Portage Bay Bridge Replacement

Proposal: to offer contractors an option of bidding using maritime construction

Rendering of a box girder conceptual design of Portage Bay Bridge, looking southwest. Final Concept Design Report, 2016.

Who we are

John R. Hutchins, P.E., S.E. Principal Harbor Consulting Engineers, Inc.
40 years consulting engineer, focused on bridges
Has designed bridges for WSDOT
Has been expert witness on WSDOT bridge cases

Carl Stixrood, 40 years environmental and permitting services: roads, bridge, dams, light rail, other

Pete DeLauney: President of Community Council, retired business owner

Anne Preston: Community Council, retired business owner

Gregg DuPont : DVM, Dipl AVDC, Retired Practice Owner, Leading Health Aspects of SR520 Noise Variance Appeal

Fran Conley: former CEO and venture capitalist, led 520 coalition

Portage Bay Bridge Replacement

Current plan
- work bridges north and south
- cast-in-place concrete
- hauling on local streets
- destructive noise and vibrations

Plan is not realistic, ignores real problems

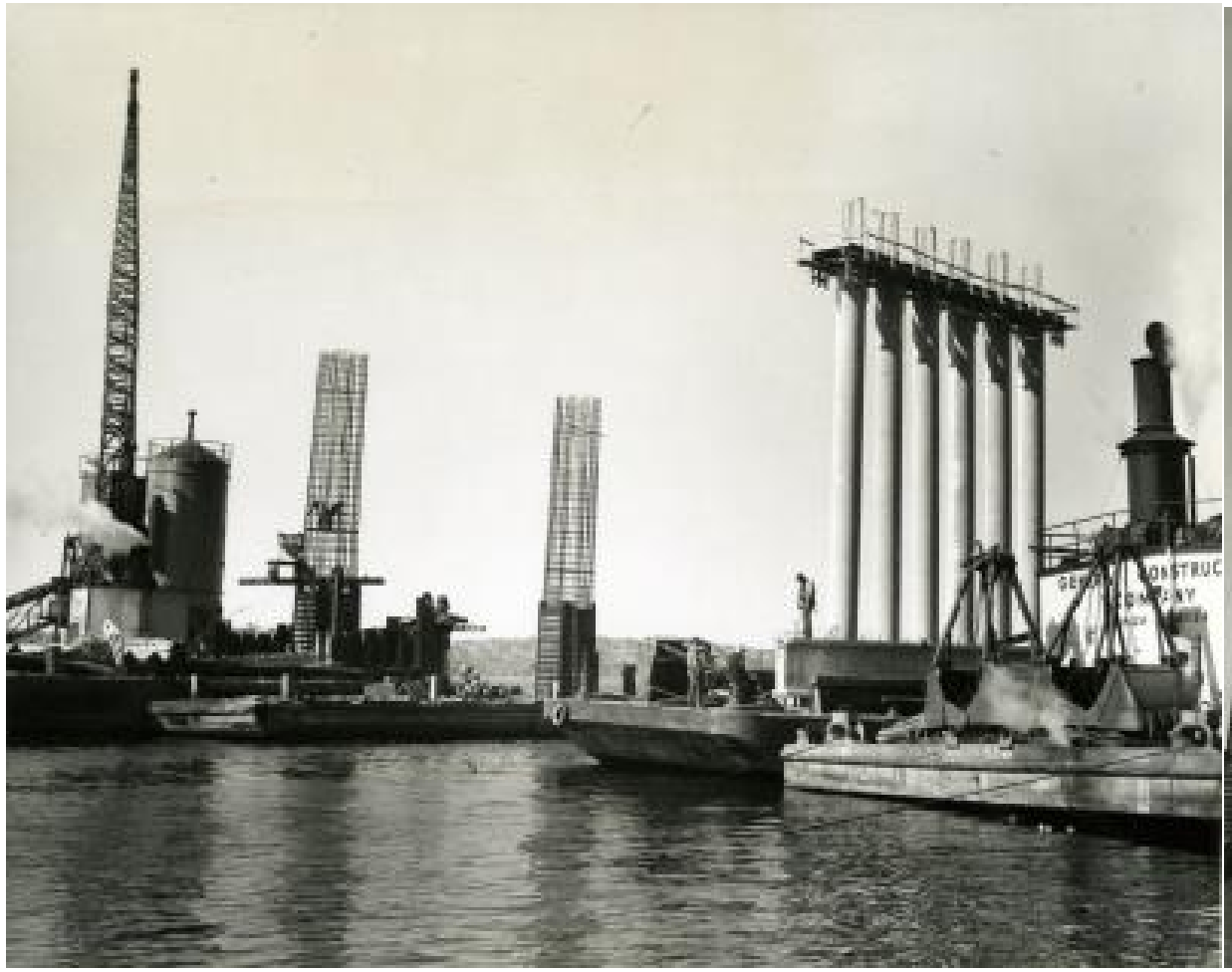
Likely delays, challenges, cost over-runs

