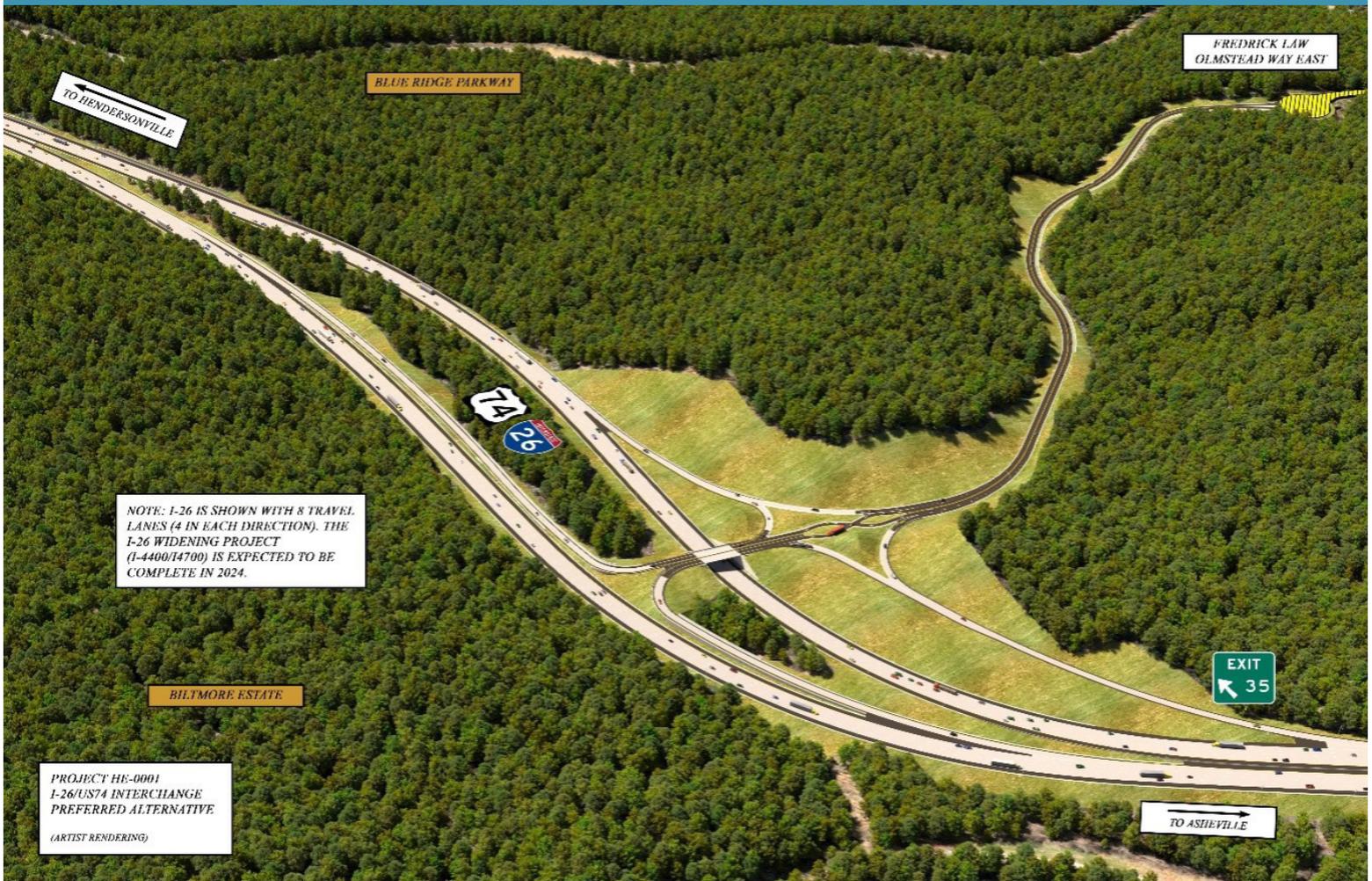


GROUND TO SKY PROJECT



Outcome Criteria Narrative

**MPDG FFY 2023 and 2024
GRANT APPLICATION
AUGUST 2023**



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Supplemental information, including letters of support and appendices, may be accessed:
<https://connect.ncdot.gov/resources/MPDG2023-126DIV13/Pages/default.aspx>

Outcome Criteria Narrative

Criterion #1: Safety

NCDOT's top priority is the safety of travelers, as evidenced by its policies, programs, project development approach, and daily business practices. The Department's mission is: "Connecting people, products, and places safely, and efficiently with customer focus, accountability, and environmental sensitivity to enhance the economy and vitality of North Carolina."

Safety is a guiding principle throughout project development to protect motorized travelers, communities and residents from health and safety risks. Through careful evaluation and application of state and federal design policy and guidelines, Ground to Sky (G2S) will construct a new connecting roadway and interchange between two major regional routes: I-26 and NC 191. The design implements actions identified in the National Roadway Safety Strategy to promote safer people through engineering solutions and safer roads through roadway design that mitigates human mistakes, encourages safer behaviors, and facilitates safe travel, including appropriate speed limits, dedicated left and right turn lanes associated with the innovative half Diverging Diamond Interchange configuration (DDI), a roundabout, and lighting on the interchange.

GS2 incorporates two **USDOT National Roadway Safety Strategy** objectives:

- Safer Roads—a context sensitive roadway design conforms to the mountainous topography and will be posted at a safe speed of 35 mph in anticipation of future, walkable development.
- Post-Crash Care—through greater connectivity, enhanced survivability is expected through expedient incident response.

