
IMPLEMENTATION AND FUNDING



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funding sources & strategies

Purpose

A major theme that has had a profound impact on transportation has been personal preference on where people work, live and play. The things that people tend to look for in their community of choice do change, but only very slowly. A considerable amount of attention is currently given to young, upwardly mobile professionals since it is this cohort of the population that is most closely associated with the media-friendly technology sector and new start-up companies. Some elements of this group's lifestyle preferences have caught on in a bigger way: living closer to work, less emphasis on housing size than on location, and access to shopping and recreational pursuits, as some examples. In fact, according to the National Association of REALTORS 2017 Survey, 53% of Americans would prefer to live in smaller homes that have easy access to amenities.

Some of these trends in transportation needs reflect favorably towards local control, since towns, cities and counties tend to direct development patterns and densities that support those elements that are the most desirable from these recent surveys. (More information on these surveys can be found here: <https://www.nar.realtor/newsroom/real-estate-story-ideas/more-homebuyers-are-looking-for-walkable-communities>)

A second major theme concerning transportation implementation is the availability, or lack thereof, of funding for major capital improvements. Nearly 70% of transportation revenues in South Carolina originate with motor fuels taxes imposed at the state and federal levels. However, more fuel-efficient vehicles and more people waiting longer to obtain their driver's license, translate into fewer dollars generated through fuel sales. The difficulties of developing new roadway capacity extend beyond financing, as federal and state environmental and community consequences are increasingly seen as barriers to traditional new location and widening projects. A federal directive has responded to these fiscal pressures in part by moving to a performance-based priority system. In addition, South Carolina is fortunate to have county-level transportation construction and maintenance functions which provide the ability of local sources (i.e., Sales Tax) to cover some of the gaps created by declining federal revenues. Private and public road tolling, once thought to be a non-starter in South Carolina, have now appeared in its metropolitan markets with more on the way or being reviewed.

Funding Sources & Strategies

In today's financial environment it has become apparent that traditional transportation funding sources, like State DOT revenues, alone will not sufficiently fund all transportation needs for a region. That said, the tri-county region of BCDCOG has strived to offset the need for transportation improvements by supplementing state and federal resources through implementation of Transportation Sales Tax and Impact Fees. CHATS and other local decision-makers within the region must consider alternative funding sources if there is a local desire to expand its investment in transportation. Alternative funding measures being considered locally as well as applied around the state and nation include the following.

The FAST Act

The Fixing America's Surface Transportation Act (FAST) was passed in 2015 and identified a five-year policy and funding program at the federal level. FHWA, who oversees the FAST ACT, continues to implement the law by distributing funding to state and local governments as well as MPOs for project development. FAST requires or affords additional opportunities for collaboration between public transportation providers between public transportation providers, MPOs, and various public departments that may be responsible for resiliency of the transportation network due to storms, between MPOs and the state in designating freight corridors, and the creation of Congestion Management Plans. The FAST Act encourages other actions by the MPO such as working with Amtrak and private rail companies on road/railway crossing safety measures and closures. The next two fiscal years include over \$700 million in apportioned funding to the MPOs throughout the U.S. CHATS' leadership should continue working with FHWA to distribute funding to specific projects outlined in this document.

<https://www.fhwa.dot.gov/fastact/>

BUILD Transportation Grants

The Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant program replaces the preceding Transportation Investment Generating Economic Recovery (TIGER) grant program. BUILD appropriates \$1.5 billion to selected participants for projects that include safety, economic competitiveness, quality of life, environmental protection, state of good repair, innovation and partnership. In 2014, the Wando Welch Terminal Rehabilitation project was completed using TIGER funds awarded to the South Carolina Ports Authority (\$10 million) and in 2009 funding was used to complete roadway and stormwater improvements along US 17, Septima Clark Parkway (\$10 million). Dorchester County was also a recipient of TIGER funds in 2017 to widen U.S. 78 (\$13 million).

<https://www.transportation.gov/BUILDgrants>

SCDOT Infrastructure Maintenance Trust Fund

In 2017, the South Carolina State Legislature passed a highway bill (Act 40) that increased the state's gasoline tax and imposed fee increases on taxpayers when they lease, buy, register, obtain license tags for, and pay property taxes on items that were not previously taxed. Act 40 mandated the revenues from these higher taxes and fees be placed in a special account called the "Infrastructure Maintenance Trust Fund" and used only to repair, maintain, and improve South Carolina's existing highway system. Coordination with SCDOT officials and CHATS staff should continue to attempt to get qualified regional projects included for funding from this source. SCDOT's main focus for projects include: rural road safety, paving, bridge replacements, and interstate widening. Committed funds from Act 40 as of June 30, 2018 for the study counties included: Berkeley - \$8.1 million, Charleston - \$10 million, Dorchester - \$6.4 million.

"C" Program

South Carolina Department of Transportation and Counties across the state partner together to improve transportation infrastructure. "C" funds come from an allocation of the state gas tax. Projects approved for completion with this funding include maintenance, repairs and improvements

to the state and country highway systems. In fiscal year 2018-2019, \$86 million were apportioned to S.C. counties. The following amounts were awarded to the project study counties from the “C” Program: Berkeley - \$3.1 million, Charleston - \$3.4 million and Dorchester - \$1.8 million.

