



FY 2013 National Infrastructure Investments

DTOS59-13-RA-TIGER5

Tiger V Discretionary Grant Application I-5/116th St. NE Interchange Improvements Final Phase - Bridge and Ramps



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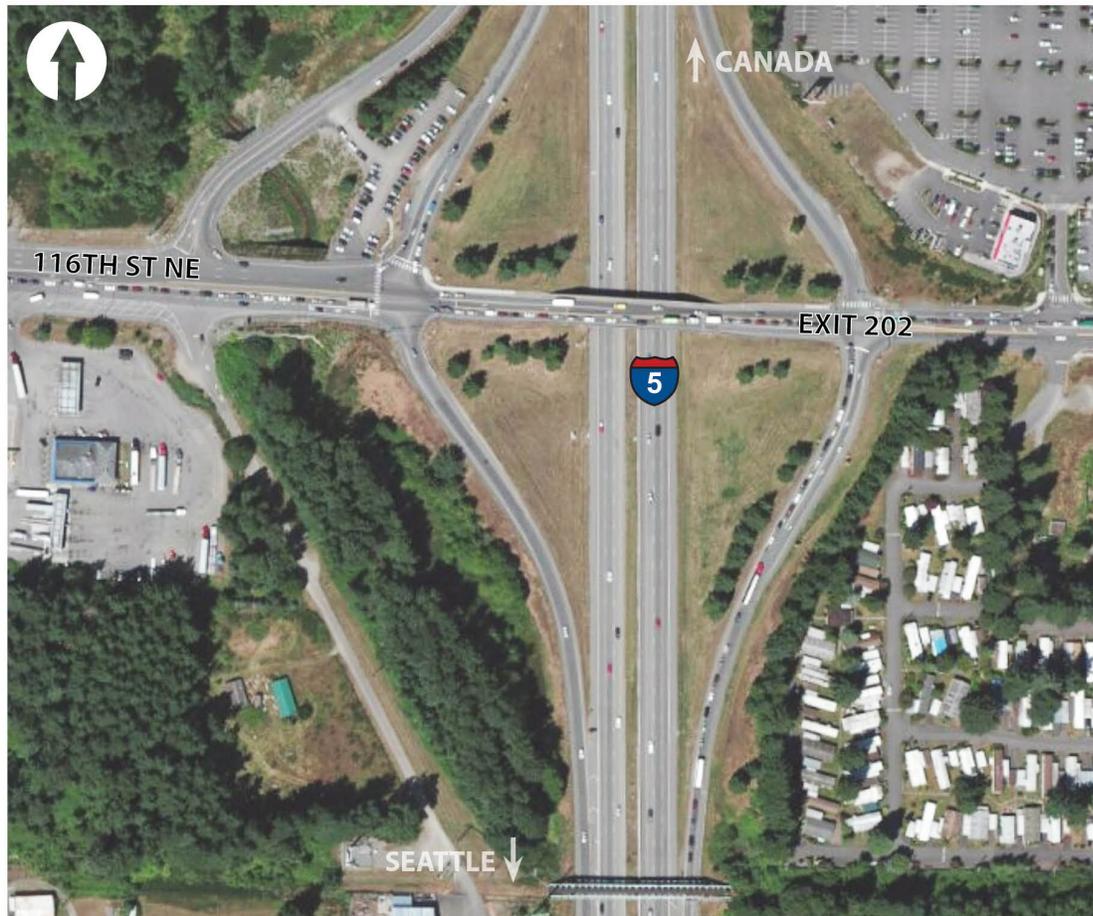
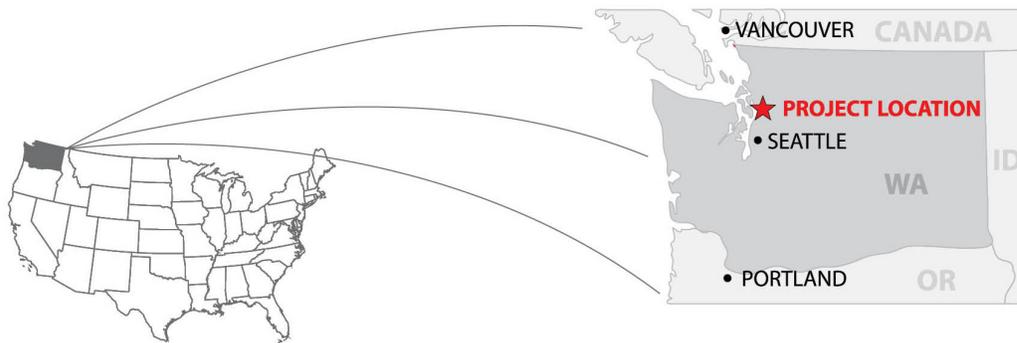


I. PROJECT DESCRIPTION AND SUMMARY

Type of Project: Infrastructure Improvement (Interstate Highway Interchange Replacement)

Location of Project: The 116th Street NE Interchange (116th Interchange) accesses Interstate 5 (I-5) and is located in Tulalip, Washington, approximately 40 miles north of downtown Seattle and 70 miles south of the Canadian Border. The 116th Interchange directly serves the Tulalip Indian Reservation, the City of Marysville, and Snohomish County, and supports the economy and transportation mobility of the greater Puget Sound Region. The project area and surrounding communities are within Washington's 2nd Congressional District.

Urban or Rural Area: Urban



Total Project Cost: \$62,264,942

Prior Phase Funding

Prior non-Federal: \$16,216,418

Prior Federal: \$10,048,525

Final Phase Funding (all secured)

Tulalip Tribes: \$13,000,000

Snohomish County: \$1,000,000

Federal STP: \$8,000,000

TIGER Funds Requested: \$14,000,000

Applicant: Tulalip Tribes

Project Website: <http://projects.tulaliptribes-nsn.gov/116th-interchange/index.aspx>

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PROJECT OVERVIEW

On behalf of the Tulalip Indian Reservation, the City of Marysville, and Snohomish County, the Tulalip Tribes are submitting this \$14,000,000 FY 2013 TIGER Discretionary Grants program (T5) application to complete the final phase of the 116th Interchange project. **The project will replace an existing diamond interchange with a “Single-Point Urban Interchange” (SPUI).** This final phase will replace an existing 3 lane bridge and diamond interchange built in 1971.

Among the many project attributes the most notable may be that as an outcome of significant investments over the last several years, the interchange construction project is **ready to go to bid for construction in September 2013**. This final construction phase will build on the planning, design, and permitting for the whole project, and the environment mitigation and ancillary roadway improvements constructed in Phases 1 and 2.



The following sections under this section and the following **PROJECT BENEFITS HIGHLIGHTS** section are all detailed later in the TIGER 2013 application.

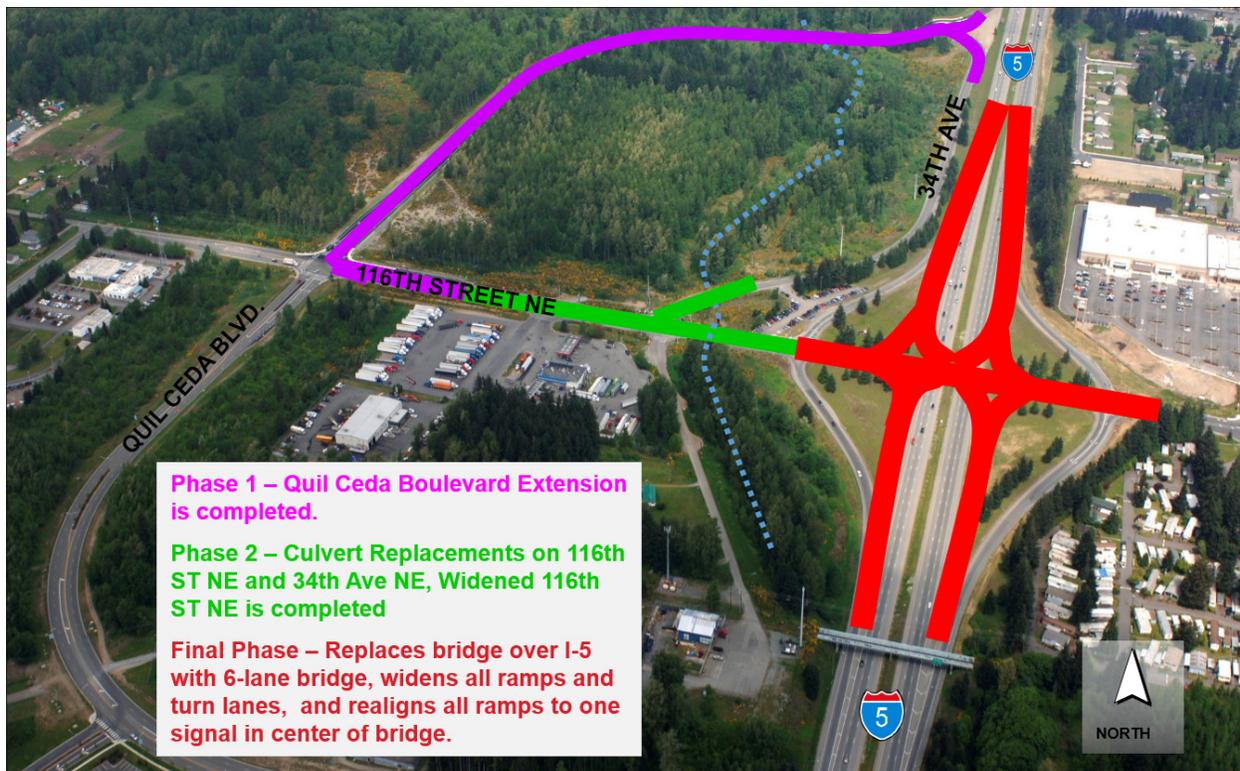
Current Interchange Condition

At present, the 116th Interchange is functionally obsolete. Problems with the 116th Interchange include:

- Traffic and interchange configurations result in unsafe back-ups onto I-5 travel lanes.
- Current structural design standards for 116th Street NE Bridge over I-5 are not met.
- Current pedestrian, bicycle and ADA standards are not met.
- The resulting congestion increases vehicle idling, causing fossil fuels to be consumed unnecessarily and producing additional greenhouse gas (GHG) emissions.
- Existing commercial and industrial centers and future economic development opportunities along the I-5 corridor are stifled by these access problems off of I-5.

Prior and Current Investments

The efforts to date to complete the planning, environmental permitting, design and construction of the project's two prior phases, and design of the final phase, represent an investment of over \$26 million, of which over \$16 million has come from the Tulalip Tribes, Snohomish County, and Washington State Department of Transportation (WSDOT).



The cost to construct the final phase of the project is \$36 million. The Tulalip Tribes have committed \$13 million and Snohomish County has committed \$1 million to this final phase. In 2013 Snohomish County Council and County Executive approved development of a financial strategy for the 116th interchange project for up to a million dollars in county funding as match for grant funds. With approval of these Federal Funds Snohomish County would commit to programming these funds in the 2014 budget and 6-year Transportation Improvement Plan.

This project has been the Tribes highest priority project for more than 9 years as is demonstrated by their prior and current commitment. Additionally, the Tulalip Tribes have been awarded \$8 million in federal Surface Transportation Program (STP) funds under US Department of Transportation's Moving Ahead for Progress in the 21st Century Act (MAP-21) via the Puget Sound Regional Council (PSRC), the central Puget Sound TMO, MPO and RTPPO for transportation planning in the region, for the final phase

of the project. Although not allowable as local match the allocation of these STP funds to the project further demonstrates the serious regional commitment to seeing this project to completion.

Project Readiness

Primarily through the efforts of the Tulalip Tribes, ALL pre-construction work is complete including permitting and design, NEPA analysis through a FONSI, right-of-way acquisition for all phases, reconstruction of several roadways approaching the interchange, and environmental mitigation for all phases, including the final phase for which TIGER funds are being requested. Thus the TIGER 2013 stipulation that all-preconstruction activities have to be complete by June 2014 is already satisfied.

