delay (s)	PM LOS / Control Delay (s)
1	Center Drive & Wilmington Drive	B/11	B/17	B/13	C/31	B/13	C/31
2	Center Drive & McNeil Street	C/22	**F/80**	D/36	**E/61**	D/36	C/31
3	Center Drive & Bob's Hollow Lane	B/21	C/28	C/25	C/30	C/25	C/30
4	Center Drive & Palisade Boulevard	**F/320**	**F/589**	**F/151**	**F/353**	C/20	C/32
5	Center Drive & Civic Drive	A/6	A/6	A/6	A/6	A/6	A/6
6	Center Drive & DuPont-Steilacoom Road	D/46	C/30	D/51	D/52	C/29	C/30
7	DuPont-Steilacoom Road/Wilmington Drive & Barksdale Avenue	A/9	B/10	A/9	B/13	A/9	B/13
8	McNeil Drive & Bobs Hollow Lane	**F/125 (SB)**	**F/54 (SB)**	**F/275 (SB)**	**F/302 (SB)**	C/15	A/15
9	I-5 Access Road & DuPont-Steilacoom Road	A/7	A/9	A/7	A/8	A/7	A/8

Transportation: Center Drive/McNeil

- Projected Residential Distribution 17%
- Trips Center AM 2,295; PM 3,247
  - Existing AM 999; PM 1,056
  - McNeil AM 1,144; PM 1,276
  - Existing AM 529; PM 624
- Level of Service E, 61 second delay
- AM Peak Critical Volume: Northbound to Eastbound Left Turn – 317 (Existing 100)
- PM Peak Critical Volume Northbound to Eastbound Left turn – 661 (Existing 320)
- Mitigation: LOS D, 36 second delay
  - Center Dr. Dual NB Left Turns, 400 ft queue, Eliminate 10 ft of median, Eliminate 12'-14' landscaping East Side;
  - McNeil Additional Eastbound Lane
- Feasibility/Desirability?
- Options: Without Improvements, LOS E and Trips Redistribute to Intersections to the North

Transportation: McNeil/Bobs Hollow

- McNeil – Resid. Distr. 19%, Non-Resid. – 17%
- Bobs Hollow – Resid. 2%, Non-Resid. – 12%
- Trips McNeil AM 1,144; PM 1,276
  Existing AM 529; PM 624
  Bobs Hollow AM 315 PM 431
  Existing AM 219; PM 226
- Level of Service F, 302 seconds delay SB Stop
- AM Peak Critical Volume: Southbound to Westbound Right Turn –113 (Existing 67) (McNeil EB 633 (Existing 117), WB 359 (Existing 385))
- PM Peak Critical Volume: Southbound to Eastbound Left Turn –189 ((Existing 129) McNeil EB 480 (Existing 285), WB 800(Existing 500))
- Mitigation: Traffic Circle
- Feasibility/Desirability?
- Options: Without Improvements, LOS F SB Stop

Transportation: Center Drive/New Road - Palisades

- Projected Residential Distribution 65%
- Trips Center AM 2,680; PM 3,364
  Existing AM 684; PM 529
  OFL Access AM 1,851; PM 2,510 Existing 0
  E. Palisades AM 301; PM 316
  Existing AM 92; PM 99
- Level of Service F, 353 second delay
- AM Peak Critical Movement: Northbound to Eastbound Left turn – 449 (Existing 0)
- PM Peak Northbound to Eastbound Left turn – 773 (Existing 0)
- Mitigation:
  - Center Dr. Dual Left Turns, 481 ft queue, Eliminate 380 ft of median, Eliminate 12'-14' landscaping one Side;
  - West Leg, Additional Eastbound Lane, ROW is
- Feasibility/Desirability?
- Options: Without Improvements, LOS F

Transportation: Center Drive/Civic Drive New Access

- Potential Mitigation if Center Drive/McNeil Dual Left Turns are not implemented and Traffic Distribution Shifts to the North
- Project Trip Distribution, about 25%

- Level of Service: Projected C or D
- AM and Peak Critical Volume: Northbound to Eastbound Left Turn –AM 455 (Existing 142, PM 355 (Existing 54) Mitigation: Extend Left Turn Pocket to 250 to 350 feet
- Feasibility/Desirability?
- Options: Do not Implement, LOS E or F at Center/McNeil if Center/McNeil Dual Left Turns not Implemented and Traffic Redistributes