Like the roundabout, DDIs have been proven to increase safety by improving the flow of traffic and by eliminating left turns against oncoming traffic and last-minute lane changes, reducing the severity of potential crashes.¹ According to the FHWA, the innovative DDI significantly reduces fatalities and/or serious injuries by reducing vehicle-to-vehicle conflict points by nearly 50 percent and eliminates many of the most severe crash types when compared to a conventional diamond interchange². G2S is incorporating roadway design that is proven to improve safety.

An interstate access request (IAR) was approved by FHWA-NC Division certifying that the project meets FHWA's policy points for interstate access, including that the change in access does not have a significant adverse impact on the safety and operation of the Interstate. G2S will reduce congestion within the transportation network, particularly on NC 191—a part of the State Highway System, a Federal Aid Road, and minor arterial—by providing an alternate link to/from the west. Based on project level analyses, vehicular delay on NC 191 will improve in the future (2045) Build condition compared to the No-Build condition at most intersections, and the level of service (LOS) improves or stays the same at all studied intersections. Overall, creating a more direct connection between I-26 and NC 191 reduces the opportunity for incidents and collisions.

NCDOT is in the process of widening approximately 17 miles of I-26 from US 64 (Exit 49) to I-40/I-240 (Exit 31) to improve capacity and safety. As part of the National Highway Freight Network and NCDOT's Strategic Transportation Corridor (STC) network, I-26 is a critical

¹ <https://journals.sagepub.com/doi/full/10.1177/03611981211004961>

² <https://safety.fhwa.dot.gov/intersection/crossover/fhwasa14039.pdf>

facility for North Carolina's economy and will foster efficient freight mobility. On local roadways, freight operators may have to contend with steep grades and sharp turns, whereas I-26 carves a smooth path through western North Carolina's mountainous terrain.

A major safety factor for G2S is the increased presence of freight associated with future development around the interchange. Direct access from the interstate to the businesses within Biltmore Park West, including Pratt & Whitney, reduces the number of interactions with intersections and conflict points for motorists. It is safer to keep freight separated as much as possible from local traffic, on the interstate, where terrain and infrastructure are more suitable for freight vehicles. With the shipment of goods to/from the current and future facilities at Biltmore Park West, the interchange becomes a critical connection and means of keeping freight off local roads, reducing the potential for truck/passenger vehicle conflicts.

G2S will protect vulnerable and non-motorized users from health and safety risks by incorporating sidewalks for a portion of the connector road, continuing the pedestrian facility introduced by the private developer on East FLOW between NC 191 and the existing roundabout adjacent to Pratt & Whitney. This sidewalk connects to the private developer's intended future walkable community at Biltmore Park West with potential for regional bicycle and pedestrian connections. Please refer to the **Encourage Thriving Communities** section for information on trails and non-motorized travel on and near the project site.

The connection this project creates benefits everyone in the area when it comes to emergency services (*Figure 1*). Local EMS providers have previously requested NCDOT to install a crossover/turn around for emergency services on this roughly four mile stretch of I-26 between exits 33 and 37; this need is only strengthened by the introduction of new development in Biltmore Park West. Emergency situations at Biltmore Park West, on NC 191, and/or on I-26 will be easier to access with G2S, thereby enhancing survivability. A letter of support from Skyland Fire & Rescue, who services the project area, can be found in the appendix to this Grant Application. The interchange and roadway will also improve alternate route options in the area in case of a road closure or evacuation scenario.

People in Western NC, particularly near Asheville, must contend with traffic not only from work commuters, but also from tourist sites. The interchange will prevent unnecessary strain on the local roadway system, which experiences congestion that

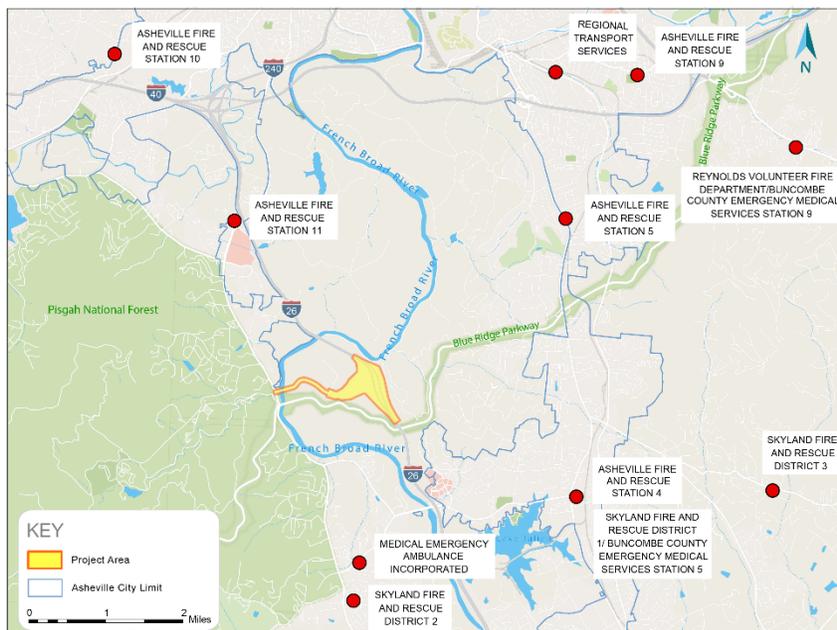


Figure 1. G2S provides an important connection and will improve emergency service access and enhance survivability. Skyland Fire and Rescue (located at bottom of map) has requested a turnaround in this area before.

is expected to intensify in a future No-Build condition. G2S will provide direct interstate access to popular tourist attractions, including the Blue Ridge Parkway (a National Park Service unit), NC Arboretum, Pisgah National Forest, Bent Creek River Park, etc. Additionally, Asheville Outlets, located north of the project site and west of I-26, employs about 800 people and welcomes thousands of visitors. BorgWarner Turbo Systems, Inc., an auto parts manufacturer, is located on NC 191, south of the project site and west of I-26, and employs approximately 600 people. Refer to *Figure 2*.