Some of the efforts in Phase 1 and 2 actually exceed conventional regulatory or design requirements. For instance, the already-completed culvert replacements and stream restorations associated with the 116th Interchange project provide a significant ecological benefit by reopening a previously-diverted stream to its natural meander, and re-establishing passage for endangered salmon species.

All regulatory permits for the final completion phase are in place, routine construction permits from local jurisdictions (all of which are on record as supporting this project) have been obtained, and construction-associated water quality permitting is complete. All that remains is the preparation of bid documents and award of a construction contract. **Final construction bid documents are in production and this project is scheduled to be advertised for bid in mid-September 2013, subject to the availability of TIGER 2013 funding.**

The project can break ground in December 2013, far in advance of TIGER 2013 stipulations obligating fund by September 2014. In fact, as can be seen by the Project Schedule under the Project Readiness section of this application, by September 2014, the actual final construction project will be 50% complete, with the opening of the fully functional new interchange scheduled for October 2015. ***This provides the highest level of assurance to US DOT and the TIGER program that the project will not only proceed within the timeframes stipulated by grant requirements but in all likelihood be will one of the first TIGER 2013 supported projects to be completed.***

Details on all prior completed efforts toward replacing the 116th Interchange including NEPA and other regulatory compliance are detailed later in this TIGER 2013 application and are available on the project website.

Local Project Support

Written endorsements and letters of support have been secured from local and regional officials, and other entities, including the City of Marysville, Snohomish County, PRSC, WSDOT, Economic Alliance of Snohomish County, Tribal Transportation Planning Organization (TTPO), and Affiliated Tribes of Northwest Indians (ATNI). Primary stakeholders have been documented proponents of the project since 2004.

Current Local Conditions

The current interchange, located at the crossing of I-5 and 116th Street NE which connects the City of Marysville with the developed center of the Tulalip Indian Reservation, was constructed in 1971. At that time, surrounding communities were lightly populated and the immediate region was almost completely rural in character. Snohomish County had a population of only 265,000 in 1970. While many rural uses remain, the area has become home to a rapidly-growing suburban population and to major commercial and employment centers.

Drivers of economic growth, such as the Reservation's Quil Ceda Village and Marysville's Gateway Shopping Center, have developed since 1971 and use the 116th Interchange as the primary access from I-5. Numerous new neighborhoods accessed through the interchange have developed that house new residents on the Reservation and in the City of Marysville, including the families of workers at the

nearby Boeing Everett plant (largest aircraft manufacturing facility in the world) and the Everett Naval Station.

The County now has 713,000 residents according to the 2010 U.S. Census, and the County population is projected by the Puget Sound Regional Council (PSRC) to increase to 985,000 by 2030. Even more dramatic, the City of Marysville, which sits right at the 116th Interchange, had a population of 4,300 in 1970, and has grown to over 60,000 (2010 U.S. Census). The 116th Interchange built in 1971 was not designed for such growth or population and the vehicular traffic that follows with it.

Regional Influences

These local impacts are magnified by the fact that I-5 is the only north-south Interstate Highway on the West Coast connecting the US to Mexico and Canada. **I-5 is the north-south international trade corridor connecting Washington State with Canada, Oregon, and other areas.** Thus the problems with the existing 116th Interchange go beyond just local impacts to negatively affecting the greater Puget Sound region. Approximately 70 miles south of the U.S.-Canada border, and 40 miles north of downtown Seattle, the 116th Interchange provides access to significant traveler and employment centers, and also brings Canadian dollars into the regional and local economy. The portion of I-5 passing through the City of Marysville, Snohomish County, and the Tulalip Indian Reservation is a crucial freight link between the major ports of Seattle and Tacoma, and the Canadian market. **Donna's Truck Stop, located at the 116th Interchange is the second busiest truck stop on I-5 between Seattle and Canada.**¹

TIGER 2013 Funding

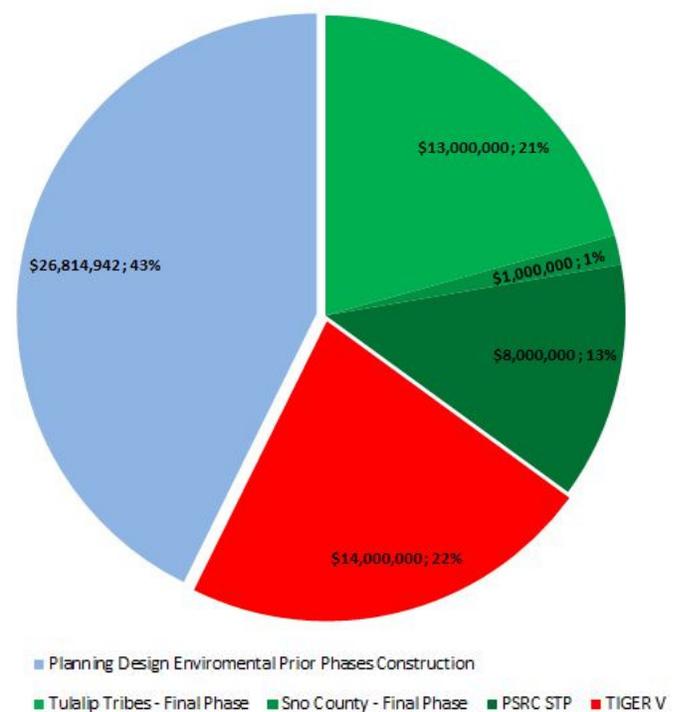
With TIGER funding, the project will be completed and open for business by October 2015. The \$14 million in TIGER funding when combined with local match and other funds will replace the existing non-standard three-lane bridge over I-5 with a full standard six-lane bridge that includes wider outside lanes to accommodate bikes and sidewalks and crosswalks that meet current ADA requirements.

Realign the interchange layout from a diamond with two signals into a one-signal single point urban interchange SPUI layout.

Provide additional westbound and eastbound through-lanes and double left turn storage.

Widen and realign off-ramps to include additional left- and right-turning lanes to provide adequate storage lengths for traffic queues to remove existing backups onto the I-5 mainline.

Provide ramp metering and a high occupancy vehicle (HOV) bypass lane on the southbound on-ramp to encourage use of carpooling and public transit while actively managing traffic loads to maintain a higher level of service (LOS).



¹ The above references for the WSDOT Truck Parking Study I-5, I-90 2005 were taken from the following site: http://www.wsdot.wa.gov/NR/rdonlyres/7E2131DF-040E-437A-A054-6CC34463429D/0/TruckStudy_Appendices.pdf

PROJECT BENEFIT HIGHLIGHTS

The Tulalip Tribes, along with Snohomish County and the City of Marysville, have for well over the last decade recognized the pressing need to replace the existing 116th Interchange with an option that provides improved safety, more capacity, less congestion, reduces pollution, and accommodates adequate bicycle and pedestrian facilities. The ongoing and planned design and interchange construction program for 116th has the best combination of lower costs, increased speed of construction, improved long-term safety and level of service, environmental impact avoidance and mitigation, and enhancements to local community livability and transportation options.

Overall Benefit-Cost

According to the Benefit-Cost Analysis (BCA) conducted to TIGER 2013 specifications by an independent economic consultant (see the attached full BCA), the benefit-cost ratio for the complete 116th Interchange is 2.33 at a 7 percent discount rate and 4.83 at a 3 percent discount rate.

Major economic benefits of a new 116th Interchange include:

- \$38.928 million in user delay benefits (\$84.626 million if discounted at 3 percent)
- \$2.496 million from reduced GHG emissions (discounted at 3 percent)
- \$12.626 million in user operating cost reductions (\$26.904 million if discounted at 3 percent)
- \$16.568 million in safety benefits (\$30.012 million if discounted at 3 percent)

Costs attributable to this project include \$4.5 million in construction costs in 2013, \$18.0 million in 2014, and \$13.5 million in 2015. The value of maintenance and preservation costs is also calculated at the 7% and 3% rates. This is part of the benefit-cost ratio reported above. See the full BCA attached to this application for more information.

Economic Development Impacts

The new 116th Interchange will help accommodate the population growth summarized highlighted under **PROJECT OVERVIEW** above and will support new private investments in local and regional economic expansion supporting both long-time and new residents and other businesses.

The analysis detailed in the **ECONOMIC COMPETITIVENESS** section of this TIGER 2013 grant application and the attached **BCA** demonstrates that the new 116th Interchange will have significant positive impacts on local and regional employment opportunities and economic growth.

Additional details can be found under **JOB CREATION AND ECONOMIC STIMULUS**

The project is expected to unlock significant economic activity. The direct impacts consisted of 7,000 direct jobs, all in Snohomish County. As described below, these consist of 1,338 jobs in the retail trade sector, 3,321 jobs in the manufacturing sector, and 2,314 jobs in the transportation and warehousing sector. These direct jobs correspond to \$131 million per year in retail output, \$1.2 billion in manufacturing output, and \$412 million in transportation and warehousing output. Direct income to retail workers is \$54 million per year, to manufacturing workers is \$331 million, and to warehousing workers is \$147 million².

These economic development impacts are complimented by significant upgrades to pedestrian and bicycle facilities; and major improvements to salmon and stream habitats in the area. These attributes and outcomes are detailed in the balance of this TIGER 2013 grant application. A project website has also been created to monitor progress towards completing the new interchange by October 2015. See <http://projects.tulaliptribes-nsn.gov/116th-interchange/index.aspx>.

² Information referenced from [ECONorthwest report: I-5 16th Interchange: Economic Impacts and Benefits of Interchange Replacement](#), September 2009

Improved Safety and Level of Service

The existing diamond interchange will be replaced with Single-Point Urban Interchange (SPUI) to improve safety, reduce congestion, and increase thoroughfare capacity on I-5 and 116th Street NE. The existing diamond interchange has several deficiencies, including inadequate capacity to meet the high levels of commercial and commuter traffic. These deficiencies create negative impacts to local, regional, and international economies by disrupting the international, regional, and local flow of goods and services; increasing GHG emissions as vehicles idle; and generating safety risks as traffic queues back onto the I-5 mainline.

It is estimated that the SPUI design would cut the number of collisions in half relative to the number that would occur with the existing interchange. In 2016, there would be 6.59 fewer injury collisions and 13.57 fewer non-injury collisions. In 2045, there would be 8.80 fewer injury collisions and 175.66 fewer non-injury collisions. Injury collisions were valued at \$167,816 each on average, and non-injury collisions at \$6,232 each, both in 2013 dollars. These amounts are per collision and include damages to all involved parties and vehicles. The value of safety benefits grow from \$1,205,725 in 2016 to \$2,570,659 in 2045.

Decreased Congestion and Pollution

Currently interchange access ramps frequently back-up onto I-5 during the PM peak hour, especially into northbound lanes. Back-ups carry through adjacent signals on either side of the interchange, and create severe bottlenecks, increasing driver frustration and collision potential on I-5 and on the local arterial system, blocking driveways, and increasing red light violations. The forecast peak queuing analysis with no interchange improvements exceeds the link distances of the ramps, and indicates queues would back into onto the adjacent arterial nearly 2,000 feet eastbound and over 1,000 feet westbound. Additional information is provided under the **ECONOMIC COMPETITIVENESS** and **LIVABILITY** sections of this application.

The Tulalip Tribes have been committed to initiatives with respect to climate change and greenhouse gas (GHG) reduction for the last decade. For example, the new Tribal Headquarters building is heated by clean renewable geothermal energy. The 116th Interchange will reduce GHG emissions and provide direct economic benefits from that reduction (see the **ECONOMIC COMPETITIVENESS** section of this application for additional details). In simplest terms, the value of emission reductions over the first 30 years of operation of the new interchange will be \$2.496 million at the 3% discount rate.

Improved Bicycle and Pedestrian Options

Upgrading the 116th Interchange for pedestrians and bicyclists will allow local and regional pedestrians originating from the eastside of I-5 to conveniently and safely choose between multiple travel options in patronizing the burgeoning west-side commercial and recreational areas, and vice versa. The current 116th Interchange has a single (five-foot width) sidewalk on one side of the bridge over I-5. The sidewalk directly parallels an eleven-foot wide travel lane. This sidewalk is used by both pedestrians and bicyclists traveling to destinations in both directions. This facility is unsafe for pedestrians and bicyclists, and for motorists. The sidewalk is simply too narrow for even low bicycle/pedestrian volumes, much less two-way, multi-modal or ADA use. The project design includes an eight-foot wide pedestrian sidewalk on both sides of the bridge over I-5 and a six-foot shy/shoulder distance for bikes to the bridge's twelve-foot wide outside travel lanes.