Transportation: Center Drive/Steilacoom Road

- Projected Residential Distribution 19%
- Level of Service D, 52 seconds delay
- AM Peak Critical Volume: Eastbound Left Turn –540 (Existing 264) Mitigation: None
- PM Peak Northbound to Eastbound Left turn – 364 (Existing 174) (SB Right Turn has higher volumes but no opposed movement) Mitigation: Exclusive Left Turn, current Shared Through/Left Turn, add 12-14 foot Lane to the East
  - Center Dr. Dual Left Turns, 481 ft queue, Eliminate 380 ft of median, Eliminate 12'-14' landscaping one Side;
  - East Leg, Additional Eastbound Lane
- Feasibility/Desirability? Wetlands to East
- Options: Without Improvements, LOS D

Environmental Impacts Overview

Transportation: Mitigation Options

Monitor Trips Distribution and Impacts as the OFL Subarea Develops and Adjust Mitigation – Potential Problem with Establishing Developer Mitigation or Transportation Impact Fees

- Reduce Development Intensity
  - Trip Generation of Existing OFL Plan (xx vs xx) Does Not Substantially Change Impacts or Mitigation
  - How Would One Set a Threshold of Acceptable Impact Level
- Improve Intersections to Serve Projected Trip Distribution and Meet LOS D Standard – Allows Long Term Mitigation Conditions and/or Transportation Impact Fees
- Eliminate Specific Intersection Mitigation and Experience LOS Above LOS D Standard and Likely Change Trip Distribution with Alternative Improvements (Civic Drive Extension – Allows Long Term Mitigation Conditions and/or Impact Fees

Scoping Determination:

Elements of the Environment to be Analyzed

- Earth
- Air Quality
- Surface Water and Groundwater
- Plants and Animals
- Hazardous Materials
- Noise
- Land and Shoreline Use
- Aesthetics
- Cultural Resources
- Transportation
- Public Services and Utilities
- Economy, Social Factors, Social Policy