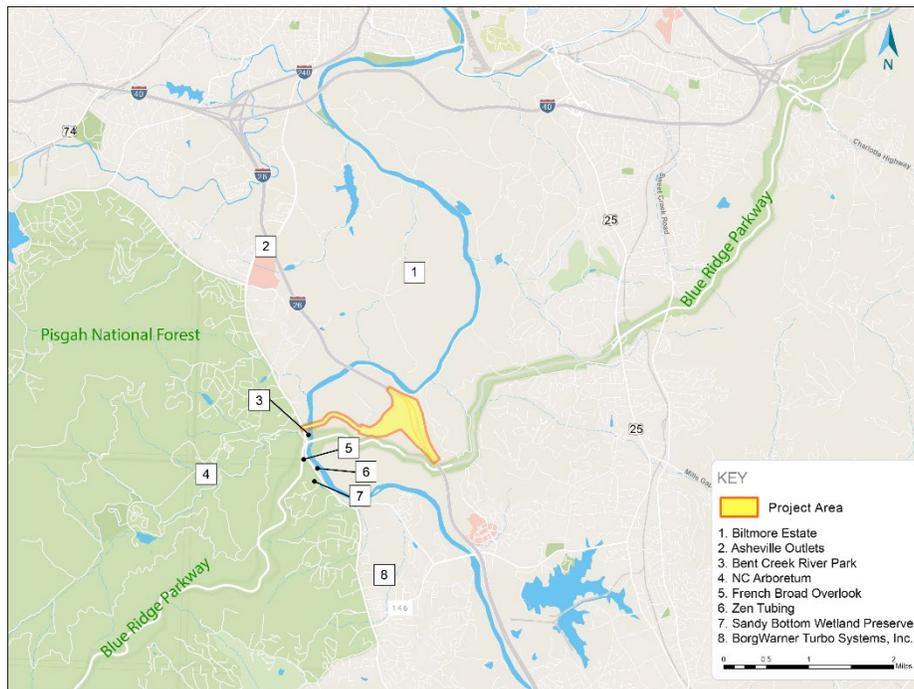


Figure 2. *In addition to providing efficient access to new jobs at Pratt & Whitney, G2S will improve access to existing employment centers and tourist ad recreation destinations.*

Considering the added traffic volume that will come with Pratt & Whitney's 800 employees (450 maximum per shift) and future mixed-use development in Biltmore Park West, an added route option is critical to maintaining a safe flow of traffic. Forcing such large numbers of motorists through the interchanges to the north (Exit 33, NC 191) and south (Exit 37, NC 146) of the project site will exacerbate the existing congestion, especially during peak commuting hours. Routing travelers directly to the interstate will help ease congestion and stacking on NC 191 and the local roads surrounding it, reducing the potential for incidents, and increasing the reliability of trips.

Criterion #2: State of Good Repair

G2S is consistent with the North Carolina Department of Transportation Asset Management Plan³ to maintain transportation systems in a state of good repair and addresses current and projected vulnerabilities that if left unaddressed would threaten future transportation network efficiency, mobility of goods and people, and economic growth. There is currently a gap of approximately 4.5 miles between Exits 33 and 37 without access, creating longer trips. Future

³ <https://connect.ncdot.gov/resources/Asset-Management/TAMP/Final%20TAMP%20-%20June%202021.pdf>

Exit 35 will create a connection that will allow travelers to avoid going several miles out of their way to reach their destinations. The connection not only improves the east-west access through the site but improves I-26 and NC 191's connectivity, benefiting citizens of southern Buncombe, Henderson, and Haywood counties, and tourists to the region. The connection will allow operation at acceptable performance levels for the foreseeable future and will help the movement of freight, commuters, tourists, and other travelers to their destinations more quickly, efficiently, and safely than the current transportation system allows.

NC 191 already experiences high volumes of traffic, due in part to its connection to commercial/retail centers, residential neighborhoods, the North Carolina Arboretum, Blue Ridge Parkway, and other regional attractions. NCDOT has identified a needed project to widen NC 191 south of the Blue Ridge Parkway; however, this project is not currently funded. Creating an additional connection to the area from I-26 will alleviate pressure from a stressed highway system, especially during peak commute hours, tourist season, and emergency events.

Criterion #3: Economic Impacts, Freight Movement, and Job Creation

G2S will decrease transportation costs and improve access to employment centers and job opportunities by:

- enhancing recreational and tourism opportunities with direct access to the Blue Ridge Parkway, Pisgah National Forest, the NC Arboretum, and others;
- helping the US compete in the global economy by accommodating the location of aerospace innovation at Pratt & Whitney and facilitating efficient and reliable freight movement; and
- resulting in high quality job creation by supporting good-paying jobs and workforce development, through partnerships with five regional community colleges serving the rural Appalachian region.

Neighboring Haywood County recently lost its largest employer, Pactiv-Evergreen, resulting in the displacement of 900 employees. Many of the high-paying jobs in manufacturing sought by displaced mill workers are in the area that would be positively impacted by this project.

The economic benefits of the project are largely due to future economic development on the Biltmore Park West site, and collaboration and partnership with Pratt & Whitney. NCDOT is confident that constructing this interchange and connector road will result in long-lasting economic benefits like those captured at GE Aviation, which has jet engine manufacturing and assembling facilities throughout North Carolina, including Asheville, West Jefferson,

Wilmington, and Durham. GE's Asheville plant opened in 2014 and invested an additional \$105 million into the plant in 2018 to meet demand.⁴ The GE facility, which is approximately 4.5 miles northeast of the project site, is comparable to the Pratt & Whitney facility in that they manufacture similar products, though the Pratt & Whitney facility will employ nearly double what the GE plant does.

