Successfully Designed and Constructed Projects on the Washington State Highway System

Dale Severson P.E.
Olympic Region Development Services Engineer
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Today's Panel

- Bob Jewell P.E. SCJ Alliance Senior Vice President
- Neal Campbell P.E. WSDOT Olympic Region Local Programs Engineer & Region Tribal Coordinator
- Bryan Dias P.E. WSDOT Olympic Region Materials Engineer
- Dale Severson P.E. WSDOT Olympic Region Development Services Engineer

Topics We'll Talk About Today

- Development Services is here to help
- Practical Solutions
- Successful Tribal projects in Olympic Region
- What makes a successful project?
- WSDOT's Role in these projects
- Tribe's Role in these projects
- How to design a successful Project – Bob Jewell P.E.
- WSDOT Local Program Grants – Neal Campbell P.E.
- Q & A

- *Ask questions at any time during the presentation*

Some WSDOT Facts and Figures

- WSDOT has 6 Regions – 3 either side of the Cascade Mountains
- You are currently in Olympic Region (Pierce, Thurston, Grays Harbor, Mason, Kitsap, Jefferson, and Clallam Counties)
- The overall state highway system has:
  - over 7,000 miles of roadway
  - ~3,100 bridges, adding on average ~22 new or replacement bridges per year
  - over a 1,000 traffic signals
  - ~125 roundabouts
- Projects built by others such as Tribes, Developers, and Local Agencies adds anywhere from 20 to 40 new statewide highway improvements a year to the state system
- 3 Tribe projects built this year in Olympic Region
- Typical projects are intersection related improvements, such as crosswalk enhancements, sidewalks, left and right turn lanes, traffic signals, illumination, and roundabouts.

Development Services

- Each Region has a Development Services office
  - NW Region has two, Sno-King and Mt Baker
- Good starting point if you have a project you want to build on the state highway system
  - Other useful contacts are the Region Local Programs Engineer and/or Region Tribal Liaison / Coordinator, and the HQ Tribal Liaison.
- Region Development Services Contacts are:
  - NW Region Sno-King Area (Seattle) – Ramin Pazooki 360-440-4710
  - NW Region Mt. Baker area (Burlington) - Roland Strome 360-757-5961
  - Olympic Region (Tumwater) – Dale Severson PE 360-357-2736
  - SW Region (Vancouver) – Jeff Barsness 360-905-2059
  - NC Region (Wenatchee) – Bill Gould P.E. 509-667-2909
  - SC Region (Yakima) – Rick Holmstrom 509-577-1633
  - Eastern Region (Spokane) – Greg Figg 509-324-6199

2016 Tribal Projects in Olympic Region

- 3 Tribal projects currently under construction or just completed:
  - Lower Elwha Tribe - US 101 ~600’ westbound right turn lane
  - Skokomish Tribe – US 101 ~1,000’ TWLTL extension
  - Nisqually Tribe – SR 510 2/3 to 4/5 lane widening and relocated traffic signal
- 2 Tribal projects currently in some form of design review
  - Puyallup Tribe of Nations – I-5 / SR 167 vicinity East 29th Street Roundabout (future City of Tacoma intersection)
  - Quinault Tribe - SR 109 left turn channelization to future gas station / convenience store and other retail development

What makes a successful project?

- Successful Planning and Design?

- Successful Construction?

A successful project

- *Is a project that is well designed and constructed, and operates well – delivering the greatest safety benefits*
- *On time and within budget*
- *A project that has engaged and frequent communication and coordination between the various parties*
- *Has satisfied customers*

Practical Solutions

Practical Solutions

- *Practical Solutions is a performance-based approach to transportation decision-making. This data-driven approach uses the latest tools and performance measures to support decision making. The goal is to seek lower cost efficiencies in operating highways, ferries, transit and rail, and reducing travel demand to save money and to reduce the need for building costly new infrastructure expansion.*

Practical Design

- *Maximum results within limited funding*
- *Tailored solutions for the project's purpose and need*
- *Phased solutions that address more critical and current needs*
- *Design guidance that transitions from a rigid structure to a more flexible framework*
- *Freedom to innovate*