Environmental Impacts Overview

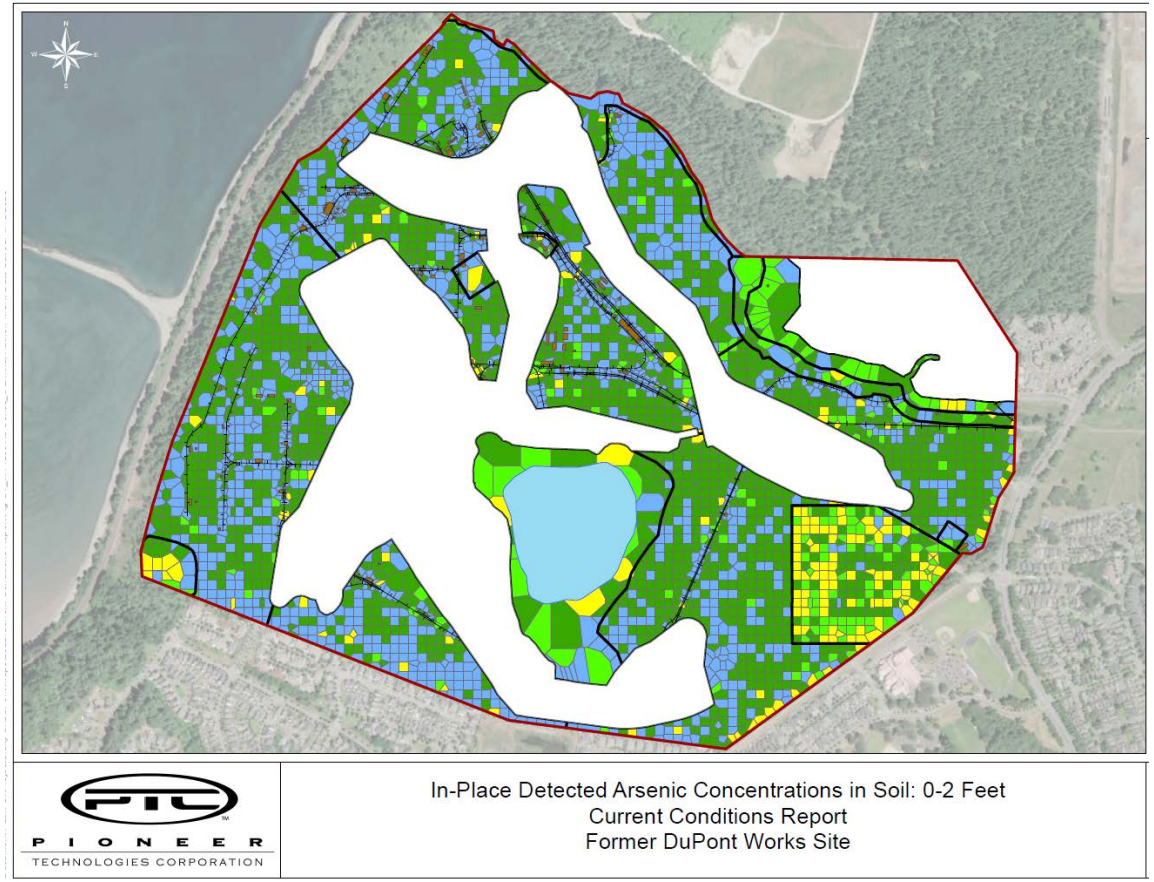
Aesthetics/Visual Quality

- Existing Zoning – Up to 65 foot Height
- Proposed Plan/Zoning Revisions – Generally Smaller Scale

Lands Use	Existing OFL Plan/Zoning		Proposed OFL Subarea Plan and Zoning Amendments	
	Height	Density	Height	Density*
Single Family	35 feet	53du/acre	35 feet	6 du/acre
Middle Housing	NA	NA	35 feet	16 du/acre
Multi-Family	55 feet	24 du/acre	50 feet	30 du/acre
Non Residential	65 feet	NA	45 feet	
Non-Residential w/in 150 feet of Residential	35 feet	NA	No Restrictions	
Non-Residential w/in 50 feet of Golf Course	35 feet	NA	No Restrictions	
Hotel	65 feet	NA	50 feet	No Restrictions

Environmental Impacts Overview

Hazardous Materials



- Ecology has sole jurisdiction to approve changes to current use restrictions
- Exceedances of Residential Standards are relatively modest
- Owner(s) have a wide range of alternatives in cleaning up limited areas to Residential Standards

Cultural Resources

- Site has been extensively surveyed
- Multiple resources encountered and conserved
- Designated cultural resources
  - Hudson Bay Company 1833 Fort Site
  - Native American Cemetery
  - Wilkes Observatory
- Inadvertent Discovery Plans would be required for all future earth movement

Public Services

- Population increase of 87 percent generally will result in proportional increase in City personnel and costs
- New Development can be Expected to Install New Infrastructure
- Development and Building Permit Review is paid by Developers
- Capital Costs Can be Recovered by Fees per RCW 82.02.090(7)
  - Off-site Transportation Infrastructure
  - Parks acquisition and development
  - Fire Department Capital Costs
  - Schools
- State Environmental Policy Acts Substantive Authority provides additional authority

Environmental Impacts Overview

Schools

- Future Facility Need Based On:
  - Students Generated by New Development c
  - Cohort Progression of Students Through Grades
- City has School Impact Fee (Dedicated Sites Credited to Impact Fees)

Facility	Existing Teaching Stations	Enrolment 2023	Future Buildout Enrollment	Buildout Additional Teaching Stations
Steilacoom High School	41	912	1,505	19
Pioneer Middle School	31	746	1,294	21
Mainland Elementary	60	1,282	2,452	63
TOTAL Secondary		**1,800**	**2,801**	**40**
TOTAL Elementary		**1,220**	**2,452**	**63**