<https://www.scdot.org/projects/c-program.aspx>

SC Transportation Alternative Program

The Transportation Alternative Program (TAP) is a federally funded grant for State and MPO agencies to use to build pedestrian facilities, bicycle facilities and streetscaping projects. The Federal government will pay for up to 80% of eligible project costs for a TAP project. A local match is required to pay for 20% or more of the remaining project costs. For 2018, CHATS anticipated funding allocation is \$881,427. Looking forward, it is anticipated that the CHATS region will receive approximately \$899,000 annually (on average) for non-motorized transportation projects. This would generate TAP funding totaling \$17.2 million over the next twenty years.

Aesthetic Enhancement Funding

Streetscape and other aesthetic improvements often have a large impact in creating a more inviting and pleasing community. SCDOT has two formal programs to help provide an opportunity for community involvement in the transportation system. The Adopt-A-Highway program allows individuals or groups to help maintain a part of the highway system. SCDOT's Adopt-An-Interchange program actually provides 80% funding toward landscaping and beautification, with a 20% local match.

Bicycle and Pedestrian Funding

Bicycle and pedestrian projects are often eligible for their own funding sources. There are several grant programs and resources that exist throughout the nation including Active Living by Design (<https://healthyplacesbydesign.org/>), Highway Safety Improvement program (<https://safety.fhwa.dot.gov/hsip/>), South Carolina Parks, Recreation and Trails grants (<https://www.scprrt.com/recreation/recreation-grant-programs/recreational-trails-program>), Recreation Land Trust grants (<https://www.landtrustalliance.org/public-funding>), private donations, and Rails to Trails Conservancy (<https://www.railstotrails.org/>). These and other local programs provide communities with a small grants

to study bicycle, pedestrian, or other healthy living initiatives as well as build bicycle and pedestrian infrastructure.

Safe Routes to School

Funded by Moving Ahead for Progress in the 21st Century Act, Safe Routes to School (SRTS) (https://www.fhwa.dot.gov/environment/safe_routes_to_school/) provides funding for individual schools to create a safer walking and biking environment for their students. South Carolina has a yearly application program for which any school, school district, municipality or other governmental body, or non-profit association may apply. Projects such as sidewalks and intersection improvements may qualify for SRTS funding. Coordination with the SRTS in South Carolina (<http://www.scsaferoutes.org/>) should be maintained to improve safety around area schools.

Transportation Bonds

Transportation bonds have been instrumental in the strategic implementation of local roadways and non-motorized travel throughout South Carolina. The rate of interest charged against bonds is dependent on the financial stability and rating of the community. Hence, improved tax revenues from quality development helps create a “virtuous cycle” between increasing private sector revenues and supportive public investments in infrastructure. Financing of transportation bonds can happen in several ways: 1. General obligation bonds, 2. Revenue bonds, and 3. Private - public partnerships. Currently the CHATS planning area Counties utilize revenue bonds to assist in financing transportation projects.

Transportation Sales Tax

Counties and municipalities across South Carolina have successfully implemented sales taxes to generate additional funding for transportation projects. Sales tax revenues can be used to implement Complete Streets and streetscape type projects, safety improvements, or access management priorities. To successfully enact a transportation sales tax, the public must vote in favor of the tax through the election process. As a result, it is vitally important that a public education process be initiated to explain the benefits that would result from the tax. It is important to note that at this time, South Carolina state law supports

the use of a local or county transportation sales tax for these types of projects.

Dorchester County Transportation Sales Tax

In 2004, residents of Dorchester County voted for a one-cent increase in local sales tax to provide funding for multiple transportation projects. As a result of this action, the Dorchester County Transportation Authority (DCTA) was created to manage the funding and projects. Projects completed with this funding include new roadway construction, existing roadway widening, dirt road pavings totaling 260 miles, intersection improvements, street resurfacing, and sidewalk repairs. The county currently has committed about \$4 million to \$5 million in area projects.

<https://www.dorchestercountysc.gov/our-county/boards-commissions/dcta-transportation-authority>

Berkeley County Transportation Sales Tax

Berkeley County initially voted for and approved a one cent transportation sales tax increase in 2008 to fund local transportation infrastructure improvements. County residents have since re-approved the measure in 2014. Projects completed with the tax funding include bridge replacements, intersection improvements, capacity, and re-surfacing projects.

<https://www.buildingberkeley.org/>

Charleston County Transportation Sales Tax

Charleston County currently has a one-cent transportation sales tax in place to finance local transportation projects. The county's residents initially passed a half-cent sales tax referendum in 2004 which is anticipated to collect \$1.3 billion to fund various roadway, greenbelt and transit projects. In 2016 county residents voted to "complete the penny" by approving an additional half-cent transportation sales tax which is projected to finance \$210 million in transportation related projects, including mass transit.

