



Washington State
Department of Transportation

SR 224/SR 225 Intersection Improvements



Application for the FY 2014 TIGER Discretionary Grants Program

Capital Project - Rural

Red Mountain – Improving Connections for Economic Development

\$3,500,000 TIGER VI funding requested



Benton City, Washington
Congressional District 04

Submitted to:

U.S. Department of Transportation
TIGER Discretionary Grants Program
www.dot.gov/tiger



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Executive Summary

Red Mountain – Improving Connections for Economic Development

SR224/SR 225 Intersection Improvements

Benton County is the third fastest growing county in Washington state, with 23 percent growth from 2000 to 2010, compared to the statewide Washington state average of 14 percent growth. Benton City, the smallest incorporated city in the county, has the lowest median household income. In order to improve connections for communities and business and propel the area economy, the Washington State Department of Transportation (WSDOT) is seeking \$3.5 million to advertise and build key intersection improvements adjacent to I-82 in Benton County near Benton City. The TIGER VI funding will replace the existing stop-controlled intersection of SR 224 and SR 225 with a roundabout, incorporating the I-82 westbound ramps for better movement on and off the interstate. The fully utilized existing park and ride lot will be relocated away from the intersection area, with double the available parking spots, and a dedicated transit stop.



Looking south from SR 225 to I-82; SR 224 intersection is on the left

In central Washington, Interstate 82 connects with State Routes 224 and 225 which are busy commuter and agricultural feeders for neighboring rural communities. This project will improve access to safe, reliable and affordable transportation, promoting economic opportunities and providing the critical connections to move people and goods, and enhance the quality of life.

- ✓ **State of Good Repair:** Replaces adjacent stop-controlled intersections with innovative roundabout to provide congestion relief and improve transit connections
- ✓ **Economic Competitiveness:** Provides benefit-cost ratio of 4.4:1 while improving interstate connections for area agriculture, including wheat, alfalfa, fruit orchards and 1,200 vineyard acres in Red Mountain American Viticultural Area (AVA)
- ✓ **Quality of Life:** Improves access to employment, training and education by doubling capacity of park and ride lot, and adding dedicated transit stop. New sidewalks and pathway connections improve livability and increase options.
- ✓ **Environmental Sustainability:** Reduces greenhouse emissions and improves riparian habitat as a mitigation action.
- ✓ **Safety:** Roundabout geometrics reduce risk of serious collisions, while improving pedestrian safety.
- ✓ **Innovation:** Roundabout as an intersection design strategy is relatively new to parts of eastern Washington. Public outreach helped grow local support.
- ✓ **Partnerships:** This project leverages more than a dozen partnerships with local cities, counties and agencies.

Project Description

The busy intersection of SR 224 and SR 225, just north of Interstate 82 near Benton City, serves commuters to the Hanford Nuclear Reservation Site and neighboring Tri-Cities (Richland, Kennewick and Pasco), as well as multiple agricultural interests both north and south of the interstate. An existing park and ride lot directly adjacent to the intersection is fully utilized, with 100% occupancy on a typical weekday. Existing adjacent stop-controlled intersections experience congestion during peak commute times. This interchange access from I-82 is a key access for industry associated with the Red Mountain American Viticultural Area (AVA), as well as other agricultural interests including wheat, alfalfa, and fruit orchards.

This project grew out of a planning effort with the local community, local/regional business interests, and Benton County. The project proposes to improve access to and from I-82, provide safer, more efficient traffic flow through the SR 224/SR 225 intersection, and reduce the risk of collisions. The project will construct a roundabout, incorporating the adjacent I-82 ramp terminals, and eliminate the closely spaced, stop-controlled intersections. This improved freeway access to and from Benton City and the Red Mountain AVA and neighboring agriculture will open up new areas for economic growth, and reduce congestion during peak commute times. Both commuters and agricultural products will move more freely to and from the interstate system.



Looking south from SR 225 toward I-82 and the site of the proposed roundabout.

