Capital Delivery Programmatic and Project-level Workplan Q1 2025 Update

System Expansion Committee
2/13/2025

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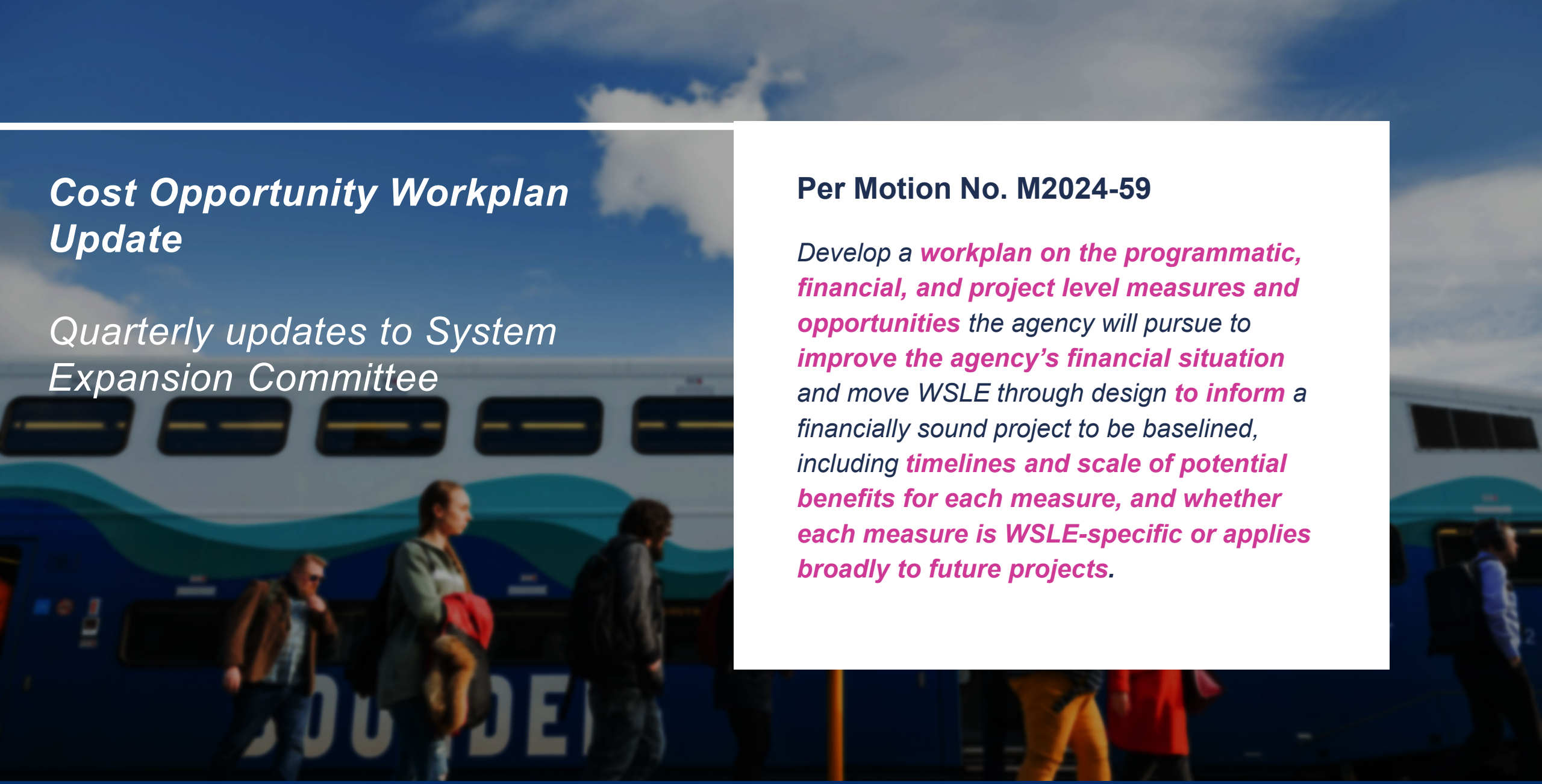
Today's Agenda

- Cost workplan update
  - Programmatic opportunities
  - Project opportunities
- Next steps

475+ opportunities are in progress



Cost Opportunity Workplan Update

Quarterly updates to System Expansion Committee

Per Motion No. M2024-59

*Develop a **workplan on the programmatic, financial, and project level measures and opportunities** the agency will pursue to **improve the agency's financial situation** and move WSLE through design **to inform** a financially sound project to be baselined, including **timelines and scale of potential benefits for each measure, and whether each measure is WSLE-specific or applies broadly to future projects**.*