Stream Restoration and Fish Habitat Enhancements

Quilceda Creek flows through the Tulalip Indian Reservation and the City of Marysville downstream of this confluence, and thence into the Snohomish River. Upstream, West Fork Quilceda Creek flows directly through and under the interchange area. Endangered Chinook salmon and bull trout historically spawn within this watershed. Steelhead and rainbow trout are also present. The stream and wetlands enhancements and storm water improvements that have already been completed as part of the 116th Interchange project will improve the overall health of the Quilceda Creek system, providing for resource

quality uplift supporting increases in fish populations and the reappearance of now absent historic populations. *This is an exceptional outcome for a project centered on a major transportation improvement.*

Enhanced Local Community Livability

The new 116th Interchange will provide several significant new transportation options for residents and businesses throughout Snohomish County, the City of Marysville, and the Tulalip Indian Reservation. All disadvantaged populations will benefit from the availability of a wider range of choice and services as a result of the new 116th Interchange. The full range of travel modes accommodated in this project will speed movements between both sides of I-5, providing ready access to existing services. The improved vehicular connections from and over I-5 and new pedestrian and bicycle will make an immediate and dramatic difference in choice for such populations. As documented under **ECONOMIC COMPETITIVENESS**, the development and employment unlocked by the 116th Interchange project will also generate new services.

II. PROJECT PARTIES

The Tulalip Tribes will be the recipient and administrator of this TIGER 2013 grant. The Tulalip Tribes are familiar with the complexities and contingencies of grant funding. The Tulalip Tribes have a long history of successfully managing Federal grant funds, having been awarded millions of dollars in the past 10 years and having passed every grant audit, as well as delivering successful grant funded projects “on the ground”. The Tulalip Tribes also have the financial resources necessary to manage the cash flow between construction expenditures and TIGER 2013 grant funding reimbursements.

Other key participating jurisdictions and agencies include the Federal Highway Administration (FHWA), the Bureau of Indian Affairs (BIA), the Washington State Department of Transportation (WSDOT), and Snohomish County. The activities of these jurisdictions and any funding contributions are detailed under **PART III: PROJECT FUNDING AND SOURCES**, and elsewhere in this TIGER 2013 grant application.

III. GRANT FUNDS AND SOURCES/USES OF PROJECT FUNDS

An investment of over \$26 million (see additional details under **PROJECT DESCRIPTION AND SUMMARY** above; and Project Readiness to follow) has already been made in the 116th Interchange project, leaving a cost to complete of \$36 million. The Tulalip Tribes will provide \$13 million for the completion phase as detailed below. Snohomish County is committed to an additional \$1 million. Another \$8 million is coming for Federal Surface Transportation Funds secured by the Tribes. The \$14 million requested from TIGER 2013 will complete the funding package for the entire interchange

Tulalip Tribes: \$13M from Tribal Transportation Program Funds, Tulalip Tribes Motor Fuel Taxes, and Tribal Hard Dollars.

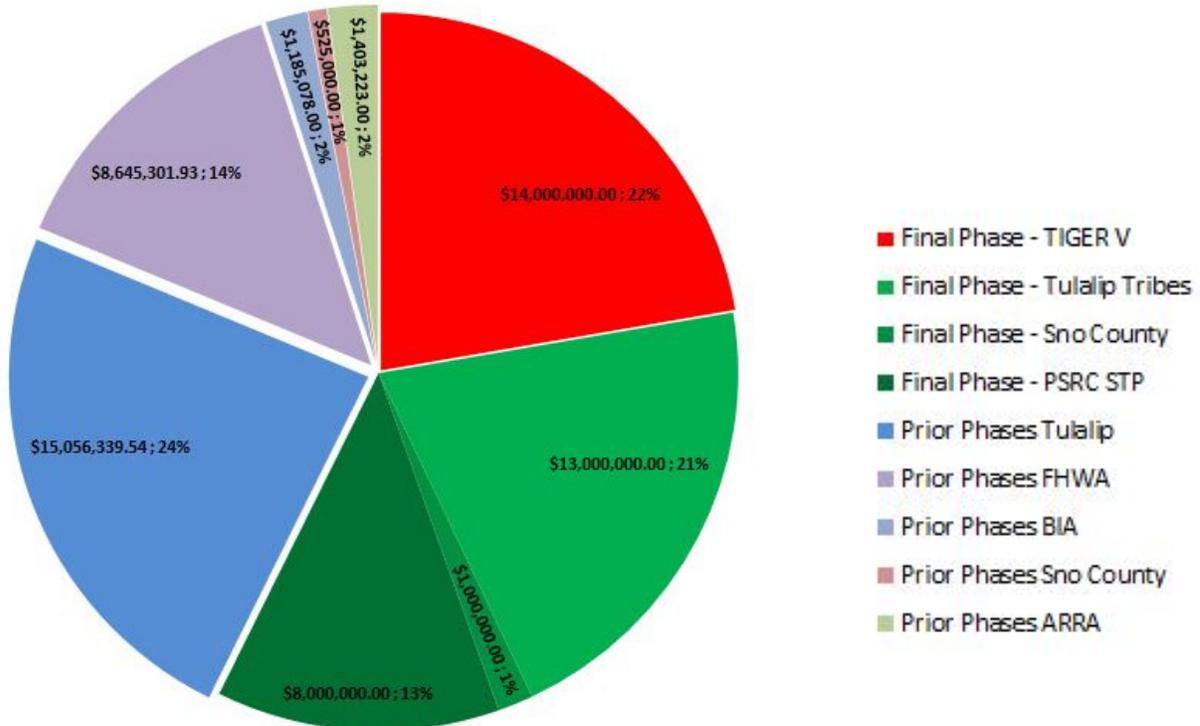
Snohomish County: \$1.0 million

Surface Transportation Program: \$8.0 million

Project Funds Expended and Required To Complete

	Total Project	Funded to Date	Final Phase Cost to Complete
Planning	\$3,886,391	\$3,886,391	
Engineering	\$12,240,346	\$12,240,346	
ROW	\$550,000	\$550,000	
Construction	\$46,138,205	\$32,138,205	\$14,000,000
TOTAL	\$62,814,942	\$48,814,942	\$14,000,000

Parties Providing Project Funds



IV. SELECTION CRITERIA

a. LONG-TERM OUTCOMES

i. STATE OF GOOD REPAIR

The existing diamond interchange will be replaced by a SPUI structure to improve safety, reduce congestion, and increase thoroughfare capacity on I-5 and 116th Street NE. The existing diamond interchange has several deficiencies, including inadequate capacity to meet the high level of commercial and commuter traffic.

Service Deficiencies

The existing 116th Interchange was designed and built in 1971, at a time when the Tulalip Indian Reservation, the City of Marysville, and northern Snohomish County had significantly fewer residents and businesses. Increased regional, interstate and international traffic on I-5 is also impacting the 116th Interchange. Between just 2000 and 2010 the City of Marysville's population grew from 25,000 to 60,000. The Puget Sound region's "tech" boom over the last 30 years, and attendant growth pressures, has driven property values significantly higher in nearby urban centers, motivating many residents of those centers to choose to relocate to "further out" communities, such as those surrounding the 116th Interchange. The expansion of the Boeing plant in nearby Everett, and the continued need for housing generated by the Everett Naval Station, have also contributed to increased population and associated traffic volumes.

As a result, the existing 116th Interchange is now operating beyond design capacity, causing congestion and lengthy delays during peak traffic hours. The combination of traffic volumes and the inefficiencies caused by closely-spaced dual signals at the 116th Interchange generate back-ups at the I-5 off-ramps, increase traffic delays and pose safety risks on both the interchange and the I-5 main line. On-ramps release vehicles onto I-5 in a sporadic and unmetered manner, causing additional congestion. The

current 116th Interchange has little infrastructure accommodating carpooling or public transit, and only very limited pedestrian and bicycle use facilities.

Functional, Operational, and Structural Deficiencies

The current 116th Interchange structure and ramps have substandard and AASHTO/WSDOT non-compliant, contributing significantly to congestion and excessive vehicle idling, which in turn increase GHG emissions and adversely impair economic activities in the area.

Across the interchange, 116th Street NE is only three lanes, but connects five-plus lane sections east and west of the interchange. This creates huge bottlenecks.

Lack of adequate left and right turn lane storage on 116th Street NE to the on-ramps backs up traffic east and west of the interchange and onto the I-5 off-ramps.



The interchange has no active stormwater treatment systems, and untreated stormwater runoff enters endangered salmon and steelhead bearing streams and adjacent wetlands and riparian areas.

The existing bridge structure does not meet current seismic design standards. It was designed for a 500-year seismic event; the current WSDOT standard is 1,000 years.

The existing bridge structure was designed as a two-lane bridge and now carries three lanes of live loading of cars and trucks.

Inadequate pedestrian and bicycle accommodation. There is only a five foot sidewalk on the north side, and ramp terminal intersections are not ADA compliant.



The current configuration lacks full pedestrian and bicycle paths. ¶

Life Cycle

AASHTO sets the effective life of a pre-stressed concrete bridge structure like the existing 116th Interchange at 75 years. However, since the interchange was opened in 1971 changes in population and employment opportunities, changing land use and development patterns, and updated standards such as for stormwater management and bicycle/pedestrian facilities have brought the current 116th Interchange to the operational end of its design life and rendered the interchange structure obsolete.

Higher traffic volumes generated by the immediate area’s population and commercial growth, and expanding regional demands on the interchange are overwhelming a facility originally built to serve a less-populous rural community.

Operations and Maintenance

WSDOT operates and maintains the 116th Interchange bridge structure. With the improvements proposed with this TIGER 2013 application, operation and maintenance (O&M) costs for the structure will be lower than for the existing diamond interchange. Note: Stormwater treatment improvements will incur slightly higher O&M costs of \$5,000 - \$10,000 per year, essentially because current stormwater treatment is non-existent or incidental (sheet run-off to adjacent disturbed lands). The ecological benefits of the active storm water treatment incorporated in the new design more than offset the higher base O&M expense. Stormwater management provisions are described under the Sustainability sub-section of this application.

ii. ECONOMIC COMPETITIVENESS

Economic Efficiency and Productivity

Existing Conditions and Critical Need – Major Local Drivers

A new 116th Interchange will support major employment centers in the area and unlock the potential for expanding on existing developments and creating new opportunities. Major economic drivers in the immediate project vicinity that will directly benefit from proposed improvements to the 116th Interchange are summarized in the following table.

Local Economic Drivers for Project

Driver	Description
Boeing	The Boeing Company has its primary factory location in Everett, approximately 13 miles from the 116th Interchange. The factory is the largest building in the world (by volume), covering over 1,025 acres. Thousands of Boeing employees live near the vicinity of the 116th Interchange and use it on a daily basis. With the manufacturing of new generation Boeing commercial aircraft ramping up, employment is expected to increase significantly.
Naval Station Everett	The nearby Naval Station Everett is the homeport for several important U.S. Navy vessels, including a nuclear aircraft carrier. Five (5%) percent of all economic activity in Snohomish County is linked to personnel and procurements at this base.
Consolidated Borough of Quil Ceda Village	The Tulalip Tribes have invested over \$81 million on the Quil Ceda Village Business Park, west of the 116th Interchange, to develop and support infrastructure, including roads and utilities, hotels, large retail, smaller shops, professional and government services, and entertainment venues. 180 acres have already been developed in the 2,000 acre Business Park, and several hundred more acres of development will be leveraged by the new interchange.
Kruse-Junction Marshall Area	Located on the east side of I-5, the City of Marysville has developed or permitted over 1.6 million square feet of built or planned commercial space. All this activity is occurring within 2 miles of the 116th Interchange.
Marysville - Lakewood Triangle	A 2006 annexation by the City of Marysville unlocked the potential development of 500,000 square feet of retail and light commercial opportunities. This development area is 2 miles northwest of the 116th Interchange.
Smokey Point Master Planned Community	The City of Marysville is investing in infrastructure to support development of 675 acres of light commercial and industrial development. The 116th Interchange is a primary regional access point. The development is 2 miles northeast of the 116th Interchange.