Environmental Impacts Overview

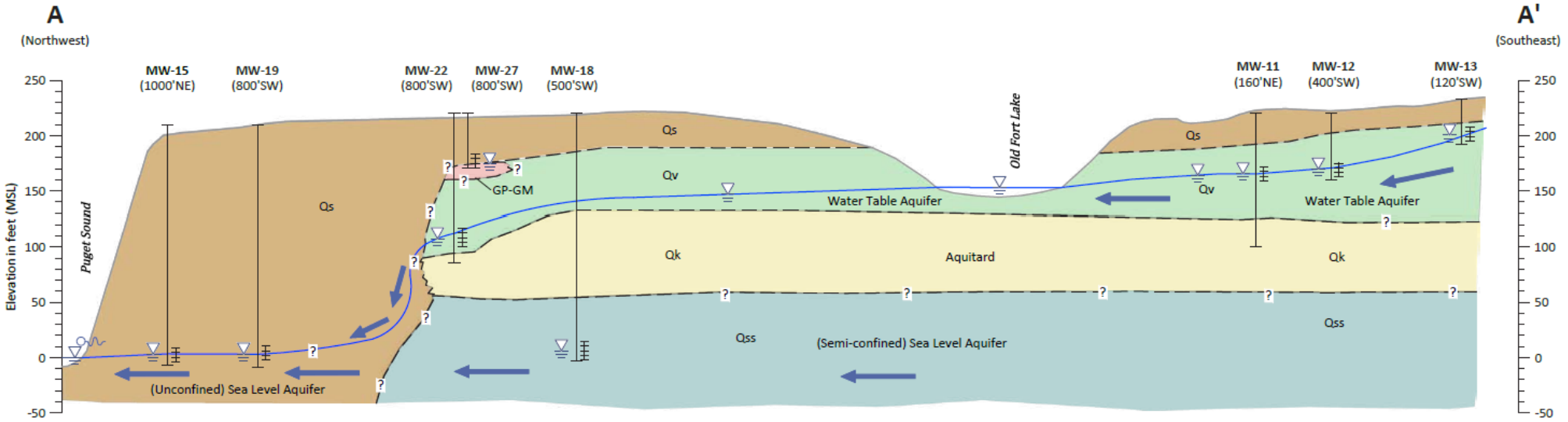
Utilities

- City Water System
  - Adequate Well Source Capacity
  - Adequate Water Rights
  - Adequate Storage
  - New Development Expected to Install New On-site Infrastructure
- Pierce County Sewer
  - Adequate Planned Future Treatment Capacity
  - Expansion Required of Pump Stations and Sewer Mains
  - New Development Expected to Install New On-site Infrastructure
- Electrical Capital Costs Can be Recovered by Fees per RCW 82.02.090(7)
  - Regional Transmission Capacity Sufficient
  - Local Substation Capacity Likely Will Require Expansion

Environmental Impacts Overview

Earth, Geology, Soils:

- Steilacoom Gravels predominant – very permeable
- Most soils removed during hazardous materials remediation
- Few limits for building or structural fill
- High level of slope stability



Geologic Cross Section A-A'

Environmental Impacts Overview

Plants and Animals:

- Most vegetation removed during hazardous materials remediation, little wildlife value in regenerated fir and other plants
- Margins – Puget Sound Bluff & Sequalitchew Creek canyon have substantial wildlife value and are migration corridors
- A few isolated Garry Oak, but not in large enough complex to provide "Prairie– Oak ecosystem
- Old Fort Lake open space has limited wildlife value due to isolation
- No threatened, endangered or species of local importance in areas designated for development

Environmental Impacts Overview

Water Resources:

- Old Fort Lake is only surface water body - Groundwater fed,
- No streams or watercourses on site
- Isolated areas mapped as floodplains
  - Localized areas of less permeable soils, water perches during storms
  - Likely can be eliminated through FEMA Letter of Map Amendment (LOMA) submitted by land owner/developer
- Stormwater will be infiltrated in permeable gravels in most cases
  - Designed per Ecology Stormwater Manual for Western WA
  - Pre-treatment for water quality required

Environmental Impacts Overview

Process:

- Additional Analysis/Discussion of Transportation Impacts & Mitigation
  - Total Unit Cap
  - Individual Intersection Improvement
  - Adjusting Improvements to Change Trip Distribution and Local Street Impacts
    - Center/McNeil Drive
    - Civic Drive Access Option
- Analysis of Impacts and Mitigation for All Elements
- Completion of Draft Environmental Impact Statement/Public & Agency Review/Final EIS
- Planning and City Council Development/Adoption of Subarea Plan - Ensure that the Environmental Impact Statement covers all the Mitigation Alternatives to give the Planning Commission and City Council the Widest Range of Options in Considering/Adopting Final Provisions

Environmental Impacts Overview

Next Steps:

- Planning Commission Meeting July 22, 2024