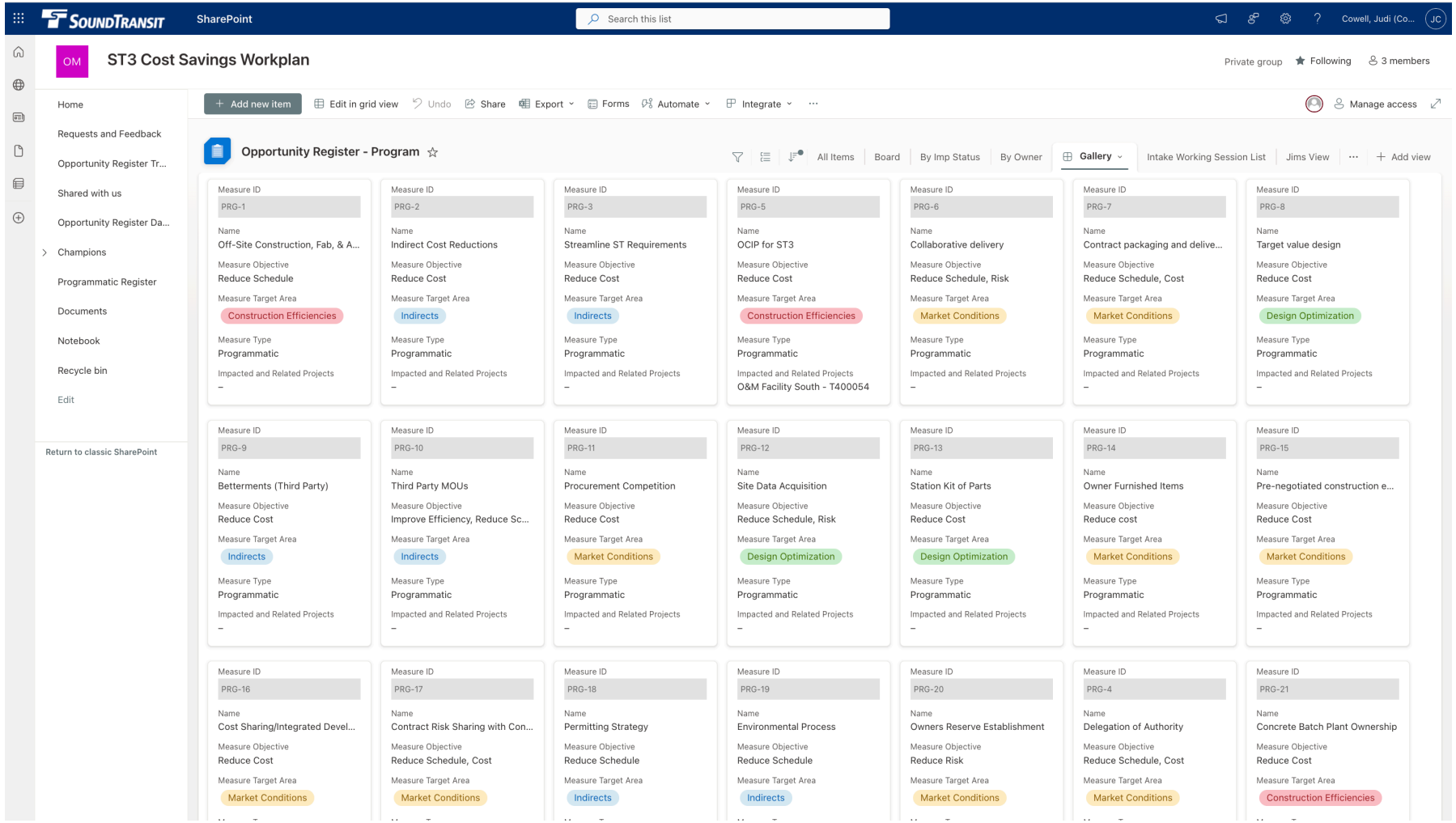
Cost Workplan

Tools, reporting, and training in place

Dashboards and Reporting
Real time data by program and project

Processes / Tools
New tool to track and manage all opportunities

Training
All project teams trained on tools, processes and target savings



Programmatic register tracks opportunities as they move through the assessment and implementation process

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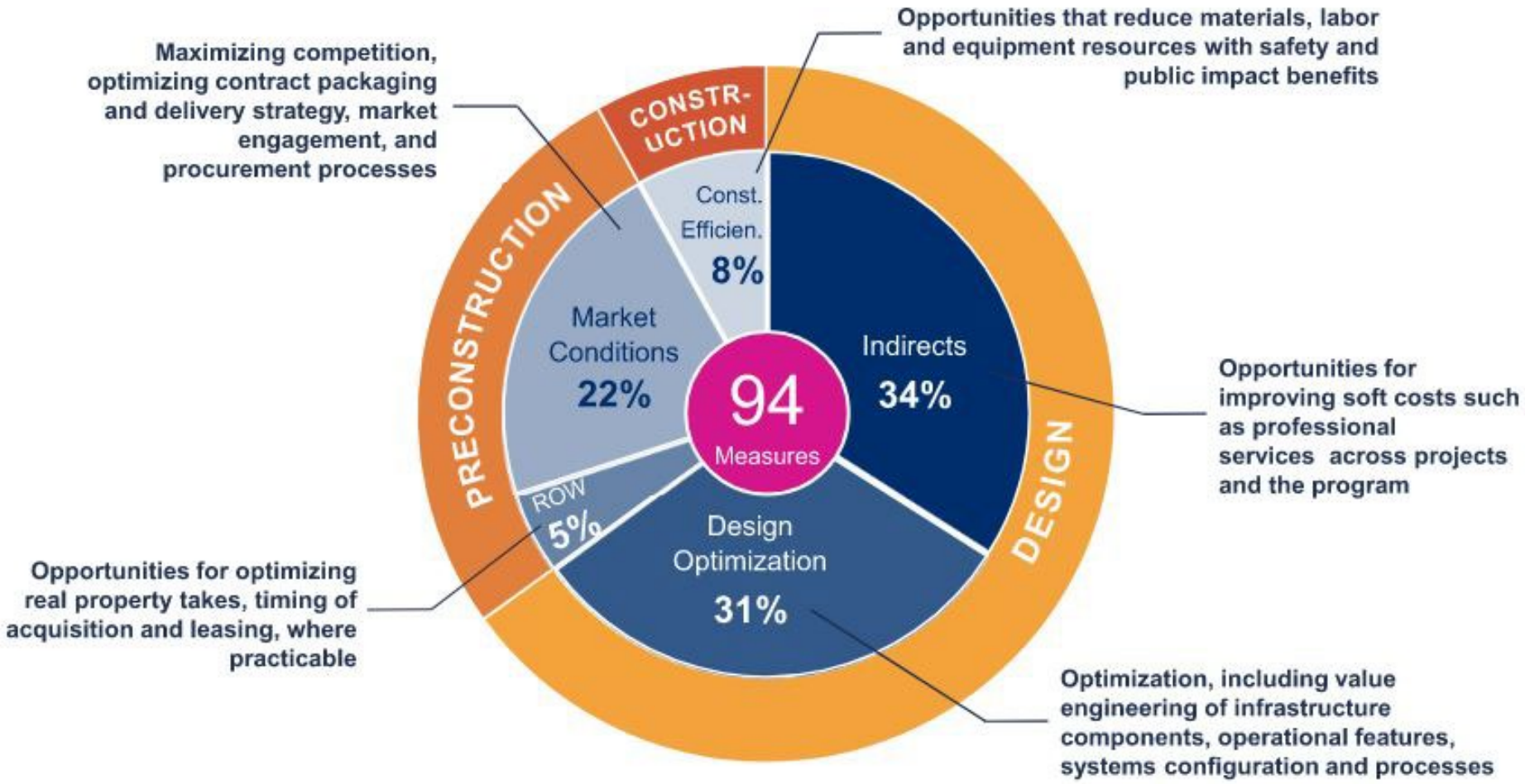
Programmatic