Let's look at some successful Tribal projects built within the Olympic Region over the years

(here's 14 of them in no particular order)

Quinault Tribe

SR 115 left turn lane channelization to the Quinault Beach Resort and Casino

Jamestown S'Klallam Tribe

~140 foot Pedestrian Tunnel under US 101

Suquamish Tribe

SR 305 Intersection Improvements

Suquamish Tribe

SR 305 left turn channelization at the Masi Shop

Skokomish Tribe

~2,100 foot pathway along SR 106

Skokomish Tribe

US 101 Left turn channelization and fish passage improvement

Lower Elwha Tribe

US 101 **Westbound ~600’ Right Turn Lane to Dry Creek** Road including Driveway Access to Site

Nisqually Tribe

Pedestrian Activated Yellow Flashing Warning Lights (since removed due to highway widening)

Nisqually Tribe

~3,700 feet SR 510 highway widening and relocated signal

Chehalis Tribe

US 12 left turn channelization

Squaxin Island Tribe

SR 108 (1) left turn channelization to Little Creek Casino Resort & (2) TWLTL highway widening

Jamestown S'Klallam Tribe

US 101 left turn channelization to (1) Seven **Cedar's Casino & (2) Longhouse Market and Deli**

What is WSDOT's role?

- One of WSDOT's primary roles is to make sure safety and operation of the roadway for all modes of the traveling public is a top priority
- Ensure that the highway project meets the agency's current design and construction requirements – designed and built well
- WSDOT is generally only in an "oversight" role
- Occasionally WSDOT will "administer" a project
- WSDOT may have additional requirements if state or FHWA funding is involved
- Most projects WSDOT becomes the owner of the completed highway project

What is the Tribe's role?

- Administer the project from design through construction
- Use their own staff, consultants, and contractors to design and build the project (engineer of record)
- Responsibility for obtaining all WSDOT required documentation (schedules, material testing, approved mix designs, etc.)
- Obtaining any other Federal or State approvals
- Funding documentation when required

What are some of the little things that make a successful project?

- Always thinking safety first!
- Good ongoing coordination and collaboration between the various parties
- A designer / consultant / contractor that is very familiar with the WSDOT process (e.g. Design Manual (1268 pages), Construction Manual (898 pages), Standard Specifications (982 pages), & Standard Plans). It makes a big difference to achieving a successful project.

What little things have caused issues in the past (all projects)?

- Luminaires installed before being WSDOT inspected and approved. Had to be removed and reinstalled.
- “Locates” not thoroughly marked in the field and subsequently traffic loops were cut. $10,000 unplanned repair.
- Signs not WSDOT inspected and approved before being installed. Resulted in project completion delays.
- Incomplete design. Results in a change order and added costs.
- Lack of timely coordination with the Utility companies, resulting in delays to the project. In one case the delays resulted in the project shutting down for the winter to be finished next year.

How to successfully design a project on the state highway system

Bob Jewell P.E.

Senior Vice President SCJ Alliance in Lacey Washington

25 years transportation and civil engineering design experience

Key stages for a successful project

- PRE-DESIGN
- PRELIMINARY DESIGN
- FINAL DESIGN
- CONSTRUCTION AGREEMENT
- CONSTRUCTION

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Pre-design

- TIMELY REIMBURSABLE ACCOUNT SET-UP
- DEFINE TOPOGRAPHIC SURVEY REQUIREMENTS
- MATERIALS OFFICE COORDINATION (PAVEMENT SECTION REQUIREMENTS, SHOULDER BORINGS)
- HYDRAULIC OFFICE COORDINATION (CONCEPTUAL STORMWATER MANAGEMENT DISCUSSIONS)
- FUNDING SOURCE (INFLUENCES DELIVERABLES)
- UTILITY PERMITTING IS A SEPARATE PROCESS
- BUILD POSITIVE RELATIONSHIPS WITH WSDOT STAFF
- OTHER STAKEHOLDERS?