The interstate connection that future Exit 35 is partly what attracted Pratt & Whitney to Biltmore Park West due to its large number of employees and the need to ship its products to assembly plants in Georgia and Connecticut. The interchange will continue to attract businesses and

⁴ <https://www.geaviation.com/press-release/other-news-information/ge-aviation-expanding-two-north-carolina-plants-meet-growing>

economic opportunities to the site. The proximity of the existing and future facilities to I-26, which is an FHWA-designated freight route,⁵ will streamline the movement of commercial and military engine components to and from the manufacturing facility. The project will allow employees from throughout the region to access a more direct route to work, saving them both time and money while reducing congestion on the area's roadway network.

Pratt & Whitney's plant will provide good-paying jobs to 800 people, the vast majority of whom will be local hires from the Appalachian region. The economic impact of creating the connection to good-paying jobs will be widespread; Asheville's commuter shed extends to several counties including, but not limited to, Buncombe, Henderson, Haywood, Madison, and others (*Figure 3*). Many commuters to Asheville and Buncombe County are from historically disadvantaged communities and/or rural areas (refer to *Figure 5* in the **Project Description** section).

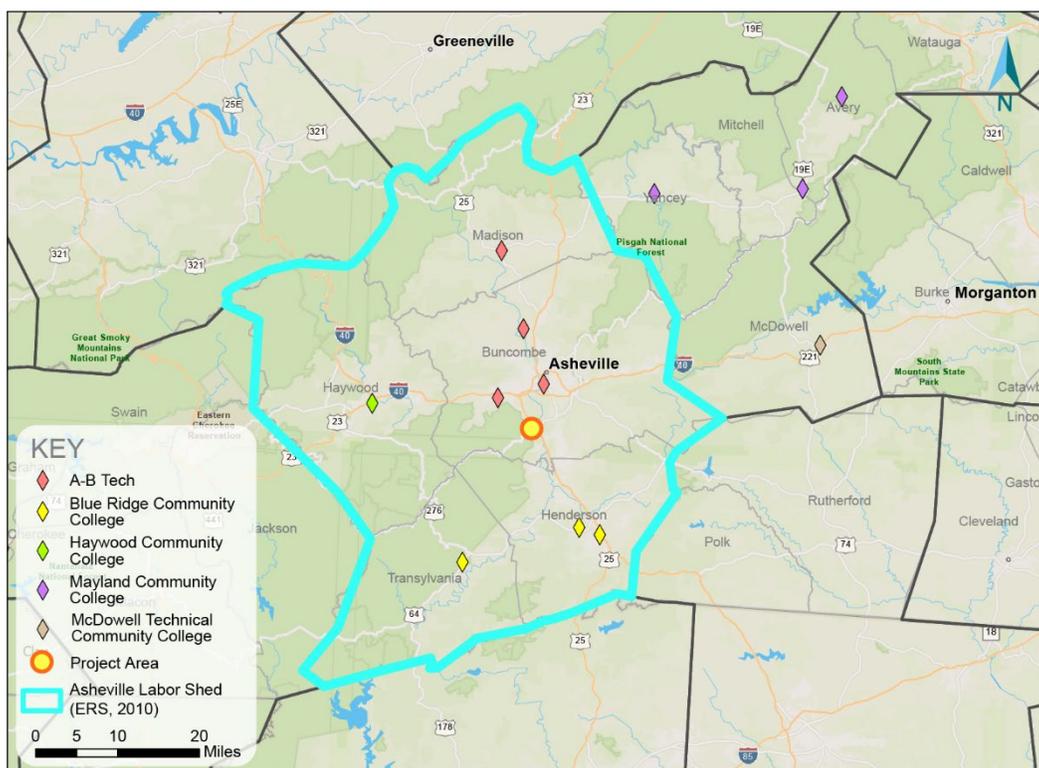


Figure 3. Based on ERS Delineations (2010), the Asheville area pulls from a five-county labor shed, highlighted in blue here. It is expected that workers will travel from neighboring counties, as well, to access good-paying jobs. Also displayed are the community colleges partnering with Pratt & Whitney.

Buncombe County is the employment center of the mountain region, with a total employment of 118,120 compared with the next highest county of Henderson with 35,235.⁶ Many of these jobs, however, are in retail (15.3%) and accommodations and food service (9.9%) due to much of the area's economy being dependent on tourism.⁷ Underemployment is one concern, as is the number of educated and skilled working age people who move outside of the region seeking

⁵ https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/north_carolina.htm

⁶ <https://www.census.gov/quickfacts/fact/table/hendersoncountynorthcarolina,ashevillescitynorthcarolina,buncombecountynorthcarolina,NC/INC910221>

⁷ https://linc.osbm.nc.gov/pages/business-industry/?refine.area_name=Buncombe%20County

more gainful employment. See the section **Investments in High-Quality Workforce Development** for information on attracting, training, and retaining skilled workers.

G2S – Partnering for Rural Development and Quality of Life

The proposed project is an outstanding demonstration of the value of partnerships among all levels of government and the private sector to enhance economic opportunity. Elements that make this a possible model or best practice throughout the ARC region and beyond include:

- Coordinated transportation and land use planning and development
- Private funding of transportation infrastructure
- Private sector donation of real estate
- Workforce development partnerships with area community colleges and State financial investment in training programs
- Extensive near-term, good-paying, high-tech job creation with potential for more jobs
- Focus on rural quality-of-life
- Improved access to tourism and recreation resources
- Coordinated project programming of the interchange and connector road with the I-26 widening

The average income at Pratt & Whitney is projected to be \$68,000 per year per person on average,⁸ which exceeds both North Carolina’s per capita income (\$34,209) and median household income (\$60,516)⁹ (*Table 1*). The combination of the facility and interchange makes the area attractive for further development by other companies; the partnership is an exemplary model of regional socioeconomic investment.

