

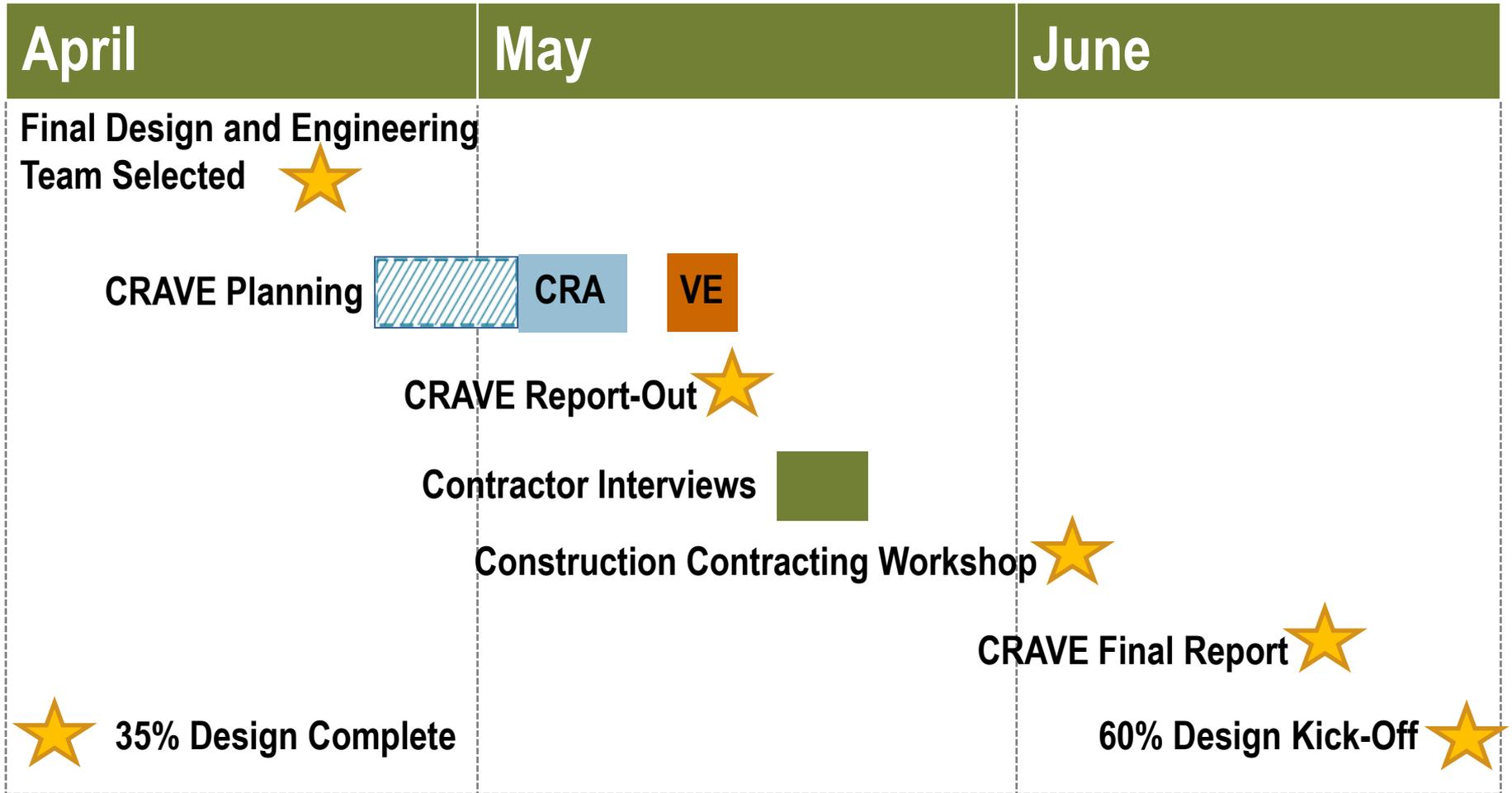
Elliott Bay  Seawall  
Project

***Seattle City Council  
Special Committee Briefing  
June 18, 2012***

# Topics Today

- Report on project workshops
  - Cost risk assessment
  - Value engineering
  - Jet grout contractor meetings
  - Construction contracting approach
- Schedule update
- Ongoing maintenance
- Next steps