Programmatic opportunities

94 programmatic opportunities under development



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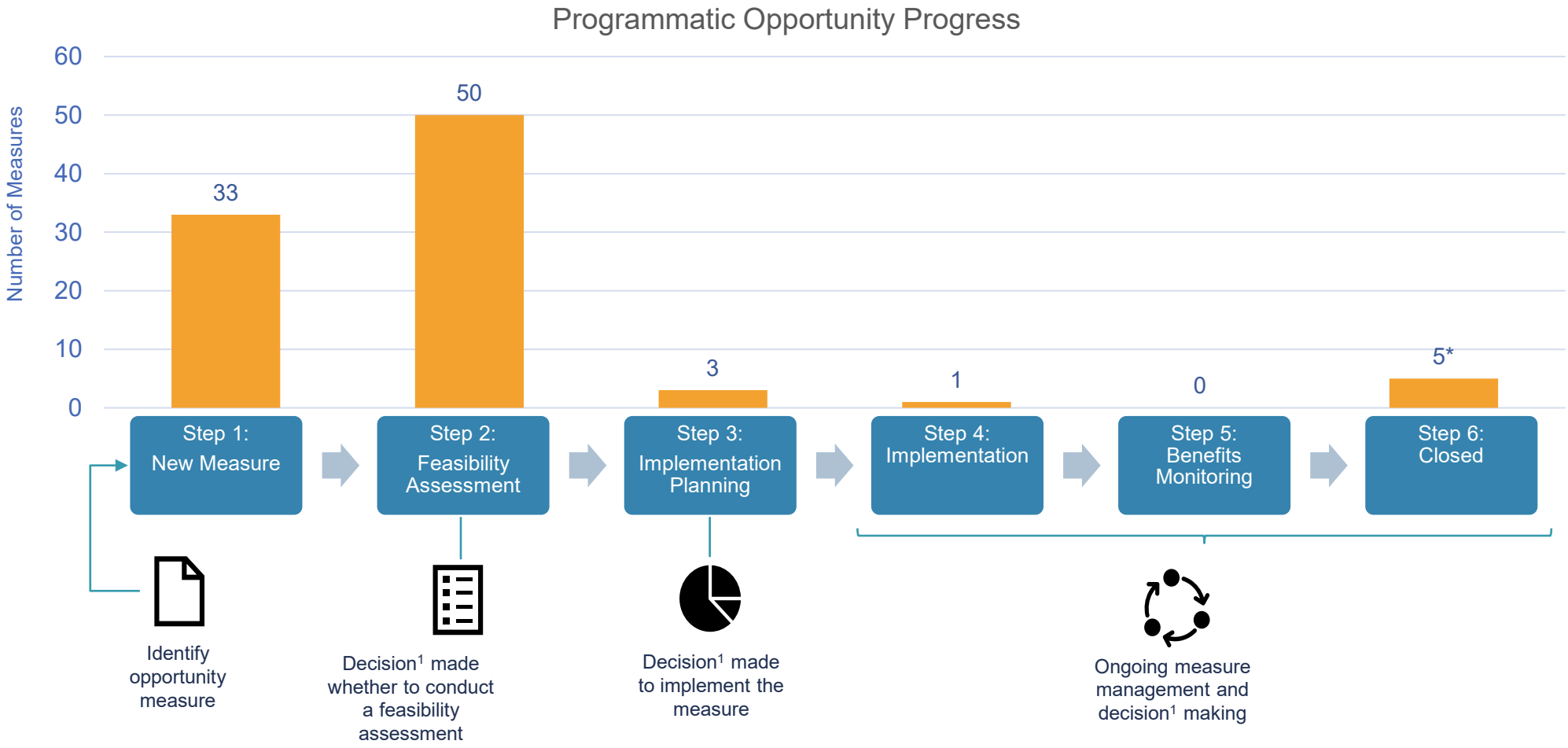
Programmatic

Programmatic Opportunity Workplan

19% of the measures are ranked as high benefit



*Closed measures due to duplication

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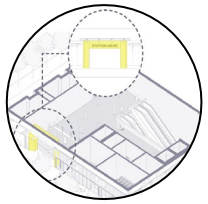
Programmatic Opportunities (partial list)

Example Opportunities (High Likelihood)



Design Optimization
Station Optimization

Market Conditions
ST Delegated Authority

Indirects
Streamline Commissioning and Handover

Market Conditions
Implement Owner Controlled Insurance Program (OCIP)

Name	Measure Target Area	Benefit Ranking	Likelihood Ranking	Measure Implementation Status
Streamline ST Requirements	Indirects	High	High	Step 1a: New Measure
Rebalancing Project Teams	Indirects	High	High	Step 1a: New Measure
Efficient Final Commissioning/Handover (ATO) Process	Indirects	High	High	Step 1a: New Measure
Off-Site Construction, Fab, & Assembly	Construction Efficiencies	High	High	Step 2a: Feasibility Assessment - Planned
OCIP for ST3	Market Conditions	High	High	Step 2a: Feasibility Assessment - Planned
Collaborative delivery	Market Conditions	High	High	Step 2a: Feasibility Assessment - Planned
Contract Risk Sharing with Contractors	Market Conditions	High	High	Step 2a: Feasibility Assessment - Planned
MATOCs	Indirects	High	High	Step 2a: Feasibility Assessment - Planned
PMIS Tool	Indirects	High	High	Step 2a: Feasibility Assessment - Planned
Project Charging only by CDD	Indirects	High	High	Step 2a: Feasibility Assessment - Planned
Delegation of Authority	Market Conditions	High	High	Step 2b: Feasibility Assessment - In Progress
Station Programming Review	Design Optimization	High	High	Step 6: Closed
Adapt ST standards requirements to align with industry benchmarks / best practices	Design Optimization	High	Medium	Step 2a: Feasibility Assessment - Planned
Station Programing Review	Design Optimization	High	Medium	Step 2a: Feasibility Assessment - Planned
Station headhouses in public ROW/spaces	Design Optimization	High	Medium	Step 2a: Feasibility Assessment - Planned
Optimize platform width	Design Optimization	High	Medium	Step 2b: Feasibility Assessment - In Progress
Utility Service Level Agreements	Market Conditions	High	Medium	Step 3: Measure implementation planning
Permitting Strategy	Indirects	High	Low	Step 2a: Feasibility Assessment - Planned
QA/QC Assessment	Indirects	Medium	High	Step 1a: New Measure
SOGR estimates	Design Optimization	Medium	High	Step 1a: New Measure
Indirect Cost Reductions	Indirects	Medium	High	Step 2a: Feasibility Assessment - Planned
Site Data Acquisition	Design Optimization	Medium	High	Step 2a: Feasibility Assessment - Planned
Analyze alternative parking garage delivery methods	Construction Efficiencies	Medium	High	Step 2a: Feasibility Assessment - Planned
Digital Twin	Construction Efficiencies	Medium	High	Step 6: Closed
Report Consolidation	Indirects	Medium	Medium	Step 1a: New Measure
Risk Based Estimating	Indirects	Medium	Medium	Step 1a: New Measure
Turnback Operations	Design Optimization	Medium	Medium	Step 1a: New Measure
Fleet Reliability Improvments	Design Optimization	Medium	Medium	Step 1a: New Measure
Target value design	Design Optimization	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Third Party MOUs	Indirects	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Procurement Competition	Market Conditions	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Station Kit of Parts	Design Optimization	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Owner Furnished Items	Market Conditions	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Pre-negotiated construction equipment/material Costs	Market Conditions	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Environmental Process	Indirects	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Leasing Property vs Acquiring	Right of Way	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Full ROW Acquisition design improvements	Right of Way	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Off Site Commissioning	Market Conditions	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Enhanced use of Design Technologies	Construction Efficiencies	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Infrastructure Design	Design Optimization	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Optimize use of public restrooms where needed	Design Optimization	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Optimize use of bike parking rooms	Design Optimization	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Rail Systems Kit of Parts	Design Optimization	Medium	Medium	Step 2a: Feasibility Assessment - Planned
Large Contract Splitting	Market Conditions	Medium	Medium	Step 6: Closed
Betterments (Third Party)	Indirects	Medium	Low	Step 1a: New Measure
Cost of Federal vs Non-Federal Work	Indirects	Medium	Low	Step 1a: New Measure
Optimize platform lengths	Design Optimization	Medium	Low	Step 1b: On Hold
Cost Sharing/Integrated Development	Market Conditions	Medium	Low	Step 2a: Feasibility Assessment - Planned
Owners Reserve Establishment	Market Conditions	Medium	Low	Step 2a: Feasibility Assessment - Planned
Tunnel Boring Machine Ownership	Market Conditions	Medium	Low	Step 2a: Feasibility Assessment - Planned
Commodities	Market Conditions	Medium	Low	Step 2a: Feasibility Assessment - Planned
Use side platforms where deemed necessary	Design Optimization	Medium	Low	Step 2a: Feasibility Assessment - Planned
Add turnstiles/faregates	Design Optimization	Medium	Low	Step 2a: Feasibility Assessment - Planned
Platform Edge Doors	Design Optimization	Medium	Low	Step 2a: Feasibility Assessment - Planned
Concrete Batch Plant Ownership	Construction Efficiencies	Medium	Low	Step 2b: Feasibility Assessment - In Progress
Contract packaging and delivery strategy	Market Conditions	Low	High	Step 2a: Feasibility Assessment - Planned