Marine Construction

Uses barges for hauling
Uses floating cranes for construction
Favors large pre-cast components

- Shorter Construction Schedule : could save two years
- Reduced Construction Cost, potentially by one-third
- Reduced conflicts with other project phases
- Reduced Neighborhood Impacts
  - Less noise, vibration, heavy truck traffic on narrow residential streets, damage to homes, and detours

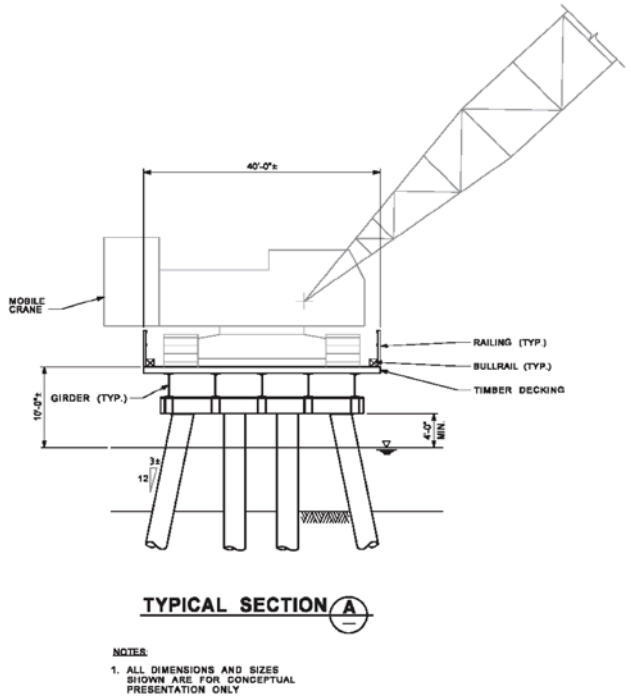
Original 520 Bridge Construction Used Barges and a Marine Approach



