Draft Shared Use Path Conceptual Design Summary (March 2024)

History and Status

This conceptual design summary provides context, preliminary design considerations, and planning level costs to support a Shared Use Path (or similar) facility from SE 68th St to 90th Ave SE, approximately one mile, along Island Crest Way (ICW).

The project goals are to improve safety along ICW, develop ICW into a functional multimodal corridor that improves accessibility and function for pedestrians, bicyclists of all ages and abilities, and drivers, while balancing safety improvements with preservation of the urban forest.

In 2021 and 2022 City staff, with their project partner DKS Associates, developed the Island Crest Way Safety Recommendations to inform City staff and City Council on a programmatic approach to enhance safety along the Island Crest Way corridor. the City has implemented several of the "low cost" solutions identified in the report, including selective tree trimming, adding reflective sheeting to sign posts, updating all regulatory and warning signage to high visibility, double signing crosswalks, relocating/removing several fixed objects, and enhancing sign reflectivity recommended several projects and activities. Five are included in the ICW Corridor Improvements Project:

1. ICW Shared Use Path Improvement Project *(Discussed herein)*
    - Feasibility Study & Preliminary Design
2. Tree Condition Assessment *(Draft Complete)*
3. Illumination Study *(Draft Complete)*
4. Crosswalk Improvements *(Design Complete)*
    - Design and Construct ICW crossing improvements at three locations (summer 2024)
5. Intersection Feasibility Study & Concept Design *(in progress)*
    - SE 53rd Place
    - SE 68th Street intersections

In 2023 the City contracted with KPG Psomas, in partnership with DKS, to develop the projects listed above. The project team anticipates several of these items being completed by fall 2024. This report focuses on the preliminary results of the Shared Use Path Evaluation.

Shared Use Path Evaluation

Figures 1-3 present photo simulations of the three alternatives the project team evaluated to address the multimodal needs in the corridor and support the project goals:

- Separated bike lanes with new sidewalks
- East Side Shared use Path
- West Side Shared use Path

Figure 1: Separated Bike Lane

The separated bike lane alternative proposes new separated bike lanes with 2’ wide marked buffer, curb and gutter, corridor illumination, vegetated buffers, signage, crossings at side street intersections, and cement concrete sidewalk for the length of the project. Other improvements include utility modifications, stormwater treatment facilities, and private property restoration. This alternative provides a delineated bike facility and improves the safety and pedestrian/bicyclist experience along the corridor.

Figure 2: East Side Shared use Path

The east side shared use path alternative proposes a new separated 10’ wide shared use pathway, replacing the existing paved walkway, along the east side of the corridor. The new path is within five feet of ICW to avoid removing the large laurel hedges along the edge of right of way, providing screening for adjacent private properties.

A modification to this alternative called “Option A” shifts the path alignment further away from ICW, between Island Crest Elementary and SE 59th St, see Figure 3. It removes the hedges and replaces them with screening. This provides greater separation between path users and vehicles and saves approximately 10% of the large Occidental (London) Plane trees, between ICW and the path.

Figure 3: East Side Shared use Path Option A

Additional improvements consist of new illumination, vegetated buffer, signage and crossings at side street intersections, utility modifications, stormwater treatment facilities, and private property restoration. This alternative provides a widened shared use path for bicycles and pedestrians with a physical separation/buffer from the roadway for safety.

Figure 4: West Side Shared use Path

The west side shared use path proposes a new separated 10’ wide shared use path, replacing or supplementing the existing gravel path, along the west side of the corridor. Additional improvements consist of a new vegetated buffer, signage, and illumination utility modifications, stormwater treatment facilities, and private property restoration. This alternative provides a widened shared use path for bicycles and pedestrians with physical separation/buffer from the roadway for safety.

Figure 4, at the end of the report, summarizes the criteria and considerations used to compare the alternatives discussed. Refer to Attachment 1 (Shared Use Path Alternatives Graphics) to see an overhead view of each alternative, the trees expected to be removed, potential impacts to hedges, and the alignment of the path. Typical cross-sections depict the improvements across the right of way and the relative impacts are noted.

The following describes the considerations and preliminary evaluation of the three alternatives.

1. **Tree and Urban Forest Considerations**

   The draft tree condition assessment memo evaluated 560 trees within and adjacent to the ICW right of way (ROW) corridor. Overall, trees in the corridor display good resilience to the urban developed environment showing its ability to adapt changes with a hardy historic canopy, good biodiversity and native species dominance along the corridor. The composition of the planted trees is predominantly American Sycamore and English Oak, likely 40 to 70 years old. Both species are long-lived (200 years potentially) and tolerant of various environmental conditions. There are several Western Red Cedar along the east side of Island Crest Way and pockets of native trees exist along the west side of the roadway near Dragon Park, Island Crest Park, and along both sides of the roadway at Pioneer Park. Many of these native trees are impacted by the urban environment, showing die-back and poor long-term viability.

   The conceptual design alternatives were developed with the intent to preserve as many healthy and exceptional trees as possible through small shifts in path alignment, separation from the roadway, and selective removal of smaller trees to preserve large healthy trees. Based on the canopy analysis in the draft memo and the preliminary layouts of the three alternatives, the separated bike lanes remove the largest portion of the tree canopy within the ROW, while the west side shared use path removes the least because creating 5' bike lanes with 2' buffers (14' total), widen the roadway prism and impact many of the existing trees located adjacent to the existing edge of roadway. The west side shared use path has more space to navigate around trees.

2. **Impacts to adjacent parcels and ROW**

   There are fences, large hedges, utilities, and other improvements near the outer edges of the ICW right of way. The conceptual designs take these into consideration when evaluating path/sidewalk widths and alignments. The east side path alternative works its way in between hedges in or adjacent to the right of way on the east side of the path and trees on the west side, requiring a careful balance between tree removal (loss of canopy) in some places and significant hedge trimming or removal (loss of privacy screening) in other locations. East Side Option A shifts a portion of the path to the east to avoid several large trees but requires removal of several large hedges. These details will be refined during the formal design process. Easements or ROW acquisitions may be necessary at intersection corners, and along the Island Crest Park frontage. Specific easement and ROW needs will be assessed during final design.

3. **Improved accessibility and function for pedestrians and bicyclists of all ages and abilities**

   The design guidance for the alternatives and considerations are as follows:

   - FHWA Bikeway Selection Guidelines (2019) https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf
   - WSDOT Design Manual Chapter 1515 Shared Use Path https://wsdot.wa.gov/publications/manuals/fulltext/M22-01/1515.pdf
   - WSDOT Design Manual Chapter 1520 Roadway Bike Facilities https://wsdot.wa.gov/publications/manuals/fulltext/M22-01/1520.pdf

   The guidelines encourage providing a separation between the roadway and pedestrian/bicycle facilities through either a horizontal buffer such as a planter strip, vertical curb or other appropriate means due to the vehicle volumes (15,000 – 16,000 vehicles/day) and posted speed limit (35mph).

4. **Illumination considerations**

   The community survey results from the ICW Safety Study reflected the importance of illumination and visibility

for residents and users along ICW. The project team prepared a corridor illumination study to guide various opportunities to improve illumination and visibility in the corridor. Each illumination alternative presents different possibilities. The Separated Bike Lane alternative would require a completely new illumination system consistent with standard urban arterial roadway corridor illumination (e.g. SE 40th St, 84th Ave NE in Clyde Hill, Bellevue arterial streets, etc.). The East Side Shared Use Path presents an option to increase roadway illumination with roadway luminaires and install pedestrian scale luminaires on the back side of the pole for the pathway. The West Side Shared use Path could provide the same treatment as the east side; or it could install a separated pathway illumination system since the path is further separated from the roadway. West Side Shared use Path would need to supplement the existing illumination of the roadway to meet lighting level standards. Any of these alternatives could either be installed as part of shared use path construction or independently. Lighting levels are established by the WSDOT Design Manual Chapter 1040.

The Illumination study assessed the existing corridor, but it does not provide lighting analysis or levels for the shared use path options. According to the draft study, some intersections meet these requirements, but others do not. Intersection lighting will be improved as part of the crosswalk improvements at Island Crest Elementary, SE 62nd St, and SE 63rd St. Other intersections can be addressed as part of subsequent projects, or as standalone evaluations and installations.

Due to the lack of continuous lighting along the corridor, light level standards are not met for roadway segment lighting and pedestrian lighting throughout the entire corridor. Continuous roadway lighting and pedestrian lighting is recommended due to collision history and pedestrian utilization during non-daylight hours. Pedestrian safety can be further improved by providing a separated shared-use path with appropriate pedestrian scale lighting.

5. Stormwater Management

Stormwater management will need to be incorporated into the project to comply with stormwater regulations. The existing ICW corridor presents an opportunity to capture and treat pollution generating runoff from the roadway. Removing pollutants from stormwater runoff has been proven to enhance local and downstream natural environments. Low Impact Development options may include open channels, rain gardens, or bioretention swales to remove pollutants onsite prior infiltrating into the ground or entering the piped conveyance system. Downstream of ICW, the runoff travels through various piped or open conveyance systems and discharges into Lake Washington.

6. Utility Impacts

Underground and above-ground utilities exist within the ICW corridor including water, sewer, stormwater, power, cable tv, fiber optic, and phone. Utility coordination, relocations, and adjustments will be required in all three alternatives. Due to the nature of the separated bike lane alternative and the required widening of the roadway prism, drainage systems, communication systems, power, and water will all be impacted and require relocations. The east side shared use path has less impacts, likely limited to power, communication, and drainage modifications. The west side shared use path has the least utility impacts, due to its greater separation from the roadway, but will still require drainage, water, and power modifications.

7. Implementation

The project team considered how each alternative could be implemented and identified potential impacts to existing uses along the corridor. The Separated Bike Lane alternative requires extensive corridor reconstruction for the widened roadway prism and new pedestrian facilities. This will cause significant disruption to vehicle movement and pedestrian movement throughout the corridor. The East and West Side Shared use Path

alternatives allow function of the roadway and opposite side pedestrian facilities to remain in use during construction. The East Side alternative does present more challenges as it replaces the existing paved walkway within the corridor.