Interstate 82, adjacent to this intersection, is classified as a T1 freight route, based on 2013 data in the Washington State Freight and Goods System (FGTS), which classifies roadways, railways and waterways according to the annual tonnage they carry. I-82 in the vicinity of the project has a daily average of 3,200 trucks, carrying more than 18 million tons per day. Average daily traffic volume for this portion of the interstate is 18,000 vehicles. SR 225 is classified as a rural collector for its 11-mile length, connecting I-82 with SR 240, the primary access to the Hanford Site from the west and south. Nearly 10,000 vehicles travel north and south daily through Benton City on this two-lane roadway. SR 225 travels 2.7 miles through Benton City, a small rural community of slightly more than 3,000 residents. SR 225 is a T-3 route, carrying nearly 2 million tons of freight a year in 2013, with 11 percent truck traffic. SR 224, is classified as a rural collector in the project vicinity, and becomes a minor arterial as traffic volumes increase near the city of West Richland, five miles east of the project. In the project area, SR 224 is a T-3 FGTS route, with 11 percent truck traffic, carrying more than 1 million tons of freight in 2013 per year.

The existing park and ride lot will be relocated, with double the capacity of the existing facility. A new dedicated transit stop within the park and ride lot will improve connections and safety for transit riders. Bike/pedestrian connections to local retail, the park and ride lot, and the existing pathway system will be improved.

Project Parties

WSDOT is the applicant on this TIGER Grant application to fund the project to improve connections in central Washington. WSDOT is responsible for overseeing the State’s highways, ferries and aviation programs, including planning and administrative activities to support public transportation and rail. Highways and bridges make up the largest portion of Washington’s transportation system. WSDOT is responsible for more than 20,000 lane-miles of roadways and ramps, nearly 3,000 vehicular bridges, and 524 other structures. Although the State highway system accounts for less than 11 percent of the total roadway miles in Washington, the State system accounts for more than half – about 56 percent – of vehicle miles traveled.

The intersection improvements grew out of local planning efforts and commercial interest in improving the connection to the interstate system for regional agriculture and commerce, as well as reducing peak hour congestion. Major project supporters include: **WSDOT, Benton County, Benton City, West Richland, Benton-Franklin Council of Governments, Benton County Rural Electric Association (REA), and Red Mountain Vision.** (See Appendix B for support letters)



Benton City, directly north of the interstate and the SR 224/SR 225 intersection, notes in their recent Economic Development Plan, their desire to capitalize on upcoming road improvements “to establish a formal gateway into the downtown area.” Traffic projections suggest sufficient demand for one to two additional gas stations, a convenience store, several fast food restaurants, and a visitor center/entrance to Benton City. A number of governmental entities and others are very interested in the construction of this intersection improvement.

Benton City plans to capitalize on the proposed intersection improvements “to establish a formal gateway” to their downtown area. Projections suggest significant additional retail would be supported adjacent to the roundabout and Benton City.

III. Grant Funds and Sources/Uses of Project Funds

WSDOT developed the project scope, environmental documentation and contract plans for this improvement using the design-bid-build model. Funding to acquire the key right-of-way parcel was provided by the 2011 Washington State Legislature. The preliminary engineering phase was funded by a 2012 Washington State Legislature budget proviso. WSDOT seeks \$3.5 million to construct this improvement (see Exhibit 1).

Exhibit 1: Project Funding Source by Phase

Project Phase	Secured Funding		TIGER Request	Total Cost
	Non-Federal	Federal		
PE	\$449,500	0	0	\$ 449,500
RW	\$ 53,500	\$375,000	0	\$ 428,500
CN	0	0	\$3,500,000	\$3,500,000
Total	\$503,000	\$375,000	\$3,500,000	\$4,378,000

IV. Selection Criteria

a. Primary Selection Criteria

i. State of Good Repair

This project will improve system resiliency by constructing a concrete-surfaced roundabout to replace two adjacent stop-controlled asphalt-surfaced intersections. The concrete roundabout is projected to have a 50-year life expectancy before major rehabilitation will need to be programmed.

The existing asphalt-surfaced adjacent intersections would require three to four rehabilitation cycles in the next fifty years, adversely impacting drivers with repeated construction projects. Based on WSDOT’s experience with the challenges in maintaining durable delineation for concrete roundabouts, this project will require concrete that is dyed a darker gray, for more contrast with the white lane delineation.