# Spring 2012 Work



# ***Cost Risk Assessment and Value Engineering Findings***

# CRAVE Overview

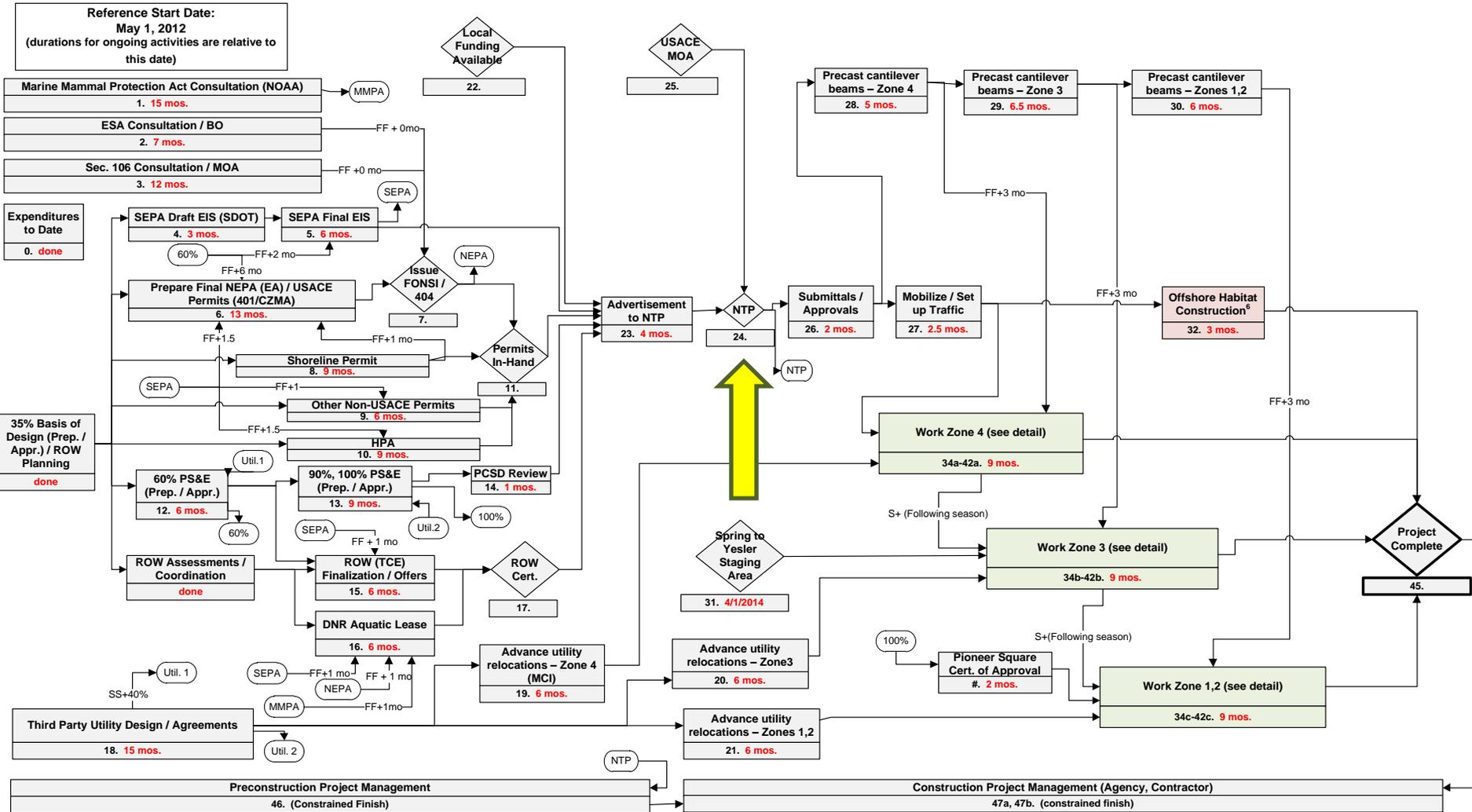
- Multi-disciplinary (40+ participants)
- Collaborative, team approach
- Workshop objectives:
  - **CRA:** Quantify uncertainty in project cost and schedule
  - **CRA:** Prioritize risks and opportunities to enable management
  - **VE:** Explore alternative design and construction approaches
  - **VE:** Identify opportunities to improve function and reduce cost
- **Outcome:** Provide input to decision makers and design team

# Cost Risk Assessment Workshop

- Brought independent perspective
- Provided comprehensive review (design, environmental, construction, outreach, contracting)
- Validated and quantified uncertainty in project assumptions
- Identified and quantified risks and opportunities
- Developed risk register