8. **Funding opportunities and Total Project Costs**
   Several outside funding opportunities are viable sources to supplement the City's investment in enhancing this corridor. The team has identified the sources below as primary candidates:
   - Transportation Improvement Board (TIB) Urban Arterial Program and Active Transportation Program
   - WSDOT Pedestrian and Bicycle Grant and Safe Routes to School Grant
   - Department of Ecology Water Quality Grants

The team performed preliminary project funding evaluations using 2024 dollars inclusive of construction, preliminary and final design, construction management, administration, construction inspection, and City administration for each alternative. Right of Way acquisition is not included in this cost evaluation. The preliminary total project cost estimate for the Separated Bike Lane Alternative has a range of $12M - $14M. The preliminary project cost estimate for the East Side Shared use Path has a range of $3.5M - $6M. The preliminary project cost estimate for the Wast Side Shared use Path has a range of $3M - $5.5M. Should the City secure federal funding for the desired alternative the project could increase by up to 20% to cover the additional administrative rigor required of the City, consultant and contractor to comply with grant requirements.

In summary, each alternative presents opportunities, and challenges. Challenges include tree preservation, pedestrian and vehicle impacts during construction, private property screening impacts, utility relocations, and construction costs. Opportunities include improving safety throughout the corridor, stormwater management, improved pedestrian and bicycle accessibility and function, improved lighting and traffic calming. This is a complex project that requires tradeoffs, balancing the need to improve safety in the corridor while retaining the beloved urban forest, minimizing other impacts, and doing so at an affordable cost. Table 1 and Figure 5 depict the three alternatives and their relative impacts on each other on key factors to be considered.

Table 1: Alternatives Summary Table

Alternative	New Impervious Surface	Utility Impacts	Trees Removed	Tree Canopy Removed	Drainage Mods	Vehicle Impacts (const. stage)	Ped Impacts (const. stage)	Const. Cost (order of magnitude)
Separated Bike Lane	~70,000sf	med	110 to 120	~40%	high	high	med	high
East Side Path	~15,000sf	high	85 to 99	~34%	med	low	high	med
East Side Path (Option A)	~15,000sf	high	70 to 85	~30% to ~32%	med	low	high	med
West Side Path	~24,000sf	low	75 to 94	~28%	low	low	low	med

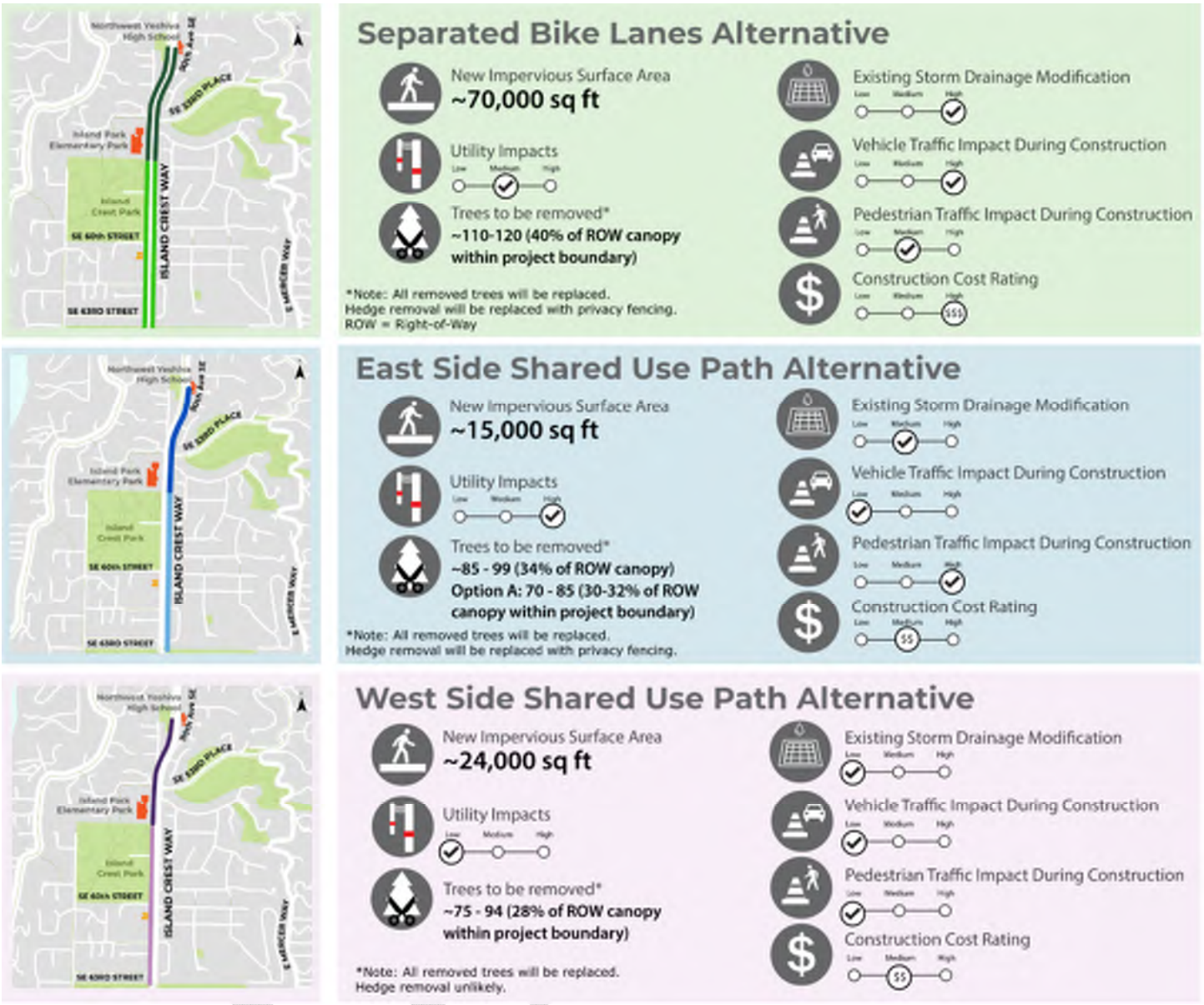

Figure 5: Alternative Summary Table

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ATTACHMENT #1
SHARED USE PATH CONCEPTUAL DESIGN REPORT SUPPORTING GRAPHICS

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PHOTO SIMULATIONS

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SEPARATED BIKE LANE PHOTO SIMULATION

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EAST SIDE SHARED USE PATH PHOTO SIMULATION

OPTION A - SE 59TH ST TO ISLAND CREST ELEM

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WEST SIDE SHARED USE PATH
PHOTO SIMULATION

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CROSS SECTIONS

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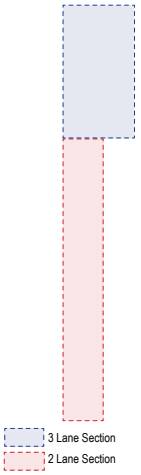
ISLAND CREST WAY CORRIDOR ANALYSIS | TYPICAL SECTIONS

Separated Bike Lane Layout - Two Lane Section

Looking North

Context Map



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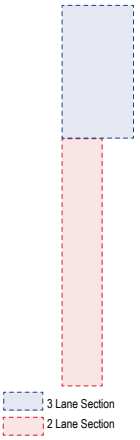
ISLAND CREST WAY CORRIDOR ANALYSIS | TYPICAL SECTIONS

Bike Lane Layout - Three Lane Section

Looking North

Context Map



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ISLAND CREST WAY CORRIDOR ANALYSIS | TYPICAL SECTIONS

East Side Shared-Used Path Layout - Two Lane Section

Looking North

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OPTION A - SE 59TH ST TO ISLAND CREST ELEM

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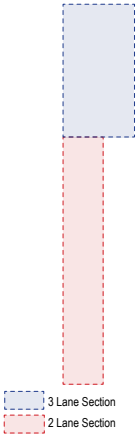
ISLAND CREST WAY CORRIDOR ANALYSIS | TYPICAL SECTIONS

East Side Shared-Used Path Layout - Three Lane Section

Looking North

Context Map



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ISLAND CREST WAY CORRIDOR ANALYSIS | TYPICAL SECTIONS

West Side Shared-Used Path Layout - Two Lane Section

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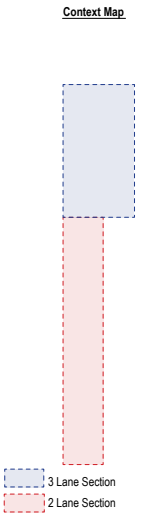

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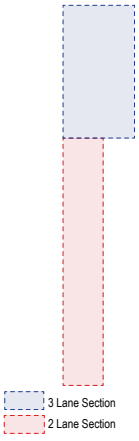
ISLAND CREST WAY CORRIDOR ANALYSIS | TYPICAL SECTIONS