“**SR 225** extends from Interstate 82 through Benton City to SR 240 at Horn Rapids, serving as Benton City’s main street. Hanford commuters dominate peak volumes on this two-lane roadway and the route **should be monitored for capacity problems.**” *BFCG Regional Transportation Plan*

The project addresses the peak hour congestion that impedes the movement of people and goods on and off I-82, and improves the reliability of transit routes. The Benton-Franklin County of Governments (BFCG) Regional Transportation Plan notes: “SR 225 extends from Interstate 82 through Benton City to SR 240 at Horn Rapids, serving as Benton City’s main street. Hanford commuters dominate peak volumes on this two-lane roadway and the route should be monitored for capacity problems.” As part of the initial planning and concept development for the intersection improvement, WSDOT analyzed various alternative intersection configurations using computer modeling software. The analysis

indicates that the no-build alternative fails for both the current year (2012) and the 2032 design year. The roundabout alternative would function at an acceptable Level of Service D or better through the 2032 design year. The existing intersection configuration presently meets signal warrants 1A, 2 and 3B. (*Eight-hour vehicle volumes, four-hour vehicles, and peak hour volumes*) Computer modeling and analysis indicated the signal alternative would operate at Level of Service (LOS) D on the day of installation, and would be at capacity within two years.

ii. Economic Competitiveness

The proposed roundabout will improve traffic flow for passenger vehicles, commercial trucks, and transit buses using the SR 224/SR 225 intersection and the adjacent Interstate 82 interchange. The expanded and relocated park and ride doubles the capacity of the existing lot and provides safer and more efficient connections to transit. Improved freeway access for Benton City and the Red Mountain AVA will open up new areas for economic growth. An economic impact analysis commissioned by local agencies found that improvements at this intersection will result in new light industrial jobs, tourism jobs, commercial/private sector investments, tourism spending, and increasing economic commerce for Washington state. In its Economic Development Plan, Benton City describes the roundabout project as “a potentially powerful opportunity to create a first-rate commercial corridor” at and around the SR 224/225 intersection, essentially a “gateway” to Benton City. The smallest incorporated city in Benton County, Benton City has the lowest median household income, lagging behind the more affluent West Richland by more than 40 percent.

Job Creation and Near-Term Economic Activity

The project will be awarded to the contractor who submits the lowest, responsive bid for the work. The TIGER-funded \$3.5 million construction phase will create approximately 47 job-years (a job-year is based on 2,080 job-hours). See Exhibit 2. WSDOT’s analysis is based on the Council of Economic Advisors (CEA) assumption that \$76,923 in direct government spending creates one job-year. This estimate included direct, indirect, and induced jobs.

The roundabout project is “a potentially powerful opportunity to create a first-rate commercial corridor” at and around the SR 224/225 intersection, essentially a “gateway” to Benton City.

- *Benton City Economic Development Plan*

Exhibit 2: Job-creation by Time Period

Period	Spending 2013 dollars	Direct, indirect and induced created job-hours
2015 Qtr 1	\$20,000	
2015 Qtr2	\$371,327	5
2015 Qtr 3	\$1,524,991	20
2105 Qtr 4	\$1,372,615	18
2016 Qtr 1	\$283,582	4
2016 Qtr 2	\$28,914	
Total	\$3,601,429	47

To calculate job creation, WSDOT used multipliers as directed in the Federal Register/Volume 77, No. 20. Per the Executive Office of the President, Council of Economic Advisers (CEA), one job-year is created by every \$76,923 in transportation infrastructure spending (or 13,000 job-years per billion dollars of transportation infrastructure spending). Using the assumption that there are 2080 job-hours per job-year, one job-hour created for every \$36.98 of expenditures. Estimate is calculated using current and future funds. This model does not use prior PE or RW expenditures in the calculation.

Assumes no jobs created by RW expenditures. Assumes 25% of the job-hour benefits are attributed to “direct project” activities, and another 25% are attributed to “indirect” project-related activities, during project PE and CN phases. Induced job-hours represent the remaining 50% attributed to jobs created or preserved in the local, regional and national economy during the project.

Exhibit 3: Area agriculture



The new roundabout will improve interstate connections for area agriculture, including wheat, alfalfa, fruit orchards and 1,200 vineyard acres in Red Mountain American Viticultural Area (AVA). The I-82 interchange at Benton City is the easiest and most direct freeway access for a large area west of the Tri-Cities. See Exhibit 3. Both SR 224 and SR 225 are rated as T-3 freight routes, each with 11 percent truck traffic. I-82 is a T-1 freight route, carrying 18 million tons annually. SR 225 carries nearly 2 million tons a year in 2013, while SR 224 carries than 1 million tons per year. Eliminating the stop conditions and resulting queuing will ease the movement of commodities to and from the interstate. Grapes produced from the Red Mountain AVA are used locally in eighteen Red Mountain wineries, and sourced to many additional Washington vintners. Red Mountain-grown premiere grapes are known nationally for their quality.

iii. Quality of Life

This project enhances the six livability principles promoted by the Partnership for Sustainable Communities.

