



# 30% Design Elements

Board of County Commissioners  
January 25, 2011





# Where We Are

- Culmination of 10-month engineering and public process to refine the design within the framework approved by the Record of Decision
- CAC made recommendations to PSC
- City commissioned an independent design study
- Project team incorporated CAC recommendations and ideas from the independent design study
- Staff from all partner agencies evaluated trade offs and endorsed the 30% design elements
- PSC made recommendation on January 18



# Bridge Types Considered



Box Girder



Deck Arch



Through Arch



Extradosed

# Evaluation Process

- Project team, multi-agency working groups, CAC, and public involved
  - 7-month process
  - 11 CAC meetings
  - Public open house with 130 participants
  - Web survey with 2,452 respondents
- Rigorous technical and aesthetic evaluation



# Evaluation Criteria

- Aesthetics/user experience
- Constructability
- Construction time
- Cost
- Impacts to natural environment
- Impacts to social environment
- Maintainability
- Seismic performance
- Sustainability



# Consensus CAC Recommendation for Steel Deck Arch

- Reflects community values
  - Aesthetically pleasing solution
  - Enhanced bicycle/pedestrian experience
  - Enhanced views of and from the bridge
  - Respect for historic bridge context
- Source of civic pride
- Within EIS target cost
- High technical performance

# Steel Deck Arch Recommended



- CAC and public consensus for Deck Arch form is strongest differentiator
- Steel preferred - Concrete will also be studied with contractor to look at costs and local economic benefit





# River Bridge Span Type Conclusions

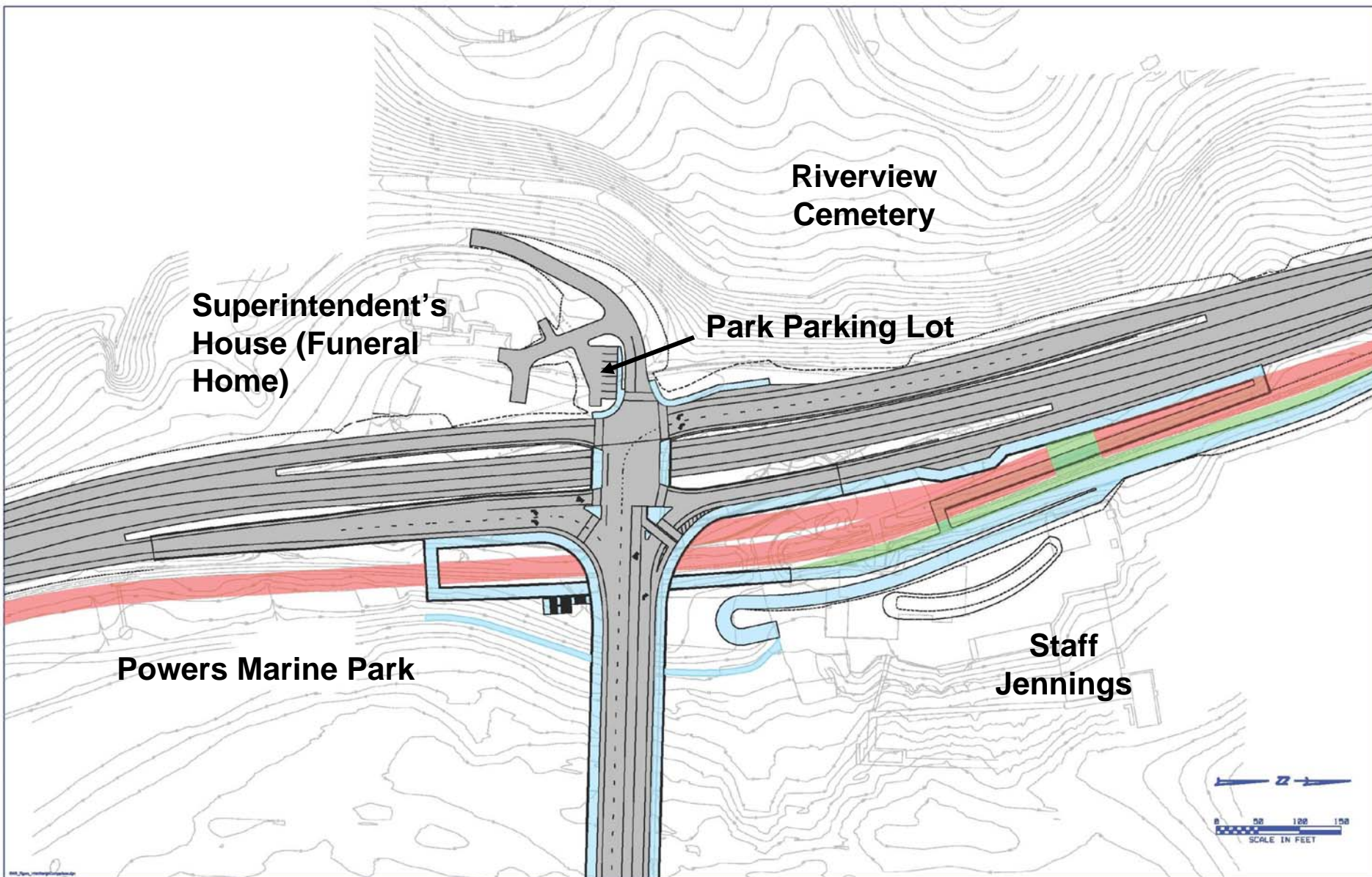
- Additional CAC recommendations should be considered in final design:
  - Make bridge approach aesthetics consistent with main span
  - Reflect different bridge approach settings on the east and west sides
  - Reduce the size of piers in the river and on the banks
  - Coordinate bridge design with Tacoma Main Street Plan safety concepts
  - Include on-deck features suggested by the community to enhance safety and user experience