Table 1: Income / Salary Comparison¹⁰

Median Household Income	
North Carolina	\$60,516
Buncombe County	\$59,699
Asheville	\$58,193
Haywood County	\$52,063
Henderson County	\$59,928
Per Capita Income	
North Carolina	\$34,209

⁸ <https://www.google.com/amp/s/amp.citizen-times.com/amp/6075798002>

⁹ <https://www.census.gov/quickfacts/fact/table/NC/INC910219>

¹⁰ <https://www.census.gov/quickfacts/fact/table/ashevillecitynorthcarolina,buncombecountynorthcarolina,NC/INC910221>

Buncombe County	\$36,057
Asheville	\$37,392
Haywood County	\$31,302
Henderson County	\$33,905
Pratt & Whitney Salary	
Average Facility-wide Salary	\$68,000
Machinist/Skilled Labor Salary	\$55,000

Criterion #4: Climate Change, Resiliency, and the Environment

This project has been developed through a rigorous environmental review process, in compliance with the National Environmental Policy Act (NEPA) and other state and federal laws and regulations. The NEPA document was approved in August 2022 and Section 404 individual permit authorization received in August 2023. Through coordination with the US Fish and Wildlife Service (USFWS) Asheville Field Office, NCDOT is funding a monitoring program for a jurisdictional, first order tributary to the French Broad River in the project area to establish baseline conditions and evaluate stream health during and after construction. Additionally, NCDOT is designing a stream relocation as part of the G2S interchange for which approximately 400 feet of another jurisdictional, first-order stream draining to the French Broad River will remain daylighted as opposed to being placed in a pipe, which is preferable for stream health.

G2S incorporates numerous conservation-measures relative to the federally protected Gray bat and the Appalachian elktoe, including commitments to the most stringent sediment and erosion control (SEC) measures described in **Disaster Preparedness and Resilience to all Hazards** below. Further, through consultation with NPS, NCDOT and FHWA agreed to a No Adverse Effect, with conditions for the Blue Ridge Parkway. NCDOT will design, plant, and maintain approximately 900 feet of native vegetation to screen the project from the Blue Ridge Parkway.

Improved connectivity is a central feature that will introduce resiliency to the local transportation network at a time of tremendous growth regionally and result in fewer miles traveled to reach destinations. G2S is facilitating the growth and operational efficiency of the Pratt & Whitney Manufacturing Plant and complementing the private developer's framework to build out a healthy, thriving community with active transportation options.

Disaster Preparedness and Resilience to all Hazards

The addition of an interchange and connecting roadway between I-26 and NC 191 in southern Buncombe County improves disaster preparedness and resilience by through needed system redundancy. As described in **Criterion #1: Safety**, G2S will improve alternate route options in the area in case of a road closure or evacuation scenario benefiting motorists and first responders. Redundancy is an important part of resiliency. Providing multiple ways to move between origins and destinations allows people and goods to keep moving. If main travel routes are blocked, travelers can use alternative routing to reach their destination during an emergency.¹¹

¹¹<https://www.ncdot.gov/initiatives-policies/Transportation/nc-2050-plan/Documents/drivers-opportunities-security-eng.pdf>

Like other areas in the American southeast, western North Carolina is subject to more frequent, intense storm events which lead to flooding and landslide impacts across the region. Given the mountainous terrain that often limits transportation connectivity options in fair weather conditions, travelers of all modes, including freight, benefit from redundancy in the network. Flooding on NC 191 (Figure 4; Dec 29, 2018) and landslides and downed trees on the Blue Ridge Parkway (Figure 5; Aug 18, 2021) are a couple examples of storm related events that have limited transportation options in the project area in the recent past.^{12,13} In the future, G2S will provide an alternate route to travelers and emergency responders alike to reach their destinations.



Figure 5. Landslides and mudslides caused by heavy rains can block roadways, like the Blue Ridge Parkway here (Aug 18, 2021) (Source: Asheville Citizen-Times)



Figure 5. The French Broad River can overtop its banks and flood nearby roads like NC 191; this example is from north of Downtown Asheville (Dec 29, 2018) (Source: Asheville Citizen-Times)

Consistent with pre- and post-construction stormwater management best management (BMP) practices and statewide standards, G2S will implement the highest standards to prevent impacts to protected species, including Appalachian elktoe habitat in the French Broad River, and adjacent wetland habitat. NCDOT is committed to implementing the most restrictive sediment and erosion control (SEC) measures according to Design Standards in Sensitive Watersheds (DSSW, 15A NCAC 04B.0124), Environmentally Sensitive Areas, and the NC Division of Water Quality (NCDWQ) Construction General Permit (NCG01) terms and conditions that allow for stormwater discharge under the National Pollutant Discharge Elimination System (NPDES). An inspector will monitor all SEC devices for the life of the project and post-construction controls will use emerging BMP technologies, including but not limited to bioswales, bio-embankments, biofiltration conveyances, and soil improvements that maximize infiltration to the greatest extent practical.

¹² <https://www.citizen-times.com/story/news/local/2018/12/29/asheville-flooding-road-closures-henderson-county-wnc/2439857002/>

¹³ <https://www.citizen-times.com/story/news/local/2021/08/18/blue-ridge-parkway-mostly-closed-asheville-nc-tropical-depression-fred-floods-flooding-downed-trees/8182277002/>

NCDOT is also implementing a pre-construction stream monitoring program to establish baseline stream flow characteristics and sediment loads. This program is underway and will be a project-specific control measure, but also serve as a case study for future roadway projects.