Sustainable communities are places that have a variety of housing and transportation choices, with destinations close to home. They tend to have lower transportation costs, reduced air pollution and stormwater runoff, decreased infrastructure costs, protected historic properties and sensitive lands, less waiting in traffic, more economic

resiliency and they are able to meet market demand for different types of housing at different price points. Quality of life can be measured by the security you feel when taking a neighborhood walk, or your experience commuting to work every day, or the effort it takes to catch your bus or van-pool ride to work or services or college.

Livability Principles:

from Partnership for Sustainable Communities

- ✓ *Provide more transportation choices.*
- ✓ *Promote equitable, affordable housing.*
- ✓ *Enhance economic competitiveness.*
- ✓ *Support existing communities.*
- ✓ *Coordinate and leverage federal policies and investment.*
- ✓ *Value communities and neighborhoods.*

Park and Ride – Transit connections

Existing Park and Ride Lot mid-week



The expanded and relocated park and ride lot provides affordable and convenient **transportation choices**, by doubling the capacity of the existing lot, which is currently fully utilized. In the past three years, park and ride usage has grown from 83% utilization to 100% (2013). The project constructs safer and more

efficient connections to transit. Counts at the existing park and ride showed usage was at 100% in 2013. Doubling the park and ride lot capacity encourages transit ridership, and effectively improves connections from the local community to employment, higher education, and services, **supporting existing communities** and **valuing the community and neighborhood**. Columbia Basin Community College, with sites in both Pasco and Richland, serves 7,000 area students. Nearly 1,350 students are pursuing a four-year

degree at the Tri-Cities campus of Washington State University. Benton-Franklin Transit connects students with higher education.

The new park and ride design will accommodate buses, allowing pick-up and drop-off of passengers at a dedicated stop within the lot away, from the through lanes of traffic. Currently, the local transit makes several informal stops, on the shoulder of the interstate off-ramp, and on SR 225. Commuters walk behind the ramp guardrail and have worn a pathway to the existing park and ride facility. This practice results in user delay, inefficient operation of the intersection, possible rear-end collisions, and does not protect pedestrians. The new park and ride will **improve choices** and **value the community** by improving the commuting experience.



Bike/pedestrian pathway along SR 225 in Benton City, just north of proposed roundabout movement through the area. The shared use path will connect to the Yakima River Bridge on SR 225, just north of the intersection, which in turn connects to the existing dedicated bike/pedestrian pathway signed and delineated along SR 225 through Benton City. The project will improve connections to the south by building a new pathway that extends south under the interstate, connecting transit riders with housing south of I-82.

Pedestrians and bicyclists

Improved connections to the local bike/pedestrian walkway encourage bike and pedestrian travel, and enhance the local community, **supporting and valuing the community**. The project improves safety for pedestrians by constructing a shared use path around the perimeter of the roundabout, shortening their exposure to traffic and providing refuges. A shared use path along SR 224 will serve the park and ride lot and improve safety for pedestrian

iv. Environmental Sustainability

- ***Reduce energy use, air or water pollution***

The proposed roundabout will eliminate three stop-controlled intersection legs, reducing idling time and greenhouse emissions. Research by the Insurance Institute for Highway Safety (IIHS) shows that traffic flow improves following conversion of traditional intersections to roundabouts. Less idling, in turn, reduces vehicle emissions and fuel consumption. The expanded park and ride lot will encourage transit users, reducing the number of SOVs on the roadway.

The treatment of **storm water** will be improved with settling ponds, infiltration strips, and an oil water separation system. This will be an improvement over the current passive storm water treatment at the existing gravel-surfaced park and ride. Offsite mitigation coordinated with the Yakama Nation will enhance riparian cover, and ultimately improve water quality within the Wapato Reach of the Yakima River, upstream of this location.

The roundabout will eliminate three stop-controlled intersections approaches, **reducing delay** and associated fuel consumption. WSDOT estimates under the current intersection configuration, intersection delay in the current year totals 297 vehicle-hours of delay/year; the projected 2032 delay with no improvements is 3,397 vehicle-hours of delay/year. The current configuration would break down in the future, and SR 224 drivers would not be able to find a gap to enter SR 225.