# Project Schedule Flowchart



# Cost Risks and Opportunities

Risks and Opportunities	Potential % Cost Impact
Missed work windows	+ 20%
Unexpected work restrictions	+ 12%
Construction coordination	+ 2%
Design changes	+ / -
Re-use of materials	- 7%
Alternate soil improvement methods	- 15%
Jet grout design refinement	- 23%

# Schedule Risks and Opportunities

Risks and Opportunities	Potential Activity Duration Impact
Environmental approvals	+ 6 mo
Utility design coordination	+ 5 mo
Design review and approvals	+ 2 mo
Maintenance of access	+ 1 mo
Jet grout productivity	+ 1 mo
Construction approach	- 2 mo
Optimized soil improvement solution	- 2 mo

# Value Engineering Workshop

- Explored alternative design and construction approaches
- Identified opportunities to improve function and performance and reduce cost
- Included focus criteria:
  - Business impacts
  - Environmental impacts
  - Constructability
  - Schedule
  - Agency approval
  - Waterfront coordination



# Key Design and Cost Questions after 35%

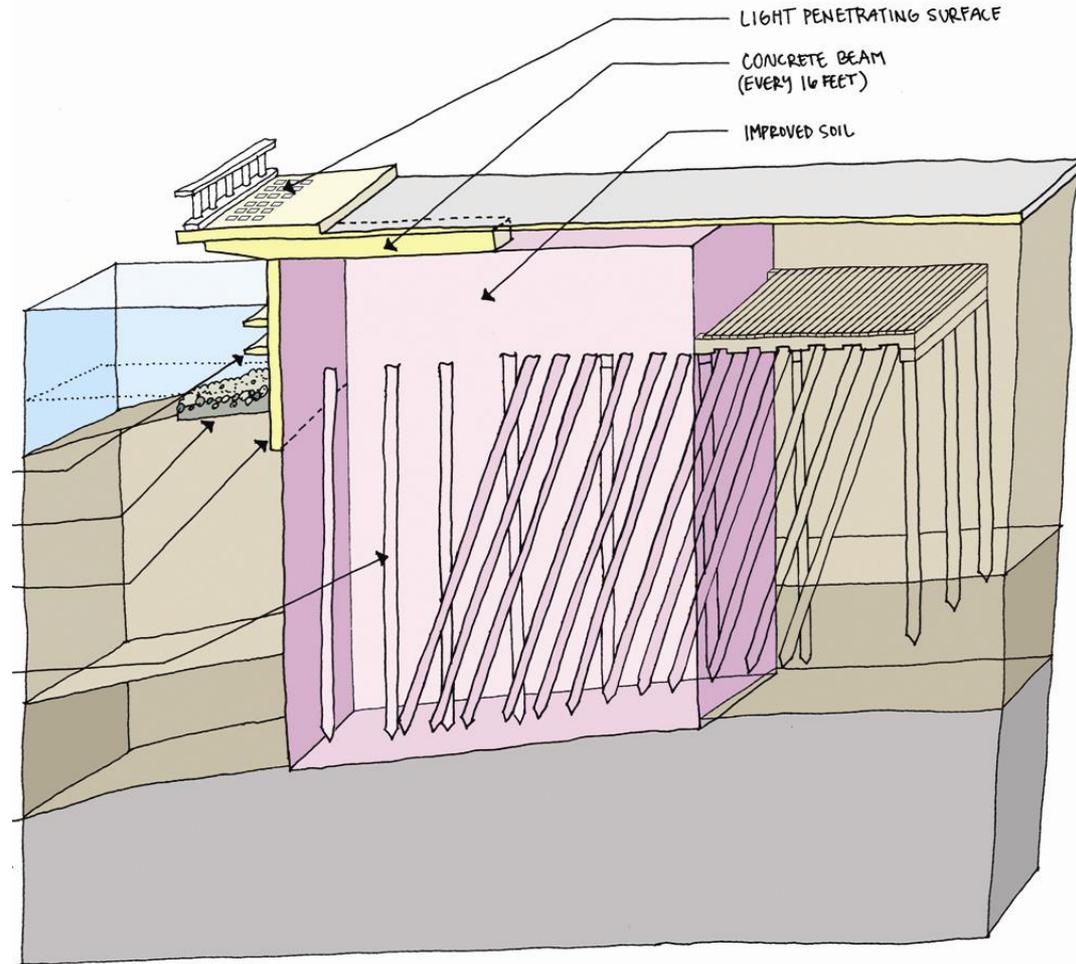
## Structural:

Do we have the most streamlined, elegant structure, with few redundant elements?