Promote Energy Efficiency

There is a strong rationale for supporting the Pratt & Whitney investment since their work will positively impact the regional economy and create innovative technologies to reduce emissions that contribute climate change and its adverse effects. The company is continually improving the efficiency of their products, including reducing the amount of noise produced by their engines and increasing fuel efficiency. The Asheville plant will support high-volume programs, including the Pratt & Whitney GTF and F135 engines, for decades to come.¹⁴

The GTF engine family is the quietest, most efficient, most environmentally compatible in its class, delivering the lowest fuel consumption and CO₂ emissions for single-aisle aircraft. With unmatched efficiency and world-class operating costs, GTF engines are helping airlines open new routes and fly more people, farther, on less fuel. The geared fan will be the foundation for more sustainable propulsion in the decades ahead.¹⁵

The F135 engine is the heartbeat of the F-35 providing the warfighters of today and tomorrow the technological edge to fight and win. Not only is the F135 the most powerful and most advanced fighter engine ever produced, it's also the most dependable. The F135 delivers unrivaled performance to the warfighter, enabling operations in the most advanced threat environments and redefining what's possible for our customers and their missions.¹⁶ The parts manufactured by Pratt & Whitney support the US Department of Defense's Sustainability Plan.

Lastly, Pratt & Whitney's Asheville plant has high standards for responsible, energy efficient and sustainable development. The Asheville plant has met or exceeded Pratt & Whitney's greenhouse gas, water and waste goals, and features several sustainability and environmental stewardship initiatives including LEED certification, zero liquid waste discharge, and 100% achievement of best practices for wastewater, energy and greenhouse gases.¹⁷

Transportation Efficient Design and Fiscally Responsible Land Use

Private investment at Biltmore Park West has unlocked development potential on the approximately 450-acre parcel in southern Buncombe County within 6 miles of downtown Asheville. G2S is leveraging significant private investment to establish redundancy in the transportation network and provide safe and efficient access to a major regional employer. No

Biltmore Park West proposed land-uses and quantities were provided by Biltmore Farms, LLC, May 2020:

- 1,218 Residential dwelling units (Townhouses and Apartments)
- 178,000 square feet of Retail/Office
- 120-room Hotel
- 60,000 square feet of Public Service/Institutional
- 460,000 square feet of Industrial.

¹⁴<https://www.prattwhitney.com/en/newsroom/news/2022/11/16/pw-world-class-north-carolina-turbine-airfoil-production-facility-nears-operational-capability>

¹⁵<https://www.prattwhitney.com/en/products/commercial-engines/gtf>

¹⁶<https://www.prattwhitney.com/en/products/military-engines/f135>

¹⁷<https://www.prattwhitney.com/en/newsroom/news/2022/11/16/pw-world-class-north-carolina-turbine-airfoil-production-facility-nears-operational-capability>



Figure 6. *Biltmore Park Town, an example Biltmore Farms project southeast of G2S.* Source: <https://www.shookkelley.com/work-detail/19>

master plan has been completed for Biltmore Park West, but mixed uses are expected including employers, residences, education, and services, like Biltmore Park (*Figure 6*) located to the southeast. Biltmore Farms, the private developer, is committed to the economic development of the region and sustainable growth.¹⁸

NCDOT will reserve 1,000 feet control of access (C/A) along the connector roadway. This will ensure safe and efficient interchange

operations into the future by restricting driveway access within 1,000 feet of the interchange ramp terminals and fostering responsible land use decisions.

Further, G2S introduces a transportation scenario in southern Buncombe County that may contribute to a future scope reduction associated with a programmed NC 191 widening south of the East FLOW intersection. Though NCDOT will need to conduct further traffic analyses, the rerouting of traffic through the transportation network may alleviate the need for the NC 191 widening project for the foreseeable future and thus avoid impacts to sensitive ecological resources at Sandy Bottom Preserve, the French Broad River, and recreational resources, including the Blue Ridge Parkway and Zen Tubing.

Production/Preservation of Location-Efficient Affordable Housing

Location-efficient affordable housing is a possibility at Biltmore Park West in the future. Proximity to employers, Downtown Asheville, and reliable transportation corridors make this an attractive location for affordable housing options.

Incorporate Electrification

NCDOT has committed to work with project partners to investigate electric vehicle infrastructure, which could include charging facilities, within the overall project site. The Pratt & Whitney Manufacturing Plant includes electric vehicle charging stations for its employees.

Criterion #5: Equity, Multimodal Options, and Quality of Life

Equity and Inclusion Program

NCDOT has an ongoing commitment to involve Disadvantaged Business Enterprises (DBE), Minority Business Enterprises (MBE), and Woman Business Enterprises (WBE) in USDOT- and NCDOT-assisted contracts. To address racial equity, NCDOT will create project-specific DBE goals. Each project looks at specific contract items and considers the availability of DBEs for the specific contract when setting project DBE goals. As is standard, a Good Faith Effort report will be created if this goal is not met.

¹⁸ <https://www.biltmorefarms.com/community-development/>

Barriers to Opportunity

By providing direct access to I-26, G2S will provide greater connectivity for rural communities (several of which are historically disadvantaged communities) to good paying manufacturing jobs, career tracks, and technical training opportunities (refer to *Figure 5* in the **Project Description** section). By proactively leveraging private investment in transportation infrastructure, including the new East FLOW bridge over the French Broad River, NCDOT is addressing current and future projected traffic needs for the approximately 450-acre Biltmore Farms development tract (that includes the 100-acre Pratt & Whitney facility) by providing safe and efficient access to good paying jobs in the Appalachian region of western North Carolina.