Existing Conditions and Critical Need – Interstate 5 Corridor

The 116th Interchange also plays a large role in regional economic competitiveness. The new 116th Interchange will greatly speed the movement of goods and people up and down I-5. The existing truck stop immediately adjacent to the 116th Street Interchange is the second busiest truck stop between Seattle and Canada. This is detailed in [WSDOT's Truck Parking study](#) completed in 2005.

I-5 is a key route to Seattle – Tacoma (Sea-Tac) International Airport, and the ports of Seattle, Tacoma, and [Everett](#). Tacoma and Seattle are among the top ten U.S. containership ports³ and the I-5 corridor is home to five of the top ten U.S. ports by volume.⁴ Furthermore, \$179 billion, or 69 percent, of Washington's freight shipments are by truck⁵; and these shipments rely heavily upon I-5. An average **47.8 million tons of freight annually and 11,000 trucks daily pass through the 116th Interchange.**⁶ In addition, major medical, educational, government, military and cultural venues lie along the I-5 corridor.

Existing Conditions and Critical Need – International Trade

I-5 is the primary north-south transportation route in Washington State, connecting with Canada, Oregon, California and Mexico. Congestion at the 116th Interchange has the effect of stifling the flow of goods between regional and international trade centers, resulting in lost productivity. U.S. trade with Canada has steadily increased from \$243 billion in 1994 to \$537 billion in 2011. During a similar time period, freight truck traffic in Washington State increased by 94 percent on I-5.⁷ Two-way trade at I-5's Blaine, Washington border crossing (70 miles north of the 116th Interchange) was valued at more than \$35 million per day in 2000.⁸ The portion of Washington's trade that is international (29 percent in 2002) is anticipated to grow steadily to 37 percent by 2035.⁹ This growth in trade will primarily come from Canada and to a great extent "pass through" the 116th Interchange.

³ http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/state_transportation_statistics/index.html
Tacoma ranked #10 in 2010, importing 340,000 twenty-foot equivalent units [TEUs] and exporting 496,000 TEUs for a total of 836,000 TEUs. Seattle ranked #7 in 2010 importing 888,000 TEUs and exporting 529,000 TEUs for a total of 1,417,000 TEUs.

⁴ Los Angeles #1, Long Beach #2, Tacoma #10 Oakland #5, and Seattle #7 (2010)

⁵ <http://faf.ornl.gov/fafweb/FUT.aspx>

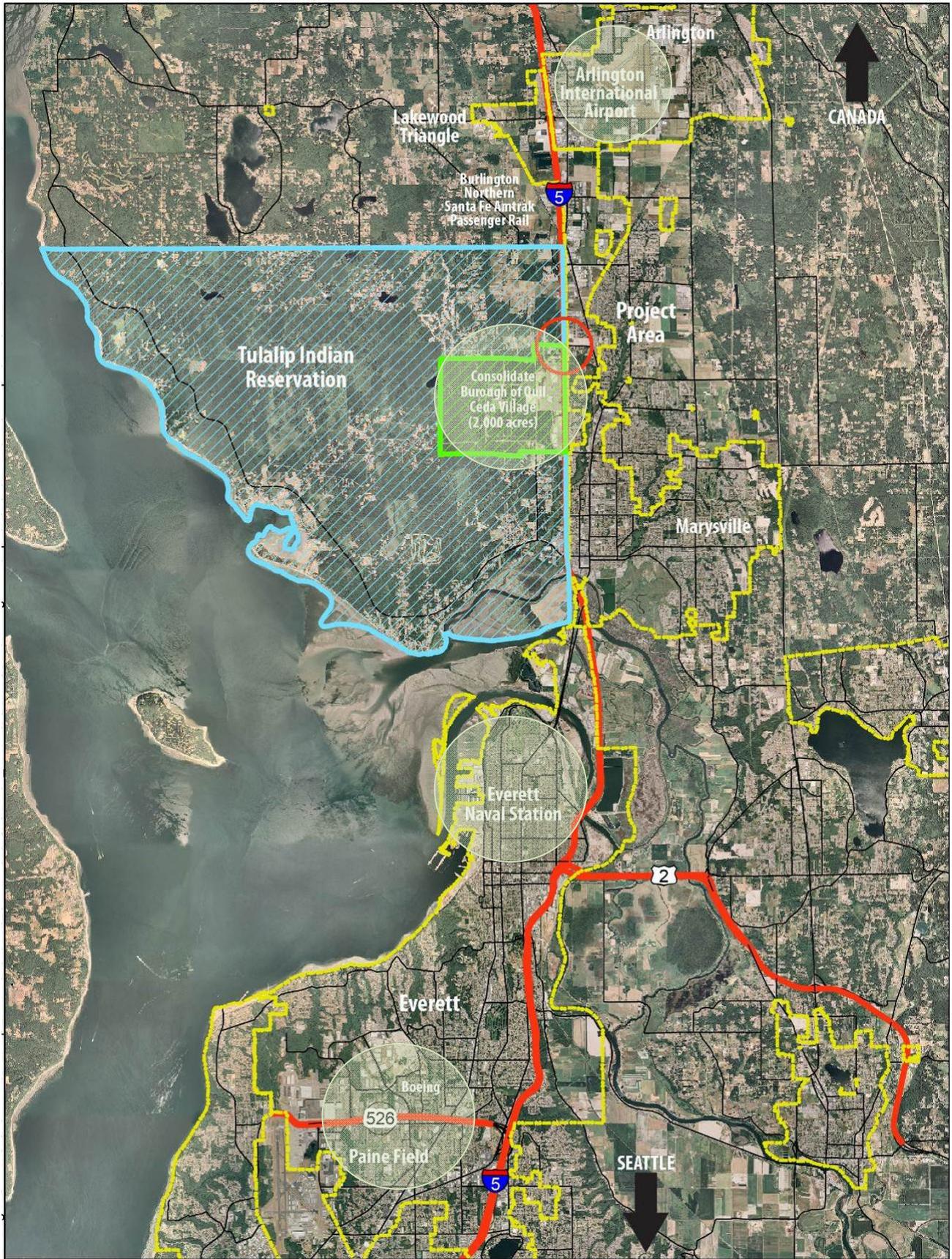
⁶ <http://www.parametrix.com/docs/default-source/hosteddocs/tulalip-116th-interchange--eco-nw-deliverable.pdf?sfvrsn=2>

⁷ <http://faf.ornl.gov/fafweb/FUT.aspx>

⁸ <http://www.wsdot.wa.gov/Freight/FGTS/default.htm>

⁹ http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf/faf3/netwkdbflow/index.htm

Figure 1. Location of Project in Relation to Economic Hubs



 Economic Centers

Congestion-Related Economic Impacts

User Delay Reduction

The project is needed to reduce congestion on I-5 and to support planned development in the Tulalip Indian Reservation, City of Marysville and Snohomish County. Synchro models were run for the existing interchange and the proposed interchange in 2014 and 2042. These model runs estimate the number of seconds it takes a vehicle to traverse each link along their path through the interchange. For each link, the difference in travel time between the without- and with-improvement cases was multiplied by the number of vehicles on that link and converted the result from seconds to hours. Because the number of vehicles was the same in both cases, no additional calculations were necessary to determine the value to those who used only the improved facility.



The project will greatly reduce existing congestion in the area

The hours were then added up over all links to get the hours of user delay benefits in the PM peak hour of a typical weekday. Those savings were 30.5 hours in 2014 and 658.2 hours in 2042. Because of the non-linear relationship between traffic volume and delay from congestion, the hours of delay increase faster than traffic volumes. The methods and formulas from the AASHTO User Benefit Analysis for Highways Manual were then applied to extrapolate delay from the peak hour to the typical weekday day and then to the entire year. Applying these factors, there were 23,423.4 hours of delay reduction in 2014 and 505,471.8 hours of delay reduction in 2042.

To get from hours of benefit to dollars, assumptions about how users of the facility value their time needed to be made. We used the values of time recommended in federal guidance (\$12.50 per hour for cars and \$23.70 for trucks) and assumed that 3.16 percent of the traffic would be trucks. For years between the years for which the model was run, user delay benefits (in hours) were interpolated assuming a constant rate of growth in benefits between modeled years.

The present value (2013) of user delay benefits for the first 30 years of operation of the new interchange is \$38.298 million when discounted at the required private real discount rate of 7 percent, and \$84.626 million when discounted at the alternative public real discount rate of 3 percent.

Job Creation and Opportunity

The following employment and income benefit and impacts projections relate to Snohomish County, the “home” county for the 116th Interchange, and the most direct beneficiary of a new interchange (along with the Tulalip Indian Reservation and City of Marysville, both included in the overall County projections). However, as noted above, I-5 is the major land transportation corridor linking the Puget Sound Region and Western Washington to markets south and north. Therefore, it is reasonable to assume the new 116th Interchange will contribute to economic stability and growth well beyond Snohomish County boundaries.

Overall Employment Impacts

The economic impacts (changes in levels of economic activity measured as changes in output, income, and employment) associated with the replacement of the 116th Interchange derive from the development of currently vacant or under developed land near the interchange. The reasonable assumption is that additional development would not be generated with the current interchange in place because of traffic impacts, including impacts resulting from traffic backing up the on-ramps and into the main line of I-5. To estimate the impacts of additional economic activity on Snohomish County, the IMPLAN economic input-output model was applied. The input-output model starts with the direct impacts and estimates the additional, indirect and induced impacts. Indirect impacts result from the

businesses on the newly-developed land purchasing goods and services from other businesses within the region. Induced impacts result from employees of the direct and indirect businesses spending part of their wages within the region.

The impacts described below are long-run impacts as of the completion of the planned development. All dollar amounts are in year-2013 dollars. These estimates do not include short-run, construction-related impacts. In the years between the beginning and completion of development, impacts will be smaller than reported here.

It is assumed that replacing the interchange would allow the development of 675,000 square feet of retail space and 4 million square feet of light industrial and warehousing space. These assumptions are consistent with Tribal planning documents (Tulalip Tribes Comprehensive Land Use Plan 2009). It is further assumed that the retail space would employ 1.982 people per 1,000 square feet, the warehousing would employ 0.915, and the light industrial would employ 2.308. It was also assumed that the 4 million square feet of light industrial and warehousing would consist of 1,437,000 square feet of light industrial and 2,563,000 square feet of warehousing space.

The ratio of the number of jobs per thousand square feet to the number of square feet yields 1,338 retail jobs, 3,231 manufacturing jobs, and 2,341 warehousing jobs, for a total of 7,000 direct jobs. Jobs are person-years of employment per year. These direct jobs correspond to \$131 million per year in retail output, \$1.2 billion in manufacturing output, and \$412 million in transportation and warehousing output. Direct income to retail workers is \$54 million per year, to manufacturing workers is \$331 million, and to transportation and warehousing workers is \$147 million. The total number of jobs and the assumed employees per square feet are consistent with Tribal planning documents (Tulalip Tribes Comprehensive Land Use Plan 2009). The split between light industrial and warehousing is implicit in the other assumptions.

Direct Impacts of Projected Development

Direct Impacts	Snohomish County		
	Direct Output	Direct Income	Direct Jobs
Aggregate Industry Sector			
Manufacturing	\$1,236,118,890	\$330,943,365	3,321
Retail trade	\$131,441,298	\$53,898,119	1,338
Transportation & warehousing	\$411,523,067	\$146,712,457	2,341
All Sectors	\$1,779,083,254	\$531,553,941	7,000

- Indirect impacts result from the directly-affected businesses purchasing goods and services from other businesses within the region. The indirect impacts amount to 3,129 additional jobs, \$657 million in output, and \$215 million in income within Snohomish County. Indirect impacts occur, to differing degrees, in all economic sectors.
- Induced impacts result from employees of directly- and indirectly-affected businesses spending their incomes. The induced impacts amount to 3,547 additional jobs, \$467 million in output, and \$168 million in income within Snohomish County. Like indirect impacts, induced impacts occur in all economic sectors.
- Total impacts are the sum of direct, indirect, and induced impacts. For Snohomish County, total impacts are 13,676 jobs, \$2.9 billion in output, and \$914 million in income.