## Work sequence:

Can we maximize access and minimize impact for:

- Businesses
- Users
- Environment
- Utilities

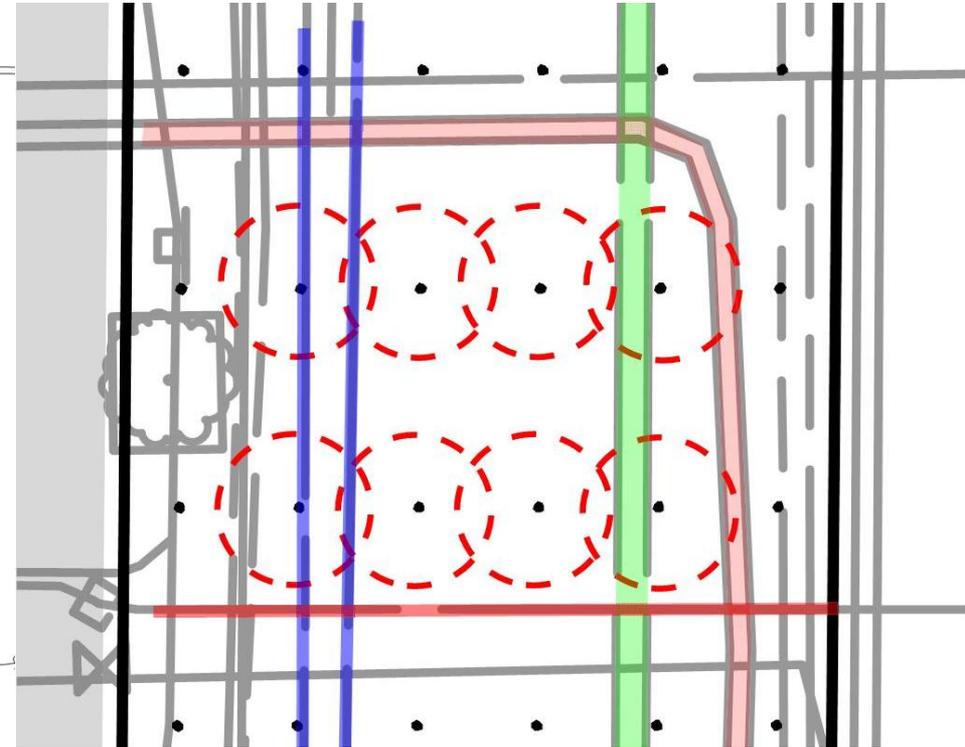


# Key Findings from Value Engineering

- Jet grout from street surface
- Optimize jet grout column configuration



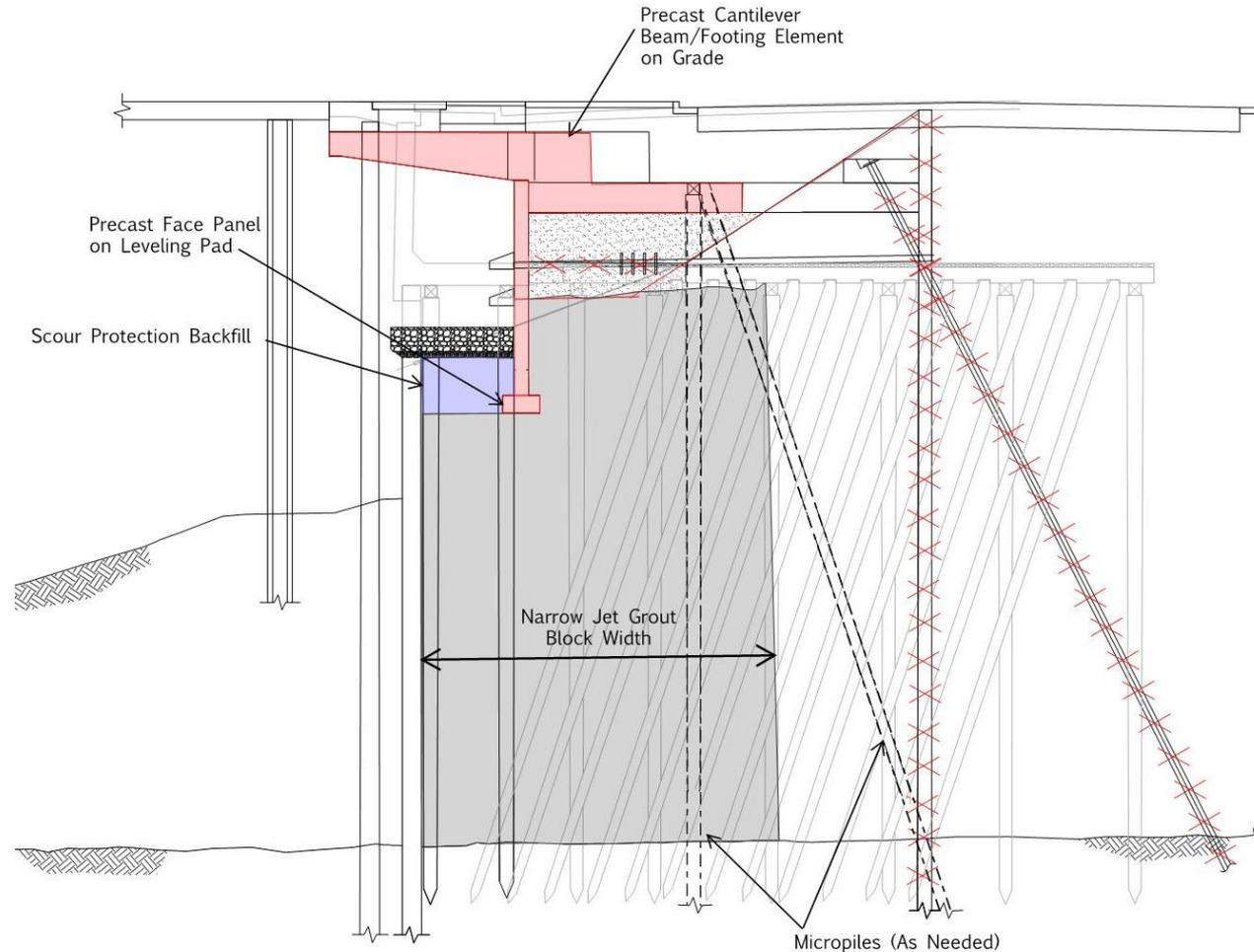
**Grout from Surface**



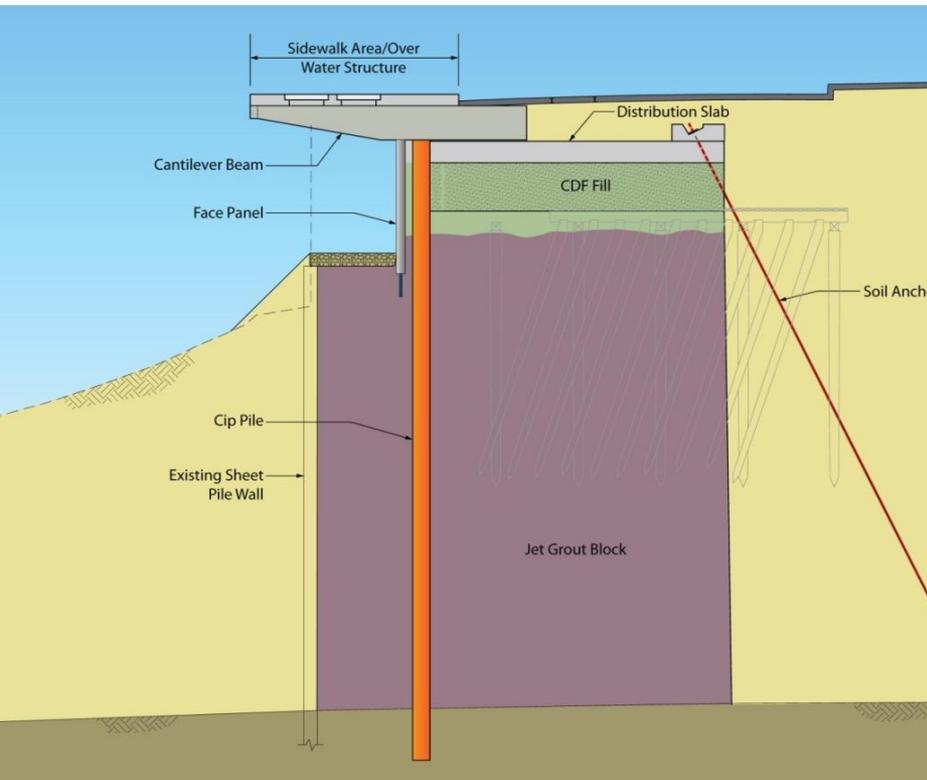
**Column Schematic**

# Key Findings from Value Engineering

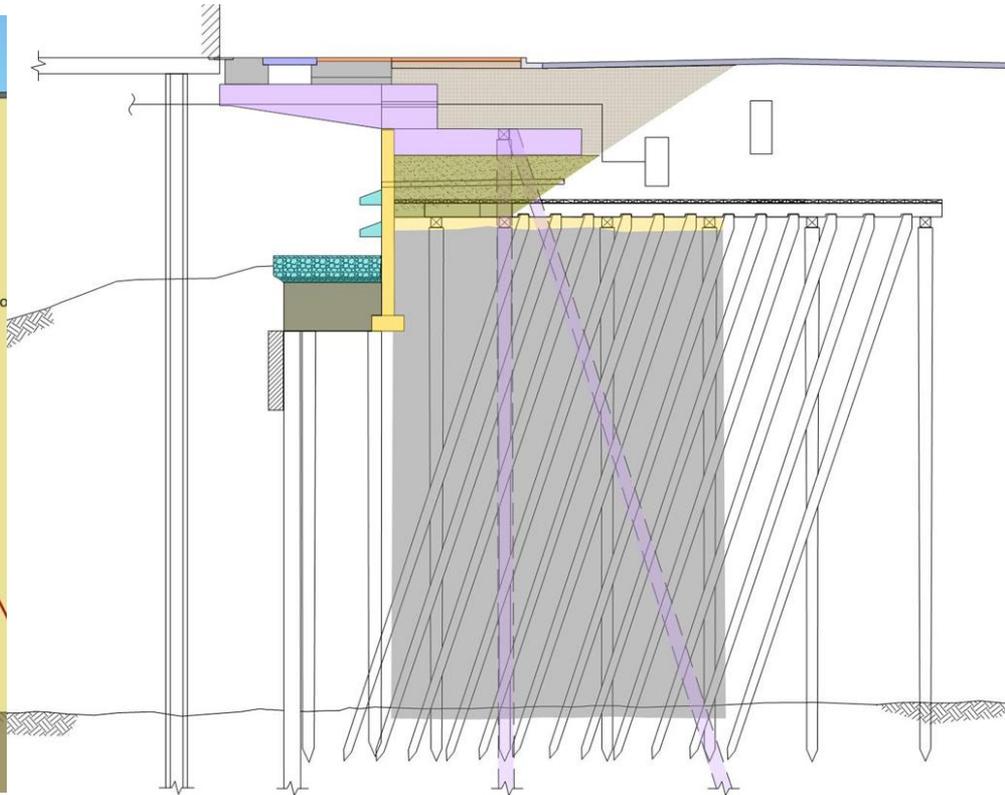
- Consider alternate methods of soil improvement, where feasible
- Refine seismic criteria
- Expand use of precast elements



# Moving to Final Design



**35% Design**



**Preliminary Approach to Final Design**

# *Construction Contracting Approach*

# Construction Contracting Workshop

- Construction contract will be City's largest to date
- Decision in late 2011—prior to completion of 35% design—was design-bid-build, with pre-qualification
- Project changes necessitated revisiting best approach
  - Progression of design and understanding of jet grouting
  - Selection of final design team
  - Clarity on project schedule
- Pre-meetings held with soil improvement contractors
  - Having expertise of “the” jet grout contractor on board early will be a factor in project schedule and performance

# Approach to Workshop

## Part 1 (June 7): Setting the Baseline

- Provide project and soil improvement overview
- Discuss project risks, value engineering recommendations, and contractor feedback
- Focus on soil improvement contracting