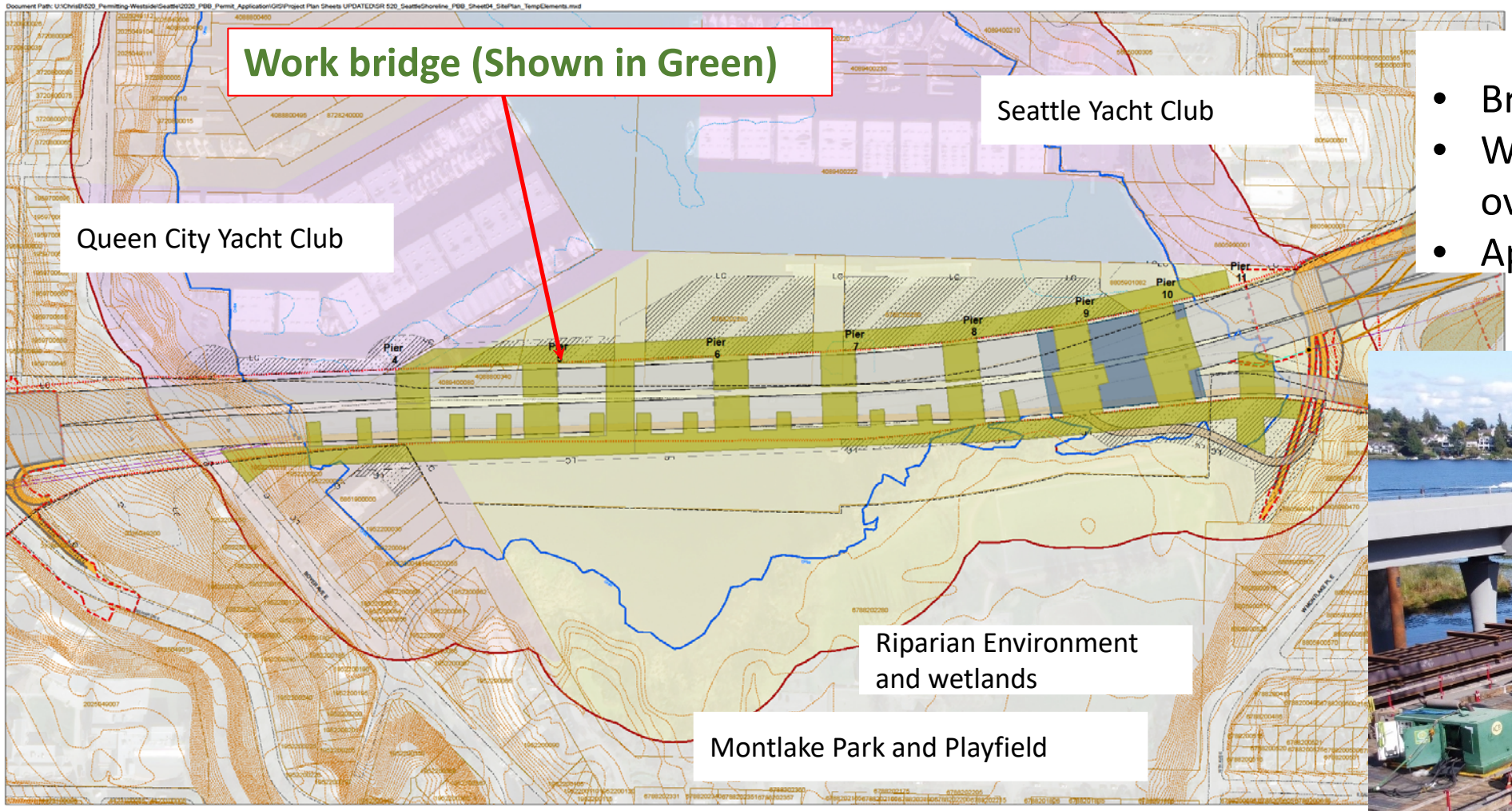
From WA State digital archives

But WSDOT is blocking this choice now.