<https://roads.charlestoncounty.org/index.php?page=program-history>

Impact Fees

Developer impact fees are currently being used by a number of communities across South Carolina. The use of impact fees requires special authorization by the South Carolina General Assembly. The fees provide a funding option for communities looking to finance collector streets and enhance existing infrastructure. These funds are most commonly used for water and wastewater system connections, police and fire protection services, and school systems. However, these funds can pay for a portion of the impacts of increased traffic on existing roads as well as bike/ped improvements. Impact fees place the costs of new development directly on developers and indirectly on those who buy property in the new developments. Impact fees free other taxpayers from the obligation to fund costly new public services that do not directly benefit them. Currently, Dorchester County and Charleston County utilize transportation impact fees to assist in funding projects; Berkeley County eliminated its impact fees. The fee collected on new developments can potentially fund a portion of a project. Impact fees can be used with transportation sales tax dollars within three years of being collected.

Developer Contributions

The development community is well aware of the cost of doing business. In fact, developers will not implement a project unless there is a healthy return on investment. Unfortunately, the true impact of development rarely is covered by their contribution. Developer contribution in some cases require the developer to make improvements to the impacted roadway that would result in a lower overall cost than local or state agency completing the project. Projects that a developer would be mandated to complete is on a much smaller scale than a those a local or state agency would complete. Developer contributions can also apply to bicycle and pedestrian infrastructure, including the construction of sidewalks, greenways and connections to existing facilities. To accomplish this goal, it will take a cooperative effort between local planning staff, SCDOT planning staff, and the development community.

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prioritizing projects

Prioritizing Projects

The CHATS project prioritization process was an extensive and collaborative process that brought together priorities of regional decision-makers with preferences by the general public. Projects were evaluated and ultimately prioritized across 12 project criteria, based on State Act 114, in accordance with SCDOT policy. Each criteria was assigned a “weight” based on its relative importance, designated by the CHATS Study Team and Policy Committee members. The methodology used in determining the ranking was approved by the SCDOT Commission. The project criteria and associated “weighting” (percent priority) are listed as follows:

- Congestion Relief (20%)
- Supports Transit (10%)
- Improves Freight Mobility (10%)
- Improves Existing Infrastructure (10%)
- Addresses Safety (8%)
- Evacuation Route (4%)
- Financial Viability (10%)
- Environmental Impact Mitigation (8%)
- Supports Bicycling (3%)
- Supports Walking (3%)
- Supports Land Use (7%)
- Supports Economic Development (7%)

For a complete description of the project criteria and the evaluation methodology used during the prioritizing process as well as final scoring for each project, see the Appendix.

Project Rankings

The 2040 LRTP evaluated 140 vision projects grouped into four major project types or categories, Capacity Improvement projects (existing and new roadway facilities) (64), Corridor Studies (7), Access Management projects (25) and Intersection projects (44). Projects were scored and ranked against each other, regardless of category, based on their overall weighted score. The following Table 6.1 presents the scoring and ranking results for all projects combined. Tables presenting the overall project ranking for all projects grouped by category follow thereafter.

- **Table 6-1 - Ranked Vision Projects**
- **Table 6-2 - Ranked Capacity Improvement Projects**
- **Table 6-3 - Ranked Access Management Projects**
- **Table 6-4 - Ranked Corridor Study Projects**
- **Table 6-5 - Ranked Intersection Projects**

Table 6-1: Ranked Vision Projects

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
1	1	Montague Avenue	Capacity Improvement	International Boulevard to I-26 Interchange	0.50	\$10,000
2	2	Rivers Avenue & Greenridge Road	Intersection Improvement	-	-	\$1,500
3	3	North Rhett Avenue	Capacity Improvement	I-526 Interchange to Yeamans Hall Road	1.93	\$42,185
4	4	US-17A / North Main Street	Corridor Study	I-26 Interchange to Berlin Myers Parkway	0.77	\$8,705
5	5	US-17 & Long Point Road	Intersection Improvement	-	-	\$3,000
6	6	Dorchester Road & Ladson Road	Intersection Improvement	-	-	\$2,000
7	7	US-17 & Anna Knapp Blvd.	Intersection Improvement	-	-	\$1,500
8	8	South Main Street	Access Management	Carolina Street to US-78	1.67	\$2,512
9	9	Jedburg Road	Capacity Improvement	Wildgame Road to Dropoff Drive	0.91	\$7,863
10	9	Jedburg Road	Capacity Improvement	Old Dairy Road to US-78	2.34	\$20,544
11	10	Remount Road	Capacity Improvement	Yeamans Hall Road to Rivers Avenue	0.35	\$8,427
12	11	College Park Road	Capacity Improvement	Crowfield Boulevard to I-26 Interchange	1.34	\$14,532
13	12	US-17A & US-176	Intersection Improvement	-	-	\$5,000
14	13	Clements Ferry Road	Corridor Study	I-526 Interchange to St. Thomas Island Drive	0.39	\$2,786
15	14	Long Point Road	Access Management	I-526 to Whipple Road	0.97	\$1,453
16	15	Ladson Road & Lincolnville Road	Intersection Improvement	-	-	\$2,000

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Table 6-1: Ranked Vision Projects (cont.)