West Side Shared-Used Path Layout - Three Lane Section

Looking North

Context Map



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CONCEPTUAL PLAN LAYOUT
SEPARATED BIKE LANE

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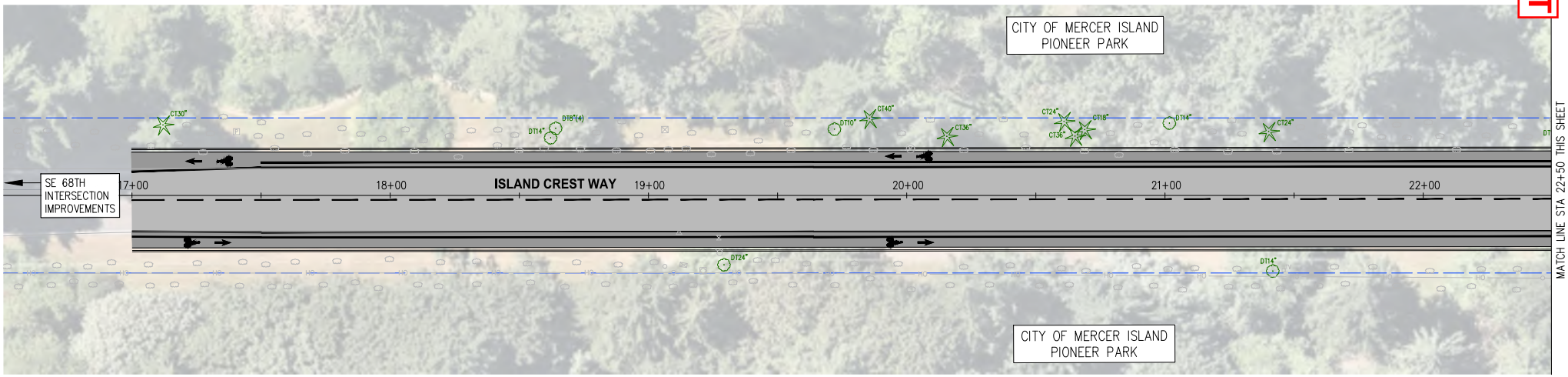

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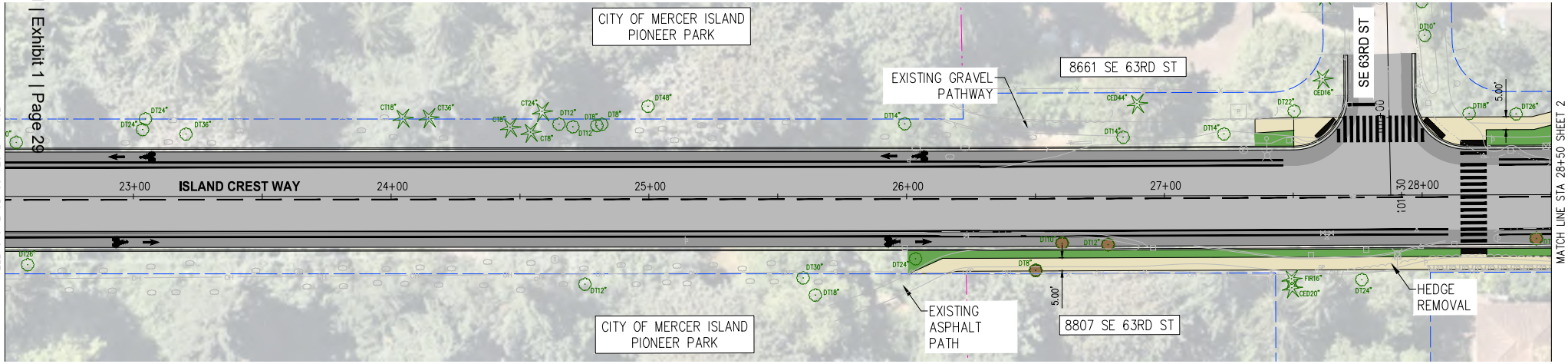

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DRAFT CONCEPTUAL BIKE LANE ALTERNATIVE

SHEET 1 OF 5

NOTES:

- ALL TREES ANTICIPATED FOR REMOVAL SHALL BE REVIEWED AND EVALUATED THROUGH FINAL DESIGN
- INDIVIDUAL PROPERTY IMPACT GRAPHICS MAY BE SUPPLIED UPON WRITTEN REQUEST TO CITY PROJECT MANAGER

LEGEND

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- ASPHALT OVERLAY
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- ANTICIPATED TREE REMOVAL
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- PROPERTY BOUNDARY

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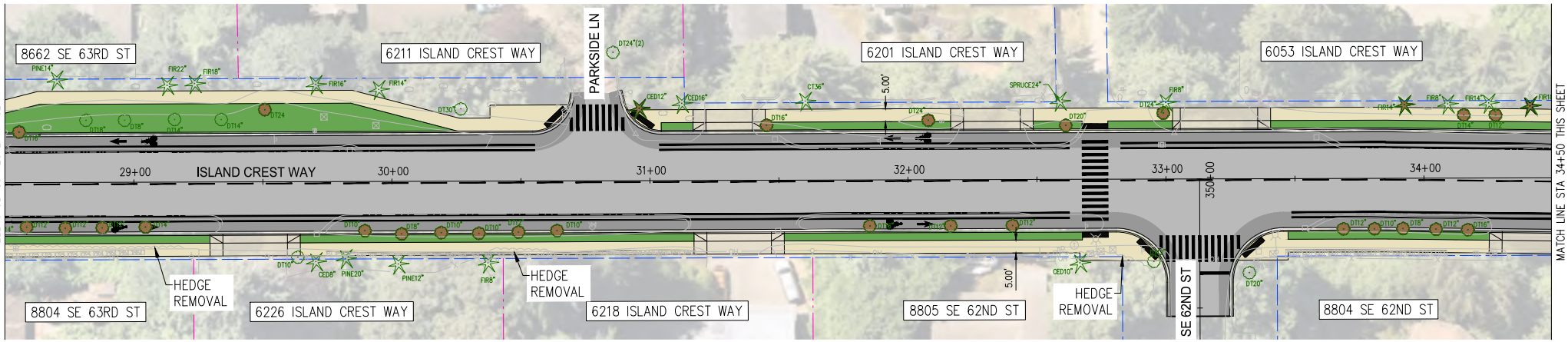

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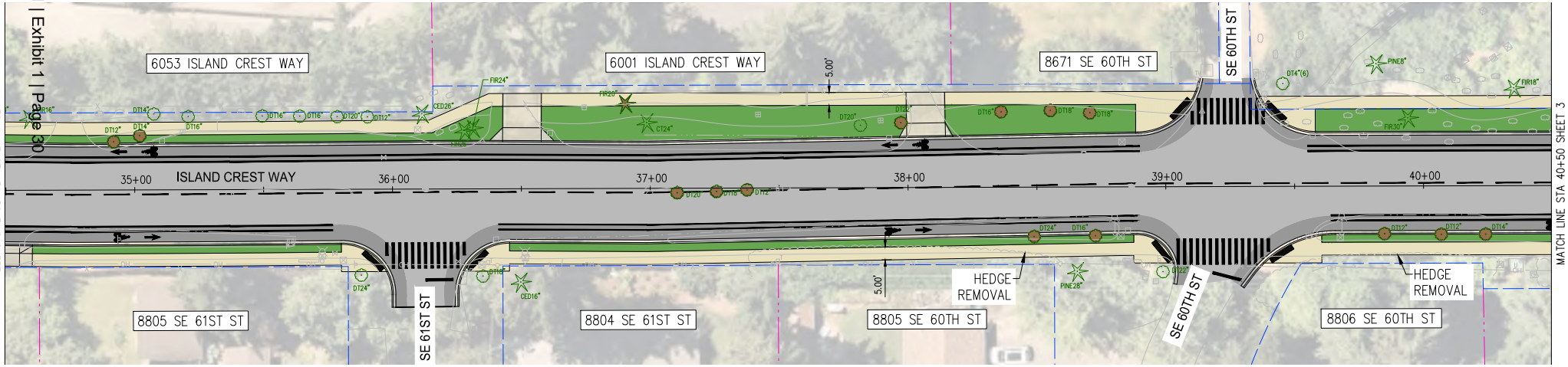

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DRAFT CONCEPTUAL BIKE LANE ALTERNATIVE

SHEET 2 OF 5

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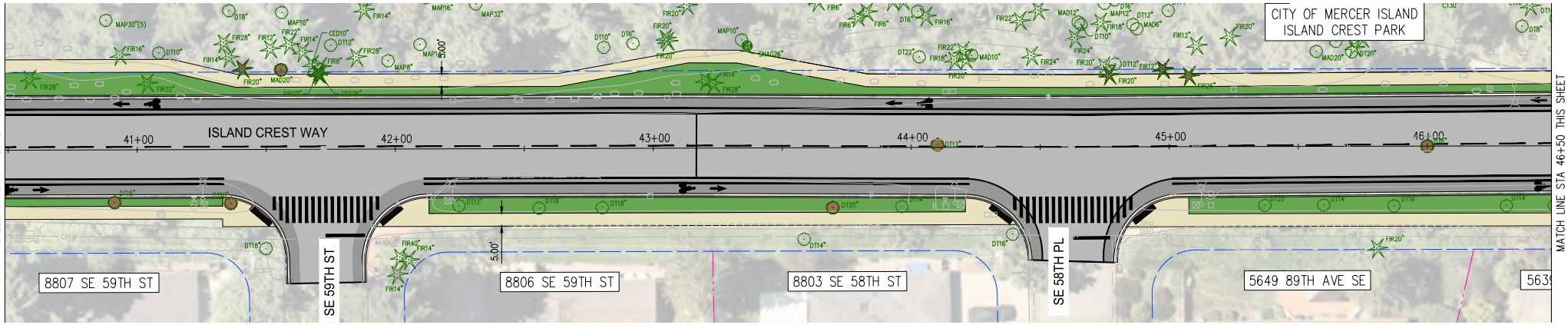