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Preliminary design

- CONCEPTUAL DESIGN MEETING
  (DEFINE DESIGN PARAMETERS/CONSTRAINTS)
- BASIS OF DESIGN
  (PER UPDATED DESIGN MANUAL)
- PLAN FOR APPROVAL DEVELOPMENT
  (I.E. PRELIMINARY CHANNELIZATION PLAN)
- FOLLOW THE WSDOT CHECKLIST!
- DESIGN ANALYSIS REQUIRED?
- ACCESS CLASSIFICATION CONFORMANCE (IS ENGINEERING STUDY REQUIRED?)

Final design

- CONCURRENT DESIGN (WITH PRELIMINARY DESIGN = FACILITATES EXPEDITED APPROVAL)
- FOLLOW THE WSDOT CHECKLIST!
- CLEAR, COMPLETE AND CONCISE PLANS = TIMELY PERMITTING
- DIVISION 1 SPECIAL PROVISIONS CAN BE FLEXIBLE FOR TRIBES
- ENVIRONMENTAL PERMITTING COMPLETE ?
- IS ELECTRICAL SERVICE AGREEMENT PROCESSED?
- ENGINEER TO ADDRESS WSDOT COMMENTS THOROUGHLY AND QUICKLY

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Construction agreement (CA)

- WSDOT PROJECT SPECIFICATIONS INCLUDED IN CA (UNDERSTAND REQUIREMENTS AND INCLUDE AS CONTRACTORS RESPONSIBILITY IN THEIR CONTRACT AS APPLICABLE)
- INSURANCE REQUIREMENTS ARE GENERALLY LARGER THAN TRIBES TYPICALLY REQUIRE
- LIQUIDATED DAMAGES FOR EXCEEDING ALLOWED TIMES FOR TRAFFIC CONTROL LANE CLOSURES
- BONDING WITH WSDOT IS NOT REQUIRED FOR TRIBES (PAYMENT AND PERFORMANCE BOND BETWEEN CONTRACTOR AND TRIBE)

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Construction

- CONTRACTOR READIES FOR CONSTRUCTION START AND SUBMITS:
- SPILL POLLUTION PREVENTION AND COUNTERMEASURE PLAN (SPPCP)
- INSURANCE REQUIREMENTS ARE GENERALLY LARGER THAN TRIBES TYPICALLY REQUIRE
- LIQUIDATED DAMAGES FOR EXCEEDING ALLOWED TIMES FOR TRAFFIC CONTROL LANE CLOSURES
- IS ELECTRICAL SERVICE AGREEMENT SETUP?

Construction best practices
(paving)

- NEED PAVEMENT OVERLAP ALONG SAWCUT
- MILL AND FILL TO EDGE OF TRAVEL LANE
  (I.E. NO LONGITUDINAL JOINT IN TRAVEL LANE)
- MILL AND FILL CENTERLINE AND/OR SHOULDER RUMBLE STRIPS
- FINAL LIFT PAVING WINDOW PER SPEC BOOK (OCT 1 –MAY 1, OBTAIN WSDOT PERMISSION OUTSIDE DATES)
- USE APWA TESTING SPEC FOR TRIBE OWNED ROADS

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WSDOT Local Program Grants

Neal Campbell P.E.

Olympic Region Local Programs Engineer

34 years with WSDOT

Most Tribes choose to transfer their FHWA grant administration from Local Programs to Western Federal Lands or BIA.

- Avoid prescriptive FHWA federal aid processes and regulations
- Make the decision to transfer early
- Project must be included in the State Transportation Improvement Plan (STIP)
- Region Local Programs Office will be the primary contact if the project stays with FHWA.

FHWA grant administration happens in parallel and separate from project coordination with WSDOT Development Services.

- Development Services and Local Programs are separate processes
- Development Services reviews the project for conformance with WSDOT acceptability.
- Local Programs reviews for federal grant requirements including required specifications, such as Buy America, Disadvantaged Business Enterprises (DBE), etc.

Local Programs Grant Administration

- FHWA rules are often different from other federal agencies
- Can be more restrictive and prescriptive than BIA
- Different NEPA / DCE requirements
- Detailed processes and mandatory specifications
- Efforts before authorization not eligible for reimbursement
- Each phase must be authorized (planning, preliminary engineering, right-of-way, and construction)
- Authorization can take months

We thank you for joining us today. Are there any questions or comments?

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