

## EXECUTIVE SUMMARY

Horizon 2040, the Long-Range Transportation Plan for the Greenville-Pickens area, outlines a regional strategy for a connected transportation system that accommodates existing and future mobility needs. Horizon 2040 is a financially constrained plan, meaning it identifies projects and programs that can reasonably be implemented through the year 2040. In response to federal mandates and the desire of residents, the Long-Range Transportation Plan addresses all modes of transport, including automobile, bicycle, pedestrian, transit, air, and rail movements.

### *Reason for the Plan*

GPATS, the Greenville-Pickens Area Transportation Study, reviews the long-range transportation plan every five years and updates it every 10 years. Horizon 2040 is the first major update to the region's Long-Range Transportation Plan since 2007. The plan fulfills federal requirements and serves as the region's transportation vision. It characterizes current and future transportation needs, outlines the region's long-range transportation vision, documents multi-modal transportation strategies to address needs through the year 2040, and identifies long-term opportunities beyond the current ability to fund projects. Federal funding cannot be allocated to transportation projects unless they are included in the financially-constrained plan. GPATS cannot plan to spend more money than it reasonably expects to receive.

### *Study Area*

The Horizon 2040 study area covers 777 square miles of the Upstate, including portions of Greenville, Pickens, Anderson, Laurens, and Spartanburg Counties.

### *Planning Process*

The Horizon 2040 process started with a review of socioeconomic and transportation conditions. Guiding principles and goals were established prior to identifying multimodal recommendations. Once the recommendations were developed, a prioritization process was created and available resources through the year 2040 were identified. The financially constrained plan provides a blueprint of transportation projects over the next 25 years and will be re-evaluated in 5 years.

### *Public Engagement*

As part of Horizon 2040, GPATS staff engaged municipal and county staff, elected officials, SCDOT, FHWA, State, and Federal agencies, various public agencies, advocacy groups and community leaders in a variety of ways. Engagement for Horizon 2040 included two regional workshops, 17 sub-regional community meetings, 25 stakeholder and small group interviews, three focus group work sessions, three surveys, and multiple meetings with the GPATS Policy Committee and Study Team.

## GUIDING STATEMENTS

The guiding statements represent six interrelated value statements established in accordance with national, state, and regional long-range planning goals. The guiding statements, which reflect the region's transportation needs and desires, provided direction throughout the planning process and helped inform the prioritization of recommendations.

### *Culture & Environment*

Enhance the region's quality of life by preserving and promoting its valued places and natural assets.

### *Economic Vitality*

Support regional economic vitality by making it easier to move people and freight within and through the region.

### *Growth & Development*

Make traveling more efficient by coordinating transportation investments with land use decisions.

### *Mobility & Accessibility*

Provide a balanced transportation system that makes it easier to bike, walk, and take transit.

### *Safety & Security*

Promote a safe and secure transportation system by reducing crashes, making travel reliable and predictable, and improving emergency response.

### *System Preservation & Efficiency*

Extend the life of the transportation system and promote fiscal responsibility by emphasizing maintenance and operational efficiency.

## ROADWAY RECOMMENDATIONS

The Upstate's transportation system must strike a balance between serving the current mobility needs of existing residents, businesses and visitors, while planning for the region's future growth and economic well-being. The GPATS area will face a continued rise in travel demand, placing pressure on the roadway network to accommodate more trips each year. A balanced program should seek to plan for the future through a mix of capacity improvements, access management, active transportation, and operational improvements that improve safety and travel efficiency for all users.

The Horizon 2040 roadway recommendations are a crucial component of building and maintaining a safe, efficient, and accessible transportation network that accommodates all users. An existing network assessment allowed the Horizon 2040 team to fully understand the region's profile and challenges and to be better stewards of limited resources.

In total, Horizon 2040 recommends:

- 123 corridor improvements throughout the region.
- 137 Intersection improvements

These projects were identified based on safety, operational, or congestion issues in close consultation with local staff and public input. The exact scope of many improvements identified here will be identified as projects move forward in the funding cycle.