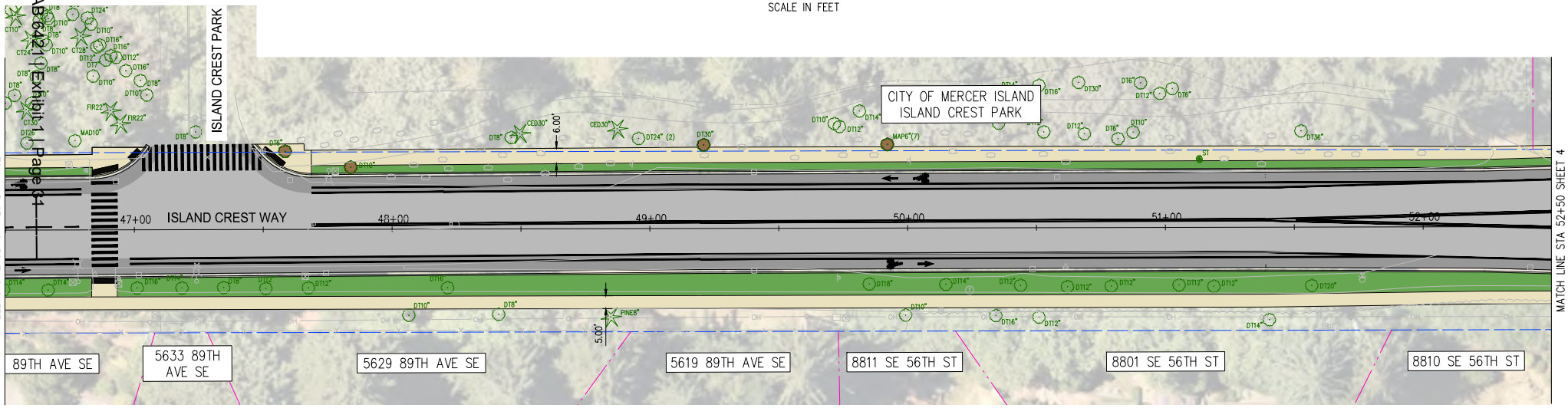

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SHEET 3 OF 5

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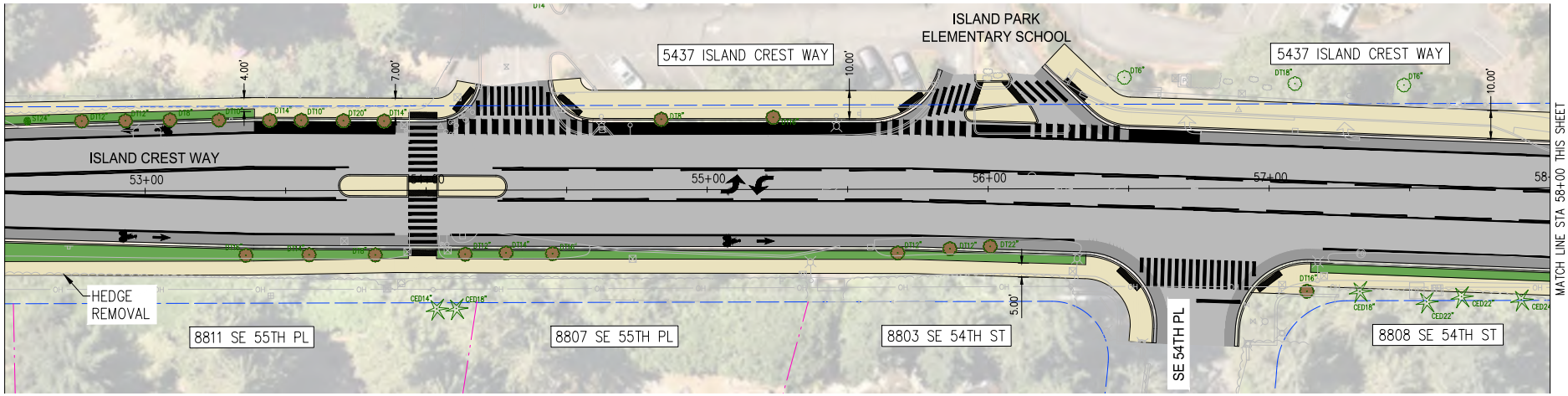

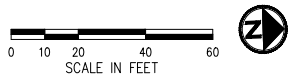

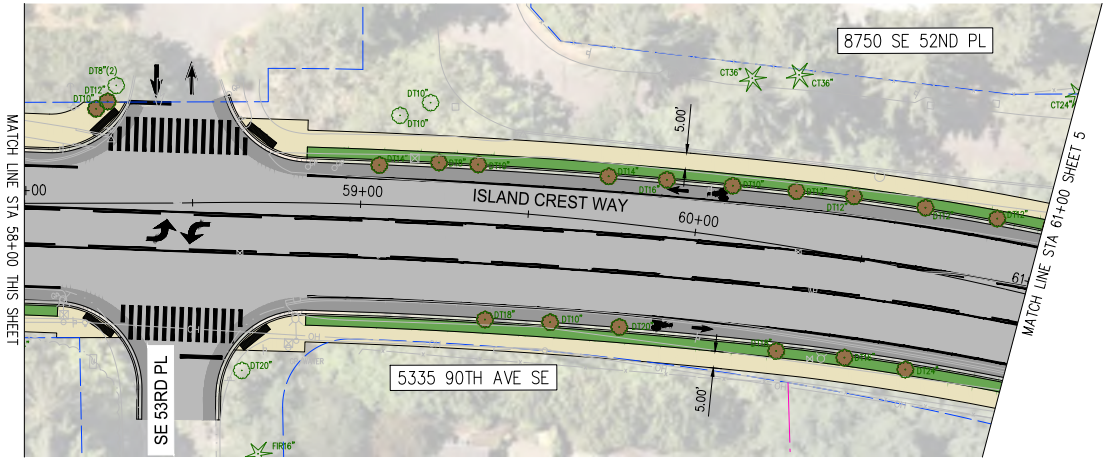

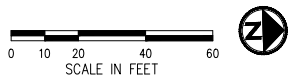

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SHEET 4 OF 5

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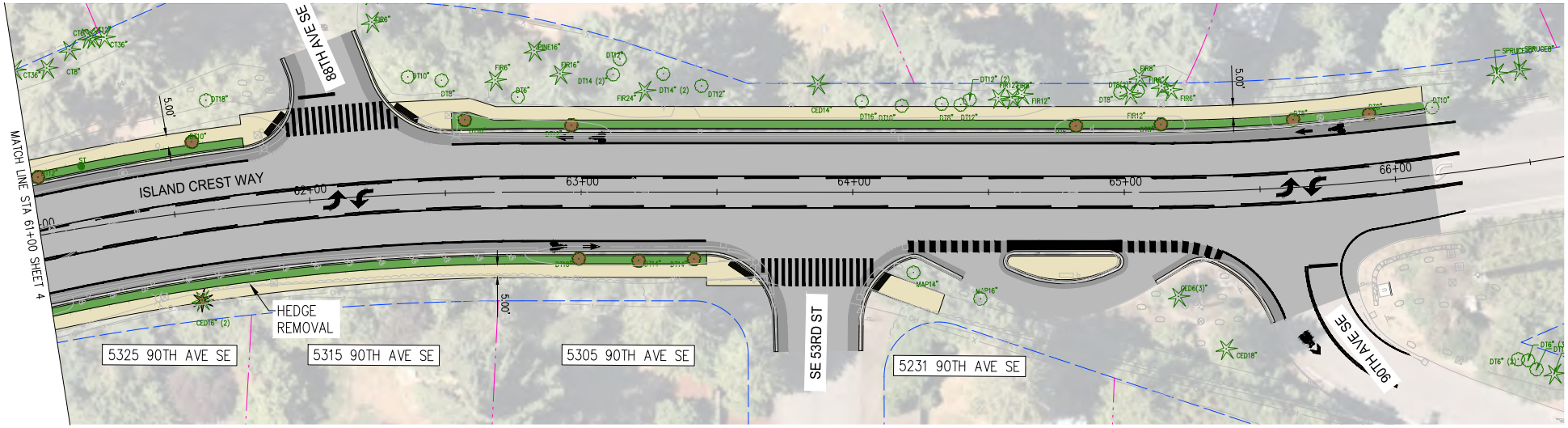

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CONCEPTUAL PLAN LAYOUT
EAST SIDE SHARED USE PATH

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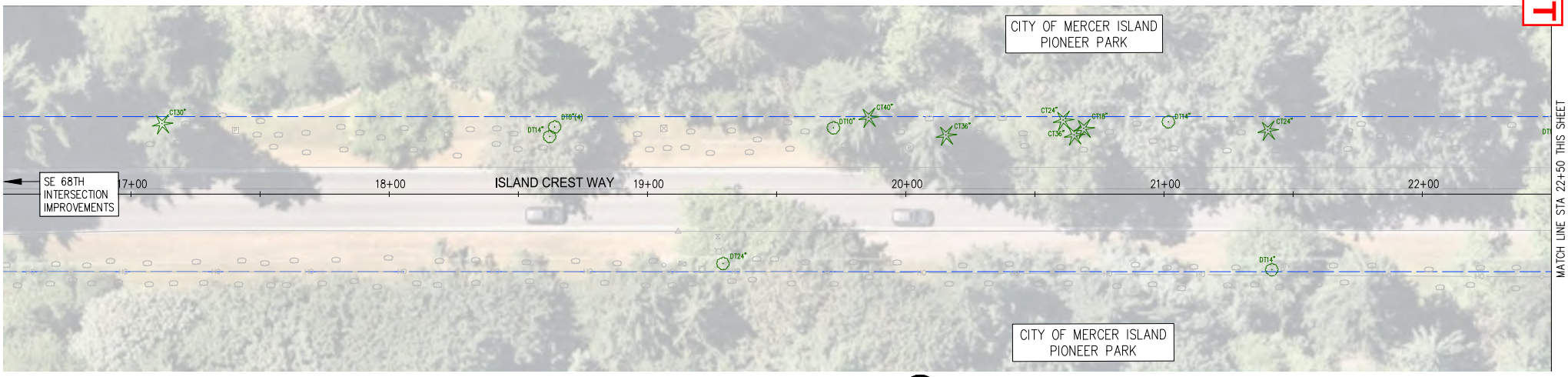