Investments in High-Quality Workforce Development

To ensure that the local communities benefit from the workforce development opportunities, Pratt & Whitney is partnering with multiple state and local organizations. These innovative workforce development partnerships entail over \$7 million in education and training investment. The comprehensive approach even includes \$100,000 to support STEM community education.¹⁹ Pratt & Whitney is partnering with five regional community colleges (refer to *Figure 3* in this section) to customize pre-employment training programs that are producing a pipeline of skilled labor to work on the production floor. With support from Buncombe County, A-B Tech will build and operate a 20,000 square-foot workforce training center close to Pratt & Whitney's manufacturing site. The Appalachian Regional Commission (ARC) awarded A-B Tech two \$1.5 million grants for technical equipment purchases for the Pratt & Whitney project. Further, the State of North Carolina Community College system has committed \$4.2 million to provide prospective workers with a 96-hour training and a guaranteed interview with Pratt & Whitney.

As of Fall of 2022, Pratt & Whitney had endorsed three short-term training programs at A-B Tech for which no prior experience is required: CNC (Computer Numerical Control) Machining 101, Machining Fundamentals, and MSSC (Manufacturing Skill Standards Council) Certified Production Technician. A-B Tech announced earlier this year that they would accept registrations for a free Pratt & Whitney Fast Track training program designed to put area residents on the path to full-time employment with benefits in aerospace manufacturing. Fast Track training prepares individuals to interview with and work for Pratt & Whitney. Additionally, by completing the classes, students may increase their opportunities to apply for

Pratt & Whitney's partnerships with these organizations will promote STEM education for students:

- Buncombe County Schools Foundation
- Henderson County Education Foundation
- Haywood County Schools Foundation
- Asheville City Schools Foundation
- Blue Ridge Community College Educational Foundation
- Asheville-Buncombe Technical Foundation
- Eliada
- United Way of Asheville and Buncombe County
- Asheville Museum of Science

¹⁹<https://wlos.com/sponsored/spotlight/pratt-whitney-donation-supports-stem-education-in-the-community>

employment with other local companies to include Eaton, Thermo Fisher, Linamar, and more.^{20,21}

Pratt & Whitney has also formed exciting partnerships with local and regional traditional and non-traditional workforce development agencies that identify and work with underrepresented and historically unemployable populations, including but not limited to recidivism reduction services. To announce their presence in the community, Pratt & Whitney hosted focus group meeting with the Asheville-Buncombe Chamber of Commerce and “Community Conversations” throughout the region including, but not limited to, at local public housing communities and community college partners.

Encourage Thriving Communities

G2S is encouraging thriving communities in southwest Buncombe County where individuals may expect the opportunity to live, work, and play. The Pratt & Whitney Manufacturing Plant incorporates architectural design elements with the intent of blending into a future mixed-use development, including residential uses (*Figure 7*). East FLOW will serve as the spine of a vibrant mixed-use development. NCDOT recognizes the great value of coordinated transportation and land use planning. Multimodal elements will be incorporated as feasible including sidewalks, linkages to trails, and accommodations for persons with disabilities.



Figure 7. Pratt & Whitney Manufacturing Plant, Asheville. Courtesy of RTX.

G2S is including sidewalks as a component of a growing pedestrian network and acknowledging the private developer’s intention to construct a future walkable community at Biltmore Park West. There exist future potential connections to recreational resources, including the Mountains-to-Sea Trail, a statewide recreation hiking trail that parallels the Blue Ridge Parkway, Bent Creek River Park, NC Arboretum, and Pisgah National Forest west of NC 191. Further, the County’s Arden/Lake Julian Greenway may be connected to this development in the future.

²⁰<https://abtech.edu/news/offer-free-fast-track-training-pratt-whitney-jobs>

²¹<file:///C:/Users/AArchual/Downloads/abtech-classes-endorsed-by-pratt-and-whitney.pdf>

Further, as the area is expected to grow, public transportation services could further complement the transportation profile and the range of options available to workers and residents. Mixed use development is a feature of the overall development in proximity to the interchange and connector road. East FLOW is being developed such that future transit service will be possible. Taken together, these opportunities create transportation choices for individuals to move freely, with or without a car, in a healthy environment.

Quality of Life

The project will positively impact the quality of life for citizens and tourists by improving mobility and connectivity and providing safe and efficient access to employment and recreation opportunities. The project supports commercial and mixed-income residential development in walkable communities adjacent to NC 191 and I-26, major regional transportation corridors. Future development potential at the site will accommodate mixed uses that integrate existing, planned, and new walking and bicycling infrastructure that will reduce automobile dependence and improve access for people with disabilities. As discussed, G2S is expected to improve traffic operations in the network, thus reducing congestion and transportation costs by decreasing miles traveled and delay. Health benefits include improved emergency response times and access to recreational resources including but not limited to the Blue Ridge Parkway, Mountains-to-Sea Trail, Pisgah National Forest, Bent Creek Park, and NC Arboretum.

NCDOT believes that this MPDG funded project will be a great demonstration of public-private and federal-state partnership that has transportation and economic impact while also greatly enhancing quality of life. Refer to the **Investments in High-Quality Workforce Development** section for more details relative to efforts made to spread these benefits to diverse populations, including historically disadvantaged populations, across the region.

Reduce Cost Burdens

By leveraging significant public investment, NCDOT is maximizing the taxpayers' dollar to accomplish a major new infrastructure element at future Exit 35 and completion of East FLOW. In so doing, NCDOT is ensuring efficient access to good paying is established and is preserving network reliability and resiliency through the introduction of much needed redundancy. As discussed, the project expands on the pedestrian framework initiated by the private developer and is supporting a future thriving, walkable, mixed-income community where citizens can live, work, and play near regional transportation corridors and recreational resources.