Impacts on Lower Income Workers

The residents of the Tulalip Indian Reservation provide a compelling example of how nearby disadvantaged populations that will benefit from the new 116th Interchange. With a poverty rate of over double the U.S. average and a median household income of 76 percent of the U.S. average, the Tulalip Indian Reservation is classified as an “Economically Distressed Area.” The poverty rate for

American Indians at Tulalip is more than four times the Snohomish County average, and the median household income is only 60 percent of the county average.

This is demonstrated by higher than average unemployment rates and lower than average incomes compared to other areas of the Puget Sound region.

According to the 2000 U.S. Census, Tulalip tribal members have a poverty rate that is over double the U.S. average, and median household income (MHI) is 76 percent of the U.S. average. According to the FHWA (42 U.S.C. 3161), the **Tulalip Indian Reservation is classified as an “Economically Distressed Area,” with poverty rates more than four times the Snohomish County average**, and median household income at only 60 percent of the county average. Results in the 2010 census show the area and the Tulalip Tribes members still trailing regional and national averages for poverty and unemployment.

Additional details can be found under **JOB CREATION AND ECONOMIC STIMULUS**.

Of the 4,000 members of the Tulalip Tribes, 2,469 (2010 U.S. Census) live on the Reservation, with approximately 500 more tribal members in surrounding Snohomish County. Total population within the Reservation is over 10,631 (2010 U.S. Census). The median annual household income of tribal members living on the Reservation is under \$32,000 (2000 U.S. Census). Results in the 2010 census show the area and the Tulalip Tribes members still trailing regional and national averages for median household income.

Median Household Income Comparison

Nation & State		Project Vicinity		Puget Sound Region		
U.S.	Washington	Marysville	Everett	Bellevue	Sammamish	Redmond
\$51,425	\$56,384	\$54,637	\$47,091	\$80,350	\$129,583	\$87,194

Specific benefits of the new 116th Interchange to disadvantaged and other special populations include:

- **Economically disadvantaged:** Development unlocked by the 116th Interchange project (see section above) will provide wider and more numerous employment opportunities, and higher wage jobs. The sum of the overall interchange improvements will also lessen local travel distances (and expense) and particularly allow for non-vehicular choice in shopping, getting to school, getting to work, entertainment, and accessing essential services.
- **Non-drivers:** Benefits to non-drivers will be immediate and direct. Presently those wishing to walk or bike the approximate one-half mile between Tulalip and Marysville commercial centers have only a single six-foot wide sidewalk to do so. Circuitous seven to nine mile routes over distant I-5 interchanges are the shortest alternatives.
- **Senior citizens:** Elder residents of the City of Marysville and the Tulalip Indian Reservation face the same challenges as their contemporaries across the region—reduced incomes, challenging physical condition, and restricted mobility. The positive Economic Competitiveness and Livability impacts of the project, as discussed in this application, will greatly expand opportunity and choice for seniors.
- **Persons with disabilities:** Persons with disabilities exhibit much the same profile as senior citizens, and will accrue much the same benefits from the project.

Opportunities for Minority-Owned, Small and Disadvantaged Businesses

During construction, the 116th Interchange will provide opportunities for small and disadvantaged business enterprises, including veteran-owned and service-disabled veteran-owned. As the primary project proponent, the Tulalip Tribes will work with the project contractors to encourage qualified, employable minorities to participate in the competitive bid and procurement processes. The project will promote the creation of job opportunities for low-income workers through the use of best practice hiring programs and utilization of apprenticeship (including pre-apprenticeship) programs. As the

project is located within the Tulalip Indian Reservation, it is also subject to oversight from the [Tulalip Tribal Employment Rights Office](#) (TERO), a community-based organization organized to connect disadvantaged workers with economic opportunities. The TERO office requires businesses locating or working on the Reservation to:

- Hire TERO qualified and certified workers.
- Give Native-owned businesses the opportunity to bid on projects and services.
- Negotiate a compliance plan prior to commencing work.

iii. LIVABILITY

The new project will provide several significant and more convenient new transportation options for residents and businesses throughout Snohomish County, the City of Marysville, and the Tulalip Indian Reservation. This new transportation options will contribute to reduced congestion and GHG emissions, and for the first time, offer safe and adequate bicycle and pedestrian facilities for area residents and visitors to move between the east and west sides of I-5 without resorting to the automobile.

Pedestrian and Bicycle Facilities

The current project has a single narrow five-foot wide sidewalk on one side of the bridge over I-5 that must accommodate both pedestrians and bicyclists traveling to destinations in both directions (east and west). This limited facility is unsafe for motorists as well as pedestrians and bicyclists, and simply too narrow for even nominal low volume, two-way, multi-modal or ADA use. This route (approximately 0.5 mile) from Marysville's eastside 116th/State Street commercial district (and nearby residential neighborhoods) to the west-side's Tulalip Quil Ceda Village commercial center is at present only accessible by automobile except for the single sidewalk. Tribal government offices are also in this area. Other east-side commercial services include the Gateway Shopping Center, Winco, and Kohl's. The nearest full service pedestrian/bicycle "friendly" I-5 crossovers are at the Smoky Point Interchange four miles to the north, and the 4th Avenue Interchange three miles to the south. Note: Bicycle/pedestrian facilities at the 88th Avenue Interchange (two miles south) are limited to a single four-foot wide sidewalk.

Upgrading the project for pedestrians and bicyclists will allow local and regional pedestrians originating from the eastside of I-5 to conveniently and safely choose between multiple travel options in patronizing the burgeoning west side commercial and recreational areas, and vice versa. The project will include the following pedestrian and bicycle facilities:

- Eight-foot wide raised pathway on both sides of 116th Street bridge structure over I-5.
- Sidewalks and ramps will be upgraded to be ADA compliant.
- Connections to similar facilities along 116th Street NE in Marysville and those in the Tulalip Indian Reservation's Quil Ceda Village.

Congestion Reduction

Livability benefits of the project relating to congestion reduction will provide significant reductions in delay and queuing. The existing northbound ramps and 116th Street NE form the most critical intersection of the interchange, and carry approximately 2,500 PM peak hour trips (25,000 average daily trips [ADT]). [WSDOT](#) has established Level of Service (LOS) D as its acceptable level of service on highways of state-wide significance, such as I-5. Analysis shows that the current 116th Interchange already operates below the threshold at LOS E for the critical approaches, with long queue lengths and high collision rates. Traffic exiting I-5 backs up into I-5 travel lanes, with queues during peaks extending over 1,000 feet long. Without the interchange improvement, additional development in the vicinity will degrade operations to LOS F, with queues extending further into the I-5 mainline and further increasing the probability of collisions if improvements are not completed.

With the new 116th Interchange in place, the opening year queues will be reduced to as low as 400 feet for nearly all movements, completely eliminating backup into I-5 (and thus will also eliminate a major safety hazard). For the future year 2042, nearly all queues would be within the queuing capacity provided with the interchange. The proposed interchange will allow most critical approaches to operate within LOS D levels with the worst approach operating at LOS E and the interchange ramp intersections operating close to LOS D levels. The interchange improvement will have significant queuing benefits up to approximately 1,000 feet for some of the approaches. The interchange improvement will provide capacity for approximately 1,500 PM peak hour trips (15,000 ADT) per ramp intersection and still stay within existing LOS E operating conditions, and will also contain all queuing within the proposed storage lengths and not impact the I-5 mainline or surrounding intersections.

Additionally, because the queues from the current interchange back up through adjacent signals, the overall system delay reductions from a new 116th Interchange would be 39,014.4 hours in 2014 and 526,694.4 hours in 2040.

Improves Services to Disadvantaged Populations

The new 116th Interchange will directly serve the Tulalip Indian Reservation to the west and the City of Marysville to the east, as well as surrounding areas of Snohomish County. Both the direct transportation improvements associated with the project and the economic impacts in terms of unlocked development and employment will have significant positive impacts on the area's disadvantaged populations. All disadvantaged populations will benefit from the availability of a wider range of choice and services as a result of the new 116th Interchange. The full range of travel modes accommodated in this project will speed movements between both sides of I-5, providing ready access to existing services. The improved vehicular connections from and over I-5, and new pedestrian, bicycle, and bus shuttle systems, will make an immediate and dramatic difference in choice for such populations. As documented under the **ECONOMIC COMPETITIVENESS** section of this application, the development and employment unlocked by the project will also generate new services.

iv. SUSTAINABILITY

Increased Energy Efficiency

Reduced Oil Dependence

Particular emphasis is given in that section to the value of reduced driver delays and GHG emissions, but reductions in oil consumption will also be realized from shorter idling time and by vehicles operating at more optimal speeds (as well as from drivers simply leaving their vehicles parked). See the **LIVABILITY** section of this application discussing significantly improved bicycle and pedestrian facilities).

Reduced Electricity Needs

The existing 116th Street interchange ramps illumination and illumination on 116th Street NE over I-5 utilizes standard high pressure sodium (HPS) 400 watt lamps. This project will install 271 watt LED lamps for illumination of the ramps and 116th Street. This use of LED lamps will reduce the electrical load at the interchange from 7,300 kWh to 4,900 kWh per year. This will reduce the electricity costs for the interchange from \$6,500 annually to \$4,500 annually. This is a cost neutral capital and life cycle analysis innovation, and it is a great demonstration project for long term system wide reductions in electricity usage on freeways.

User Operating Cost Reductions

The user benefits of reduced fuel consumption fall directly out of the emissions analysis highlighted. To achieve a one-ton reduction in carbon dioxide emissions, 119.6 fewer gallons of gasoline must be burned. The emissions reductions were multiplied by 119.6 to get the number of gallons saved and then multiplied the number of gallons by \$3.50 in 2013 dollars to get the operating cost savings resulting from less waste of fuel. Any real price increase for motor fuel was not assumed, although it is quite possible that the real price will increase between now and 2045.

The present value (2013) of operating cost benefits is \$12.626 million when discounted at the required private real discount rate of 7 percent, and \$26.904 million when discounted at the alternative public real discount rate of 3 percent.

Greenhouse Gas Reduction

The Tulalip Tribes have been committed to initiatives with respect to climate change and GHG reduction for the last decade. For example, the new Tribal Headquarters building is heated by clean renewable geothermal energy. The 116th Interchange will reduce GHG emissions and provide direct economic benefits from that reduction. Using the same Synchro model runs as for other parts of the benefits analysis included in this grant application, the amount by which greenhouse gas emissions (carbon dioxide) would be reduced by replacing the interchange, which would increase vehicle speeds to more efficient levels, and reduce stopping, idling, and accelerating was estimated.

These GHG emissions reduction calculations were made based on the reduction in emissions associated with congestion-caused idling and lower (less fuel-efficient) travel speeds. The recommended 3 percent SOC values per metric ton of carbon dioxide equivalent (CO₂e) emissions, which increase in real terms over time, has been applied to the reduction in emissions attributed to the proposed interchange improvements.

Annual reductions in carbon dioxide emissions were valued as recommended in federal guidance, using the appropriate 3 percent SOC values for each year. As recommended in the federal guidance, these annual values were discounted at 3 percent, and the present value at 3 percent was included in the total benefits reported for both 7 percent and 3 percent discount rates. The present value (2013) of emissions benefits is \$2.496 million when discounted at a real discount rate of 3 percent. See the attached BCA for more information.

Salmon Habitat and Stream Restoration

West Fork of Quilceda Creek flows through and under the project site. Endangered Chinook salmon and bull trout historically spawn within this watershed. Steelhead and rainbow trout are also present. The West Fork Quilceda Creek stream and wetlands enhancements and stormwater improvements associated with the project have improved the overall health of the Quilceda system, providing for resource quality uplift supporting increases in fish populations and the reappearance of now absent historic populations.