When modeling the impacts of the roundabout design, if the roundabout design was constructed today, there would be 269 vehicle-hours of delay/ year (a 9% reduction compared to no-build), and 410 vehicle-hours of delay/year in 2032 (an 88% reduction from the no-build scenario). Fuel savings would begin in the current year (4,000 gal/year saved) and be substantial in the future. Annual fuel savings in 2032 is projected to be 36,000 gallons/year with the proposed roundabout design.

Avoiding adverse impacts to air or water quality, wetland, and endangered species:

Federal, state, and local air quality standards will not be exceeded during construction. The Yakima River borders the project to the north. This project constructs a culvert to convey flow from a degraded and isolated ephemeral stream that does not support wildlife. This impact will be mitigated by partnering with the Yakama Nation to restore riparian vegetation off-site within the Wapato Reach of the Yakima River. The ultimate goal of mitigation is to restore shade and woody debris recruitment, thereby improving fish habitat.

- ***Providing environmental benefits, such as brownfield redevelopment, wetlands creation or improved habitat connectivity, stormwater mitigation, including green infrastructure***

The proposed roundabout will minimize vehicles stopping, reducing greenhouse emissions and inefficient movement through the intersection. The project improves access to the relocated park and ride facility within the project. The project improves existing baseline conditions by constructing settling ponds, infiltration strips, and an oil water separation system.

Approximately 5.5 acres of adjacent private property along the banks of the Yakima River was purchased for this project. This site previously contained a single family home and various outbuildings in addition to a remnant section of Old US 12. This property

will be reclaimed and seeded with native grasses and should effectively help to provide a buffer to the Yakima River.

- ***Improve the resilience of a transportation asset or the transportation system***

The proposed concrete roundabout is projected to have a 50-year life expectancy before major rehabilitation will need to be programmed, ensuring smooth, uninterrupted use of this key intersection. The existing asphalt-surfaced adjacent intersections would require three to four rehabilitation cycles in the next fifty years, adversely impacting drivers with repeated construction projects, and delays due to traffic control.

Safety

A ten-year review of collisions associated with the SR 224/225 intersection noted six collisions – two collisions resulting in evident injuries, and four involving property damage only. The Insurance Institute for Highway Safety notes roundabouts are a safer alternative to traffic signals and stop signs. The tight circle of a roundabout forces drivers to slow down, and the most severe types of intersection crashes — right-angle, left-turn and head-on collisions — are unlikely. An IIHS study noted injury crashes typically dropped by 75 percent when an intersection with stop signs or signals was replaced by a roundabout. The study found a 37 percent reduction in overall collisions; a 90 percent reduction in fatal collisions, and a 40 percent drop in pedestrian collisions.

Roundabouts typically are safer for pedestrians. Pedestrians walk on sidewalks around the perimeter and cross only one direction of traffic at a time. Crossing distances are relatively short, and traffic speeds are lower than at traditional intersections. This proposed project will construct additional sidewalks around the intersection and along SR 224, improving pedestrian safety. The new park and ride will improve pedestrian safety with a dedicated bus pick-up/ drop-off location, rather than the existing informal stops on the state highway and on the freeway off-ramp.



Currently pedestrians walk along the narrow shoulder of SR 225 near the intersection

As part of the roundabout project, WSDOT has acquired access rights from an adjoining parcel, eliminating an existing private approach to the intersection and a potential

conflict. Relocating the park and ride lot will eliminate another existing approach at the intersection, reducing potential conflicts.

b. Secondary Selection Criteria

i. Innovation

The roundabout concept is relatively untested in some rural/suburban areas of eastern Washington. WSDOT's traffic analysis showed the roundabout would move traffic smoothly, and would function with a Level of Service D through 2032, but the local community was initially skeptical. WSDOT's local planning office hosted an open house in 2008, to explore options, listen to community questions, and ensure that future users understand the benefits of the roundabout design. At the open house, WSDOT shared that the more typical solution of installing a traffic signal would fail (degrade to LOS E) within several years. The wait time would be excessive, and long queues of waiting vehicles would not clear the intersection before the light changed. There is insufficient room on southbound SR 225 south of the bridge to construct left turn storage, which means the signal would operate with split phasing. Each leg would have its own phase, increasing wait time for the other legs. Public comments noted the need to maintain access to local business, the need to expand the capacity of the park and ride lot, and the preference for a slip-ramp from westbound I-82 at the roundabout. The roundabout design accommodates these local concerns.

ii. Partnership

As mentioned in the Project Parties section, this project evolved from discussions and planning level analysis of the needs in central Benton County, with the goal of developing the transportation solutions that would address those needs. The Regional Transportation Plan developed by the Benton-Franklin Council of Governments notes that WSDOT and Benton City should monitor capacity concerns on SR 225 from I-82 through Benton City. This roundabout project would alleviate the congestion and delays at the existing intersections and freeway ramp terminals just south of Benton City. Support letters from regional stakeholders are attached in Appendix B.