### Project Prioritization

Each roadway project was scored based on an SCDOT-driven process, which is standardized across the state. A project receives an individual score in each category according to its performance in that category, scored on a scale of 1 (worst) to 10 (best). Different types of projects are ranked against the same criteria, but each category is weighted differently, providing each project with a separate "weighted score." Projects are then ranked according to this measure. For more information on the prioritization process, see the Horizon 2040 Appendix D (see <http://www.gpats.org/plans/horizon2040>).

- **Environmental Impacts:** based on an assessment of potential impacts to natural, social, and cultural resources.
- **Truck Traffic:** based on current truck percentages.
- **Economic Development:** determined using the Transportation, Distribution, and Logistics (TDL) tool developed by Clemson University. The tool assesses the economic development impact of transportation infrastructure projects.
- **Located on a priority network:** based on a project's location in relationship to defined priority networks.
- **Consistency with Local Land Use Plans:** Verification of consistency with local land use plans is confirmed during the STIP process.
- **Traffic Volume and Congestion:** based on current and future traffic volumes and the associated level-of-service condition.
- **Alternative Transportation Solutions:** confirmed during the National Environmental Policy Act (NEPA) process.
- **Public Safety:** based on an accident rate that is calculated by the total number of crashes within a given road segment divided by the traffic volume and multiplied by the number of years.
- **Geometric Alignment Status:** based on an assessment of the intersection's functionality and operational characteristics.
- **Financial Viability:** based on estimated project cost in comparison to the six-year Statewide Transportation Improvement Program (STIP) budget. Additional consideration will be given to projects supplemented with local project funding and/or other federal and state funding
- **Pavement Quality Index:** The PQI score is based on pavement condition assessments.

## Congestion Management Process

As an urbanized area with a population greater than 200,000, GPATS is required by Federal law to implement a CMP for its entire planning area, and the MPO has chosen to incorporate a CMP into their planning efforts. The improvements can be implemented in a relatively short time frame (within 5-10 years) compared to more traditional capacity improvements, such as adding additional travel lanes, which can take more than 10 years to implement and cost significantly more. Projects identified through the CMP may also be added to future updates of the Regional Transportation Plan should they require additional funding or a longer time frame for implementation.

As the CMP is updated in the future, it is recommended that the GPATS Technical Advisory Committee be engaged in CMP related matters. This ensures that CMP issues are addressed routinely as an ongoing planning activity. A key contribution will be to identify, track, and evaluate potential congestion- or safety-related issues on the CMP roadway network.

The full regional CMP is included in the Horizon 2040 Appendix E

### *Other Elements of the Roadway Recommendations:*

- Safety Improvements Toolbox and Demonstration Intersections
- Access Management Toolbox and Demonstration Corridors
- Connectivity Best Practices

## BICYCLE & PEDESTRIAN RECOMMENDATIONS

Horizon 2040 envisions a network of infrastructure for active transportation that connects communities of all sizes across the GPATS region, encouraging walking and bicycling as common parts of everyday life. Across the region, people of all ages and abilities will enjoy access to safe, comfortable, and convenient walking and bicycling infrastructure and benefit from enhanced quality of life, healthier lifestyles, greater economic opportunity, and a culture of safety and respect for the well-being of people traveling on foot or by bike.

### *Bicycle Recommendations*

Bicycle network recommendations for the GPATS region detail a robust system of interconnected communities connected to one another by a regional shared use path network. Community bicycle infrastructure should be integrated into existing infrastructure and designed to forge connections between commercial centers, schools, parks, and neighborhoods.

Regional bicycle network recommendations are divided into two types of facilities: on-street and off-street. Recommended types of on-street infrastructure include bike routes; on-street markings; paved shoulders; bike lanes, buffered bike lanes, and separated bike lanes/cycle tracks. Off-street infrastructure are shared-use paths that can be used by cyclists and pedestrians alike.

### *Pedestrian Recommendations*

Pedestrian network recommendations for the GPATS region detail a system of sidewalks that are prioritized

for areas near schools and central business districts paired with community and regional shared use paths.

This plan recommends a priority area policy for sidewalks: a half-mile buffer surrounding elementary, middle, and high schools as well as central business districts throughout the region. Recommended shared use paths double as bicycle infrastructure.