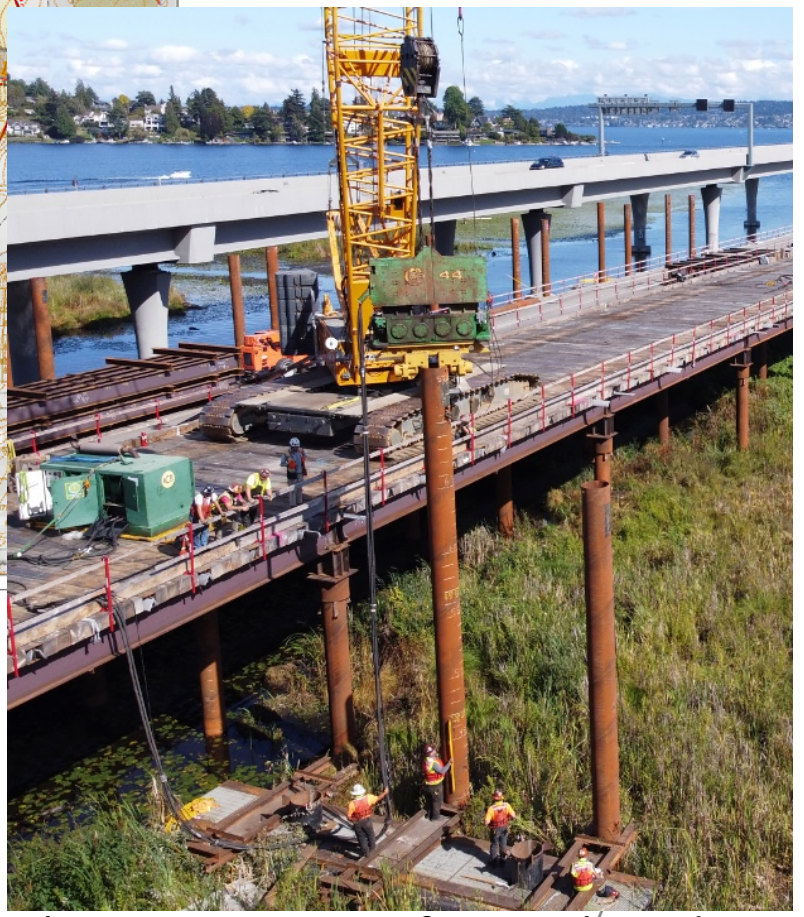
WSDOT's Shift From Barges to Work Bridges Increases costs, construction time and impacts



Work Bridge Used in Union Bay:
If done in Portage Bay would increase costs up to $130M



- Bridge lengths, 2,740 feet ea.
- Work bridge area, 9 acres over-water coverage
- Approximate cost $132 mill

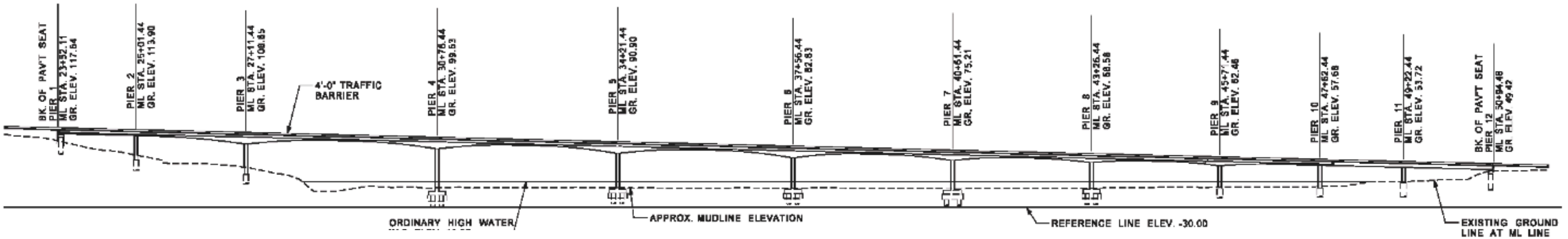


Vibratory Hammer for Work Bridges

Work Bridges Add Greater Costs and Impacts

- Driving appr. 1000 pilings for temporary bridges damages the environment and disrupts neighbors
- All materials delivered and removed by road for 6 years
- Workbridges obstruct barge access

