

# INCORPORATING PRACTICAL DESIGN INTO DESIGN-BUILD PROJECTS

## Joint Transportation Committee

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# What is Practical Design?

- An element of Practical Solutions
- Encourages innovative, low-cost solutions provided they meet the project performance requirements
- Design guidance transition from a rigid structure to a more flexible framework
- Helps to ensure maximum results within limited funding
- Practical Design is recognized and supported by FHWA

# Incorporating Practical Design at WSDOT

- Practical Design has already been incorporated into Design-Bid-Build projects
- Design-Build projects have always included elements of Practical Design
- Desire to establish a robust Practical Design process that recognizes unique characteristics of design-build:
  - Need to maintain a level playing field for proposers
  - Most design occurs after selecting the Design-Builder

# Practical Design Workshops on Design-Build Projects

To address these characteristics, WSDOT developed a Practical Design Workshop (PDW)

- Used recently on two pilot projects
- A 30-day period with options to extend or shorten
- Open dialog between WSDOT and design-builder on Practical Design opportunities
  - Workshop includes representatives from WSDOT HQ and FHWA
  - Get the decision-makers in the room
  - Creates a “brainstorming” atmosphere

# I-405/SR 167 Direct Connector

## \$115.9M



### **Project Overview:**

Builds a new flyover ramp connecting the SR 167 HOT lanes to the I-405 HOV lanes. Also relocates a noise wall and constructs portions of local streets in the Talbot Hill neighborhood.

**Construction Start: Late summer/early fall 2016**

Design-Build Contract awarded to Atkinson Construction of Renton

# Practical Design Workshop

**WSDOT and Atkinson jointly participated in an open and collegial workshop (one full day, several shorter follow-ups)**

## **Workshop Outcomes:**

- 32 practical design ideas considered by Atkinson and WSDOT
  - 16 concepts carried forward for further study
  - 6 ideas incorporated by PDW change order
  - Other items may be pursued later

## **Six ideas adopted by change order include the following types of changes:**

- Reduced width of onramps
- Minor delay of HOV entrance to optimal location, improving traffic flow
- Shoulder deviations over Talbot allow a separate new one-lane bridge rather than widening an existing bridge
- Separate bridge allowed reduced ground improvement of existing structure

**Total Contract Savings = \$2.1M**



# I-5/SR 16 Interchange HOV Connections (\$121.6M)



## **Project Overview:**

Final phase of the SR16 Nalley Valley Interchange. Constructs direct connecting bridges between I-5 and SR16 HOV lanes and reconstructs the mainline I-5 from 48<sup>th</sup> Street to M Street

## **Construction Start - Early 2017**

Design-Build Contract awarded to Skanska USA

# Practical Design Workshop

**WSDOT and Skanska participated in a collaborative, team-focused workshop.**

## **Workshop Outcomes:**

- 36 practical design ideas identified
  - 12 adopted by change order
  - 4 may be pursued later by Design Builder

**Twelve concepts adopted by change order include the following types of changes:**

- Design criteria modification to optimize constructability
- Consistent ramp design speeds
- Reuse existing highway lighting
- Consolidate signing

**Total Contract Savings = \$1.4M**



# Moving Forward

- Update process to capture lessons learned
- Include on future design-build projects
- Incorporate principles into RFP – capture all the savings
  - As a result, workshops will yield less savings over time
- Document what WSDOT will not consider
- Continue discussion of the PDW language with industry (AGC/ACEC); update/improve language as needed

# QUESTIONS/COMMENTS?

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