# Interchange Refinement Process

- Design refinement objectives from PSC, CAC and project partners:
  - Cut cost
  - Shrink footprint
  - Reduce rock cut
  - Revise streetcar alignment to provide safer location and future connection to bridge
- Maintain multimodal functionality, safety, and traffic performance without increasing environmental impacts of Final EIS Preferred Alternative

# Compressed EIS Interchange Design

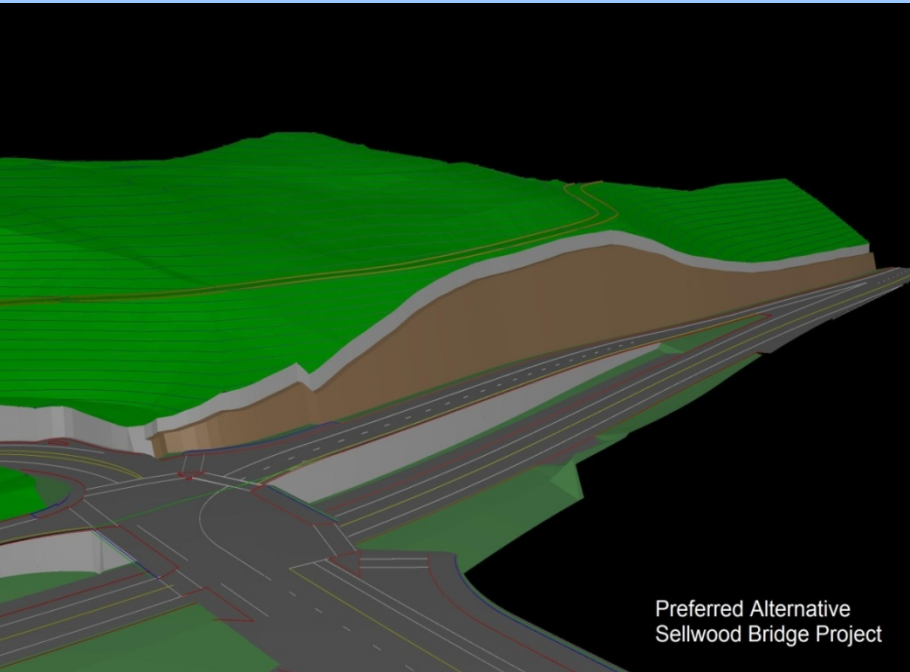




## Compressed EIS Interchange as 30% Design Element

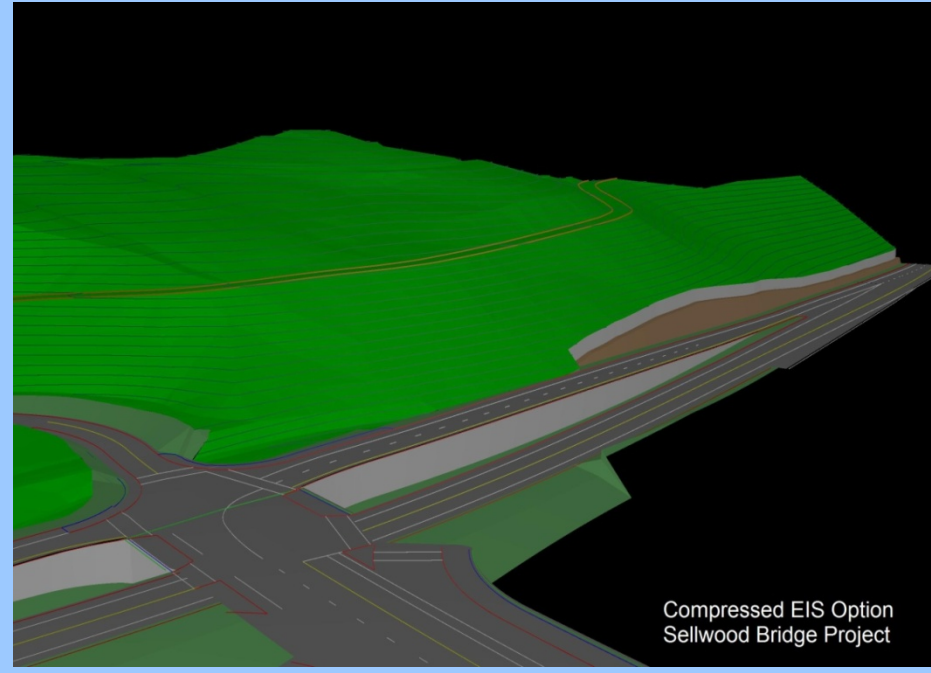
- Saves \$34 million compared to FEIS design
  - \$131 vs. \$97 million
  - Eliminates horseshoe ramp
  - Reduces footprint by 3 acres