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
17	16	US-52 & Liberty Hall Road	Intersection Improvement	-	-	\$2,000
18	17	US-52	Access Management	Button Hall Avenue to Red Bank Road	0.55	\$823
19	18	Ashley Phosphate Road	Corridor Study	Cross County Road to Rivers Avenue	2.01	\$14,139
20	19	US-78 & Ladson Road / Ancrum Road	Intersection Improvement	-	-	\$4,000
21	20	US-17 & Shelmore Blvd.	Intersection Improvement	-	-	\$1,500
22	21	US-176	Access Management	Old Mt. Holly Road to N. Goose Creek Blvd.	2.86	\$4,291
23	22	US-17 & Wappoo Road	Intersection Improvement	-	-	\$1,500
24	23	Folly Road	Capacity Improvement	SC-30 Off-Ramp to Highland Avenue	0.64	\$10,000
25	24	Cross County Road	Capacity Improvement	Dorchester Road to Hill Park Drive	1.47	\$12,097
26	25	SC-41 & US-17 Intersection	Capacity Improvement	-	-	\$43,000
27	26	Dorchester Road & Old Trolley Road	Intersection Improvement	-	-	\$5,000
28	27	US-17 / West Oak Forest Drive / Farmfield Avenue	Intersection Improvement	-	-	\$1,500
29	28	US-17 / Ravenel Bridge Southbound Approach	Capacity Improvement	Magrath Darby Blvd. to Wingo Way On-Ramp	0.27	\$3,034
30	29	US-17 & Porcher's Bluff Road	Intersection Improvement	-	-	\$4,000
31	30	Rivers Avenue & Remount Road	Intersection Improvement	-	-	\$5,000
32	31	US-17 / Ravenel Bridge Northbound Off-Ramp	Capacity Improvement	US-17/Coleman Split to Sessions Way	0.55	\$3,775
33	32	US-52 & Cypress Gardens Road	Intersection Improvement	-	-	\$1,000
34	33	Remount Road & Rhett Avenue	Intersection Improvement	-	-	\$4,000
35	34	Savannah Highway	Access Management	Wesley Drive to I-526	3.49	\$5,239
36	35	North Main Street	Access Management	5th Street to Berlin Myers Parkway	0.81	\$1,212
37	36	Cross County Road	Capacity Improvement	Hill Park Drive to Ashley Phosphate Road	0.68	\$6,628

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Table 6-1: Ranked Vision Projects (cont.)

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
38	37	College Park Road & Treeland Drive	Intersection Improvement	-	-	\$4,000
39	38	US-78 / University Blvd. & Medical Plaza Drive	Intersection Improvement	-	-	\$5,000
40	39	Wildgame Road	Capacity Improvement	Jedburg Road to Sheep Island Road	2.78	\$21,922
41	40	US-78 / 5th Street	Corridor Study	W. Richardson Avenue to Berlin Myers Parkway	2.18	\$25,964
42	41	Dorchester Road & West Hill Boulevard	Intersection Improvement	-	-	\$2,000
43	42	US-17	Capacity Improvement	Northbound Mainline at Bowman Road Interchange	0.51	\$38,926
44	43	Daniel Island Drive	Access Management	Barfield Street to Fairchild Street	0.67	\$999
45	44	Sam Rittenberg & Old Towne Road	Intersection Improvement	-	-	\$4,000
46	45	Parsons Road	Capacity Improvement	W. Richardson Avenue to Central Avenue	1.17	\$15,148
47	46	US-17A & Central Avenue	Intersection Improvement	-	-	\$2,000
48	47	Cosgrove Avenue & Azalea Drive	Intersection Improvement	-	-	\$2,000
49	48	Michaux Parkway	Capacity Improvement	International Boulevard to Dorchester Road	0.97	\$7,803
50	49	Rivers Avenue / US-52	Access Management	Camelot Drive to Greenridge Road	2.62	\$3,930
51	50	St. Andrews Blvd. & 5th Avenue	Intersection Improvement	-	-	\$2,000
52	51	Coleman Blvd. & Patriots Point Blvd.	Intersection Improvement	-	-	\$5,000
53	52	Folly Road & Wesley Drive	Intersection Improvement	-	-	\$5,000
54	53	Boone Hill Road	Capacity Improvement	Luden Drive to Greenwave Boulevard	0.46	\$2,808
55	54	Ashley River Road	Access Management	Saint Andrews Blvd. to Paul Cantrell Blvd.	2.81	\$4,211
56	55	Morrison Drive / Cooper Street / Lee Street	Intersection Improvement	-	-	\$1,000
57	56	SC-61 / St. Andrews Blvd.	Access Management	Wesley Drive to Old Towne Road	1.60	\$16,161
58	57	Mall Drive Extension	Capacity Improvement	Centre Pointe Drive to Mall Drive	0.23	\$10,265

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Table 6-1: Ranked Vision Projects (cont.)