### *Bicycle & Pedestrian Prioritization*

A number of factors were used to select a list of high priority projects from the hundreds of recommended bicycle and pedestrian improvements. These factors include:

- Connectivity
- Length and Cost
- Community & Regional Impact

Finally, all priority projects were checked to ensure their compatibility with SCDOT guideshare guidelines. In order to be eligible for guideshare funding, a bicycle or pedestrian projects must meet certain criteria, detailed in the plan. In this way, several priority projects were identified to be funded through Horizon 2040 guideshare funds.

### *Other Elements of the Bicycle and Pedestrian Recommendations:*

- Program Recommendations
- Design Guidelines

## PUBLIC TRANSPORTATION

The Transit element of *Horizon 2040* evaluates recent and on-going transit planning efforts, and recommends policy-based strategies and system-level service improvements to enhance access and mobility for residents throughout the area.

The transit recommendations build upon previous and ongoing planning efforts and evaluate opportunities to create a coordinated system that serves existing and potential needs of the area while satisfying Federal and State eligibility requirements for financial assistance.

### *Priority Corridors*

Transit in the GPATS area should develop with the goal of serving the needs of the local workforce and the transit-dependent community. Greenlink’s current planning efforts present a major opportunity to revamp the system with regional mobility in mind. By connecting more communities, focusing on serving regional activity centers, and developing a comprehensive network that links routes throughout the area, transit can become a viable mobility option that serves the needs of the local workforce, employers, and choice riders alike.

Horizon 2040 identified priority transit corridors that link major employment centers, medical services, educational centers, and serve the needs of the GPATS population.

### *Policy Recommendations*

- Seek to expand service to connect more communities within the metro region
- Provide extended service hours that better serve the needs of employers and employees.
- Prioritize service to areas that depend on transit as their primary means of mobility and to high growth corridors as a means of traffic mitigation.

- Dedicate a percentage of guideshare funding to transit system capital improvements.

### *Passenger Rail*

GPATS is committed to being an active planning participant in the development of improved Passenger Rail service and to adapting to the circumstances as improvements are known. Fortunately, GPATS and its member jurisdictions will have plenty of time to adapt its infrastructure and land use policies once improved Passenger Rail service is announced, as it will take a number of years to implement. In the interim, GPATS is committed to improving the modes of transportation that can support regional rail stations.

## FREIGHT

The movement of goods within and through the Upstate will continue to grow, and freight mobility should remain a high priority in future improvement projects. Increases in freight activity should be monitored to ensure infrastructure is in place to efficiently move goods through the region or deliver them to end users. Improvements such as corridor management, road maintenance, and traffic mitigation will help priority corridors serve existing and projected freight movements. These improvements also will help prevent freight traffic from spilling over into unsuitable areas and will yield a safer environment for all users.

Horizon 2040’s freight recommendations include:

- State Coordination
- Rail Crossing Improvements
- Regional Freight Plan
- Transportation Technology
- Industry Collaboration
- Freight Security

## TRANSPORTATION DEMAND AND EMERGING TECHNOLOGIES

The transportation systems of cities, states, and nations are undergoing a period of transformation. As a 2040 plan, *Horizon 2040* must respond not only to the transportation needs as they stand today but also the potential for change in the future. To do this, we must look beyond the current types of transportation strategies and technologies being leveraged and better understand what trends and shifts are on the way.

*Horizon 2040* contains recommendations regarding:

- Transportation Demand Management
- Transportation System Management
- Advanced and Emerging Technologies

### *Performance Measures*

As a federal requirement, states must now invest resources in projects to achieve individual targets that collectively will make progress toward national goals. MPOs are also responsible for developing LRTPs and TIPs “through a performance-driven, outcome-based approach to planning.”

GPATS is now developing its process to meet federal requirements—including requirements for tracking specific measures and setting targets—and to meet the unique planning needs of the MPO.

For the 2018 performance period, the MPO has elected to accept and support the State of South Carolina’s safety targets for five safety performance measures. More information in Chapter 9.

## FINANCIAL PLAN

### Projected Revenue

SCDOT allocates funding to its member MPOs through a program known as Guideshare funding. SCDOT provides separate funding sources for items like maintenance, safety, and interstates. Those sources are allocated and prioritized at a statewide level. Guideshare funding is allocated by SCDOT by leveraging the MPO planning process, including the LRTP and the MPO Transportation Improvement Program (MTIP). In 2017, the GPATS region received a total of \$18.078 million in Guideshare funding. This number is inclusive of a 20% match, which is funded by SCDOT. The 2017 funding amount is expected to stay constant throughout the life of the plan. When inflation is considered, this approach will lead to a decline in the region’s purchasing power.