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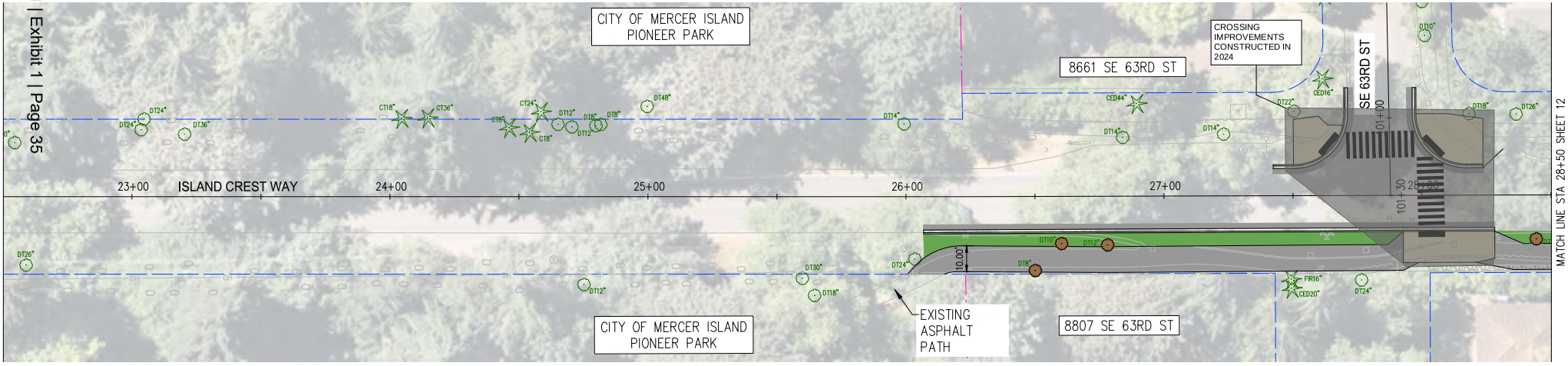

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DRAFT CONCEPTUAL EAST-SIDE SHARED USE PATH ALTERNATIVE

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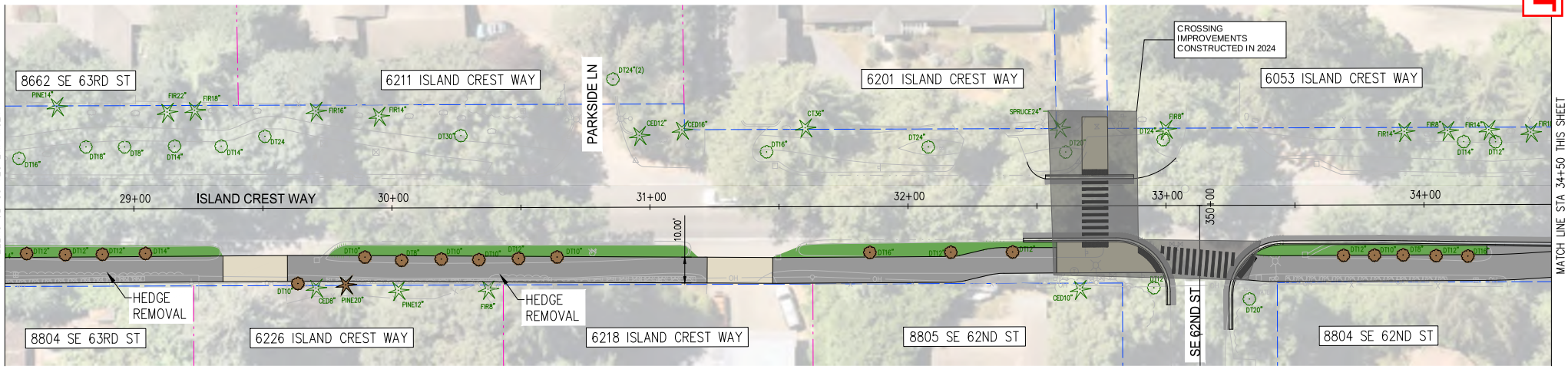

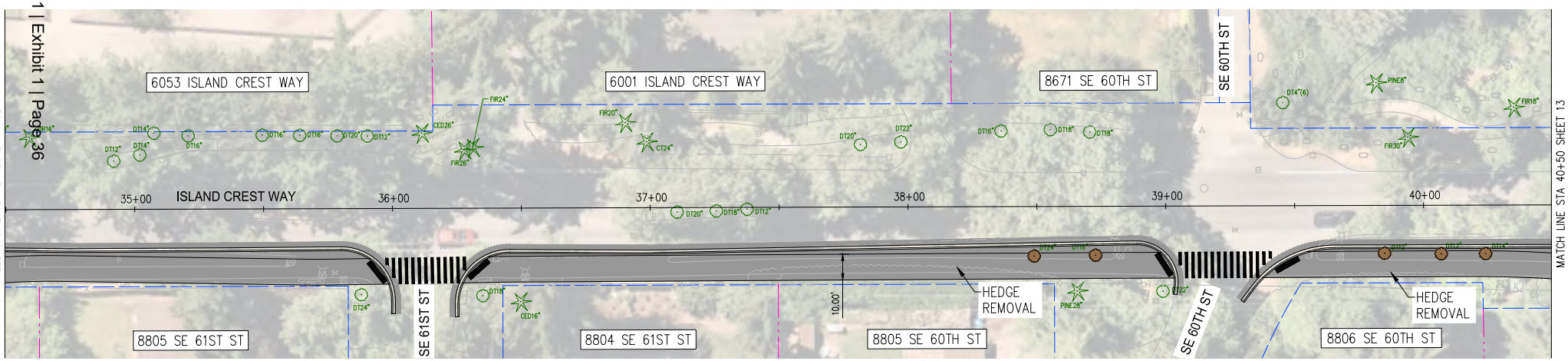

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DRAFT CONCEPTUAL EAST-SIDE SHARED USE PATH ALTERNATIVE

SHEET 2 OF 5

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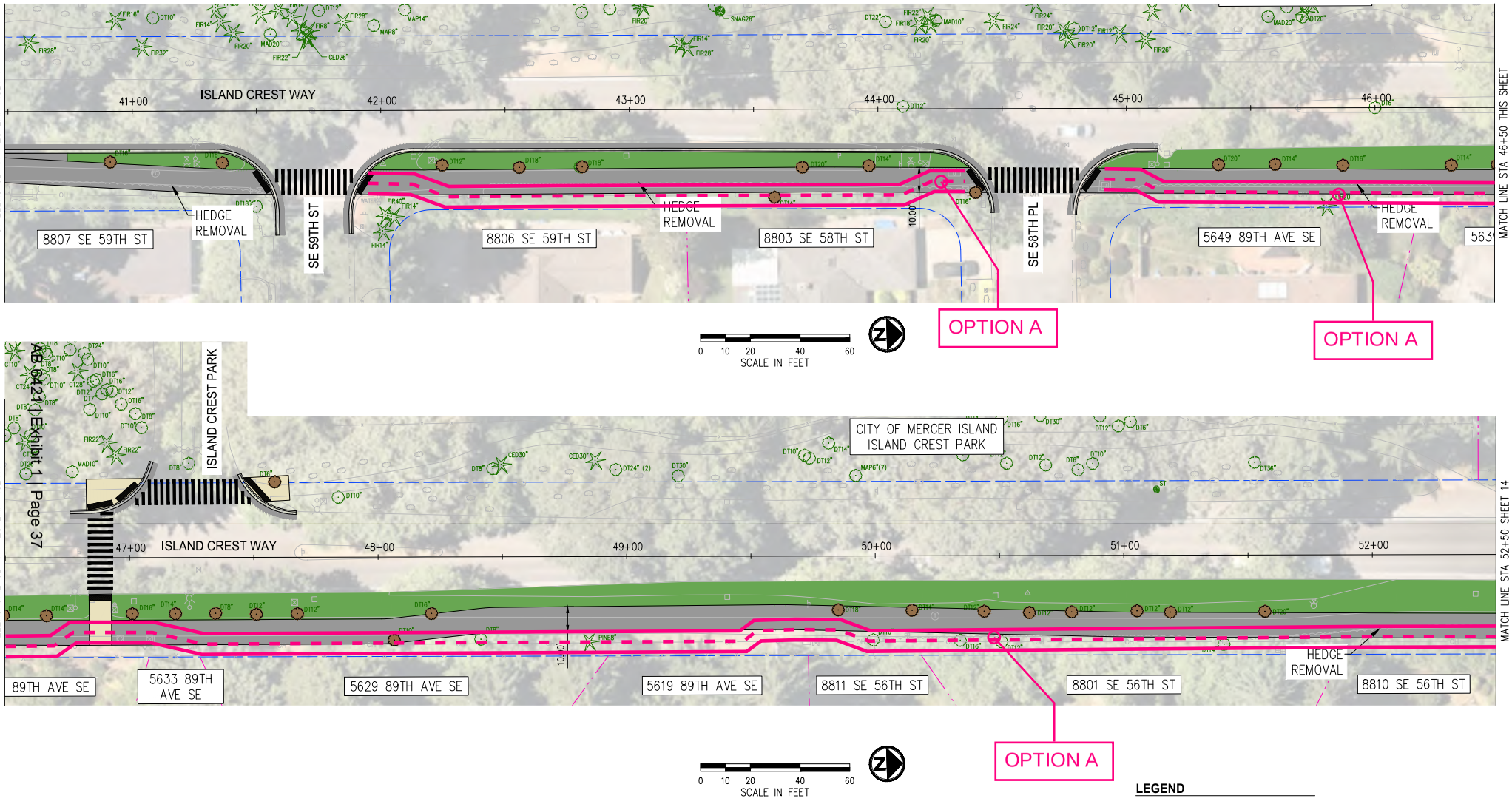

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- PLANTER AREA
- NEW ASPHALT PAVEMENT
- ASPHALT OVERLAY
- DETECTABLE WARNING SURFACE
- ANTICIPATED TREE REMOVAL
- RIGHT OF WAY BOUNDARY
- PROPERTY BOUNDARY