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
59	58	Mall Drive	Capacity Improvement	City Hall Driveway to Mall Drive Extension	0.06	\$1,255
60	59	Maybank Highway & River Road	Intersection Improvement	-	-	\$2,000
61	60	US-52	Access Management	N. Live Oak Drive to Gaillard Road	4.94	\$7,408
62	61	US-17 & Houston Northcutt Blvd. Intersection	Capacity Improvement	-	1.63	\$52,538
63	62	Mallard Road	Capacity Improvement	Orangeburg Road to US-78	1.17	\$10,269
64	63	Mathis Ferry Road	Access Management	US-17 to I-526	2.93	\$4,390
65	64	Old Trolley Road	Access Management	Dorchester Road to Bacons Bridge Road	3.48	\$5,224
66	65	US-52	Access Management	Montague Plantation Road to Oakley Road	6.45	\$9,673
67	66	US-17A & Tupperway Drive	Intersection Improvement	-	-	\$5,000
68	67	Sam Rittenberg Blvd.	Access Management	Old Towne Road to Northbridge Park	1.06	\$1,585
69	68	US-17A	Capacity Improvement	Berlin Myers Parkway Extension to SC-61	3.64	\$20,000
70	69	Folly Road	Capacity Improvement	Maybank Highway to Johnson Road	0.76	\$14,246
71	70	SC-61 / Ashley River Road	Access Management	Raoul Wallenberg Blvd. to Bees Ferry Road	3.18	\$19,883
72	71	Ashley Phosphate Road Extension	Capacity Improvement	Rivers Avenue to Railroad Avenue Extension	0.42	\$8,055
73	72	Ben Sawyer Blvd. & Rifle Range Rd.	Intersection Improvement	-	-	\$1,500
74	73	Old Mount Holly Road	Capacity Improvement	US-176 to US-52	1.61	\$15,068
75	74	East Bay Street	Access Management	Chapel Street to Hasell Street	1.42	\$2,133
76	75	Harbor View Road	Capacity Improvement	Harbor View Circle to North Shore Drive	0.70	\$54,524
77	76	Frontage Road	Capacity Improvement	Marymeade Drive to Frank Jones Road	4.42	\$21,545
78	77	All-American Boulevard Extension	Capacity Improvement	Silent Harbor Court to Lexington Drive	2.27	\$30,000
79	78	Rifle Range Road & Bowman Road	Intersection Improvement	-	-	\$3,000
80	79	US-17A / Walterboro Road	Capacity Improvement	SC-61 to Sandpit Drive	2.29	\$24,199

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Table 6-1: Ranked Vision Projects (cont.)

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
81	80	Miles Jamison Road	Capacity Improvement	Old Trolley Road to Ladson Road	3.31	\$25,907
82	81	Maybank Highway	Capacity Improvement	"Bohicket Road to River Road	2.99	\$23,763
83	82	Old Towne Road	Access Management	Sam Rittenburg Blvd. to Gunn Avenue	1.90	\$2,850
84	83	St. Thomas Island Drive	Capacity Improvement	Clements Ferry Road to Harvest Time Place	0.22	\$3,060
85	84	Hagood Avenue Extension	Capacity Improvement	Spring Street to Cannon Street	0.12	\$1,851
86	85	Central Avenue	Capacity Improvement	Orangeburg Road to Parsons Road	2.08	\$24,681
87	86	Orangeburg Road & E. Butternut Road / Mallard Road	Intersection Improvement	-	-	\$4,000
88	87	Dorchester Road	Capacity Improvement	Orangeburg Road to Charleston County Line	7.90	\$113,870
89	88	Old Fort Drive Extension	Capacity Improvement	Wallace Ackerman Drive to Palmetto Commerce Parkway	0.67	\$3,463
90	89	US-78 / 5th Street	Corridor Study	Berlin Myers Parkway to County Line (End at Benchmark Drive)	3.84	\$60,646
91	90	US-17A / Live Oak Road	Access Management	St. James Avenue to E. Main Street	10.59	\$15,887
92	91	Old Orangeburg Road	Capacity Improvement	US-78 to Mallard Road	2.17	\$15,898
93	92	Bell Wright Road Extension	Capacity Improvement	Bell Wright Road to Frontage Road	0.24	\$368
94	93	Nexton Parkway	Capacity Improvement	Nexton Elementary School to US-176	4.86	\$17,000
95	94	Wescott Boulevard	Capacity Improvement	Patriot Boulevard to Ballantine Drive	0.74	\$5,765
96	95	Berlin Myers Pkwy. North Extension	Capacity Improvement	N. Main Street to N. Maple Street	1.45	\$19,000
97	96	College Park Road Extension	Capacity Improvement	College Park Road to Nexton Parkway	2.64	\$21,672
98	97	Rifle Range Road & Venning Road	Intersection Improvement	-	-	\$3,000
99	98	Black Tom Road	Capacity Improvement	US-176 to US-17A	5.90	\$35,182
100	99	SC-61 & Shadowmoss Pkwy.	Intersection Improvement	-	-	\$1,500
101	100	Folly Beach Road	Capacity Improvement	E. Indian Avenue to Little Oak Island Drive	0.46	\$16,601
102	101	IOP Connector & Rifle Range Road	Intersection Improvement	-	-	\$2,000

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Table 6-1: Ranked Vision Projects (cont.)