GPATS has the opportunity to consider how best to allocate these Guideshare funds during the life of the plan. To help better understand the optimal allocation of these funds, GPATS reached out to the public through Regional Workshop 2. The exit questionnaire (discussed in Chapter 2) asked participants to allocate funding to various transportation modes. Through participants at this workshop as well as subsequent participation electronically when this survey was posted online,

125 members of the public provided their thoughts. These surveys strongly advocated for enhanced multimodal funding, along with strong funding for safety. These priorities were considered in the allocation of Guideshare funding percentages, as detailed below.

- **Roadway Corridors - 50% Guideshare funding.** Projects within the roadway category include widening projects, new location projects, access management projects, and road diets.
- **Intersections - 25% Guideshare funding.** Projects within the intersection category include intersection and interchange projects that have been identified to improve safety or capacity. This Guideshare allocation provides the region added flexibility to focus on its own priorities, while the state continues to address safety concerns using their statewide prioritization method.
- **Bike/Ped - 10% Guideshare funding.** Projects within the bicycle and pedestrian category include on-street or off-street projects that are independent of other roadway improvements. This Guideshare allocation is in addition to potential Transportation Alternatives Program monies that can be applied for by individual jurisdictions. In order for a bicycle or pedestrian project to be considered for the receipt of

Guideshare funding, the project must satisfy a series of criteria set forth by SCDOT. Projects should be vetted against these criteria prior to being advanced for consideration.

- **Transit - 10% Guideshare funding.** Projects within the transit category would consist of capital projects rather than operations and maintenance. This funding is in addition to transit capital and operations, and maintenance funding received through other statewide sources.
- **Signal Upgrades - 5% Guideshare funding.** Currently, \$150,000 annually is being allocated within the GPATS region for signal upgrades. The increase in funding would help accelerate these improvements, including installation of signals, improvement of current signals, signal retiming, or other ITS improvements (introduced in Chapter 8).

The table below shows the proposed allocation of funding for each category for the two planning horizon year periods.

GPATS GUIDESHARE MODAL SPLITS

	Roadway Corridors	Intersections	Bike/Ped	Transit	Signal Upgrades
2024-2030	\$63,273,000	\$31,636,500	\$12,654,600	\$12,654,600	\$6,327,300
2031-2040	\$90,390,000	\$45,195,000	\$18,078,000	\$18,078,000	\$9,039,000
Total	\$153,663,000	\$76,831,500	\$30,732,600	\$30,732,600	\$15,366,300
Notes	50% allocation	25% allocation	10% allocation	10% allocation	5% allocation

## FINANCIALLY CONSTRAINED PROJECTS

### Roadway Corridors

The capital roadway projects identified as part of the recommendations development were taken through a regional prioritization process. The capital roadway project prioritization evaluated recommendations based on a series of qualitative and quantitative measures that carried forward the plan's guiding principles.

The outcome of this process was a list of prioritized projects that can be considered for incorporation into the financially constrained plan. While it would be ideal to implement every project, only a portion can be accommodated in the funded plan. As a result, higher

ranked projects were considered first for funding. To do this, the priority project list was compared to the available revenues determined through the Guideshare modal split.

Through the project prioritization process, planning cost estimates were determined for the roadway corridor projects. These estimates attempt to capture the full cost of a project, including construction, right-of-way, design, contingency, and environmental/utilities cost. While these costs were all initially prepared in 2017 dollars, they must be inflated to properly be compared with the available revenue during our horizon year periods. To maintain a consistent approach for all projects, projects being considered within the first horizon year period (2024-2030) were inflated to the

midpoint of that period (2027). Projects that were unable to be funded within the first horizon year period were then considered for inclusion within the second horizon year period (2031-2040), with a midpoint of 2035. Once the available revenues within these funding periods was allocated, the remainder of the projects were considered part of the unfunded vision.