Environmental mitigation measures minimized or offset adverse effects on essential fish habitat, as per the Magnuson-Stevens Act. Specific project environmental actions associated with the project included:

- 1,200 feet of West Fork Quilceda Creek has been realigned and lengthened to restore the natural stream meander and enhance stream function.
- Wetlands and riparian areas adjacent to the project have been restored, and wetlands created and enhanced upstream of the project site in an area of existing higher value riparian wetlands.
- Stream buffers, riparian trees, and wetlands were retained wherever possible. All disturbed areas will be replanted with native vegetation, and trees.
- Highly invasive and persistent plant species (such as Japanese knotweed) were removed in the southwest quadrant of the new interchange, and at the Quilceda Boulevard Extension associated with this project.



Phase 2 restored sections of West Fork Quilceda Creek and has resulted in the return of wildlife.

- Two new larger (double the diameter of the old culverts) that are half as long as the 'old' culverts were constructed to convey the creek under 116th Street NE and 34th Avenue NE. This new section of the West Fork Quilceda Creek is now fully fish passable.

Wetlands Restoration and Mitigation

Existing wetlands to be filled by the project are limited to two small sites within the project's footprint. Both sites are highly disturbed and exhibit low plant diversity and quality. Restoration of the 600 foot reach of West Fork Quilceda Creek, and at the project's upstream mitigation site, provided for a slightly over 2:1 increase in wetland area and slightly over a 6:1 increase in buffer areas. The net increase in wetland values is even greater, as the project replaced degraded wetlands surrounded by interchange structures with higher function wetlands and buffers around a reach of Quilceda Creek north of the project site.

Stormwater Management

The existing interchange has no stormwater management facilities (either for quantity or quality purposes) beyond sheet runoff onto adjacent disturbed roadside vegetation. Most stormwater from the new 116th Interchange (accounting for about 60 percent of total run-off) will be conveyed to three new infiltration ponds within the footprint of the interchange. Bioswales and vaults will pre-treat stormwater prior to infiltration. Stormwater run-off from some new road sections appurtenant to the actual interchange structure/site will flow into adjacent vegetated areas. Overall run-off from the project will not impact peak flows or water quality in Quilceda Creek. The new stormwater system will infiltrate all treated run-off into the soil column.

The project will also reduce the amount of impervious surface. Impervious surface coverage affects local hydrology, increasing stormwater runoff and non-point source pollution. The project was evaluated against other interchange layouts and found to require the least amount of surface area and impervious surface coverage.

Recycling and Re-use of Construction Materials

Construction materials will be recycled and re-used in accordance with an optional specification developed by [WSDOT](#). These specifications include several opportunities for incorporation of recycled and sustainable materials.¹⁰ The specifications that will be applied to the project include:

- **Section 2-01.2** encourages the contractor to sell useable timber, chips, firewood, etc.
- **Section 2-02.3(3)** allows broken pavement and concrete to be incorporated in embankments.
- **Section 5-04.2** allows that up to 20 percent recycled asphalt pavement (RAP) may be used in the manufacture of hot mix asphalt (HMA).
- **Section 5-04.3(14)** requires that debris from planing HMA become the property of the contractor. This material may be used as noted above, and is also a marketable product that they can use for other public and private work.
- **Sections 5-05 and 6-02** allow fly ash and ground granulated blast furnace slag to be added to concrete.
- **Sections 8-01 and 8-02** have numerous uses for compost.
- **Section 9-03.21** lists requirements for using various recycled materials (RAP, concrete rubble, glass aggregate, and steel furnace slag) in place of virgin aggregates for the various types of aggregates used in highway construction.
- **Section 9-16.3(2)** allows for guardrail blocks made from recycled materials per [NCHRP Report 350](#).

¹⁰ The above references were taken from the following site:
<http://www.wsdot.wa.gov/Environment/HazMat/wasterecycle.htm>

v. SAFETY

The new 116th Interchange would significantly improve current and future scenarios for ramp traffic backing up onto I-5. The existing 116th Interchange ramps provide over a 1,000 feet of storage, but vehicles frequently back-up during the PM peak hour, especially into I-5 northbound lanes. Back-ups carry through adjacent signals on either side, and create severe bottlenecks, increasing driver frustration and collision potential on I-5 and on the local arterial system, and blocking driveways and increasing red light violations. The forecast peak queuing analysis with no interchange improvements exceeds the link distances of the ramps, and indicates queues would back into onto the adjacent arterial nearly 2,000 feet eastbound and over 1,000 feet westbound. As the traffic through the interchange gets slower and more closely packed, the number of collisions will continue to increase, but the proportion of those resulting in injury should decrease.

Over the three most recent years for which data are available, the 116th Interchange has experienced an average of 35.67 collisions per year, of which 12.67 were injury collisions. Approximately 50 percent of these collisions were rear-end collisions, systemic with the congestion and back-ups associated with the existing interchange area. The rear-end collision rate for Washington State is only 27 percent. While the statewide collision rate decreased over those years, the number of collisions at this interchange grew at a rate of 8.6 percent per year due to the increased congestion and the tendency to back up onto the mainline of the freeway.

It was assumed that non-injury collisions would continue to grow at 8.6 percent per year, but it was assumed conservatively that injury collisions would grow at only 1 percent per year. It is estimated that the new interchange design would cut the number of collisions in half relative to the number that would occur with the existing interchange. In 2016, there would be 6.59 fewer injury collisions and 16.0 fewer non-injury collisions. In 2040, there would be 8.37 fewer injury collisions and 116.22 fewer non-injury collisions. Injury collisions were valued (2013) at \$167,966 each on average, and non-injury collisions at \$6,232 also in 2013 dollars. These amounts are per collision and include damages to all involved parties and vehicles. The value of safety benefits grow from \$1.206 million in 2016 to \$2.128 million in 2040.

Such back-ups also impede freight movements on I-5. Over 46 million tons of freight moves daily through this section of I-5, and there is large truck stop service business at the 116th Interchange attracting higher levels of truck exits than those simply dictated by local deliveries. The high percentage of trucks (8 to 10 percent) out of the total traffic using the 116th Interchange, make collisions more frequent and severe. Trucks cannot stop easily when off-ramp queues extend into the I-5 mainline, and truck collisions tend to be more severe and cause longer delays for incident control.

vi. PROJECT READINESS

Technical Feasibility

Completed project activities to date are:

- All right-of-way (ROW) needs have been identified, and all necessary acquisitions have been completed prior to 2006.
- Environmental impacts have been analyzed, mitigation has been identified in the Environmental Assessment (EA), and a Finding of No Significant Impacts (FONSI) has been issued and accepted by all regulatory agencies. Periodic updates to these approvals has been done and accepted by agencies and is on-going. An EA update was completed in early 2012 with concurrence from WSDOT with the findings of no change in adverse impacts.
- Environmental mitigation, some to standards and function in excess of those required by the project's EA, has been constructed for all phases through completion. Completed in 2009 with 4th year monitoring and reporting on-going in 2013.

- All regulatory permits are in place, except routine construction permits that cannot be issued until construction is to commence (such as WSDOT right-of-way use permits, and grading permitting by the Tulalip Tribes), and construction-associated water quality permitting.
- Extension of Quil Ceda Boulevard to provide better north-south arterial circulation on the west side – Phase 1 (2007).
- Realignment of an arterial located west of the 116th Interchange, 34th Avenue NE, to connect with Quil Ceda Boulevard, including new access management and signal elimination to reduce congestion – Phase 1 (2007).
- Widening of 116th Street NE, including replacement of a narrow, failing culvert with a larger 18-foot diameter culvert to restore full fish passage – Phase 2 (2007-08).
- Replacement of a narrow, failing culvert under 34th Avenue NE with a larger 18-foot fish passage culvert – Phase 2 (2009).
- Restoration of West Fork Quilceda Creek to its original meander to provide stream habitat more suitable for salmon and other aquatic species, and other off-site mitigation and habitat restoration – Phase 2 (2011).
- All engineering and design to complete the interchange has been finalized, and bid-ready documents will be completed and ready to advertise for construction by September 2013.

The activities to complete the final phase of construction for the 116th Interchange using TIGER 2013 funding and other support will include:

- A Single Point Urban Interchange (SPUI) with all ramp terminals combined into a single signalized intersection will be created and existing on- and off-ramps widened and realigned.
- Through-lanes on the 116th Street NE across the bridge over I-5 will be expanded from two to four, plus four corresponding left turn lanes.
- On the eastside of I-5 in Marysville, 116th Street NE is currently five lanes with two through lanes in each direction. The new 116th Street NE section at the interchange will be expanded to match the existing surface street.
- On the west side of I-5 in Quil Ceda Village, 116th Street NE is currently four lanes and will be tied back to the new interchange four-lane section. A continuous left turn lane will be added.
- Southbound on-ramp improvements will include an HOV bypass lane and ramp metering.
- Bike lanes and pedestrian sidewalks will be included in the new 116th Interchange bridge, connecting to surface streets at both ends.
- Monitoring cameras and message signs will be incorporated to provide information to motorists and to highway officials anticipating and reporting problems.

Financial Feasibility

The efforts to date to reach the stage described above represent an investment of over \$26 million, of which \$12.0 million has come from the Tulalip Tribes. To complete this interchange project, \$36 million is needed. The Tulalip Tribes are pledging \$13.0 million in match. This match includes dedicated tribal transportation funds. This project has been the Tribes highest priority project for more than 9 years as is demonstrated by this commitment. In addition, Snohomish County has pledged \$1.0 million. The Tribe has also secured \$8.0 million in Federal Surface Transportation Program (MAP-21) funds to apply to this project. Although not allowable as local match the allocation of these funds to the project further demonstrates the serious local commitment to seeing this project to completion.

Project budget summary by work type and funding source is shown below. (See attachments for completed detailed breakdown by construction bid item.)

**100% P&SE ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS
I-5 / 116TH STREET NE INTERCHANGE IMPROVEMENTS - FINAL PHASE**

