APWA 2021 Project of the Year

CATEGORY: Transportation
DIVISION: $5 Million - $25 Million

Isaacs Avenue Reconstruction Phases I and II
City of Walla Walla, Washington
January 2021
Isaacs Avenue is a principal east-west arterial connecting the City of Walla Walla’s Eastgate area to the city’s central business district. Passing through and adjacent to Whitman College and Green Park Elementary School, the roadway serves as a primary route of travel for many, including pedestrians and bicyclists. The street possessed significant safety issues for motor vehicle users, pedestrians, and bicyclists.

Prior to reconstruction, the roadway was in disrepair with failing pavement and a collision rate nearly triple the statewide average for a street of this classification. Isaacs Avenue had one fatal and two severe injury crashes that were related to vulnerable pedestrian users. The corridor had significant safety issues with numerous commercial driveways, narrow sidewalks, and lack of bicycle lanes. Pedestrian facilities were inadequate and poorly lit, the pavement had deteriorated below a maintainable level, and the four-lane configuration caused poor sight distance that contributed to collisions. These safety concerns were further elevated by the corridor’s proximity to Whitman College and Green Park Elementary School.

In December 2014, the City contracted with DKS Associates (DKS) and Anderson Perry & Associates, Inc. (AP) to prepare a corridor study to address these issues. The results of the study recommended a road diet modifying the existing four-lane cross section to two travel lanes with a center turn lane and bicycle lanes, as well as replacing existing traffic signals and updating street lighting.

AP led the design improvements and provided construction management throughout the $15.5 million two-phase project that completely reconstructed approximately 1.5 miles of roadway, adding bicycle lanes, Americans with Disabilities Act (ADA) compliant sidewalks, and enhanced pedestrian crossings; a center turn lane to improve sight distance; and upgraded utilities.

Existing stormwater facilities discharged into Mill Creek with no treatment. The project constructed 5 bioretention facilities as well as 21 infiltration galleries to collect, treat, and infiltrate stormwater on site, eliminating discharges to Mill Creek during the design storm event.
The Isaacs Avenue project was completed under two separate construction contracts. This allowed Phase I, the section that had limited outside funding and limited right-of-way needs, to move from design to construction in less than two years. As soon as construction was underway on the first phase, design and right-of-way began for the second phase.

Phase II was further split into multiple segments for constructibility purposes. These segments were determined based on type of work to be completed, available detour routes, and amount of work that could be completed within a single construction season. Commercial segments of the project were kept long enough to maintain efficiency for construction crews, yet short enough to limit business impacts and facilitate business access at all times. The City and consultant also worked closely with construction crews to phase the project so no segments would remain unfinished during the winter shutdown.

Full depth reclamation using cement-treated base was employed throughout the project to accelerate construction. This technique allowed traffic to travel on existing granular base materials, which was cost effective, facilitated traffic movement, and minimized dust and track out, all while eliminating weeks of excavation.

**PHASE I**
- Initiated Design: January 2016
- Notice to Proceed: February 2017
- Substantial Completion: November 2017

**PHASE II**
- Initiated Design: April 2017
- Notice to Proceed: May 2019
- Substantial Completion: August 2020
2. Safety performance and demonstrated awareness of the need for a good overall safety program for workers and the public during and after construction, where applicable

Traffic control and pedestrian safety were of the utmost importance during the project due to the presence of nearby schools and businesses.

Construction Pedestrian Access
During Phase I, it was necessary to provide continuous access to the adjacent Whitman College and Green Park Elementary School. Pedestrian access was maintained at all times from the north side of Isaacs Avenue (where many Whitman College students reside) to the south side where the Whitman College campus is located. Similarly, approximately half of Green Park Elementary School students reside on the opposite side of Isaacs Avenue from the school, which further amplified the necessity of keeping pedestrian access open.

Construction Business Access
Phase II was dominated by the need to maintain access to the nearly 0.75 mile of businesses with direct access off Isaacs Avenue. This was facilitated by construction phasing that allowed one-way traffic at all times to businesses.

The one-way business access route limited potential traffic conflicts with oncoming traffic while providing construction crews with 75 percent of the right-of-way to complete their work safely.
2. Safety performance... (continued)

Community Safety
The project improved public safety, reduced traffic signal delay and travel time, and supported multimodal travel with a design supported by the City’s Urban Area Comprehensive Plan. The Highway Capacity Manual estimates a 29 percent collision reduction as a result of the road diet. The center turn lane and related traffic signal improvements are estimated to result in a travel time reduction of 12 to 14 percent.

By adding bicycle lanes, the project increased safety for bicyclists and provided a buffer between pedestrian and motor vehicle traffic. The existing streetlights were replaced with LED luminaires, and additional streetlights were added to improve illumination. The sidewalks were reconstructed where needed to be 6 feet wide, all facilities (sidewalks, driveways, and ramps) were upgraded to meet ADA requirements, and sidewalk obstructions were relocated where possible.