DRAFT CONCEPTUAL EAST-SIDE SHARED USE PATH ALTERNATIVE

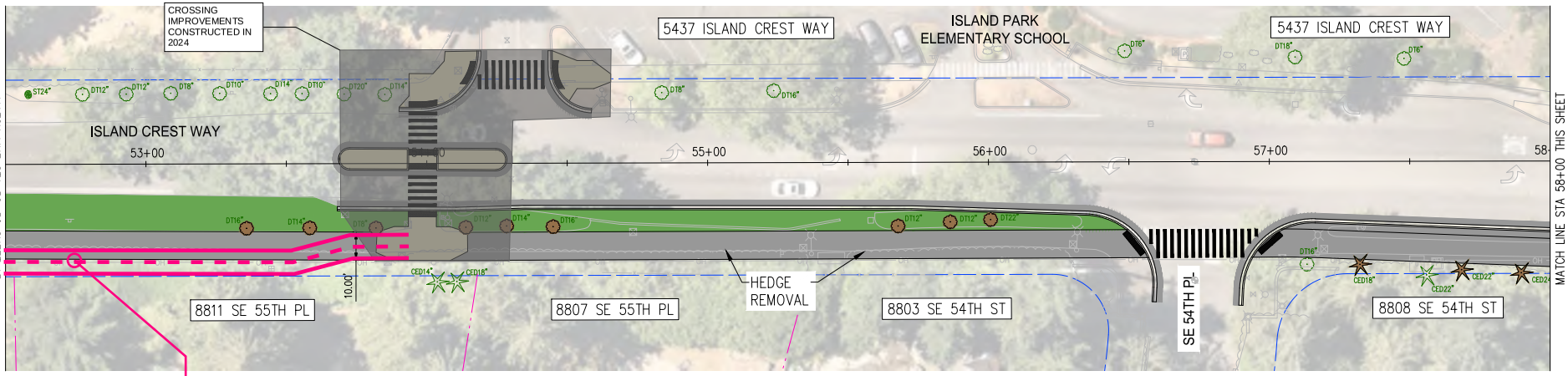
SHEET 3 OF 5

NOTES:

- ALL TREES ANTICIPATED FOR REMOVAL SHALL BE REVIEWED AND EVALUATED THROUGH FINAL DESIGN
- INDIVIDUAL PROPERTY IMPACT GRAPHICS MAY BE SUPPLIED UPON WRITTEN REQUEST TO CITY PROJECT MANAGER

KPG PSOMAS

DRAFT



OPTION A

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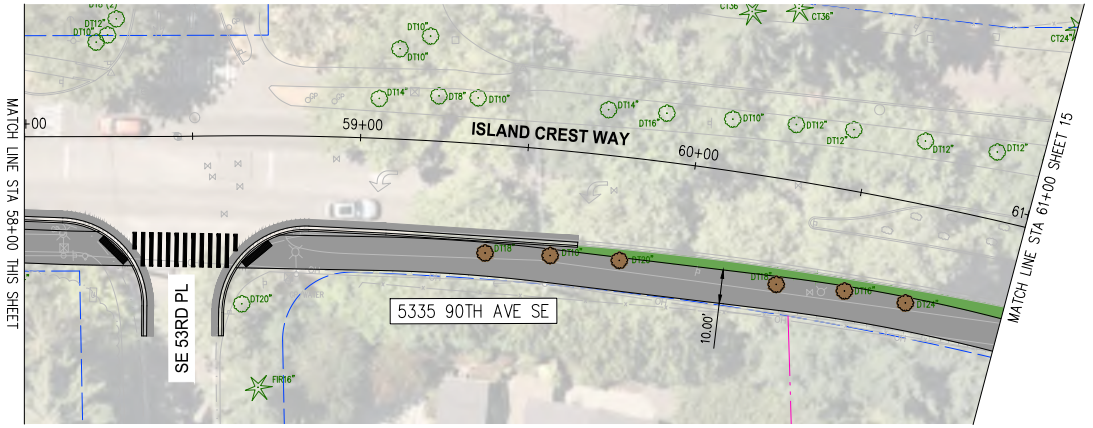

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SHEET 4 OF 5

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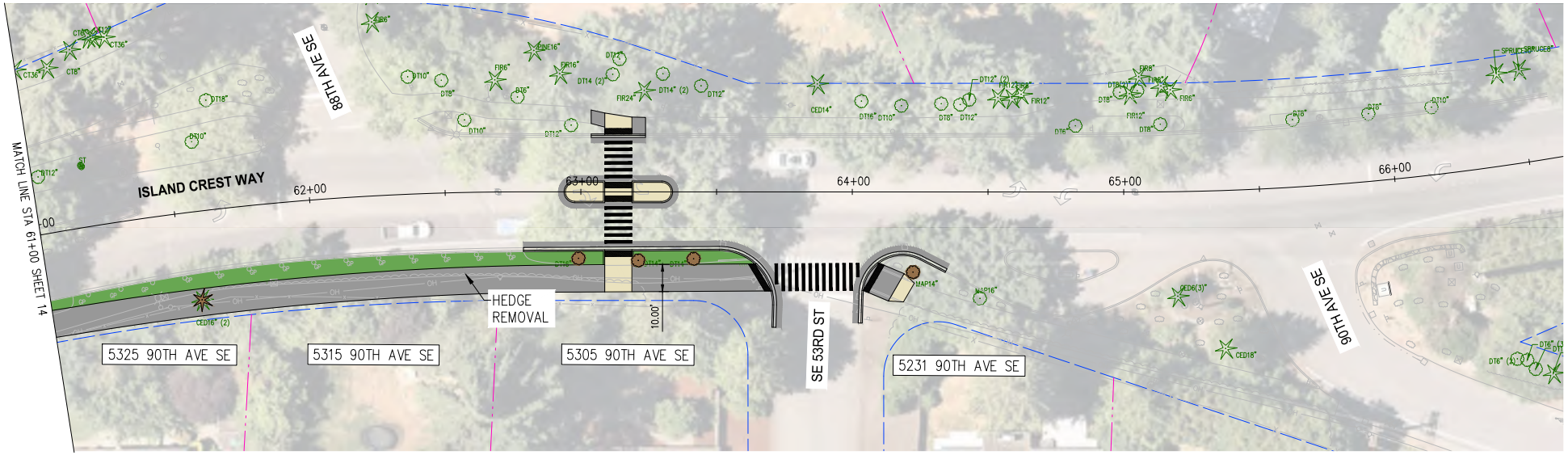

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DRAFT CONCEPTUAL EAST-SIDE SHARED USE PATH ALTERNATIVE

SHEET 5 OF 5

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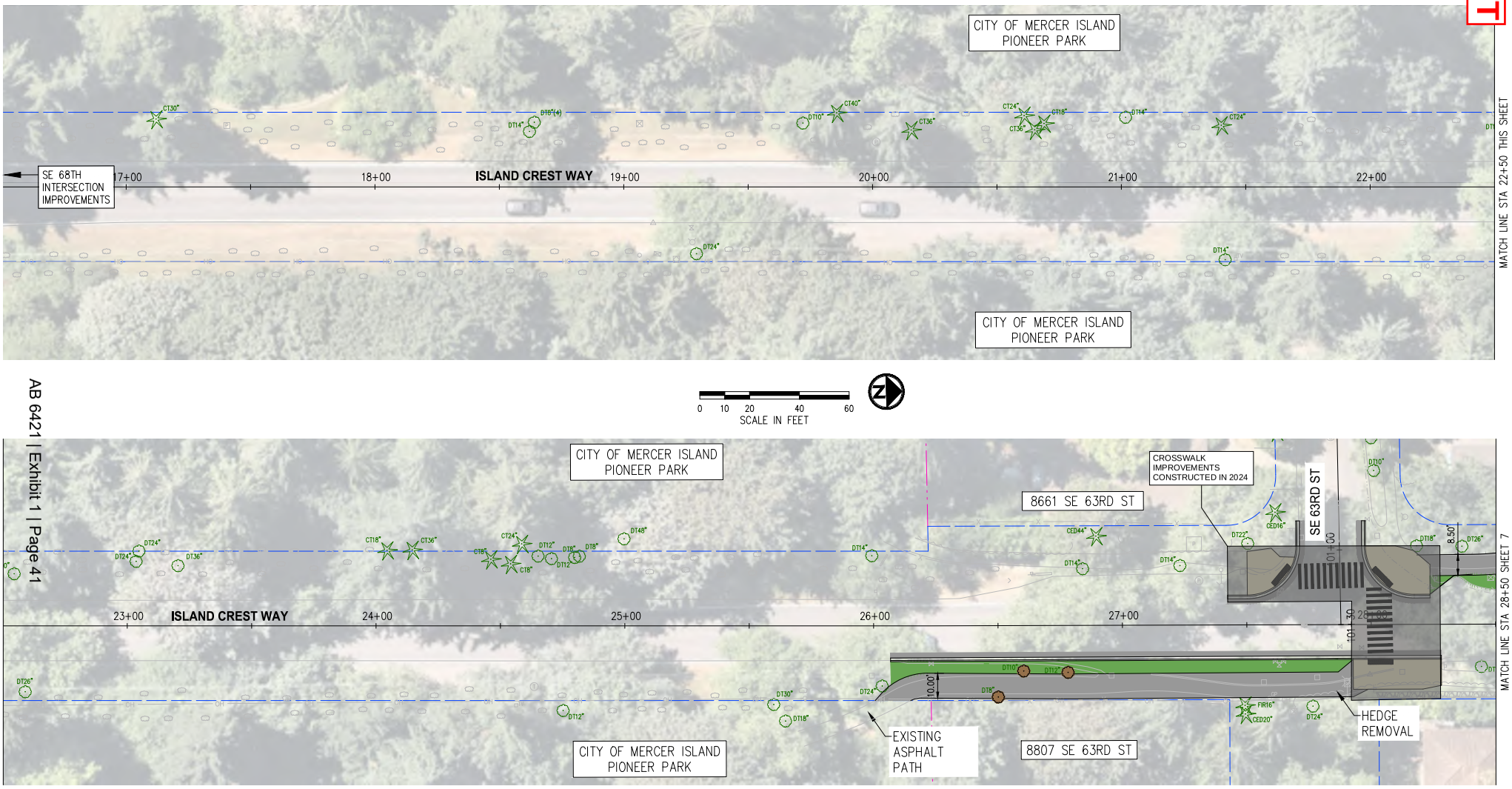
KPG PSOMAS