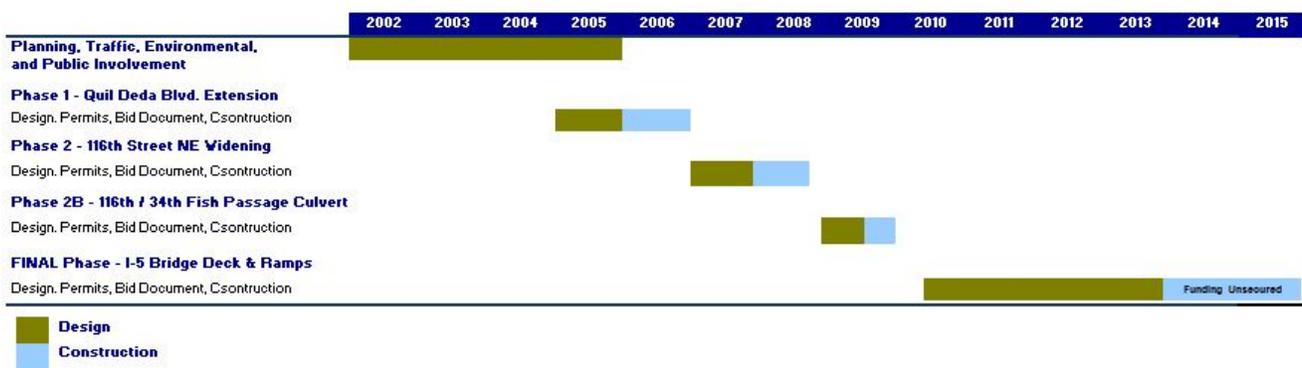
STANDARD ITEM GROUP	PROJECT TOTAL		FUNDING SOURCE			
	TOTAL \$	Tulalip Tribes	STP	Snohomish County	TIGER V	
SECTION 1: PREPARATION	\$ 2,412,999	\$ 816,318	\$ 424,688	\$ 77,940	\$ 1,093,813	
SECTION 2: GRADING	\$ 2,756,222	\$ 932,430	\$ 485,095	\$ 89,026	\$ 1,249,395	
SECTION 4: DRAINAGE	\$ 60,252	\$ 20,383	\$ 10,604	\$ 1,946	\$ 27,312	
SECTION 5: STORM SEWER	\$ 175,845	\$ 59,488	\$ 30,949	\$ 5,680	\$ 79,711	
SECTION 8: STRUCTURE	\$ 13,635,424	\$ 4,612,864	\$ 2,399,835	\$ 440,424	\$ 6,180,937	
SECTION 9: SURFACING	\$ 305,550	\$ 103,368	\$ 53,777	\$ 9,869	\$ 138,506	
SECTION 10: LIQUID ASPHALT	\$ 5,000	\$ 1,692	\$ 880	\$ 162	\$ 2,267	
SECTION 13: CEMENT CONCRETE PAVEMENT	\$ 9,639	\$ 3,261	\$ 1,696	\$ 311	\$ 4,369	
SECTION 14: HOT MIX ASPHALT	\$ 2,477,479	\$ 838,131	\$ 436,036	\$ 80,023	\$ 1,123,041	
SECTION 17: EROSION CNTRL AND ROADSIDE RESTORATION	\$ 1,016,564	\$ 343,904	\$ 178,915	\$ 32,835	\$ 460,808	
SECTION 18: TRAFFIC	\$ 5,106,589	\$ 1,727,559	\$ 898,760	\$ 164,943	\$ 2,314,817	
SECTION 19: OTHER ITEMS	\$ 2,303,295	\$ 779,205	\$ 405,380	\$ 74,396	\$ 1,044,084	
	\$ 28,023,017					
Construction Subtotal less MOB	\$ 28,023,017					
Construction Subtotal plus MOB	\$ 30,264,858					
Construction Subtotal	\$ 30,264,858	\$ 10,238,602	\$ 5,326,615	\$ 977,555	\$ 13,719,061	
State sales tax 9.60%	\$ 81,469	\$ 27,561.12	\$ 14,338.63	\$ 2,631.46	\$ 36,930.11	
TERO Fees 1.75%	\$ 529,635	\$ 179,175.53	\$ 93,215.76	\$ 17,107.21	\$ 240,083.55	
Construction Subtotal	\$ 30,875,963	\$ 10,445,338	\$ 5,434,169	\$ 997,294	\$ 13,996,074	
Tribal Utilities and Agreements	\$ 300,000	\$ 300,000				
Non-Tribal Utilities and Agreements	\$ 500,000		\$ 500,000			
Construction Administration (Engineering Support, Documentation, Inspection, Materials Testing, etc.) 10.00%	\$ 3,087,596	\$ 1,018,907	\$ 2,068,690			
Construction Contingencies 4.00%	\$ 1,235,039	\$ 1,235,039				
	\$ 35,998,598	\$ 12,999,284	\$ 8,002,859	\$ 997,294	\$ 13,996,074	
	100%	36%	22%	3%	39%	
	\$ 36,000,000	\$ 13,000,000	\$ 8,000,000	\$ 1,000,000	\$ 14,000,000	

Project Schedule

The planning, preliminary design, alternatives analysis, and environmental documentation have been completed for all phases of the project. A NEPA compliant EA and FONSI were completed and issued for the entire project, and the preferred alternative was selected (2006). EA Update was completed in March 2012. The following activities were completed in Phase 1 and 2 of the project:

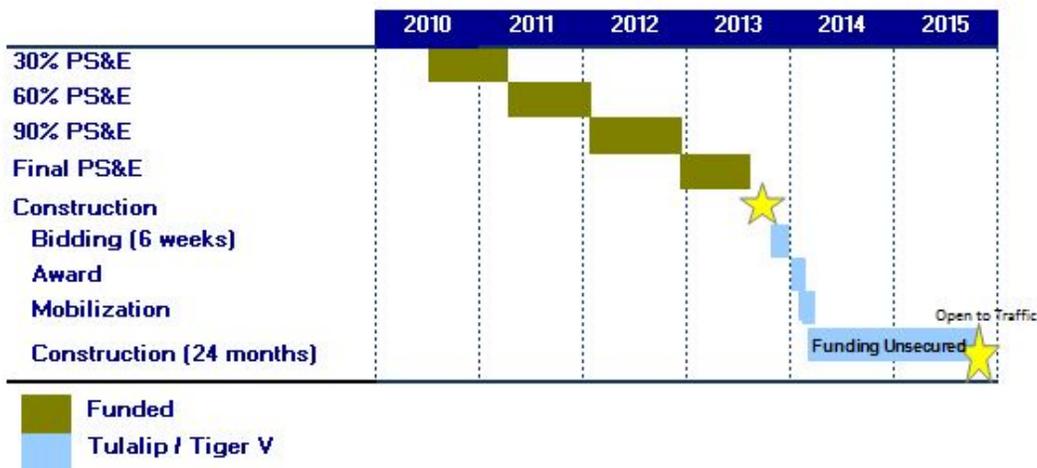
- Realignment of Quil Ceda Boulevard and 34th Avenue NE (2007).
- The widening of 116th Street NE west of the interchange and culvert installation (2008).
- West Fork Quilceda Creek channel restoration and culvert replacement under 34th Avenue NE (2010).
- Wetland and stream mitigation for the entire project (2010)
- Ten-year monitoring and reporting to regulatory agencies under way (4th year).

I-5/116th Street NE Interchange Improvements – Project Schedule (complete history all phases)



Final Design and Preparation of Construction Bid Documents Schedule (TIGER V)

The schedule shown below summarizes the overall schedule thru construction of the final phase of the project. (See attachments for detailed schedule of remaining final phase PS&E preparation items thru construction and opening to traffic.)



Project Risk and Mitigation Strategies

As documented elsewhere in this TIGER 2013 application, design and engineering is complete and construction bid documents are in production. NEPA in the form of a FONSI, and all other planning approvals, are in-hand. All other permits have been secured, excepting those that are obtained as part of construction activity on public roadways owned by Tulalip Tribes, WSDOT, and the City of Marysville.

These public right of way construction permits will be applied for in June and take approximately 1 month to approve. Environmental mitigation for the entire project has been completed.

The schedule for project readiness is to complete the preparation of the construction bid documents with Tribes and WSDOT approvals by September 18, 2014. Preparation of these construction documents have gone thru several joint reviews over the last 18 months, and the coordination and approval is ongoing. In order to insure completion of the final documents and WSDOT approvals, the Tribes and WSDOT are coordinating on a bi-weekly basis on concurrent reviews and approvals. The project and construction documents are currently on schedule, and this collaboration and coordination will insure the project is ready to go to construction as scheduled.

Construction costs are truly the only remaining risk to the project. Since the project's final phase cost estimate was first developed in 2009 and updated annually as the project's final phase moved thru the 30%, 60%, and 90% design completion levels. The engineer's estimate of probable construction costs has steadily decreased from \$42 million to the current estimate of \$36 million. These cost estimates have been developed using WSDOT's unit bid price history and analysis for local conditions.

The only remaining significant cost variable that could impact project are construction bid climate price increases above the current 6 and 12 month recent bid history. To manage and mitigate this risk, the Tulalip Tribes have employed these strategies thru bidding and construction including:

- The construction cost estimate includes a 4% construction contingency to account for variability in bid prices and potential change orders.
- Snohomish County and the Tulalip Tribes have discussed and have the ability to consider increasing their commitment of funds should the construction bids come in higher than estimated.
- The Tulalip Tribes with support from WSDOT is jointly managing the administration the construction contract thru inspection, documentation, quantity verification, materials testing, quality assurance, pay estimate verification, and change management procedures. Thru these efforts, projections of the costs to complete will be updated and reviewed on a monthly basis or if significant changes arise. If the cost projections are exceeding the funding limitations, then the Tulalip Tribes and WSDOT will work together to value engineer the remaining work to find cost savings along with input from the contractor.
- Through these efforts and the Tulalip Tribes experience with large contracts and WSDOT's experience in administering construction contracts on the interstate, these risks to construction costs will be managed to stay within the funded budget.

b. INNOVATION

The Tulalip Tribes have actively sought opportunities to leverage innovative strategies and technologies in the project. While all the following strategies have been tested at other locations in Washington State, the combined use of these technologies will provide benefits in a manner that exceeds the sum of the parts.

Single-Point Urban Interchange (SPUI)

A Single-Point Urban Interchange (SPUI) solution has been designed and engineered for the new 116th Interchange. SPUIs offer improved operation efficiency and safety as well as reduced right-of-way requirements compared to other interchange forms. Left turn traffic from both directions are able to advance simultaneously without crossing paths. Because traffic passing through the interchange can be controlled by a single signal, vehicles can clear the intersection much more quickly than in a diamond interchange (which requires two sets of traffic signals). SPUIs also allow for wider turns, easing movement for large vehicles such as trucks and RVs. Furthermore, an SPUI takes up considerably less space than a full [cloverleaf interchange](#), allowing construction to take place on a more limited amount of property. Finally, SPUIs are safer than other space-efficient interchange forms such as diamond

interchanges. Research suggests that injury and fatality rates associated with collisions that do occur are notably lower for SPUIs than diamond interchanges.

Intelligent Transportation Systems (ITS)

As part of this project, ITS components will be installed within the interchange area. At typical spacing, data collectors will be installed every half mile to provide the most accurate data necessary to make accurate estimates of travel times between locations. Additional ITS components will include ramp metering and high-occupancy vehicle (HOV) bypass lanes. These components are part of regional active traffic management strategy that is designed to encourage the use of HOVs and public transit options.

Variable Message Signs (VMS)

VMS will be employed for southbound traffic between I-5's 88th Street Interchange to the south of the 116th Interchange and SR 528 to the north. Signs will provide accurate travel time estimates to allow motorists to make educated decisions about travel priorities, routes, and congestion.

Signal Interconnect

Signals at the 116th Interchange ramps will be interconnected and tied back in to WSDOT's centralized computer system. Additionally, signals at Quil Ceda Blvd. and State Street will be interconnected and coordinated to improve efficiency.

Solar Power Appurtenances

Solar-powered fuel cells will be employed on emergency call boxes and lit and variable message signage.

c. PARTNERSHIP

Jurisdictional and Stakeholder Collaboration

The Tulalip Tribes, BIA, and FHWA have cooperated closely in moving the project forward through Phases 1 and 2. BIA and FHWA acted as co-leads on the project for NEPA compliance. FHWA was and is the approving authority for the interchange improvements. FHWA has provided funding for earlier phases of the project through the Public Lands Highway Discretionary program and High Priority Projects program. BIA has approved and distributed Tulalip Tribes transportation dollars through the Indian Reservation Roads program to the interchange project.

As noted, the following entities are also key stakeholders:

- WSDOT has been a project stakeholder and proponent since 2004. WSDOT is the review and approval authority on the final design, construction document preparation, and construction of the improvements affecting the interstate and interchange right of way within the reservation. WSDOT has contributed \$900,000 to the project.
- Snohomish County is committed to the success of the project and has contributed \$525,000 to project-associated culvert replacements, and has pledged another \$1 million to interchange construction. The County has also served as the review and approval authority for designs, construction document preparation and construction of the improvements affecting their public road right-of-way within the Tulalip Indian Reservation. Project stakeholder, funding support and proponent since 2004.
- The City of Marysville has been a project stakeholder and proponent since 2004. The City has identified the project as the City's top priority project on the I-5 corridor. The City has also designed and constructed roadway, bicycle, and pedestrian improvements east of the interchange to reduce congestion and integrate with the project.

Disciplinary Integration

The important beneficial impacts of the 116th Interchange on West Fork Quilceda Creek, and adjacent habitat, bearing endangered salmon and other species is described under the **ENVIRONMENTAL SUSTAINABILITY** section of this TIGER 2013 grant application.

d. RESULTS OF BENEFIT-COST ANALYSIS

The present value (2013) of project costs is presented in two ways as stipulated by TIGER 2013 requirements for conducting a benefit-cost analysis (BCA):

- Discounted at the required, private real discount rate of 7 percent
- Discounted at the optional, public real discount rate of 3 percent.

Since the non-TIGER funds committed to this project will be used to fund other public projects if this application is unsuccessful, the public discount rate may be appropriate.