Traffic operations at the signalized Roosevelt Street and Clinton Street intersections improved as part of the project when compared with the existing four-lane street. The operations improved due to the presence of a dedicated left turn lane and protected/permissive signal phasing. Prior traffic signal operations were inefficient due to split-phase signal phasing required without left turn lanes.

Pedestrian refuge islands were constructed at 11 intersections and rectangular rapid flashing beacons (RRFB) were installed at three locations, significantly increasing pedestrian crossing safety.

The addition of bicycle lanes and improved pedestrian crossing facilities are expected to decrease the number of bicycle and pedestrian related collisions along the corridor, which accounted for approximately 9 percent of the corridor’s total collisions.

Student Safety
The project team worked closely with Walla Walla Public Schools and Valley Transit staff to provide upgrades to school bus and public transit facilities. Prior to the project, school bus traffic and parent drop-offs at Green Park Elementary School were commingled creating an unsafe pedestrian environment for students. The project added a school bus pull-out on Isaacs Avenue that separated bus traffic from parent drop-offs and increased student safety. The design team also worked with Valley Transit to construct a bus pull-out on Isaacs Avenue for one of the City’s highest use transit stops. An RRFB was also added adjacent to this location to further enhance safety.
3. Community relations as evidenced by efforts to minimize public inconvenience due to construction, safety precautions to protect public lives and property, provision of observation areas, guided tours, or other means of improving relations between agency and the public

Community Outreach

Given the scale and local significance of this project, extensive public outreach was required to coordinate with the community. The Isaacs Avenue Corridor Study was completed in 2015 to seek citizen input for the project. The City solicited input from 15 stakeholder groups and all interested citizens through two public open houses, four City Council presentations, and the GoWallaWalla.us website. The complete street design was developed with significant stakeholder support throughout this process and was unanimously approved by the City Council on July 22, 2015, without a single voice of opposition.

"I have never been involved with a Public Works project that has seen more public input, outreach, and involvement."

– Monte Puymon
Transportation Engineer, City of Walla Walla

Public surveys were taken to allow the community to evaluate and respond to the improvements proposed by the corridor study. There was an overwhelming desire voiced by citizens for bicycle lanes throughout the project area. The City was able to prioritize this feedback by selecting a design that incorporated bicycle lanes throughout. Adjacent property owners were also given the opportunity to raise concerns regarding their properties (i.e., business operations, underground sprinklers, parking, etc.) and to express their opinions regarding the proposed improvements and traffic detours.

Cooperation with Local Businesses

Prior to and during construction, the project team met with local businesses through community meetings and door-to-door visits to discuss access needs, crucial delivery times, etc., to minimize business impacts as much as practical during construction. Throughout construction, the City ensured that Isaacs Avenue businesses were still accessible to the public through a one-way business access route or alternate entrances via side streets. Custom signage was also used to direct motorists to businesses. This became even more important as COVID-19 business restrictions were imposed just as construction restarted in spring 2020.

Open on Isaacs Road Show

During Phase II construction in the heart of one of the City’s major business areas, the Walla Walla Valley Chamber of Commerce and the City of Walla Walla partnered to host the Open on Isaacs Road Show, a free family event to help support neighboring businesses impacted by the project. The event included live music from five bands, showcased local construction equipment and emergency vehicles for kids to play in, and offered the public firsthand information about the construction project. Since the project was still actively under construction, significant measures were taken by the City, contractors, and consultants to secure the site and make it safe for public access.
4. Demonstrated awareness for the need to protect the environment during the project

Stormwater Retrofitting

One major consideration of the Isaacs Avenue project was replacing outdated stormwater facilities. The existing catch basins discharged directly into Mill Creek, a federally listed habitat for endangered bull and steelhead trout, with little to no runoff treatment. New stormwater facilities were designed to manage stormwater and treat pollutants near the pollutant source to the greatest extent possible using features that intercept sediment and filter, infiltrate, evaporate, and transpire stormwater prior to the runoff entering underground infiltration galleries and surrounding surface waters. The primary project goals were to substantially reduce direct discharge into Mill Creek, provide basic total suspended solids treatment, enhanced treatment (dissolved metals), and oil treatment. These goals were completed through the installation of infiltration galleries and four bioretention facilities.

Other Notable Environmental Considerations:

- Low-efficiency high pressure sodium lights were replaced with high-efficiency LED illumination.
- The project reduced impervious surfaces and converted them to stormwater bioretention swales.
- The addition of bicycle lanes, improved sidewalks, ADA ramps, lighting, and bus stops encourage and support multimodal transportation.
- Existing steel water mains and services had significant leaks that contributed to the City’s water loss and further degraded the roadway. Existing sewer mains were clay and concrete, and leaky joints contributed to wastewater exfiltration and groundwater infiltration.