1. Jurisdictional/Stakeholder Collaboration

This project evolved from collaboration between WSDOT's planning program, Benton County, Benton City, and local business interests, including Benton County Rural Electric Association (REA), Red Mountain Vision, and the Port of Benton, and Tri-Cities Visitor and Convention Bureau. Improving the "gateway" to Benton City, as well as improving traffic flow on and off the interstate, will have a positive ripple effect in the local community. Red Mountain AVA is one of Washington's most well-defined and

distinctive viticultural areas, and is home to two of Washington’s most prestigious wineries, according to *wine.appellationamerica.com*.

2. Disciplinary Integration

This project integrates the work of traffic analysts and environmental experts, to deliver a cost-effective solution at a reasonable cost.

c. Results of Benefit-Cost Analysis

The project benefits far outweigh the costs. A conservative analysis found that the benefit exceeded the costs by a 4.41 to 1 ratio. The travel time savings based on replacing the stop-controlled intersections with a roundabout is substantial. The computer modeling shows that the no-build option, which continues to rely on the current intersection geometrics, will not function in the future. Projected annual delay for 2032 based on the existing configuration is nearly 3,400 vehicle-hours of delay/year. (See Appendices C-1 and C-2)

V. Project Readiness

a. Technical Feasibility

This project is ready to obligate TIGER Grant funds ten months before the June 30, 2016 deadline (see Exhibit 6). The preliminary engineering for this project is 85% complete and on track to produce final contract plans by the proposed October 26, 2015 advertisement date. Environmental documentation is complete, and all right-of-way properties have been acquired. All reasonable efforts have been made to avoid or minimize impacts to the environment. The project was designed to meet WSDOT design standards; no design deviations were needed. The completed project will open to traffic late fall 2016.

Statement of work: Build single-lane concrete-surfaced roundabout, at the existing intersection of SR 224 and SR 225, incorporating the westbound I-82 off- and on-ramps. Construct new asphalt park and ride lot 300 ft. east of existing facility, doubling the lot capacity and adding a dedicated transit stop. Build a shared use path through the traffic islands of the roundabout, connecting to the new park and ride lot and the SR 225 pathway.

Major Construction Activities

Preparation: First items of work will include mobilization of equipment and materials to the site by the contractor, installation of temporary erosion sediment control Best



This project will relocate the existing Park and Ride lot.

Management Practices, temporary traffic control and clearing and grubbing of the new park and ride area.

Grading: Work includes excavation and earthwork for roundabout and new park and ride facility.

Drainage and storm sewer: Throughout the project limits, the contract will install features to handle stormwater runoff and treatment to ensure environmental standards are met. Stormwater management features of this project include natural dispersion and infiltration areas, and a bio-infiltration pond. The project will retrofit the drainage in the parking lot of the adjacent convenience store, as partial mitigation, by collecting the stormwater that currently discharges to the Yakima River, and installing an oil/water separator and constructing an infiltration pond.

Surfacing and paving: Construct new concrete roundabout; construct new asphalt park and ride facility.

Erosion control and planting: Throughout the construction of this project, the contract will require the installation of erosion control features to ensure that environmental standards are met. Roadside areas disturbed by construction will be restored with indigenous plantings once the work is complete. The center of the roundabout will be landscaped with indigenous plants and shrubs that do not require irrigation.

Traffic: This project will upgrade the illumination at the intersection with a high-mast luminaire and install illumination at the new park and ride lot for security. The project will install new traffic signs within the project limits, including signage alerting motorists to the new configuration.

Typical roundabout approach sign

Traffic Control: The contract will require that vehicular traffic and pedestrian movement through the area be maintained, while providing a safe work zone for construction crews.