Programmatic Opportunity Example #1
Design Optimization

Station Optimization

Seven station standard prototypes have been developed to address varying stations conditions across WSLE, BLE, EVLE and TDLE.

- Stations make up ~15% construction costs.
- Stations currently represent approximately 18% of WSLE total costs.

Benefits

- **Reduce upfront costs** (i.e. design)
- Potential for **bulk purchase of materials**
- **Construction efficiency:** Potential for off-site construction and modular construction
- Consistent passenger experience

Programmatic Opportunity Example #2
Market Conditions

Sound Transit Delegated Authority

Recommendation by the Board and the TAG to push appropriate decision making to staff

Improve delegation of authority through:

- Consistent application of authorization thresholds
- Policy predicated on project centric budget and contingency management

Return to the board with more information in 2025

Benefits

- View of **performance at the project level**
- **Reduces contractor markup** (risk of delayed decisions)
- Clear accountability to staff
- Supports **efficient issue resolution**
- Ability to meet **prompt payment** goals

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Programmatic Opportunity Example #3
Indirects

Streamline Commissioning and Handover

Increase efficiency and speed to reduce pre-revenue phase

- Automating fabrication
- Using simulators for driver training and integration testing to prepare before operations begin
- Off-site commissioning such as a test lab

Benefits

- **Schedule benefits:** reduce pre-revenue operational period.
- **Minimize site impacts** by maximizing off-site testing and training.
- **Streamline processes and training** across projects

Programmatic Opportunity Example #4
Market Conditions

Implement Owner Controlled Insurance Program (OCIP)

- Implement an OCIP for ST3 to cover General Liability including builder risk, pollution liability and professional liability.

Benefits

- **Cost benefits:** Potential saving for ST3 on large projects.
- **Business Benefit:** Allows greater participation by disadvantaged businesses.
- **Attract subcontractors** to pursue ST projects.

$25 – 35M
Target Savings

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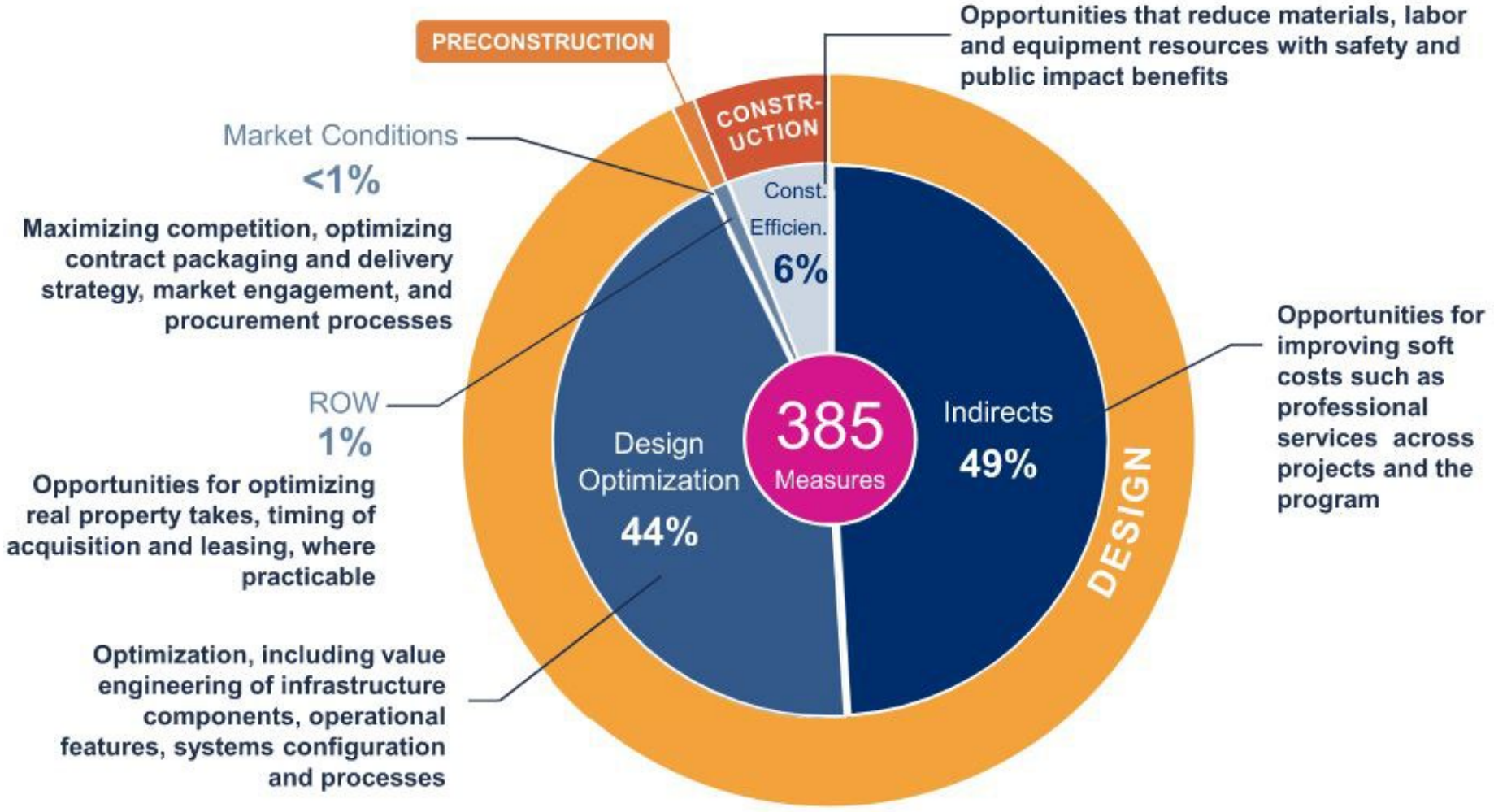
Project opportunities