## Part 2 (June 11): Evaluating Approaches

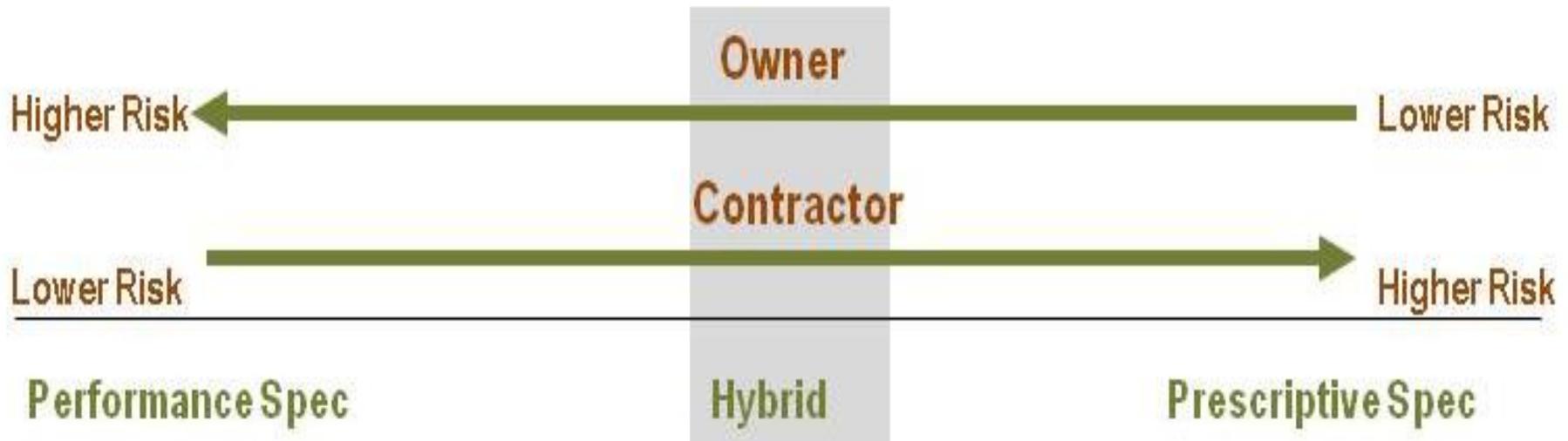
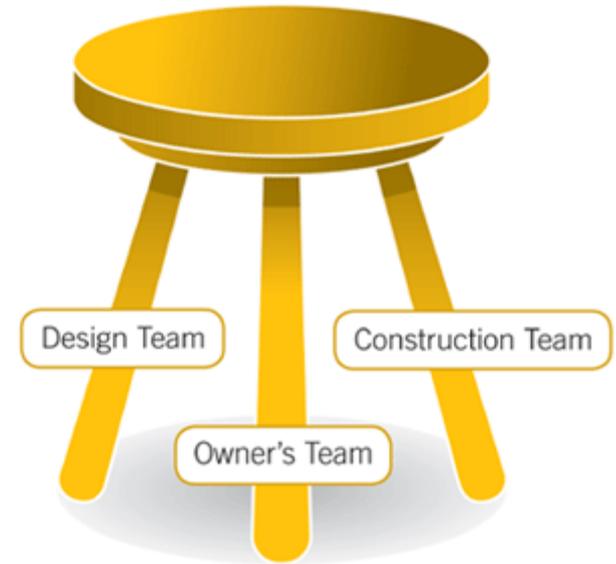
- Recap Part 1 and discuss environmental risks
- Discuss risk categories and contracting approaches
- Assess contracting approaches and schedules
- Formulate construction contracting recommendation

# Participants

- **Expert Advisors:** Jon Boknecht, Vic Oblas, Ken Johnsen, Steve Goldblatt, Dick Sandaas, Rodney Eng, JC Brummond
- **SDOT Leadership:** Goran Sparrman, Jon Layzer, Bob Chandler, Mike Terrell, John Buswell
- **Council Central Staff:** Ben Noble
- **City Contracts:** Aleanna Kondelis
- **City Attorney's Office:** Helaine Honig
- **Project Team:** David Warner, Santosh Kuruvilla, Jenifer Young, Erin Taylor, Alan Keizur, Bret Stephen, Brian Holloway, Jennifer Wieland

# Key Discussion Items

- Sharing ownership and risk
- Ability to address access and stakeholder needs
- Focus on 3-legged stools:
  - Quality, cost, schedule
  - Owner, contractor, designer



# Key Discussion Items

- Soil stabilization is a specialized subcontractor activity
  - Approach to ensuring performance must balance risk
  - Consider ability to manage changing conditions and unknowns in the field
- Early involvement of a contractor provides a partner in minimizing project risk and addressing issues in design