Other items: The contract will build other items including: shared use paths and sidewalks, including features to assist Americans with Disabilities (ADA), a pedestrian bus shelter, an oil-water separator, and fences and gates. The project will include utility relocations and cleanup of sites acquired adjacent to the roundabout.



b. Financial Feasibility

The total cost for this project is \$4,378,000. WSDOT has secured \$878,000 in federal and state funds to complete the design and right-of-way acquisition for the project. To date, WSDOT has expended \$438,400 in design, and \$362,500 for right of way acquisition. The project would use the \$3.5 million in TIGER Grant Funds to fully fund construction. See Exhibit 4.

Exhibit 4: Detailed Project Cost

Major Activity	Estimated Cost	% of Project Total	TIGER FUNDS
Preparation and Mobilization	\$190,000	5%	\$190,000
Grading	\$254,150	7%	\$254,150
Drainage and Storm Sewer	\$278,961	8%	\$278,961
Surfacing and Paving	\$698,022	20%	\$698,002
Erosion Control and Planting	\$165,000	5%	\$165,000
Traffic (signing/illumination)	\$453,790	13%	\$453,790
Traffic Control	\$235,000	7%	\$235,000
Other Items	\$308,217	9%	\$308,217
Subtotal	\$2,583,140		\$2,583,140
Sales Tax 8%	\$214,401	6%	\$214,410
Subtotal	\$2,797,541		\$2,797,541
Const. Engineering 18%	\$503,557	14%	\$503,557
Contingency 4%	\$111,902	3%	\$111,902
Subtotal	\$3,413,000		\$3,413,000
Below the Line Items (Work Zone Speed Enforcement)	\$87,000	2%	\$87,000
Total CN Cost	\$3,500,000	100%	\$3,500,000
Preliminary Engineering	\$449,500		\$449,500
Right-of-way	\$428,500		\$428,500
Total Project Cost	\$4,378,000		\$4,378,000

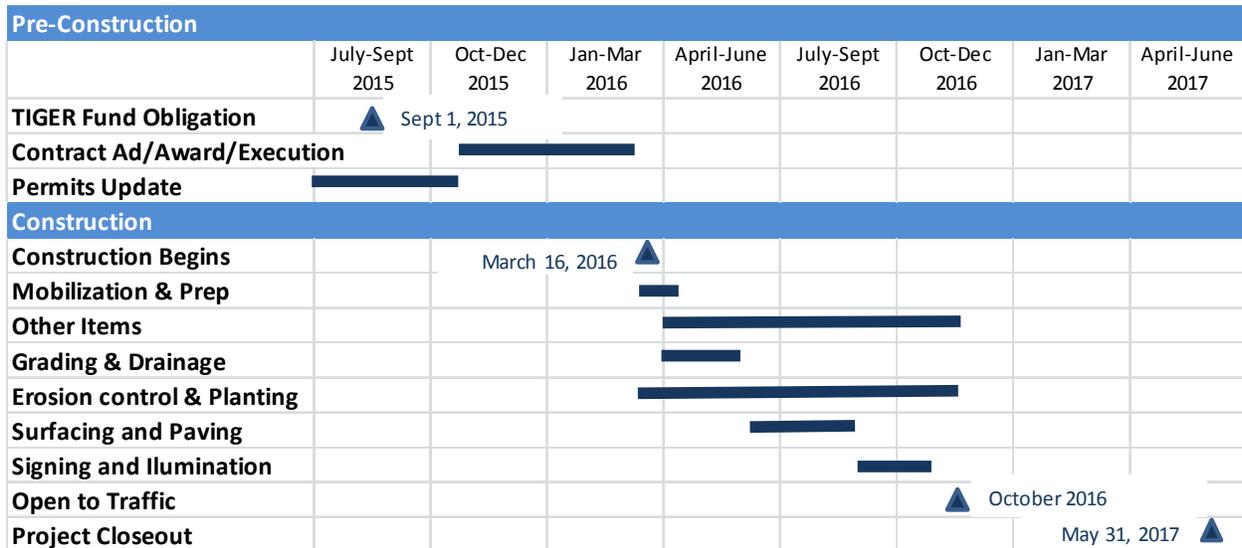
c. Project Schedule

WSDOT has completed environmental documentation (NEPA Documented Categorical Exclusion (DCE)) and is currently updating construction permits. WSDOT has acquired all right-of-way necessary for this project. With the TIGER Grant funding, the project will be ready for advertisement in October 2015, and award in November 2015. The project will be open to traffic by fall 2016. See Exhibits 5 and 6.