385 project opportunities under development



Project Opportunity Workplan

10% of the measures are ranked as high benefit

*Closed measures due to duplication

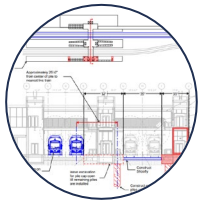
WSLE Project Workplan Opportunities

Three example opportunities with target savings of $290M - $365M

Example Opportunities (Partial list)

Construction Efficiencies
Aerial Guideway Optimization

Design Optimization
Aerial Guideway Foundation and Ground Optimization



Design Optimization
SODO Station Optimization

Measure Name	Measure Target Area	Benefit Ranking	Likelihood Ranking	Measure Priority	Measure Implementation Status
W200 Span Optimization and Adopting of pre-cast segmental guideway construction.	Construction Efficiencies	High	High	P2 (High)	Step 6: Closed
Aerial Guideway Foundations Optimization	Design Optimization	Medium	High	P2 (High)	Step 2a: Feasibility Assessment - Planned
Pre-Cast Segmental Superstruction on Duwamish Cable Stayed Bridge	Construction Efficiencies	Medium	High	P3 (Medium)	Step 2a: Feasibility Assessment - Planned
Pre-Cast Segmental Superstruction on Duwamish Cable Stayed Bridge	Construction Efficiencies	Medium	High	P3 (Medium)	Step 2a: Feasibility Assessment - Planned
Raise track top of rail at AJS	Construction Efficiencies	Medium	Medium	P3 (Medium)	Step 1: New Measure
Optimized Aerial Guideway Alignment	Design Optimization	Medium	Medium	P3 (Medium)	Step 1: New Measure
SODO Station Optimization	Design Optimization	Medium	Medium	P3 (Medium)	Step 2a: Feasibility Assessment - Planned
Alaska Junction - SW Hudson Ventilation and TPSS O	Design Optimization	Medium	Medium	P3 (Medium)	Step 2a: Feasibility Assessment - Planned
LRV Storage Track Delridge vs Alaska	Design Optimization	Medium	Low	P4 (Low)	Step 1: New Measure
Tunnel Portal Optimization Avalon	Design Optimization	Medium	Low	P4 (Low)	Step 1: New Measure
Duwamish Cable Stay with Steel Modular Deck	Construction Efficiencies	Medium	Low	P3 (Medium)	Step 1: New Measure
Station Prototype Application	Design Optimization	Medium	Low	P2 (High)	Step 2a: Feasibility Assessment - Planned
Delridge Side Platform Configuration	Construction Efficiencies	Medium	Low	P4 (Low)	Step 2a: Feasibility Assessment - Planned
SODO Station Foundation Optimization	Construction Effiencies	Medium	Low	P3 (Medium)	Step 2b: Feasibility Assessment - In Progress
Cut and Cover Station Size Reduction (Alaska Junction)	Design Optimization	Medium	Low	P3 (Medium)	Step 6: Closed
Stations Study	Design Optimization	Low	High	P2 (High)	Step 1: New Measure
Real Estate optimization	Right of Way	Low	Medium	P3 (Medium)	Step 1: New Measure
Plaza Structure Removal at Delridge	Design Optimization	Low	Medium	P3 (Medium)	Step 1: New Measure
Duwamish Cable Stay with Diamond Pylon	Construction Efficiencies	Low	Medium	P3 (Medium)	Step 1: New Measure
Pylon Foundation Optimization	Construction Efficiencies	Low	Medium	P2 (High)	Step 2a: Feasibility Assessment - Planned
Alaska Junction No 8 vs No 10	Design Optimization	Low	Medium	P3 (Medium)	Step 2a: Feasibility Assessment - Planned
Alaska Junction Entrance Consolidation	Design Optimization	Low	Low	P4 (Low)	Step 1: New Measure
SODO Station - Single Island platform	Design Optimization	Low	Low	P3 (Medium)	Step 1: New Measure
Reduced central platform width	Construction Efficiencies	Low	Low	P1 (Critical)	Step 1: New Measure
Delridge Station Optimization	Construction Efficiencies	Low	Low	P1 (Critical)	Step 2b: Feasibility Assessment - In Progress
Avalon Station Optimization	Construction Efficiencies	Low	Low	P1 (Critical)	Step 2b: Feasibility Assessment - In Progress
Alaska Junction Station Optimization	Construction Efficiencies	Low	Low	P1 (Critical)	Step 2b: Feasibility Assessment - In Progress

WSLE opportunities over the project timeline

WE ARE HERE

	PLANNING	DESIGN VALIDATION	DESIGN DEVELOPMENT	CONSTRUCTION DOCUMENTS	PROCUREMENT	CONSTRUCTION	SERVICE STARTS
Activities	• Alternatives Development • Environmental Review • Plan to budget • Cost estimate validation	• Design Optimization: confirm value engineering opportunities • Define ROW acquisition strategy • Award civil design contract	• Implement design optimizations • Advance ROW Acquisitions • Explore funding and financial capacity • Enter FTA EPD program	• Design optimizations incorporated and priced by contractors • Establish project baseline at approx. 80% design	• Procure construction contracts	• Reduce cost through programmatic efficiencies • Efficient decisions - exercise delegation of authority at the project level	• Substantial Completion • Training • Asset Transfer and Management
Outcomes	• Project to be Built • Record of Decision • Prelim value engineering and program strategies list	• Value engineering opportunities confirmed • Present work plan and potential decisions to board	• Contractor on board for collaborative delivery contracts • Board approval - EPD funding	• Compete design phase • Baseline project	• Board consider action for construction	• Effective use of contingencies and allowances (risk)	• Construction closeout

Programmatic and project opportunities implemented across each project phase and activity

WSLE opportunities during design validation

WE ARE HERE

	PLANNING	DESIGN VALIDATION	GN DEVELOPMENT	CONSTRUCTION DOCUMENTS	PROCUREMENT	CONSTRUCTION	SERVICE STARTS
Activities	• Alternatives Development • Environmental Review • Plan to budget • Cost estimate validation • Building and vett… value engineering… list for next phase • Define ROW acquisition strate…	**ACTIVITIES** • **Design Optimization:** confirm value engineering opportunities • Award civil design contract • Begin ROW acquisition process	…ment design …izations …nce ROW …sitions …re funding and …cial capacity … FTA EPD …am	• Design optimizations incorporated and priced by contractors • Establish project baseline at approx. 80% design	• Procure construction contracts	• Reduce cost through programmatic efficiencies • Efficient decisions - exercise delegation of authority at the project level	• Substantial Completion • Training • Asset Transfer and Management
Outcomes	• Project to be Buil… • *Record of Decisi…* • Prelim value engineering and program strategies list	• Present workplan and potential decisions to board	• …ractor on board for …borative delivery …racts • Board approval - EPD funding	• Compete design phase • Baseline project	• Board consider action for construction	• Effective use of contingencies and allowances (risk)	• Construction closeout