WSDOT's current Design: variable length span



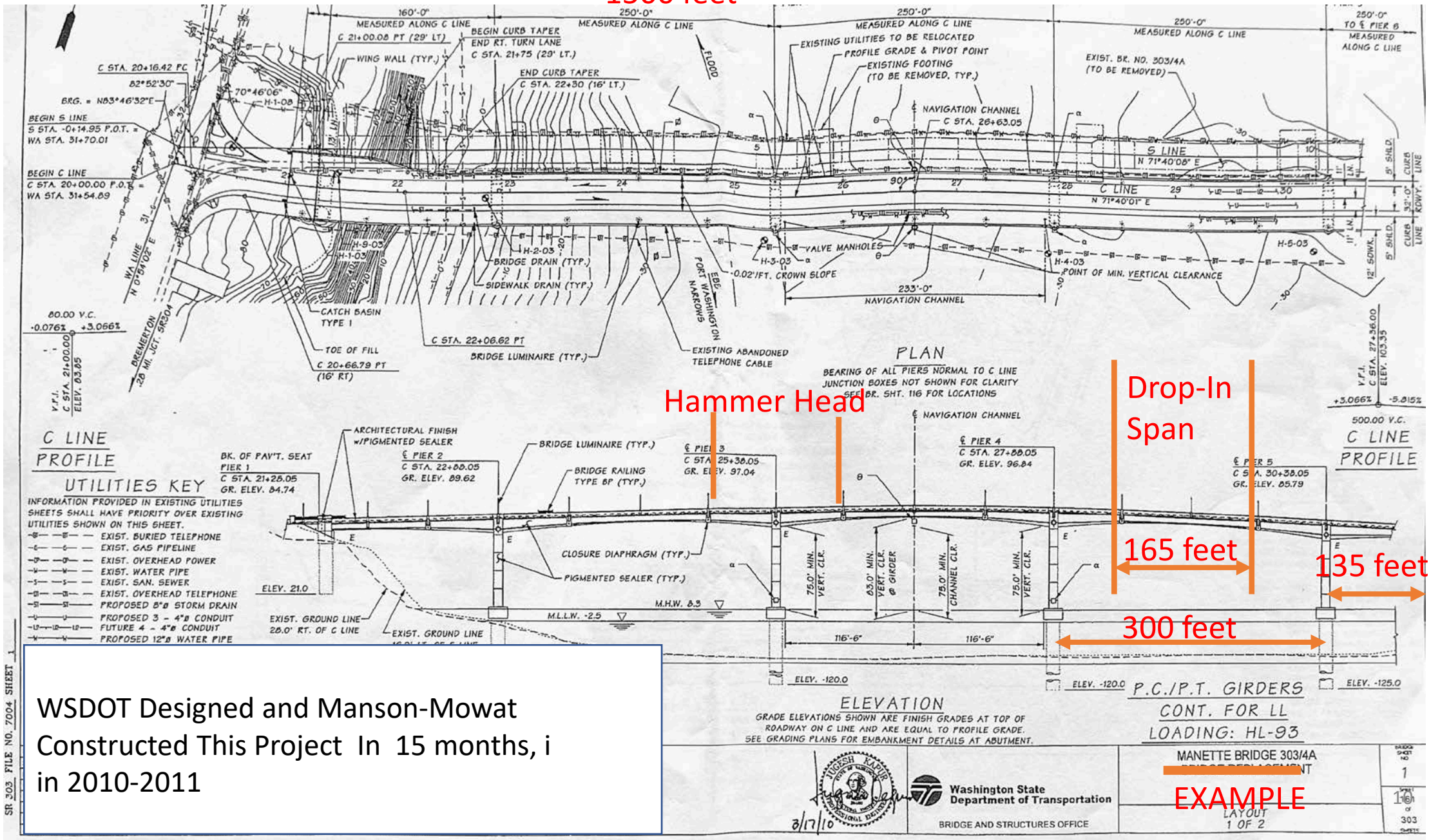
Marine Construction enables pre-cast long span girders of equal length

- Would Be Significantly Less Expensive Than This Variable Span Design
- Would Be Quieter Than This Box Girder Design

The Manette Bridge in Bremerton –
Long-span precast concrete
Built at less expense and in less time than projected
Went well - WSDOT is now considering similar design for the Spokane River