Equitable Public Engagement

Throughout project development, NCDOT conducted equitable outreach activities to inform and engage the public in the decision-making process, to fulfill the requirements established by NEPA, Section 404 of the Clean Water Act (CWA), EO 12898, and EO 13166. NCDOT prepared a project Public Involvement Plan (PIP) to establish appropriate outreach measures, considering local demographics, over the course of project development.

Local, state, and federal agencies and legislators were engaged early in project development and federally recognized Tribal Nations were consulted. Based on the location and scope of the project, and in consideration of evolving COVID-19 protocols in the summer/fall of 2021, NCDOT determined outreach would be conducted using a [project website](#) and targeted mailings; comments were accepted by phone, mail, and/or email. Digital materials to inform the public of the proposed project were developed and hosted on a robust NCDOT project website that included project design information, including graphics and videos, cost, schedule, and contact

information. The public comment period was advertised via traditional methods (e.g., newspaper announcement), mailings, and NCDOT social media outlets. NCDOT received and reviewed 259 public comments prior to selecting a Preferred Alternative.

Additional public review has taken place in accordance with Section 404 of the CWA, including a pre-application notice run concurrently with NCDOT's public comment period, and a Public Notice.

Criterion #6: Innovation Areas: Technology, Project Delivery, and Financing

Innovative Technologies

As the birthplace of modern flight, North Carolina is known for being a hub of innovation. G2S will help to carry forward the State's legacy of innovative aerospace technology.

G2S will incorporate elements of Intelligent Transportation Systems (ITS) and Transportation Systems Management and Operations (TSMO), which are inventive and modern concepts to improve transportation systems. NCDOT is already well-versed in ITS, having deployed ITS infrastructure such as 511, signal systems, and incident management patrols on its interstates.²² The new interchange will tie into I-26's existing ITS by integrating physical infrastructure and digital systems from the project site into NCDOT's existing systems.

Physical infrastructure includes components such as CCTV, roadway weather information systems (RWIS), and dynamic message signs (DMS). NCDOT currently has a camera near mile marker 35 (adjacent to the project site) that provides static images of the roadway; this camera will be incorporated into future Exit 35. The data captured feeds into NCDOT's traveler information systems, allowing motorists to visualize roadway conditions and make safe trip planning decisions. There is a permanent DMS approximately 1.5 miles north of the project site on I-26 that can be used to display travel times, warn motorists of incidents or adverse weather, and is generally used to improve safety and efficiency of the roadway via messaging.

Some of NCDOT's digital systems include: the transmittal of sensor data to one of three traffic management centers across the state; remote DMS; disseminating traveler information; and commercial vehicle operations. The project area will be included on NCDOT's interactive DriveNC map, which pulls traffic and sensor data to provide travelers with timely roadway and traffic conditions.²³

NCDOT was awarded an INFRA Grant to create a fiberoptic backbone from Wilmington to Asheville using the I-95, US 70, and US 74 corridors to service NCDOT's current and future technological needs. This statewide technology project envelopes G2S because US 74 combines with I-26 into Asheville. Fiber is being installed as part of the I-26 Widening Project and will be ready access for G2S.

NCDOT integrated innovative design elements, including the half-DDI to maintain traffic flow and prevent wrong way traffic. By maximizing existing right of way, the design requires only one bridge to construct and maintain. Retaining walls are extensively used to minimize cut and tree clearing impacts. As noted, NCDOT has designed a stream channel relocation, as well. To

²² <https://www.ncdot.gov/initiatives-policies/Transportation/safety-mobility/its/Pages/default.aspx>

²³ <https://www.drivenc.gov/>

minimize potential impacts to federally listed species, NCDOT will implement innovative lighting techniques included in the I-26 Widening Project to reduce the impact on bats.

The Pratt & Whitney site presents more opportunities to include innovative technologies to the area. The facility itself is innovative; instead of a standard manufacturing facility, Pratt & Whitney went the extra mile by ensuring the building is LEED Silver certified and is a proponent of the inclusion of sustainable energy sources, including electric vehicle charging stations for employees. The larger site is envisioned to have a mix of uses, not just industrial uses. NCDOT will work with project partners to investigate other innovative technologies, like an automated shuttle that connects facilities in Biltmore Park West, though it is too early in the project and the site's development to make a hard commitment to implement such technologies.

As stated in the **Equity, Multimodal Options, and Quality of Life** section of this application, A-B Tech is taking an innovative approach to the development of the Pratt & Whitney site. A-B Tech is building a training facility close to the manufacturing facility to provide pre- and post-training to Pratt & Whitney employees, and to recruit new qualified employees.

Innovative Project Delivery

NCDOT successfully utilized their Section 404/NEPA Merger Process for project development, resulting in the identification of a Preferred Alternative and agreement on the Least Environmentally Damaging Practicable Alternative (LEDPA) in nine months. The Merger Process is a formal coordination with federal and state regulatory and resource agencies to make important project development decisions and streamline the permitting process.

Further, because G2S is located within the limits of an active interstate widening project, NCDOT has evaluated options to maximize efficiency and minimize costs associated with construction. Through coordination with FHWA-NC Division, NCDOT split the interchange and the connector road into two construction projects. This approach is expected to accelerate the interchange design and delivery by incorporating design-build practices and releasing portions of the interchange for construction as supplemental construction contract agreements to the construction contractor currently building the I-26 widening project.

Innovative Financing

Biltmore Farms is donating the right-of-way for the connecting road, which will save taxpayer dollars. NCDOT has also secured a \$2.5 million grant from ARC for the project.

**MPDG FFY 2023 and 2024
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GROUND TO SKY PROJECT



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