BEFORE AND AFTER: This unnecessary paved area was converted into a planted bioretention swale

BEFORE AND AFTER: The City worked with local authorities to abandon this unused train track, allowing for the installation of a crosswalk with pedestrian refuge near the Whitman College campus and downtown
COVID-19 Project Compliance

On March 23, 2020, the Washington State Governor issued the Stay Home – Stay Healthy Proclamation 20-25, which was further amended limiting non-essential construction activities. The proclamation and its amendment required the establishment of a COVID-19 Safety Plan and the implementation of new required personal protective equipment (PPE) and other sanitary equipment for essential construction activities. The Isaacs Avenue project fell within the essential construction category and was allowed to proceed. However, the project team was tasked with ensuring that the contractors working on Phase II construction at this time were aware of the precautions, adhered to the required protocols, and had access to necessary PPE and sanitation supplies.

Winter Work

In an effort to limit impacts to businesses, portions of construction progressed through the winter months. Work was completed by removing a minimal amount of pavement for utility installation and utilizing temporary asphalt patches as necessary. This limited the number of open excavations when freezing temperatures and severe winter weather temporarily halted construction.

Cultural Resources

Washington State Governor’s Executive Order 05-05 required that a cultural resource inventory and consultation be completed. Numerous culturally sensitive areas were identified in the area, and after consultation with the Washington State Department of Archeology and Historical Preservation and local tribes, it was determined that cultural resource monitoring of ground disturbing activities would be required. The consultant worked with these agencies to develop a plan to complete shovel test probes ahead of construction to narrow down areas that needed further monitoring. Two areas containing cultural resources were identified, which resulted in the temporary halting of construction in that area while archaeologists uncovered and cataloged artifacts.

These unexpected and unavoidable delays were managed by careful coordination between agencies and their effect on the project schedule was minimized due to the proactive approach of completing cultural resource surveys ahead of construction.
6. Additional conditions deemed of importance to the public works agency

Consolidation of Public Works Projects

Isaacs Avenue is a principal arterial that possessed significant safety issues for motor vehicle users, pedestrians, and bicyclists. As such, the Isaacs Avenue Reconstruction project was one of the City’s top priority projects. In addition to the safety and roadway concerns, the project area also contained outdated utilities, including large diameter water and sewer mains that had reached their life expectancy and undersized storm sewer facilities that were structurally failing. By completing water, sewer, and stormwater improvements simultaneously with the road repairs, the City ensured that this vital work was completed in the most cost-efficient manner possible, with the least disruption to the community.

Outside Funding

Significant grant funding was awarded for the transportation elements of the project by multiple state and federal programs. The Washington State Transportation Improvement Board (TIB) and the Washington State Department of Ecology (Ecology) supported both phases of the project. These funds were utilized for sidewalk and pavement reconstruction, as well as stormwater system upgrades. Support was also received from the Federal Highway Administration and the Washington State Department of Transportation (WSDOT) in Phase II of the project and provided much of the funding needed for bicycle lanes and traffic signal improvements.

Use of City Funding Sources

Transportation Benefit District

In 2012, Walla Walla voters overwhelmingly approved a 0.2 percent increase to the local sales tax, with the funds dedicated to street improvements. The list of eligible projects was determined by input from residents.

Infrastructure Repair and Replacement Program

This program concentrates on fixing streets with failing water, sewer, and roadways, and is funded through the City’s water, sewer, and stormwater utilities.

The City leveraged these local funds to obtain multiple outside grants, greatly increasing the resources available to address failing infrastructure. For Isaacs Avenue, the City was able to leverage over $10 million in grant awards on approximately $15.5 million dollars in total costs.

Project Funding Breakdown

**PHASE I**

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<tr>
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<tr>
<td>TIB - Urban Arterial Program Grant</td>
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<td>City Funding</td>
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<td><strong>TOTAL PHASE I COST</strong></td>
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**PHASE II**

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<tr>
<td>TIB - Urban Arterial Program Grant</td>
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<td>Ecology - Stormwater Financial Assistance Grant</td>
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<td><strong>TOTAL ESTIMATED PHASE II COST</strong></td>
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**Image:**

_Before and After: Replacement of failing asphalt in Phase I_
6. Additional conditions deemed of importance to the public works agency (continued)

Adherence to Urban Area Comprehensive Plan

The City of Walla Walla’s Urban Area Comprehensive Plan forms the foundation of the City’s Development codes, addresses key community issues, and provides a comprehensive vision for the City’s future development. The transportation goals and policies laid out in the plan are intended to create a safe, efficient, and equitable transportation system. The Isaacs Avenue project exemplifies the key goals and policies of the plan that include:

**Commercial Retail Community Policy 4:** Accessibility by pedestrians, cyclists, and automobiles should be considered in each commercial center.