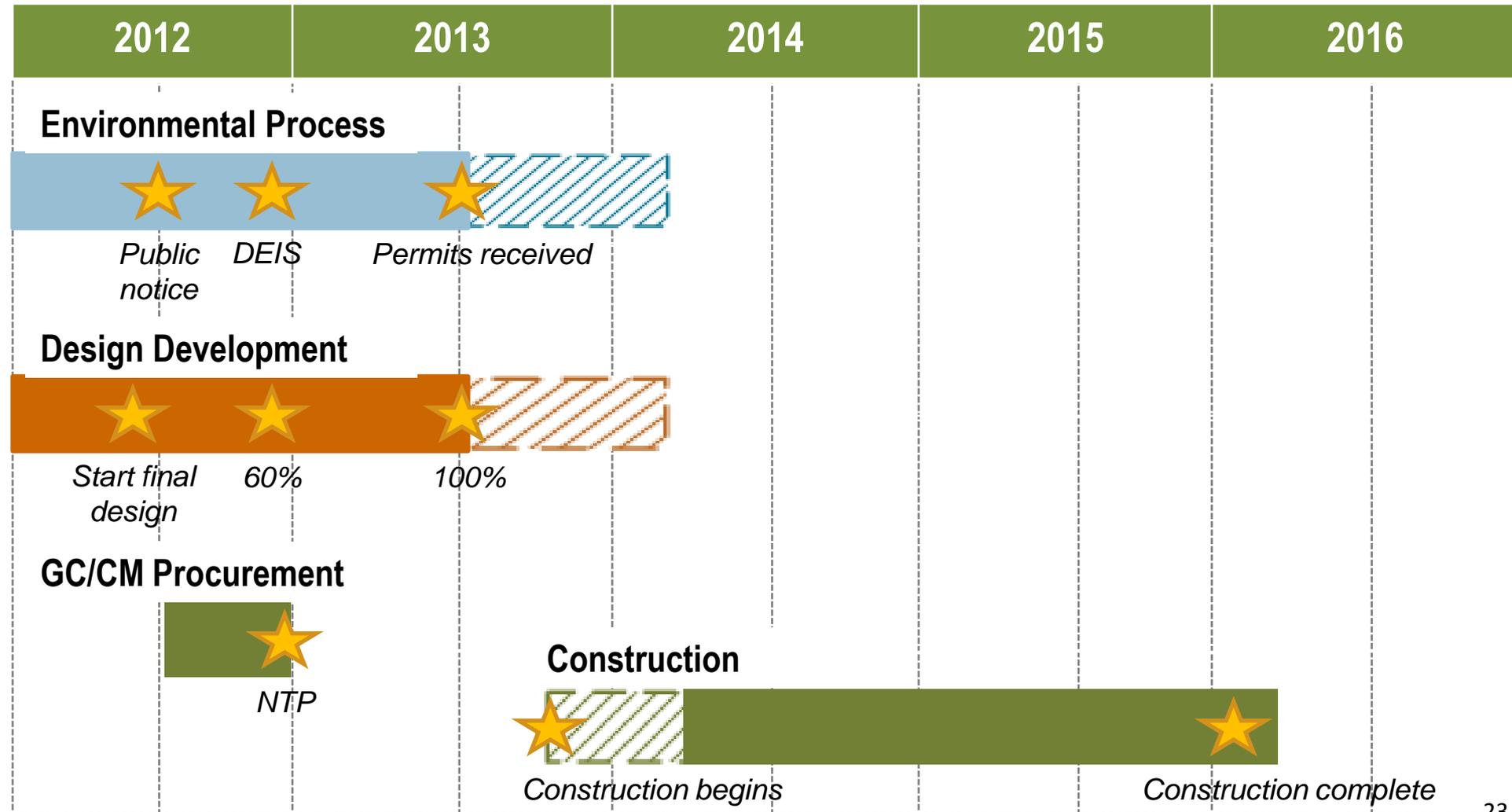


# Recommendation

- **Consensus Recommendation:** Pursue GC/CM approach
- Evaluated 7 potential approaches and concluded:
  - Ability to pre-qualify general contractor, rather than selecting the low bid, is critical
  - Securing general contractor partnership is needed
- Next steps and considerations:
  - Identify procurement goals
  - Develop process and timeline for procurement
  - Meet with general contractors
  - Explore approaches to early engagement with soil improvement sub-contractors

# *Schedule Update and Next Steps*

# Project Schedule and Milestones



# Ongoing Seawall Maintenance

- Public safety is paramount
- City has spent \$2.2M on repairs since 2000
- Surveys currently underway in conjunction with bridge maintenance division
- Additional maintenance may be required in coming months



# Upcoming Summer Events and Outreach

- Light penetrating surfaces study on Pier 62/63
- Kiosk installation
- Habitat/fish migration studies
- Habitat education
- Fairs, festivals, events
- Briefings
- Collaboration with Waterfront Seattle activities



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