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
103	102	Patriot Boulevard	Capacity Improvement	Palmetto Commerce Parkway to Club Course Drive	3.21	\$13,957
104	103	Rutledge Avenue	Access Management	Peachtree Street to Sumter Street	0.97	\$1,453
105	104	Sandlapper Pkwy. Extension	Capacity Improvement	Palmetto Commerce Parkway to Ashley Phosphate Road	1.79	\$26,406
106	105	Folly Road	Access Management	Tides End Road to Brantley Drive	4.58	\$6,863
107	106	North Gum Street	Capacity Improvement	E. 9th North Street to Marymeade Drive	0.21	\$1,010
108	107	Miles Jamison Road & Gahagan Road	Intersection Improvement	-	-	\$4,000
109	108	Maybank Highway & Main Road	Intersection Improvement	-	-	\$4,000
110	109	Delemar Highway / SC-165	Capacity Improvement	Ashley Ridge H. School to Glenn McConnell Parkway Extension	2.17	\$18,677
111	110	Beech Hill Road	Capacity Improvement	US-17A to Delemar Highway	4.57	\$53,649
112	111	Summers Corner Connector	Capacity Improvement	Beech Hill Road to Dorchester Road	2.18	\$21,684
113	112	US-176 & Black Tom Road	Intersection Improvement	-	-	\$5,000
114	113	Broad Street	Access Management	Lockwood Drive to East Bay Street	1.18	\$1,770
115	114	Betsy Kerrison Pkwy. / Bohicket Road & River Road	Intersection Improvement	-	-	\$2,000
116	115	Windsor Hill Parkway	Capacity Improvement	Sandlapper Parkway Extn. to Dorchester Road	3.24	\$40,152
117	116	Folly Beach Road	Capacity Improvement	Little Oak Island Drive to Bowens Island Road	1.20	\$27,926
118	117	Cane Bay Boulevard	Capacity Improvement	Day Break Boulevard to Black Tom Road	2.35	\$9,278
119	118	Hagood Avenue	Access Management	Moultrie Street to Fishburne Street	0.64	\$953
120	119	SC-61	Access Management	Charleston County Line to Bacons Bridge Road	4.35	\$19,193
121	120	Maybank Highway & Riverland Drive	Intersection Improvement	-	-	\$5,000
122	121	Wright Road	Capacity Improvement	Old Beech Hill Road to SC-61	2.92	\$17,496
123	122	All-American Boulevard Extension	Capacity Improvement	Winnowing Way to George Browder Road	0.62	\$8,358

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Table 6-1: Ranked Vision Projects (cont.)

Project ID	Rank	Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)
124	123	Coleman Blvd. & Chuck Dawley Blvd.	Intersection Improvement	-	-	\$6,000
125	124	Memorial Drive Extension	Capacity Improvement	Memorial Drive to US-17/Savannah Highway	0.60	\$3,975
126	125	Old US-52 & Gaillard Road	Intersection Improvement	-	-	\$2,500
127	126	Michaux Pkwy. Extension	Capacity Improvement	Dorchester Road to Ashley River Road	1.91	\$47,021
128	127	Glenn McConnell Pkwy. Extension (Phase II)	Capacity Improvement	US-17A to Old Beech Hill Road	2.61	\$19,870
129	128	Ladson Road	Corridor Study	US-78 to Dorchester Road	4.67	\$52,400
130	129	SC-165 & County Line Road	Intersection Improvement	-	-	\$4,000
131	130	Delemar Highway / SC-165	Capacity Improvement	Glenn McConnell Parkway Extn. to Clubhouse Road	3.51	\$27,336
132	131	Glenn McConnell Pkwy. Extension (Phase I)	Capacity Improvement	Bees Ferry Road to Charleston County Line	6.99	\$300,000
133	132	Henry Brown Boulevard Extension	Capacity Improvement	Henry Brown Boulevard (Brick Park) to US-52	4.40	\$24,107
134	133	Glenn McConnell Pkwy. Extension (Phase I)	Capacity Improvement	Charleston County Line to US-17A	11.04	\$470,000
135	134	Folly Road & Sol Legare Road	Intersection Improvement	-	-	\$4,000
136	135	West Bridge Connector Road	Capacity Improvement	SC-61 to Glenn McConnell Parkway Extension	1.54	\$5,558
137	136	Wescott Blvd. & Patriot Blvd.	Intersection Improvement	-	-	\$4,000
138	137	Sea Island Parkway/ Greenway	Capacity Improvement	River Road to Betsy Kerrison Parkway	9.39	\$103,442
139	138	SC-61 / Ashley River Road	Access Management	Bees Ferry Road to Charleston County Line	7.00	\$53,427
140	139	Old US-52 / Old Fort Road	Corridor Study	US-52 to Cypress Gardens Road	9.64	\$62,796
Grand Total						\$2,658,598