DRAFT

CONCEPTUAL PLAN LAYOUT
WEST SIDE SHARED USE PATH

DRAFT



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DRAFT CONCEPTUAL WEST-SIDE SHARED USE PATH ALTERNATIVE

SHEET 1 OF 5

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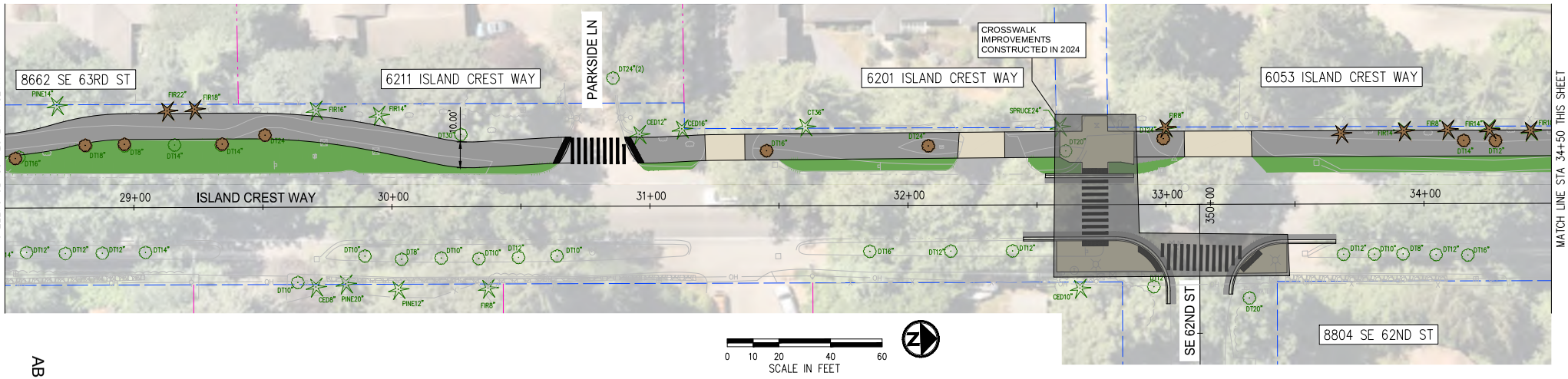

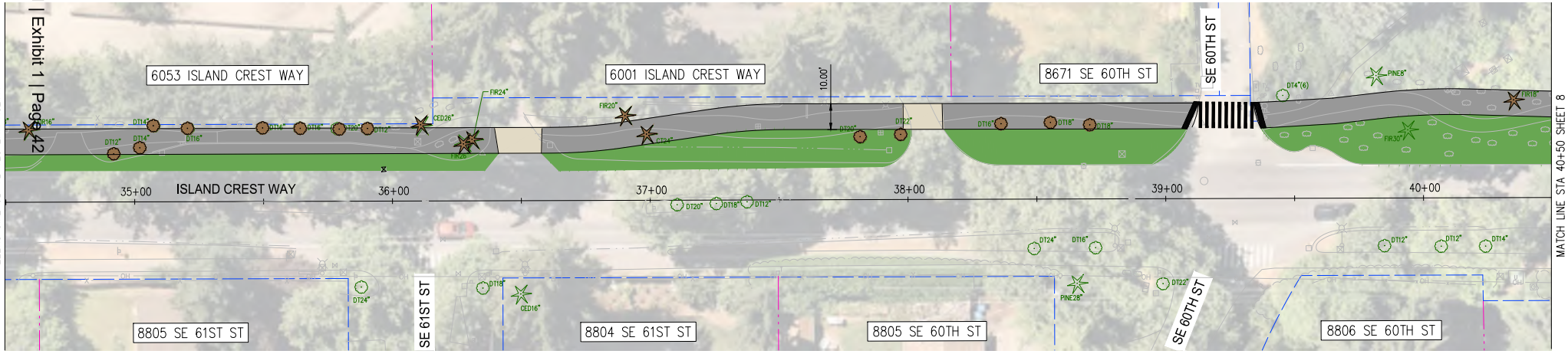

DRAFT CONCEPTUAL WEST-SIDE SHARED USE PATH ALTERNATIVE

SHEET 2 OF 5

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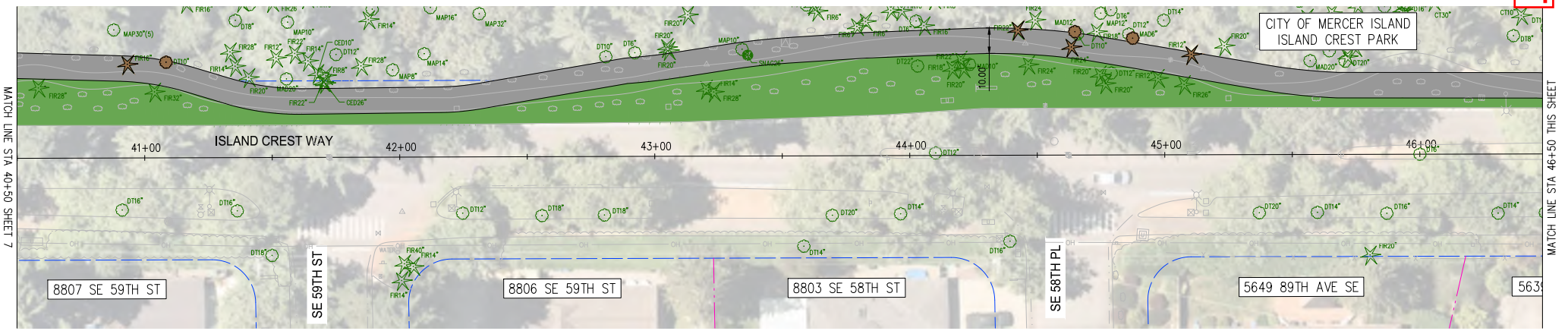

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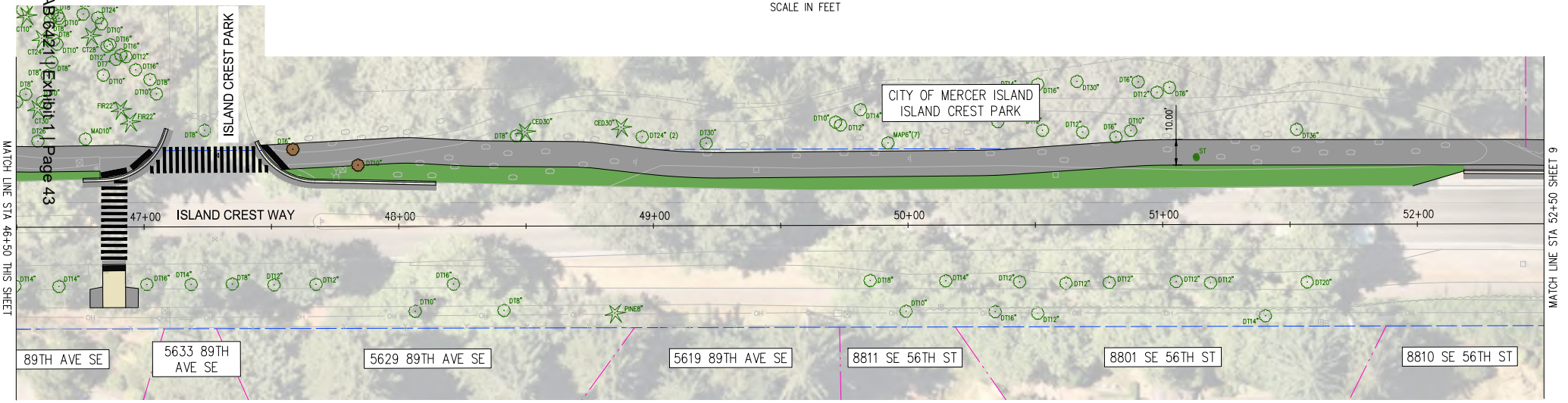

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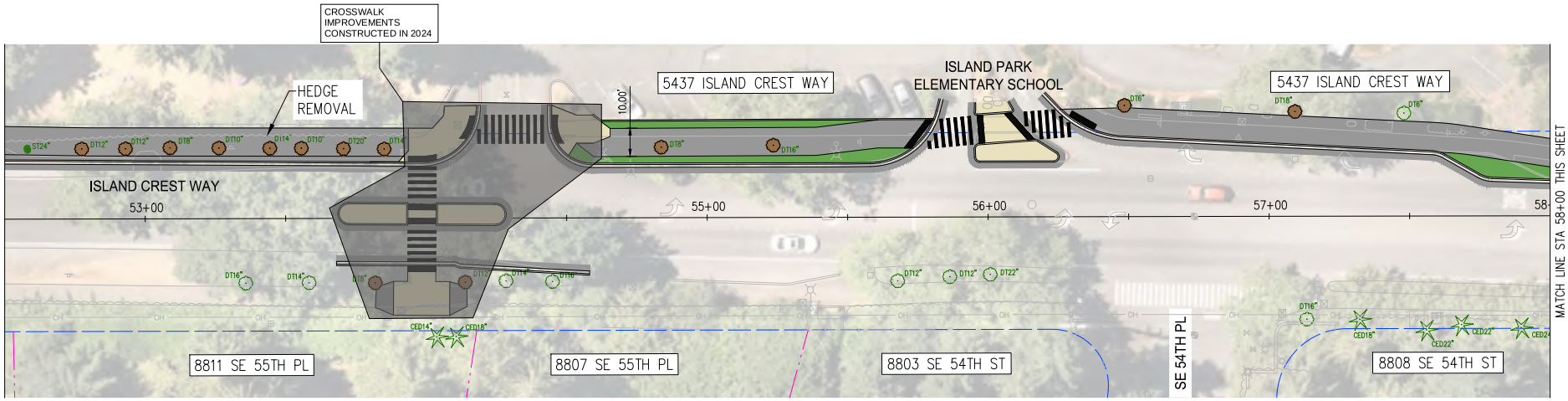