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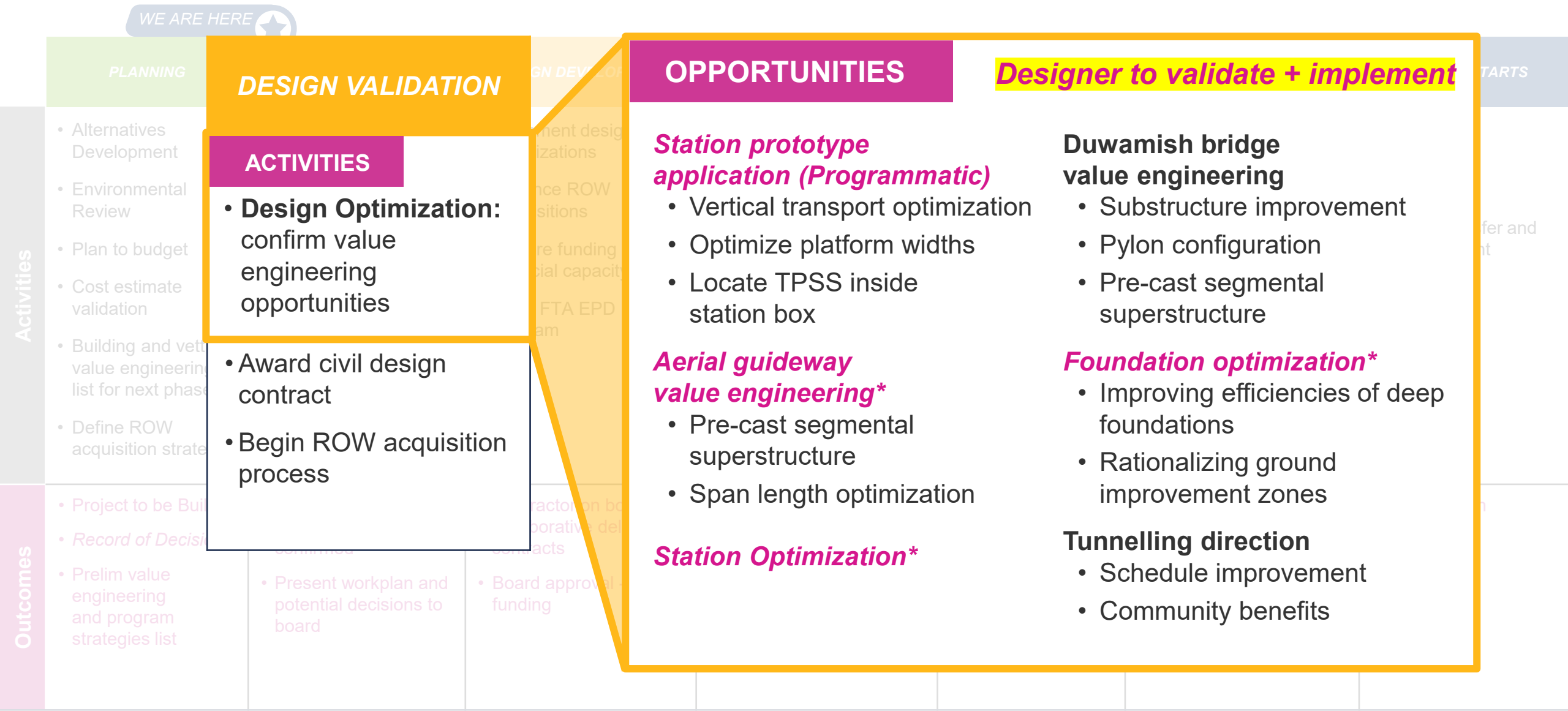
WSLE opportunity example: Design Optimization



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WSLE Workplan Example 1
Construction Efficiencies

Aerial Guideway Optimization

Revises the longer spans and cast-in-place concrete construction methodology in the PE design by using precast segmental construction and optimized span arrangements.

Realizes maximum benefits when considering foundation optimization side platforms at Delridge Station and precast segmental construction at Duwamish Crossing.

~$60-70m Target savings

Benefits

- **9 months' schedule savings** for W200
- **Off-site precast segment fabrication** in controlled factory environment:
  - Minimizes construction impacts
  - Takes off critical path
  - Results in safer construction
  - Reduces the need for ground access and MOT for construction.
  - Minimizes interface time over and adjacent to sensitive areas.
- Enables **aerial guideway foundations optimization** and **potential reduction in ground improvements**

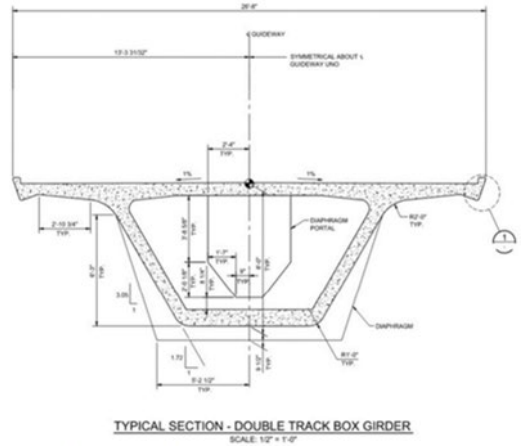

Figure 2. Simple Span Double Track Precast Segmental Structure Section

Status: In feasibility assessment

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WSLE Workplan Example 2

Design Optimization

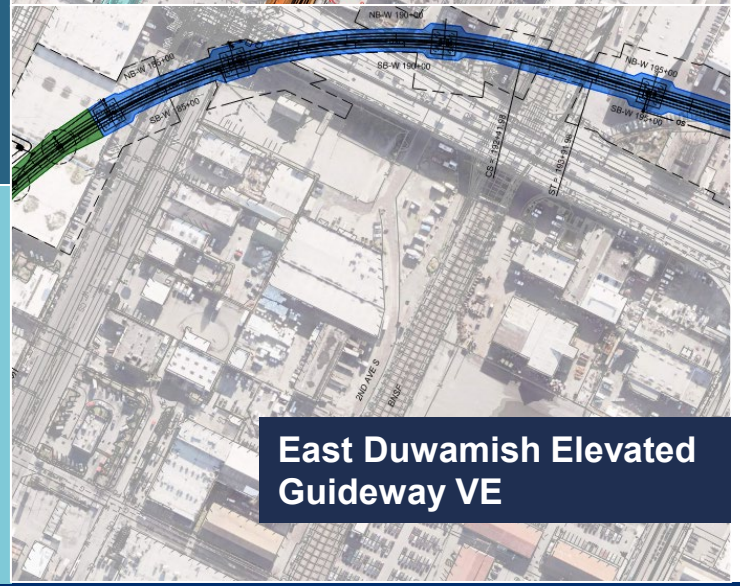
Foundations and Ground Improvements Optimization