### Funded Corridor Improvements

Horizon Years	Project ID	Facility	From	To	Type	Prioritization Rank	Project Cost	"Anticipated Year of Expenditure Costs"	Balance
2024-2030	37	Garlington Rd	SC-153	Roper Mountain Rd	Widening	1	\$8,550,000	\$10,515,000	\$52,758,000
	94	US 29/Mills Ave	Augusta St	Stevens St	Corridor Improvements	2	\$2,522,793	\$3,103,000	\$49,655,000
	11	Grove Rd	US 25	W. Faris Rd	Widening	3	\$9,813,960	\$12,070,000	\$37,585,000
	100	Laurens Rd	I-85	Innovation Dr	Corridor Improvements	4	\$6,941,330	\$8,537,000	\$29,048,000
	118	Academy St/US 123	Pendleton St	Washington Ave	Corridor Improvements	5	\$7,644,736	\$9,402,000	\$19,646,000
	92	Wade Hampton Blvd	Pine Knoll Dr	Reid School Rd	Access Management	6	\$10,451,625	\$12,854,000	\$6,792,000
	10	Woodruff Rd	Miller Rd	Smith Hines Rd	Widening	7	\$5,369,355	\$6,604,000	\$188,000
2031-2040	88	SC 357/Arlington Rd	Study area boundary	E Wade Hampton Blvd	Widening	8	\$27,026,688	\$46,011,000	\$44,379,000
	20	Bridges Rd	E Butler Rd	Holland Rd	Widening	9	\$4,593,622	\$7,820,000	\$36,559,000
	91	N Pleasantburg Dr/Pine Knoll Dr	I-385	Wade Hampton Blvd	Corridor Improvements	10	\$4,614,147	\$7,855,000	\$28,704,000
	43	Pine Knoll	Wade Hampton Blvd	Rutherford Rd	General Improvements	11	\$3,284,783	\$5,592,000	\$23,112,000
	107	White Horse Rd	Broadway Dr	Pendleton Rd	General Improvements	15	\$2,520,598	\$4,291,000	\$14,185,000
	99	N Pleasantburg Dr	Poinsett Hwy	Rutherford Rd	Access Management	16	\$5,243,733	\$8,927,000	\$9,894,000
	109	US 276 (N Main St)	Knollwood Dr	Owens Ln	Access Management	17	\$2,227,853	\$3,793,000	\$6,101,000
89	Haywood Rd	Pelham Rd	E North St	Access Management	30	\$2,968,088	\$5,053,000	\$1,048,000	

### Intersections

Using a process identical to that used in the roadway corridors section, intersection-level projects were also financially constrained based on their available revenues. As with the roadway corridor projects, all of the financially constrained projects are near-term projects, and there are many other unfunded near-term projects. If additional funding (such as through the statewide safety program) is secured for a certain intersection, the financially constrained plan should be adjusted to accommodate another near-term intersection project that can be advanced with the available funds.

### Transit

The GPATS region’s transportation needs and recommendations were introduced in Chapter 5. Based on feedback from the public, the plan allocates additional Guideshare monies to help fund capital improvements. Coordination will need to be held with Greenlink and CAT to determine the best application of this additional capital funding. This may initially take the form of funding for replacement and expansion of buses, and may ultimately include facility improvements or new facilities.

### Signal Upgrades

SCDOT leads efforts within the GPATS region to maintain and enhance signals. As a result, GPATS will work closely with SCDOT to understand how best to reflect the allocation of these additional funds.