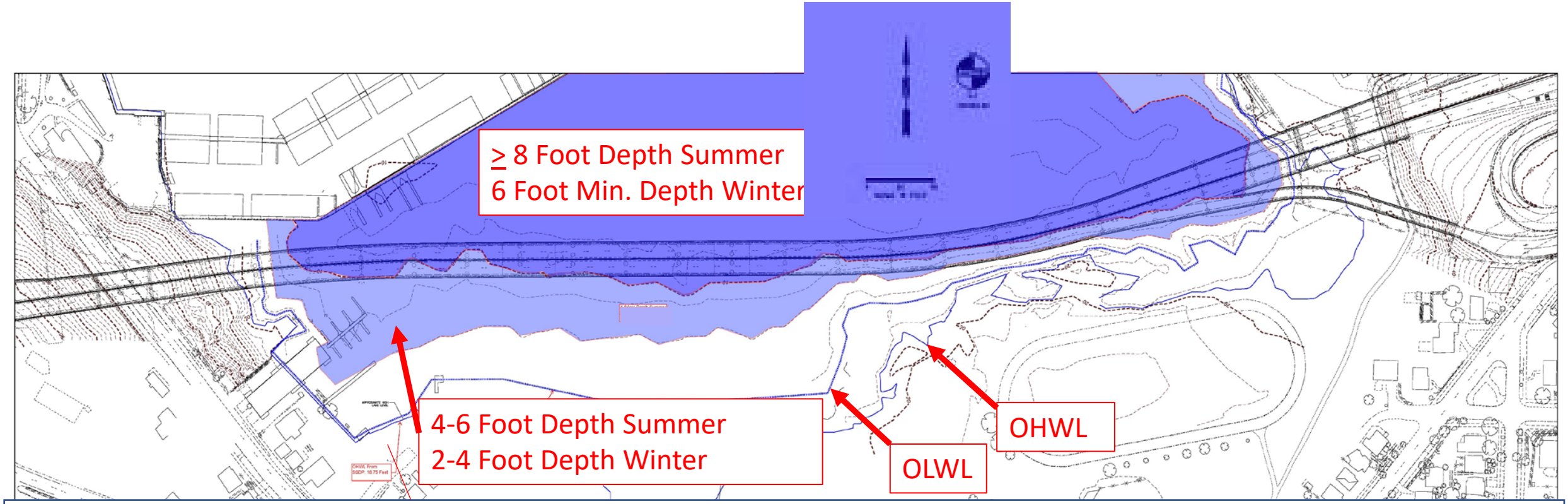
Precast Concrete Long Span Bridge Elements – Manette Bridge Example

1500 feet



WSDOT Designed and Manson-Mowat Constructed This Project In 15 months, i in 2010-2011

Water Depths: Dark Blue Depths Sufficient for Barge Access
Only Limited Dredging Needed in Light Blue for Sufficient Barge Access



WSDOT soil testing revealed no contaminants of concern, and dredged materials can be used to improve site

SR 520 Bridge Replacement and HOV Program

U.S. Department of Transportation
Federal Highway Administration

PRELIMINARY
FOR INFORMATION ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

Depth Interpretation by CWS 5/20/22 - Depth Information from WSDOT s

OHWL – Ordinary High Water Line
OLWL – Ordinary Low Water Line

Ask contractors!

- Proposed marine-based construction is worthy of serious examination
- Contractors are in best position to evaluate exact benefits and savings.
- Modify Request for Qualifications to enable contractors to include the option of using marine equipment.

What Is Needed to Create This Option?

An RFQ addendum stating that marine construction competency will be considered in contractor evaluation

RFQ addendum stating that Contractors may make other design changes, such as the use of precast uniform-length spans

A Corps of Engineers permit amendment, to allow dredging for crane barges and derricks along the south side of the current span

Requests:

1) WSDOT needs to amend the Request for Qualifications to require marine construction qualifications

2) WSDOT must get dredging permit from Army Corps prior to issuing the RFP

3) Deciders on contractors must be open to maritime construction.

Reduce costs by an estimated $200M

Reduce duration of construction by up to 2 yrs

Reduce damage to homes, roads, health, and environment.

Empower contractors to choose best methods.