Optimizes foundations required for shorter spans

Assumes and requires that the Aerial Guideway Optimization measure is in place

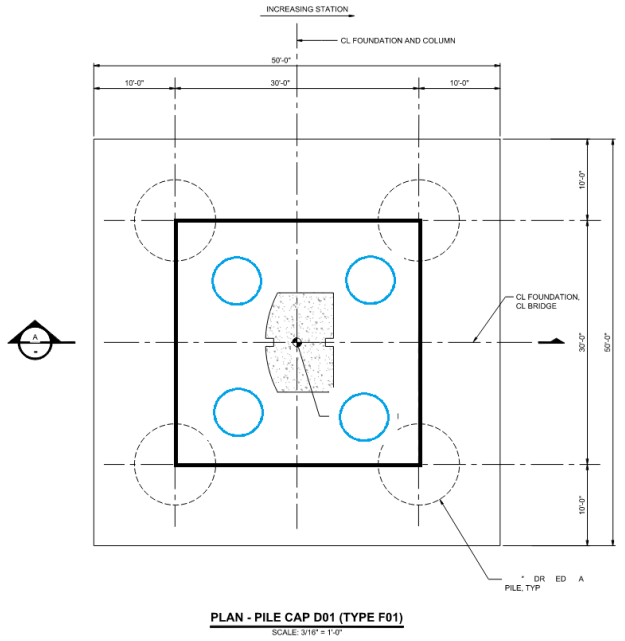
1. SODO Elevated Guideway VE
2. East Duwamish Elevated Guideway VE

~$100-130m Target savings



Benefits

- **Reduces ground improvements** in SODO area elevated guideway
- **Reduces pile cap size and shaft group diameters** in Duwamish Approach area (east of SR99)
- **Provides further optimization opportunities** for pile length after additional assessment of liquefaction



Status: In feasibility assessment

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WSLE Workplan Example 3
Design Optimization

SODO Station Optimization

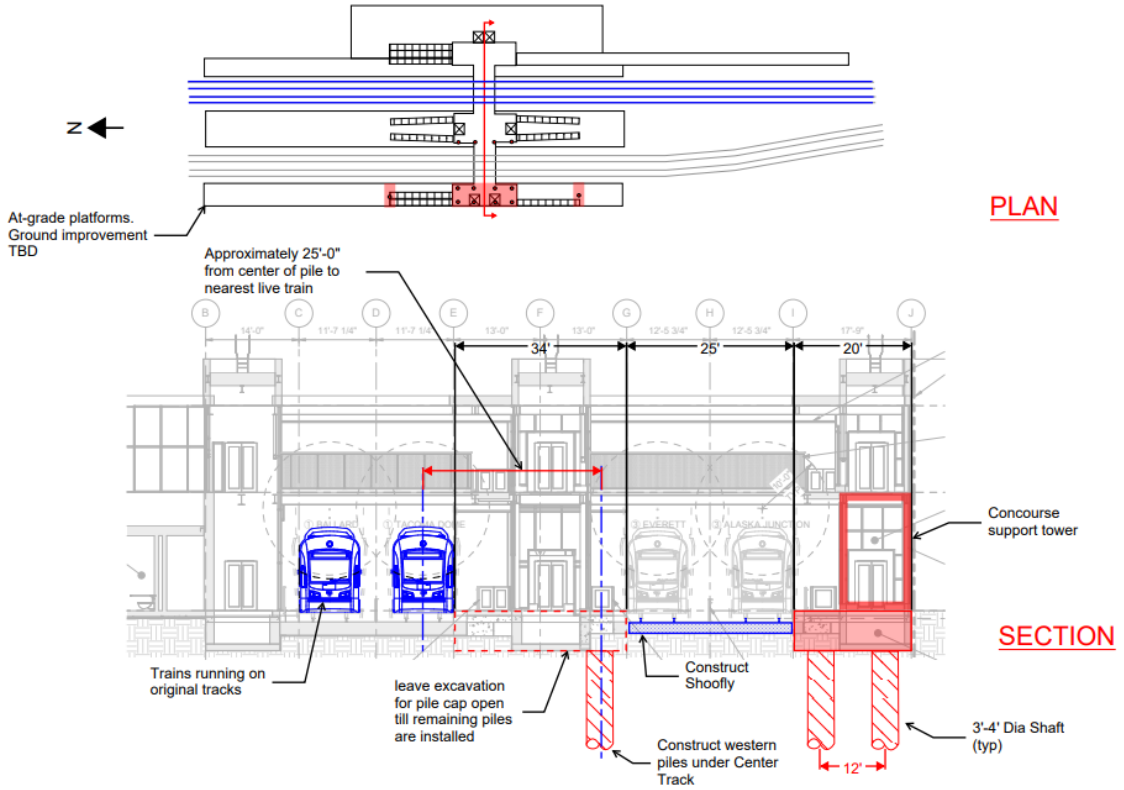
- Part of ST station standard development and optimization efforts.
- Provides cost savings from reduction in concourse level and platform footprints and vertical transportation elements.
- Reduced station footprint and VT leads to SODO Station Foundation Optimization opportunity (WSLE 28).

~$100-130m Target savings

Status: In feasibility assessment

Benefits

- **Significant schedule benefit** if revised shoofly can be realized
- Ensures **safe construction** adjacent to active rail line
- Considers design of Lander and Holgate overpass bridges
- **Maintains passenger experience** from PE design



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WSLE Workplan Example 4

Design Optimization

SODO Station Foundation Optimization

- Assumes and requires SODO Station Optimization reduced station footprint
- Reduced number of drilled shafts may eliminate the need for the temporary track. The revised concept would construct the western platform and permanent 3 Line tracks first and then shift 1 Line service directly to the permanent 3 Line tracks once complete.
- Can be combined with SODO Station Optimization to maximize cost savings