#### Funded Intersection Improvements

Horizon Years	Project ID	Road 1	Road 2	Prioritization Rank	Project Cost	"Anticipated Year of Expenditure Costs"	Balance
2024-2030	107	Roper Mountain Rd	I-385	1	\$3,500,000	\$4,305,000	\$27,331,500
	117	Haywood Dr	Pelham Rd	2	\$3,000,000	\$3,690,000	\$23,641,500
	116	Pleasantburg Dr	Rutherford Rd	3	\$3,500,000	\$4,305,000	\$19,336,500
	72	White Horse Rd	W Blue Ridge Rd	4	\$3,500,000	\$4,305,000	\$15,031,500
	81	E Blue Ridge Dr/State Park Rd	Poinsett Hwy	4	\$3,500,000	\$4,305,000	\$10,726,500
	121	Larens Rd	Woodruff Rd	4	\$3,500,000	\$4,305,000	\$6,421,500
	90	Rutherford St	James St/W Earle St	7	\$3,500,000	\$4,305,000	\$2,116,500
2031-2040	96	Hwy 93	Hwy 123	8	\$3,500,000	\$5,959,000	\$39,236,000
	101	SC 8	Murray St	9	\$3,500,000	\$5,959,000	\$33,277,000
	124	Pelham Rd	E North St	10	\$3,500,000	\$5,959,000	\$27,318,000
	113	Pleasantburg Dr	Antrim Dr	11	\$3,500,000	\$5,959,000	\$21,359,000
	114	Academy St	Pendleton St	11	\$3,500,000	\$5,959,000	\$15,400,000
	125	Laurens Rd	Verdae Blvd	11	\$3,500,000	\$5,959,000	\$9,441,000
	126	Roper Mountain Rd	Independence Blvd	11	\$3,500,000	\$5,959,000	\$3,482,000

## Bicycle and Pedestrian

The recommendations development process for bicycle and pedestrian projects detailed in Chapter 5 resulted in a series of over 800 recommended projects. From those, 63 of the projects were designated as high priority projects. Following the process outlined in other modes, these high priority projects were taken through the financial constraint exercise and checked against SCDOT standards for guideshare eligibility.

Horizon Years	Facility	Type	Road Name	Guideshare Points	Prioritization Rank	Project Cost	"Anticipated Year of Expenditure Costs"	Balance
2024-2030	Augusta Street Area Bike Network	Bike Lane, Bike Route, Shared Lane Markings	E McBee Ave, McDaniel Ave, Meyers Dr, Long Hill St, W Faris Rd, Waccamaw Dr, Rice St, Pendleton St, Blythe Dr	7	1	\$361,379	\$444,500	\$12,210,100
	West Greenville Protected Bike Lane	Protected Bike Lane	Pendleton St	7	2	\$795,774	\$978,700	\$11,231,400
	City of Easley Brushy Creek Greenway	Shared Use Path	Pearson Rd, Pope Field Rd, Brushy Creek Corridor	7	3	\$2,516,492	\$3,095,000	\$8,136,400
	Rutherford Road Bike Lane	Bike Lane	Rutherford Rd, Rutherford St	7	4	\$375,584	\$461,900	\$7,674,500
	Washington Street Protected Bike Lane	Protected Bike Lane	Washington St	7	5	\$1,406,927	\$1,730,300	\$5,944,200
	Clemson-Central Bike Connector	Bike Lane	SC 93	7	6	\$271,264	\$333,600	\$5,610,600
	Clemson-Pendleton Green Crescent Connector	Shared Use Path, Bike Lane	S Mechanic St, Eighteenmile Creek Corridor	7	7	\$964,510	\$1,186,200	\$4,424,400
	Central-SWU Green Crescent Connector	Shared Use Path	SC 93, Wesleyan Dr, Mill Ave, Clayton St	7	8	\$1,290,751	\$1,587,500	\$2,836,900
2031-2040	Clemson-Central Green Crescent Connector	Shared Use Path	SC 93 Corridor	7	9	\$2,676,913	\$4,557,300	\$13,520,700
	Mauldin Golden Strip Greenway	Shared Use Path	US 276 Corridor, SC 417 Corridor	7	10	\$3,308,753	\$5,632,900	\$7,887,800
	Simpsonville Golden Strip Greenway	Shared Use Path	SC 14 Corridor	7	11	\$2,008,699	\$3,419,700	\$4,468,100
	Downtown Pickens Doodle Trail Connector	Shared Use Path	SC 8 Corridor	6	12	\$476,148	\$810,600	\$3,657,500
	City of Easley Doodle Trail Extension	Shared Use Path	Fleetwood Dr Corridor	6	13	\$682,983	\$1,162,700	\$2,494,800
	Richardson Street Protected Bike Lane	Protected Bike Lane	Richardson St	6	14	\$817,314	\$1,391,400	\$1,103,400
	City of Easley School Sidewalk Connector	Sidewalk	Pope Field Rd	6	15	\$439,111	\$747,600	\$355,800