Table 6-2: Ranked Capacity Improvement Projects

Rank	Roadway Facility	Project Limits	Length (Miles)	Cost (1000s)
1	Montague Avenue	International Boulevard to I-26 Interchange	0.5	\$10,000
3	North Rhett Avenue	I-526 Interchange to Yeamans Hall Road	1.93	\$42,185
9	Jedburg Road	Wildgame Road to Dropoff Drive	0.91	\$7,863
10	Jedburg Road	Old Dairy Road to US-78	2.34	\$20,543
11	Remount Road	Yeamans Hall Road to Rivers Avenue	0.35	\$8,427
12	College Park Road	Crowfield Boulevard to I-26 Interchange	1.34	\$14,532
24	Folly Road	SC-30 Off-Ramp to Highland Avenue	0.64	\$10,000
25	Cross County Road	Dorchester Road to Hill Park Drive	1.47	\$12,097
26	SC-41 & US-17 Intersection	-	-	\$43,000
29	US-17 / Ravenel Bridge Southbound Approach	Magrath Darby Blvd. to Wingo Way On-Ramp	0.27	\$3,034
32	US-17 / Ravenel Bridge Northbound Off-Ramp	US-17/Coleman Split to Sessions Way	0.55	\$3,775
37	Cross County Road	Hill Park Drive to Ashley Phosphate Road	0.68	\$6,628
40	Wildgame Road	Jedburg Road to Sheep Island Road	2.78	\$21,921
43	US-17	Northbound Mainline at Bowman Road Interchange	0.51	\$38,926
46	Parsons Road	W. Richardson Avenue to Central Avenue	1.17	\$15,147
49	Michaux Parkway	International Boulevard to Dorchester Road	0.97	\$7,803
54	Boone Hill Road	Luden Drive to Greenwave Boulevard	0.46	\$2,808
58	Mall Drive Extension	Centre Pointe Drive to Mall Drive	0.23	\$10,265
59	Mall Drive	City Hall Driveway to Mall Drive Extension	0.06	\$1,255
62	US-17 & Houston Northcutt Blvd. Intersection	-	1.63	\$52,538
63	Mallard Road	Orangeburg Road to US-78	1.17	\$10,269
69	US-17A	Berlin Myers Parkway Extension to SC-61	3.64	\$20,000
70	Folly Road	Maybank Highway to Johnson Road	0.76	\$14,246
72	Ashley Phosphate Road Extension	Rivers Avenue to Railroad Avenue Extension	0.42	\$8,055
74	Old Mount Holly Road	US-176 to US-52	1.61	\$15,068
76	Harbor View Road	Harbor View Circle to North Shore Drive	0.70	\$54,524

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Table 6-2: Ranked Capacity Improvement Projects (cont.)

Rank	Roadway Facility	Project Limits	Length (Miles)	Cost (1000s)
77	Frontage Road	Marymeade Drive to Frank Jones Road	4.42	\$21,545
80	US-17A / Walterboro Road	SC-61 to Sandpit Drive	2.29	\$24,199
81	Miles Jamison Road	Old Trolley Road to Ladson Road	3.31	\$25,907
82	Maybank Highway	Bohicket Road to River Road	2.99	\$23,763
84	St. Thomas Island Drive	Clements Ferry Road to Harvest Time Place	0.22	\$3,060
86	Central Avenue	Orangeburg Road to Parsons Road	2.08	\$24,681
88	Dorchester Road	Orangeburg Road to Charleston County Line	7.90	\$113,870
89	Old Fort Drive Extension	Wallace Ackerman Drive to Palmetto Commerce Parkway	0.67	\$3,463
92	Old Orangeburg Road	US-78 to Mallard Road	2.17	\$15,898
93	Bell Wright Road Extension	Bell Wright Road to Frontage Road	0.24	\$368
94	Nexton Parkway	Nexton Elementary School to US-176	4.86	\$17,000
95	Wescott Boulevard	Patriot Boulevard to Ballantine Drive	0.74	\$5,765
96	Berlin Myers Pkwy. North Extension	N. Main Street to N. Maple Street	1.45	\$19,000
97	College Park Road Extension	College Park Road to Nexton Parkway	2.64	\$21,672
99	Black Tom Road	US-176 to US-17A	5.90	\$35,182
101	Folly Beach Road	E. Indian Avenue to Little Oak Island Drive	0.46	\$16,601
103	Patriot Boulevard	Palmetto Commerce Parkway to Club Course Drive	3.21	\$13,957
105	Sandlapper Parkway Extension	Palmetto Commerce Parkway to Ashley Phosphate Road	1.79	\$26,406
107	North Gum Street	E. 9th North Street to Marymeade Drive	0.21	\$1,010
110	Delemar Highway / SC-165	Ashley Ridge H. School to Glenn McConnell Parkway Extension	2.17	\$18,677
111	Beech Hill Road	US-17A to Delemar Highway	4.57	\$53,649
112	Summers Corner Connector	Beech Hill Road to Dorchester Road	2.18	\$21,684
116	Windsor Hill Parkway	Sandlapper Parkway Extn. to Dorchester Road	3.24	\$40,152
117	Folly Beach Road	Little Oak Island Drive to Bowens Island Road	1.20	\$27,926
118	Cane Bay Boulevard	Day Break Boulevard to Black Tom Road	2.35	\$9,278
122	Wright Road	Old Beech Hill Road to SC-61	2.92	\$17,496

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Table 6-2: Ranked Capacity Improvement Projects (cont.)

Rank	Roadway Facility	Project Limits	Length (Miles)	Cost (1000s)
123	All-American Boulevard Extension	Winnowing Way to George Browder Road	0.62	\$8,358
125	Memorial Drive Extension	Memorial Drive to US-17/Savannah Highway	0.60	\$3,975
127	Michaux Parkway Extension	Dorchester Road to Ashley River Road	1.91	\$47,021
128	Glenn McConnell Parkway Extension (Phase II)	US-17A to Old Beech Hill Road	2.61	\$19,870
131	Delemar Highway / SC-165	Glenn McConnell Parkway Extn. to Clubhouse Road	3.51	\$27,336
132	Glenn McConnell Parkway Extension (Phase I)	Bees Ferry Road to Charleston County Line	6.99	\$300,000
133	Henry Brown Boulevard Extension	Henry Brown Boulevard (Brick Park) to US-52	4.40	\$24,107
134	Glenn McConnell Parkway Extension (Phase I)	Charleston County Line to US-17A	11.04	\$470,000
136	West Bridge Connector Road	SC-61 to Glenn McConnell Parkway Extension	1.54	\$5,558
138	Sea Island Parkway/Greenway	River Road to Betsy Kerrison Parkway	9.39	\$103,442
Grand Total				\$2,066,785