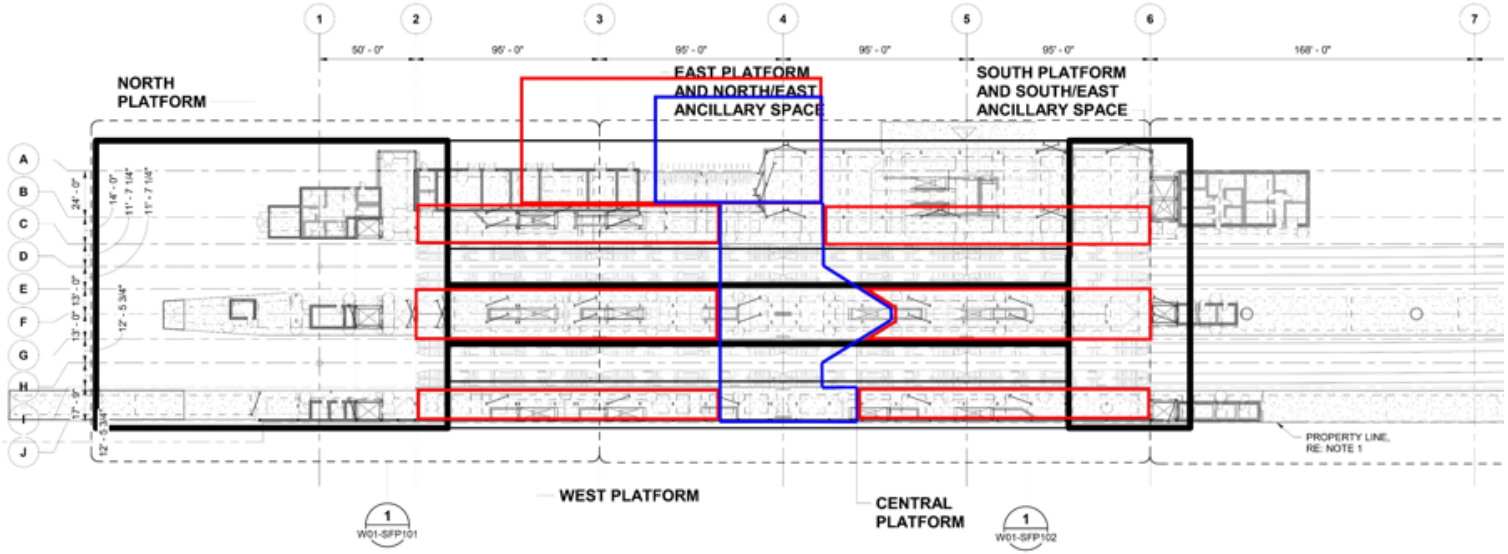
~$30-35m Target savings

Benefits

- Reduced extent of deep foundations **reduces cost and schedule**
- **Improves safety** around active rail lines

» ***Shallow Foundations (Revised Station Footprint)***

» ***Deep Foundation (Revised Station Footprint)***



Note: Schematic representation of SODO Station footprint.

Status: In feasibility assessment

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OMF-S Workplan Example 1

Design Optimization

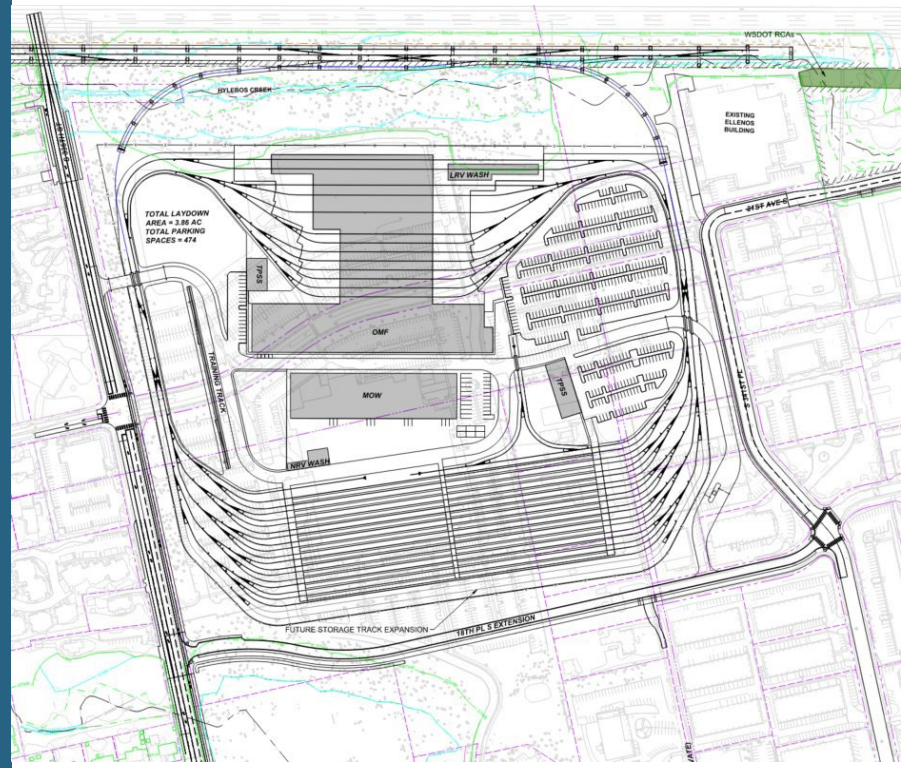
Reduce impacts to wetlands

Opportunity realigned 18th Place to eliminate an acre of fill into existing wetlands, avoiding costly wetland mitigation costs.

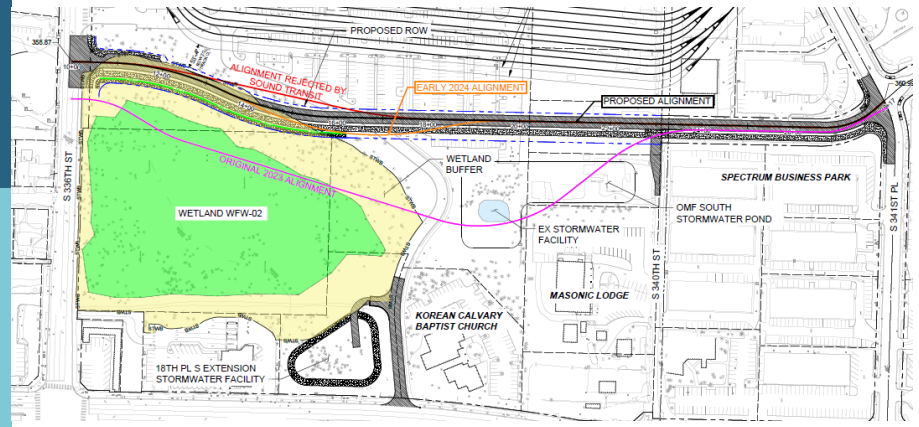
Over $200m in total cost saving opportuniites have been validated and are being implemented.

Reduced wetland impact target savings: $22m

Status: Benefits Realized



FEIS Preferred Alternative Design



OMF Cost Savings Opportunities Approach

- Created a maintenance facility program **looking at the facilities together as a network** vs an isolated approach with unneeded duplication of scope
- **OMFN as a site adapt of OMFS**, leverage the OMFS design and consistency of approach, reducing design and implementation time
- **OMFN as an add alternate to OMFS** – leverage economy of scale, remove procurement time time and incentivize contractor performance on OMFS

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Next Steps

- Next Update: Spring
  - Programmatic Opportunity Update
  - Financial Update

- Workplan quarterly updates continue in the Summer and Fall

Thank you.

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