According to the **BENEFIT-COST ANALYSIS** (BCA) conducted to TIGER 2013 specifications by an independent economic consultant (see the attached full BCA), the benefit-cost ratio for the complete project is 2.33 at a 7 percent discount rate and 4.83 at a 3 percent discount rate.

Major economic benefits of a new 116th Interchange include:

- \$38.928 million in user delay benefits (\$84.626 million if discounted at 3 percent)
- \$2.496 million from reduced GHG emissions (discounted at 3 percent)
- \$12.626 million in user operating cost reductions (\$26.904 million if discounted at 3 percent)
- \$16.568 million in safety benefits (\$30.012 million if discounted at 3 percent)

Costs attributable to this project include \$4.5 million in construction costs in 2013, \$18.0 million in 2014, and \$13.5 million in 2015. The value of maintenance and preservation costs is also calculated at the 7% and 3% rates. This is part of the benefit-cost ratio reported above. Results are summarized in the following table and fully detailed in the BCA attached to this application.

Benefit-Cost Analysis Table

Year	Const. Costs	Maint. Costs	Total Costs	Delay Benefits	Emissions Benefits	Safety Benefits	Operating Expense Benefits	Total Economic Benefits	Net Economic Benefits
2013	(4,500,000)	-	(4,500,000)	-	-	-	-	-	(4,500,000)
2014	(18,000,000)	-	(18,000,000)	-	-	-	192,870	192,870	(17,807,130)
2015	(13,500,000)	-	(13,500,000)	187,336	3,697	296,717	235,348	723,097	(12,776,903)
2016	-	1,290,750	1,290,750	860,479	18,021	1,205,725	280,943	2,365,167	3,655,917
2017	-	557,000	557,000	982,273	21,593	1,225,374	329,835	2,559,075	3,116,075
2018	-	(3,000)	(3,000)	1,115,609	25,527	1,245,873	382,218	2,769,227	2,766,227
2019	-	(3,000)	(3,000)	1,261,437	29,850	1,267,287	438,293	2,996,868	2,993,868
2020	-	(3,000)	(3,000)	1,420,781	34,593	1,289,687	498,274	3,243,335	3,240,335
2021	-	(3,000)	(3,000)	1,594,743	40,083	1,313,149	562,384	3,510,358	3,507,358
2022	-	(3,000)	(3,000)	1,784,509	45,963	1,337,754	630,859	3,799,085	3,796,085
2023	-	(3,000)	(3,000)	1,991,356	52,588	1,363,594	703,947	4,111,486	4,108,486
2024	-	(3,000)	(3,000)	2,216,657	59,651	1,390,766	781,909	4,448,983	4,445,983
2025	-	(3,000)	(3,000)	2,461,890	67,590	1,419,375	865,019	4,813,874	4,810,874
2026	-	1,197,000	1,197,000	2,728,643	76,019	1,449,537	953,567	5,207,765	6,404,765
2027	-	(3,000)	(3,000)	3,018,626	85,472	1,481,375	1,047,855	5,633,327	5,630,327
2028	-	(3,000)	(3,000)	3,333,674	95,476	1,515,025	1,148,203	6,092,378	6,089,378
2029	-	(3,000)	(3,000)	3,675,764	106,339	1,550,634	1,254,947	6,587,684	6,584,684
2030	-	(3,000)	(3,000)	4,047,018	118,485	1,588,360	1,368,439	7,122,302	7,119,302
2031	-	(3,000)	(3,000)	4,449,715	131,286	1,628,378	1,489,051	7,698,430	7,695,430
2032	-	(3,000)	(3,000)	4,886,307	145,571	1,670,874	1,617,172	8,319,925	8,316,925
2033	-	(3,000)	(3,000)	5,359,427	160,593	1,716,053	1,753,213	8,989,287	8,986,287
2034	-	(3,000)	(3,000)	5,871,902	177,326	1,764,135	1,897,604	9,710,968	9,707,968
2035	-	(3,000)	(3,000)	6,426,770	194,889	1,815,361	2,050,798	10,487,819	10,484,819
2036	-	4,309,500	4,309,500	7,027,292	214,419	1,869,992	2,213,270	11,324,973	15,634,473
2037	-	(3,000)	(3,000)	7,676,970	234,885	1,928,310	2,385,520	12,225,684	12,222,684
2038	-	(3,000)	(3,000)	8,379,563	256,927	1,990,624	2,568,072	13,195,185	13,192,185
2039	-	(3,000)	(3,000)	9,139,107	281,379	2,057,266	2,761,478	14,239,230	14,236,230
2040	-	(3,000)	(3,000)	9,959,934	306,949	2,128,600	2,966,317	15,361,800	15,358,800
2041	-	3,917,000	3,917,000	10,846,691	334,433	2,205,019	3,183,197	16,569,340	20,486,340
2042	-	(3,000)	(3,000)	11,804,367	363,957	2,286,950	3,412,756	17,868,029	17,865,029
2043	-	(3,000)	(3,000)	12,838,313	394,687	2,374,857	3,655,664	19,263,521	19,260,521
2044	-	(3,000)	(3,000)	13,954,271	428,627	2,469,244	3,912,627	20,764,769	20,761,769
2045	-	(3,783,000)	(3,783,000)	15,158,399	466,130	2,570,659	4,184,382	22,379,570	18,596,570
PV at 7%*	(33,113,853)	3,014,312	(30,099,541)	38,298,395		16,567,851	12,626,440	69,988,325	39,888,785
PV at 3%	(34,700,773)	4,873,768	(29,827,005)	84,626,306	2,495,639	30,012,298	26,903,911	144,038,154	114,211,149
B/C ratio at 7%		2.33							
B/C ratio at 3%		4.83							

*Per federal guidance, benefits from reduced CO2 emissions are valued using 3% SOC values and always discounted at 3%

V. PLANNING APPROVALS

OTHER ENVIRONMENTAL REVIEWS AND APPROVALS

NEPA and Other Permitting

The [FHWA](#), [BIA](#), and WSDOT were co-lead agencies for NEPA review of the project. The necessary EA was completed in 2005. An EA update was completed in March 2012. A [FONSI](#) was issued for the entire project in January 2006. The FONSI identified all necessary environmental improvements necessary to offset impacts associated with the project. These improvements, cataloged under the Sustainability section this application, are complete, in full accordance with the assumptions and findings made in the

EA. An EA update was completed in early 2012 with concurrence from WSDOT with the findings of no change in adverse impacts.

Upon completion of the EA, FONSI, and NEPA process, the following permits and approvals were obtained.

- U.S. Army Corps of Engineers (USACE) Section 404 Permit dated 5/5/09
- Section 106 Compliance letter from the USACE dated 6/9/09
- National Marine Fisheries and USFWS concurrence letters on 9/29/05 and 8/23/05, respectively
- National Marine Fisheries concurrence letter on Biological Assessment Supplement (list of Steelhead) on 12/18/07
- USACE Nationwide permit 14 issued on 5/5/09
- Washington State Department of Ecology (Ecology) 401 Water Quality Certification determination does not apply letter on 5/7/09
- Washington State Department of Fish and Wildlife Hydraulic Project Approval dated 4/22/09
- Snohomish County grading and Right of Way Use permits have been issued 6/15/09
- Tulalip Tribes grading, Critical Areas Review and 401 Certification have been issued 6/15/09
- Ecology National Pollution Discharge Elimination System (NPDES) General Permit issued 1/29/08, expired 12/16/10
- U.S. Environmental Protection Agency Construction General Permit issued 6/30/00, expired 6/30/10

Only the following permits and approvals are left to be obtained for the construction of the final phase of the project, including:

- WSDOT Right of Way Use Permit
- Tulalip Tribes Grading, Critical Areas Review, and 401 Certification

Legislative Approvals

The project, approved by Tribal resolution, will occur on property owned by the Tulalip Indian Reservation, and the responsible local governing body is the Tulalip Tribal Board of Directors. WSDOT and FHWA have control over the I-5 easement thru the reservation and have approved the project at all milestone phases from planning thru design and construction, and they are part of the implementation team (on-going since 2002). (See attachments and the project website for complete documentation of all jurisdictional coordination and involvement) Written endorsements and indications of support from a broad range of entities, including the [City of Marysville](#) and [Snohomish County](#), and other jurisdictions have been secured.

State and Local Planning

The project has been included in the Tulalip Tribes' [Long-Range Transportation Plan](#) since 2002, well before the initial development phases, discussed elsewhere in this T5 application, were underway. The current version of this Transportation Plan addresses 116th Interchange deficiencies and opportunities frequently and at multiple levels. The 116th Interchange appears first on this Transportation Plan's list of priority capital improvement projects. Citations and discussion in the Tulalip Transportation Plan include interstate travel demand, safety, traffic volume capacity, improvements to approach roads, pedestrian and bicycle use, and economic impacts on Quil Ceda Village commercial development.

The Transportation Plan also enumerates a series of goals promoting multi-modal transportation options, sustaining community character, enhancing the environment, assuring adequate level of service and safety, and economic opportunity. As illustrated elsewhere in this T5 application, the project, as conceived and as it is being implemented, supports these specific Transportation Plan goals in several unique ways.

The City of Marysville's current [Comprehensive Plan](#) identifies the project as necessary to promote future growth in the northern part of the city. The City's Comprehensive Plan also addresses the need for improvements to the 116th Interchange, and in 2001 the City adopted a [116th Street NE Planning Area Master Plan](#) as part of the Comprehensive Plan (page 4-129) that further catalogs the importance of a fully functional interchange.

In addition, 116th Interchange elements and phases are listed in the Transportation Improvement Plans (TIPs) of [Snohomish County](#), [Puget Sound Regional Council Vision 2040](#), and [Washington State Department of Transportation 2013-2016](#).

Coordinated Transportation/Land Use Process and Community Involvement

The project is identified as a priority in several area land use and transportation plans, including those of the Tulalip Tribes, City of Marysville, Snohomish County, WSDOT, and PSRC. The priority for completing the new 116th Interchange through the T5 program has been specifically endorsed by the Tulalip Tribes, City of Marysville, Snohomish County, WSDOT, PSRC, Economic Alliance of Snohomish County, the Tribal Transportation Planning Organization (TTPO), and Affiliated Tribes of Northwest Indians (ATNI), Resolution #11-71.

Project partners have already invested \$26 million in completed Phase 1 and 2 of the project. Agency coordination and community outreach was conducted in each phase. An Environmental Assessment (EA) was prepared under NEPA and a Finding of No Significant Impact (FONSI) completed in February 2006. The EA process included the required range of public involvement and comment, and agency consultation, during scoping, alternative identification, human and natural environment impacts analysis, alternative selection, and the FONSI.

VI. FEDERAL WAGE RATE CERTIFICATION

The Tulalip Tribes have a sound track record on labor practices and compliance with Federal laws requiring that workers are safe and treated fairly, and will comply with Federal prevailing wages laws, equal opportunity laws, Davis Bacon standards, and other standards applicable to federally-funded transportation improvement projects. Best practices, consistent with U.S. civil rights and equal opportunity laws, for ensuring that all individuals, regardless of race, gender, age, disability, and national origin, have access to project opportunities will be strictly followed. The DBE goal will be established with WSDOT for the project, as it has been for previously completed projects.

The Tulalip Tribes have administered the planning, design, and construction of dozens of projects on public roadways using federal funds successfully, including prior phases of this project. The Tulalip Tribes have included and enforced applied federal wage rate requirements in their contracts in compliance with FHWA requirements. All prior phases of this project have included these requirements and been audited by WSDOT Local Programs with flying colors. Further, the Tulalip Tribes have reviewed the requirements of Subchapter IV of Chapter 31 of Title 40, United States Code and certify that they will comply with these requirements. (See **Statement of Compliance** attached)

For this final phase of the 116th Interchange project, the Tulalip Tribes will be preparing, letting and administering the construction contract in accordance with all federal requirements. WSDOT will oversee and approve all of the construction administration activities as the federally approved contracting authority. This method of joint management of the construction is consistent with how the Tulalip Tribes and WSDOT successfully managed and administered the construction of prior phases of this project and other projects within the I-5 limited access corridor.