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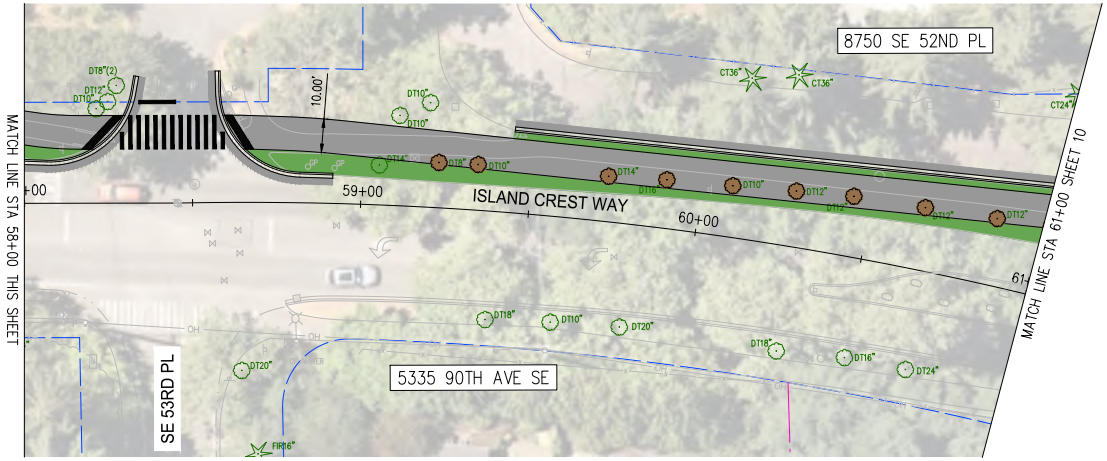
SCALE IN FEET



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DRAFT CONCEPTUAL WEST-SIDE SHARED USE PATH ALTERNATIVE

SHEET 4 OF 5

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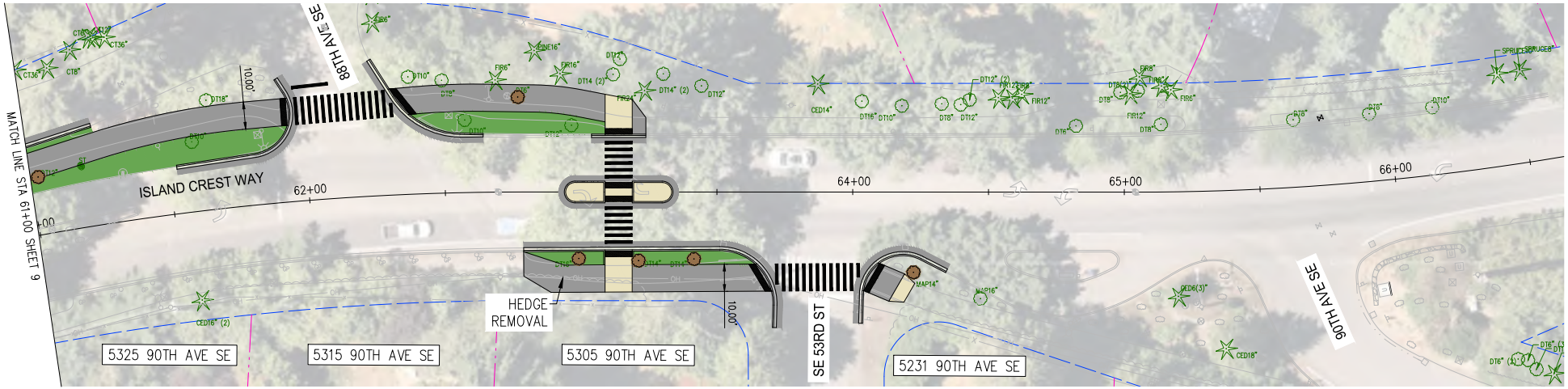

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DRAFT CONCEPTUAL WEST-SIDE SHARED USE PATH ALTERNATIVE

SHEET 5 OF 5

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KPG PSOMAS

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ALTERNATIVE SUMMARY INFORMATION

DRAFT

Separated Bike Lanes Alternative

- New Impervious Surface Area: ~70,000 sq ft
- Utility Impacts: Medium
- Trees to be removed*: ~110-120 (40% of ROW canopy)**
- Existing Storm Drainage Modification: High
- Vehicle Traffic Impact During Construction: High
- Pedestrian Traffic Impact During Construction: Medium
- Construction Cost Rating: $$$

*Note: All removed trees will be replaced.
Hedge removal will be replaced with privacy fencing

**within project boundary

East Side Shared use Path Alternative

- New Impervious Surface Area: ~15,000 sq ft
- Utility Impacts: High
- Trees to be removed*: ~85 - 99 (34% of ROW canopy)**
  Option A: 70-85 (30-32% of ROW canopy)**
- Existing Storm Drainage Modification: Medium
- Vehicle Traffic Impact During Construction: Low
- Pedestrian Traffic Impact During Construction: High
- Construction Cost Rating: $$

*Note: All removed trees will be replaced.
Hedge removal will be replaced with privacy fencing

**within project boundary

West Side Shared use Path Alternative

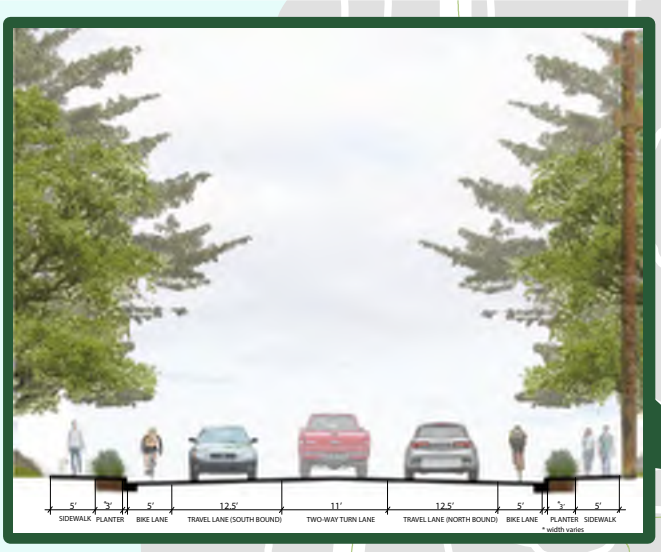
- New Impervious Surface Area: ~24,000 sq ft
- Utility Impacts: Low
- Trees to be removed*: ~75-94 (28% of ROW canopy)**
- Existing Storm Drainage Modification: Low
- Vehicle Traffic Impact During Construction: Low
- Pedestrian Traffic Impact During Construction: Low
- Construction Cost Rating: $

*Note: All removed trees will be replaced.
Hedge removal unlikely

**within project boundary

DRAFT

SEPARATED BIKE LANE



Separated Bike Lanes Alternative

New Impervious Surface Area
~70,000 sq ft

Utility Impacts
Low — Medium ✓ — High

Trees to be removed*
~110-120 (40% of ROW canopy within project boundary)

Existing Storm Drainage Modification
Low — Medium — High ✓

Vehicle Traffic Impact During Construction
Low — Medium — High ✓

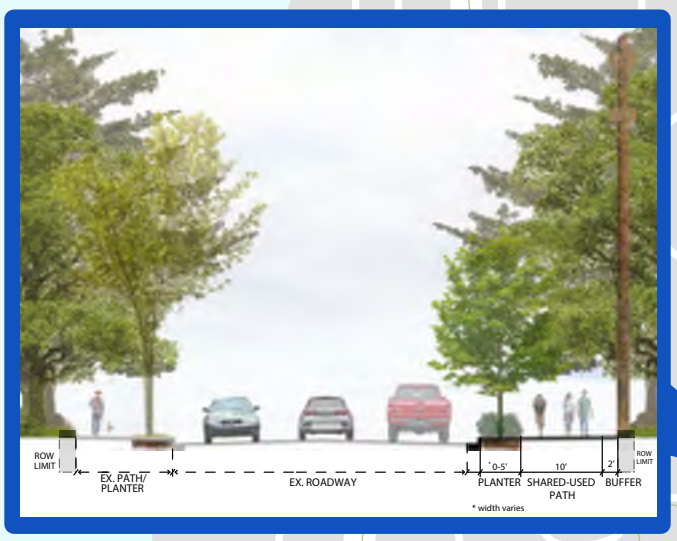
Pedestrian Traffic Impact During Construction
Low — Medium ✓ — High

Construction Cost Rating
Low — Medium — High ($$$)

*Note: All removed trees will be replaced.
Hedge removal will be replaced with privacy fencing.
ROW = Right-of-Way

DRAFT

EAST SIDE SHARED USE PATH



East Side Shared Use Path Alternative

New Impervious Surface Area
~15,000 sq ft

Utility Impacts
Low — Medium — High ✓

Trees to be removed*
~85 - 99 (34% of ROW canopy)
Option A: 70 - 85 (30-32% of ROW canopy within project boundary)

*Note: All removed trees will be replaced.
Hedge removal will be replaced with privacy fencing.

Existing Storm Drainage Modification
Low — Medium ✓ — High

Vehicle Traffic Impact During Construction
Low ✓ — Medium — High

Pedestrian Traffic Impact During Construction
Low — Medium — High ✓

Construction Cost Rating
Low — Medium ($$) — High

DRAFT

WEST SIDE SHARED USE PATH

West Side Shared Use Path Alternative

New Impervious Surface Area
~24,000 sq ft

Utility Impacts
Low — Medium — High

Trees to be removed*
~75 - 94 (28% of ROW canopy within project boundary)

*Note: All removed trees will be replaced. Hedge removal unlikely.

Existing Storm Drainage Modification
Low — Medium — High

Vehicle Traffic Impact During Construction
Low — Medium — High

Pedestrian Traffic Impact During Construction
Low — Medium — High

Construction Cost Rating
Low — Medium ($$) — High