Exhibit 5: Overall Project Schedule

Component	Percent Complete	Completion Date	Comments
Design	85	3/16/2015	No additional funding needed to complete bid-ready plans.
NEPA Approval/Completion	100	7/29/2013	
R/W Complete	95	10/31/2014	All needed acquisitions are complete. Lease amendment and minor relocation assistance remain to complete right-of-way.
Advertisement	0	10/26/2015	
Contract Award	0	11/30/2015	
Project Complete	0	11/18/2016	

Exhibit 6: Detailed Project Schedule



d. Assessment of Project Risks and Mitigation Strategies

Completing Ad-ready contract plans is on track for the March 2015 advertisement. WSDOT sees minimal risk with achieving the scheduled advertisement because the activities associated with major risks have been completed. Environmental documentation (NEPA) has been completed. All right-of-way needed for the project has been acquired. Permits have been obtained; necessary updates will be completed prior the October 2015 proposed Ad.

WSDOT is committed to on-time delivery and has extensive experience administering highway construction contracts.

VI. Other Environmental Reviews and Approvals

a. National Environmental Policy Act

- i. **NEPA Status of the Project** Environmental documentation in accordance with the National Environmental Policy Act (NEPA) was completed in 2013. The signed NEPA documents can be found on WSDOT’s File Transfer Site: ftp://ftp.wsdot.wa.gov/incoming/Benton_City_Roundabout_NEPA_Documentation

ii. Reviews by Other Agencies

As part of the environmental review process, WSDOT worked with a number of jurisdictions and agencies, to complete documentation and obtain permits, as noted in Exhibit 7.

Exhibit 7: Environmental Reviews by other agencies and jurisdictions

Agency or Organization	Environmental Action
Yakama Nation	Section 106 consultation and Mitigation Partnership
Department of Ecology	Section 410 review and approval
U.S. Army Corps of Engineers	Section 404 permit review and approval
Washington State Fish and Wildlife	HPA review and approval
Benton City	Shoreline Permit review and approval
Washington State Department of Archaeology and Historic Preservation	Section 106 review and concurrence
Washington State Department of Natural Resources	SEPA review
Federal Highway Administration	NEPA review and approval
Benton County Planning and Building Department	SEPA review
Benton County Clean Air Authority	SEPA review
Ben Franklin Transit	SEPA review
Benton Franklin Council of Governments	SEPA review
Confederated Tribes of the Umatilla	Section 106 consultation

iii. Environmental Studies/Documents

All NEPA and State Environmental Protection Act (SEPA) documents have been completed and signed. Supporting discipline reports were prepared for Visual Quality, Wetlands, Hazardous Materials, Endangered Species Act, Section Cultural Resources.

iv. Discussions with USDOT Agencies

The FHWA Area Engineer for Washington State approved documentation establishing NEPA compliance in July 2013. The U.S. Army Corps of Engineer required a Section 404 permit, which was received in January 2014.

b. Legislative Approvals

The Washington State Legislature funded the preliminary engineering and the right-of-way acquisition for this project, allowing WSDOT to be positioned to deliver the construction phase when funding is secured. Appendix B includes a support letter from Senator Curtis King, Co-chair of the Joint Transportation Committee for the Washington State Legislature.

c. State and Local Planning

In keeping with land use plans for the region, the federally funded right-of-way phase of the SR 224/SR 225 Intersection Improvements project was included in the Benton-Franklin Council of Governments Statewide (BFCG) Transportation Improvement Program (STIP) and the WSDOT State STIP dated Feb. 23, 2012. If USDOT awarded TIGER Grant funds for this project, WSDOT will amend the project into the BFCG STIP and the WSDOT STATE STIP.

The BFCG 2011-2032 Regional Transportation Plan (RTP) includes this intersection improvement project, *“The roundabout will improve the flow of traffic, reduce accidents, and provide capacity for increased traffic from future developments. The existing park and ride will be relocated to the east.”*

The collector routes are described in the RTP:

- SR 224 provides a 10-mile connection, from I-82 (Kiona/Benton City) through West Richland to Richland (SR 240). Traffic on this route is oriented to Richland and Hanford work sites and local freight movements.
- SR 225 extends from Kiona (I-82) through Benton City to SR 240 at Horn Rapids. DOE Route 10 extends on into the Hanford reservation. Hanford commuters dominate peak volumes on this two-lane roadway.

VII. Federal Wage Rate Certificate (See Appendix D)