**Transportation Policy 2:** Walla Walla’s circulation system should reflect the mobility needs of all segments of the population.

**Transportation Policy 11:** Streets should incorporate facilities for non-motorized transportation.

**Capital & Community Facilities Policy 3:** Public facilities and services, including streets and utilities should be adequately designed and distributed to ensure equitable supply and access to the population.

**Complete Streets Policy:** The City will plan for, design, construct, operate, and maintain an appropriate and integrated transportation system that will meet the needs of motorists, pedestrians, bicyclists, wheelchair users, transit vehicles and riders, freight haulers, emergency responders, and residents of all ages and abilities.

“With Green Park Elementary School and Whitman College on Isaacs Avenue, and multiple bike routes tying into Isaacs Avenue on all sides, the completion of this section closes gaps and significantly increases connectivity serving both students and populations within low to moderate income census tracts. Public transit service in the corridor extends bicycle and pedestrian connectivity valley wide.”

-City of Walla Walla Cover Letter,
WSDOT Local Programs Grant Application

**Before and After: Pedestrian improvements at the Isaacs Avenue/Roosevelt Street intersection**
7. Use of alternative materials, practices or funding that demonstrates a commitment to sustainability, climate change/resiliency, and/or use of sustainable infrastructure

Use of Recycled Materials
Full depth reclamation utilizing cement-treated base was used extensively throughout the project to improve project sustainability, initial cost effectiveness, constructibility and long-term duration/maintenance costs. This technique eliminated the need for approximately 15,000 cubic yards (CY) of excavated crushed aggregate, asphalt, and native soil excavation; haul and disposal; and replacement with new crushed aggregate. Additionally, approximately 25,000 CY of crushed cement concrete sidewalk/driveway and asphalt grindings were reincorporated back into the project as trench and structural backfill.

Select locations were also rehabilitated with cured-in-place pipe lining, greatly reducing the need for excavation, restoration, and additional impacts to the public.

Other Sustainable Practices
Low Impact Development Stormwater Treatment
Low Impact Development (LID) stormwater treatment and management techniques were used throughout the project to mimic natural processes that result in the infiltration and evapotranspiration of stormwater to protect water quality. Approximately 13 acres of pollutant generating impervious surface that previously discharged into Mill Creek with little or no treatment is now being treated and infiltrated near the source of the runoff.

Fiber Reinforced Asphalt Cement
The City of Walla Walla is committed to constructing projects that will stand the test of time. This includes reconstructing pavement as well as replacing utilities. In an effort to extend pavement life, the City utilized fiber reinforced asphalt cement (FRAC) throughout the Isaacs Avenue corridor. The City anticipates reduced cracking and rutting and therefore increased pavement life by using FRAC. These savings can be applied to rebuilding more miles of roadway in the future.

Concrete Curing
The City of Walla Walla has experienced issues with new concrete sidewalks spalling on recent projects, an issue attributed to deicer used on the sidewalks in freezing conditions. To attempt to prevent the spalling, the City has been trying different products and techniques during the finishing of the concrete. A densifier that hardens concrete at a molecular level was applied to all flatwork to extend the life of the finished concrete. This concrete densifier and several other products have been applied to the Isaacs Avenue project and other projects in Walla Walla in an effort to find a product that will protect sidewalks in the Walla Walla area.

Full depth reclamation with cement-treated base
The Isaacs Avenue Reconstruction project revitalized one of the City of Walla Walla’s primary arterials, updating a failing street with safer and more environmentally conscious facilities. From the initial corridor study through subsequent construction, the City solicited community input and involvement with extensive public outreach. This allowed residents to voice opinions that the City factored into the design process. One result of the public’s feedback was the decision to implement a road diet adding bicycle lanes and turn lanes, changes that constitute a significant increase in safety and directly represent the needs of the City’s residents.

The project also received considerable community support from local businesses and organizations. This was due in part to the City’s extensive coordination with Walla Walla Public Schools, Valley Transit, and Whitman College, combined with outreach efforts to address the needs of local businesses impacted by the project. Along with significant outside funding awarded for street and stormwater improvements, this support helped the City complete the project on time and within budget.

In addition to the substantial safety improvements, the project also provided considerable ecological benefits. Outdated stormwater facilities were replaced with LID stormwater treatment improvements, full depth reclamation utilizing cement-treated base and recycled concrete was used to improve project sustainability, and multiple impervious areas were converted to bioretention swales.

The reconstruction of Isaacs Avenue is a prime example of the City of Walla Walla’s commitment to improving aging infrastructure, and it would not have been possible without the support of community members, business owners, and outside funding. The City would like to express its sincere thanks to the businesses, citizens, consultants, contractors, and funding agencies that helped make this project a success.