# Rock Cut Reduced by 50%



## Final EIS

- 80 feet high
- 88,000 sq. ft. of surface



## Compressed EIS

- 40 feet high
- 40,000 sq. ft. of surface



# Existing Stephens Creek Crossing



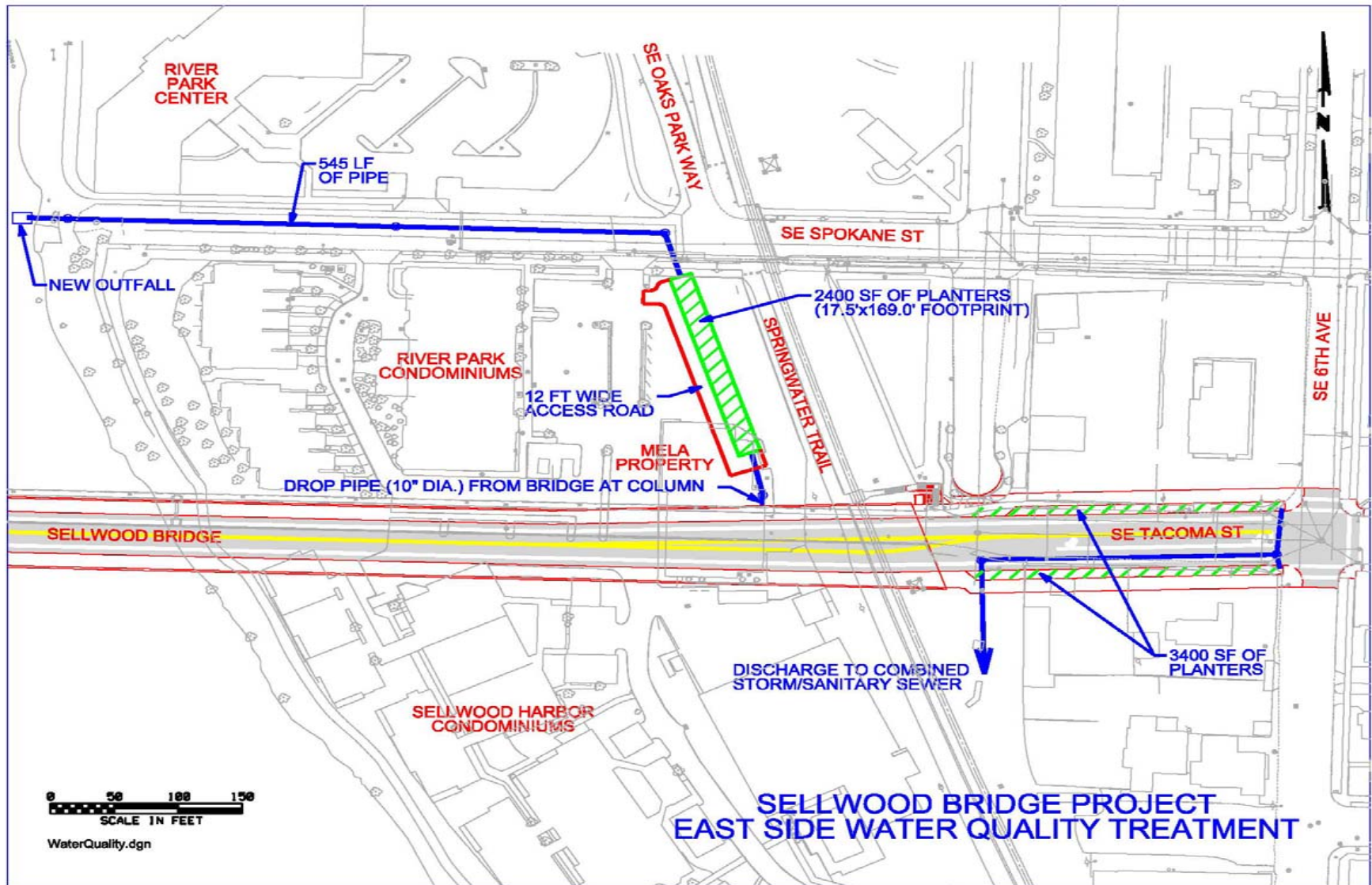


# Concrete Arch Culvert

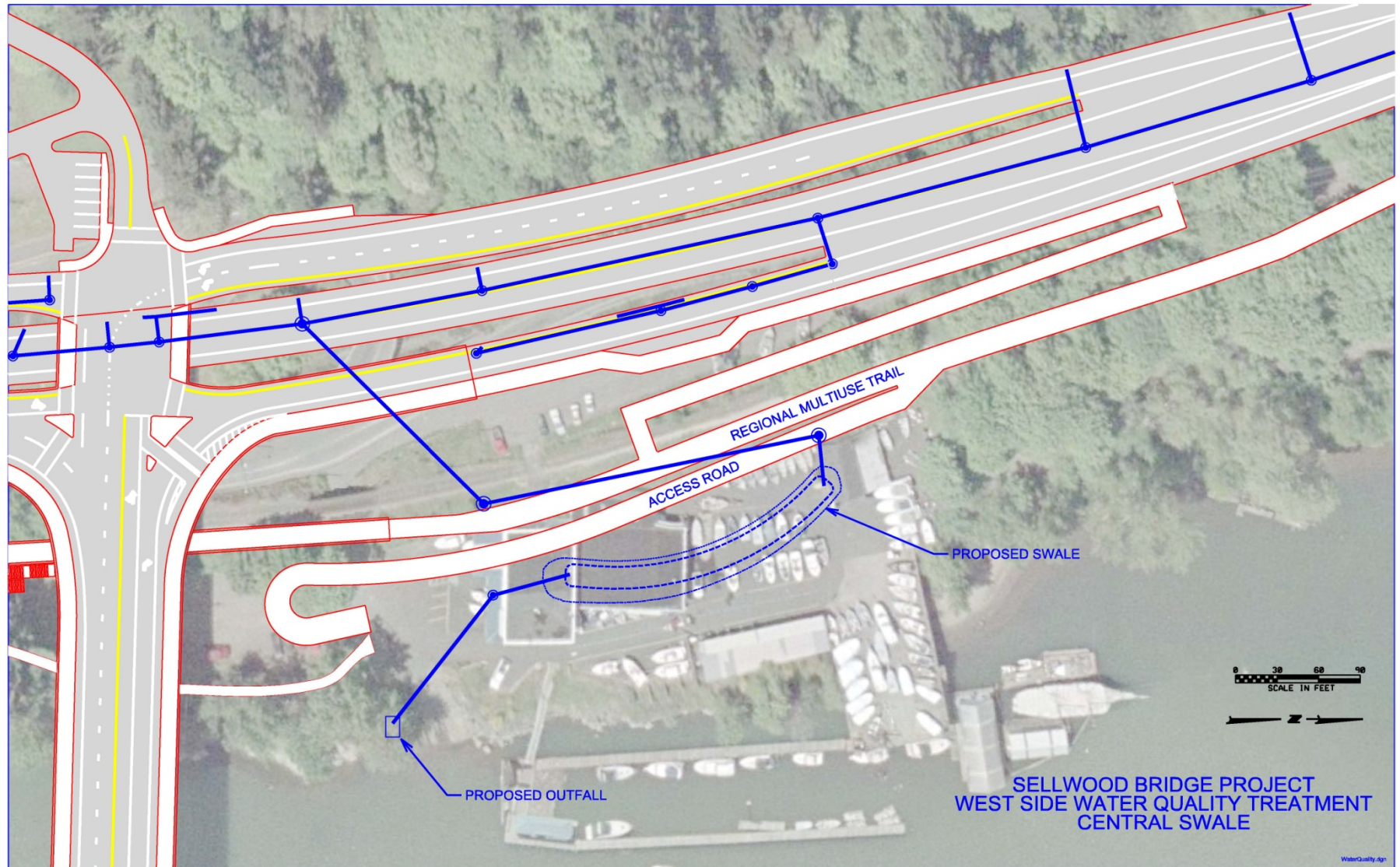




# Water Quality Facilities: East Side



# Water Quality Facilities: West Side







# Total Project Cost Comparison

- The 30% Design Alternative reduces cost by \$41 million
  - \$331 vs. \$290 million total
  - Saves \$34 million on interchange, \$7 million on bridge
  - Includes design, right-of-way acquisition, construction, mitigation, and construction contingency, inflated to 2014 dollars
- We will continue to look for additional cost savings

# A Solution Based on Community Values

- Reflects community consensus
- Reduces budget and project impacts
- Meets performance and regulatory criteria
- Respects community aesthetic sensibility
- Encourages local economic development
- Incorporates sustainability