Note: Overall Ranking is shown in Table 6-1

Table 6-3: Ranked Access Management Projects

Rank	Roadway Facility	Project Limits	Length (Miles)	Cost (1000s)
8	South Main Street	Carolina Street to US-78	1.67	\$2,511
15	Long Point Road	I-526 to Whipple Road	0.97	\$1,453
18	US-52	Button Hall Avenue to Red Bank Road	0.55	\$822
22	US-176	Old Mt. Holly Road to N. Goose Creek Blvd.	2.86	\$4,290
35	Savannah Highway	Wesley Drive to I-526	3.49	\$5,238
36	North Main Street	5th Street to Berlin Myers Parkway	0.81	\$1,211
44	Daniel Island Drive	Barfield Street to Fairchild Street	0.67	\$998
50	Rivers Avenue / US-52	Camelot Drive to Greenridge Road	2.62	\$3,930
55	Ashley River Road	Saint Andrews Blvd. to Paul Cantrell Blvd.	2.81	\$4,210
57	SC-61 / St. Andrews Boulevard	Wesley Drive to Old Towne Road	1.6	\$16,161

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Table 6-3: Ranked Access Management Projects (cont.)

Rank	Roadway Facility	Project Limits	Length (Miles)	Cost (1000s)
61	US-52	N. Live Oak Drive to Gaillard Road	4.94	\$7,408
64	Mathis Ferry Road	US-17 to I-526	2.93	\$4,390
65	Old Trolley Road	Dorchester Road to Bacons Bridge Road	3.48	\$5,223
66	US-52	Montague Plantation Road to Oakley Road	6.45	\$9,672
68	Sam Rittenberg Blvd.	Old Towne Road to Northbridge Park	1.06	\$1,585
71	SC-61 / Ashley River Road	Raoul Wallenberg Blvd. to Bees Ferry Road	3.18	\$19,883
75	East Bay Street	Chapel Street to Hasell Street	1.42	\$2,133
83	Old Towne Road	Sam Rittenburg Blvd. to Gunn Avenue	1.90	\$2,850
91	US-17A / Live Oak Road	St. James Avenue to E. Main Street	10.59	\$15,887
104	Rutledge Avenue	Peachtree Street to Sumter Street	0.97	\$1,453
106	Folly Road	Tides End Road to Brantley Drive	4.58	\$6,863
114	Broad Street	Lockwood Drive to East Bay Street	1.18	\$1,770
119	Hagood Avenue	Moultrie Street to Fishburne Street	0.64	\$953
120	SC-61	Charleston County Line to Bacons Bridge Road	4.35	\$19,193
139	SC-61 / Ashley River Road	Bees Ferry Road to Charleston County Line	7.00	\$53,427
Grand Total				\$193,514

Table 6-4: Ranked Corridor Study Projects

4	US-17A / North Main Street	I-26 Interchange to Berlin Myers Parkway	0.77	\$8,705
14	Clements Ferry Road	I-526 Interchange to St. Thomas Island Drive	0.39	\$2785
19	Ashley Phosphate Road	Cross County Road to Rivers Avenue	2.01	\$14,138
41	US-78 / 5th Street	W. Richardson Avenue to Berlin Myers Parkway	2.18	\$25,964
90	US-78 / 5th Street	Berlin Myers Parkway to County Line (End at Benchmark Drive)	3.84	\$60,645
129	Ladson Road	US-78 to Dorchester Road	4.67	\$52,400
140	Old US-52 / Old Fort Road	US-52 to Cypress Gardens Road	9.64	\$62,796
Grand Total				\$227,433

Note: Overall Ranking is shown in Table 6.1.

Table 6-5: Ranked Intersection Projects

Rank	Intersection	Cost (1000s)
2	Rivers Avenue & Greenridge Road	\$1,500
5	US-17 & Long Point Road	\$3,000
6	Dorchester Road & Ladson Road	\$2,000
7	US-17 & Anna Knapp Blvd.	\$1,500
13	US-17A & US-176	\$5,000
16	Ladson Road & Lincolnville Road	\$2,000
17	US-52 & Liberty Hall Road	\$2,000
20	US-78 & Ladson Road / Ancrum Road	\$4,000
21	US-17 & Shelmore Blvd.	\$1,500
23	US-17 & Wappoo Road	\$1,500
27	Dorchester Road & Old Trolley Road	\$5,000
28	US-17 / West Oak Forest Drive / Farmfield Avenue	\$1,500
30	US-17 & Porcher's Bluff Road	\$4,000
31	Rivers Avenue & Remount Road	\$5,000
33	US-52 & Cypress Gardens Road	\$1,000
34	Remount Road & Rhett Avenue	\$4,000
38	College Park Road & Treeland Drive	\$4,000
39	US-78 / University Blvd. & Medical Plaza Drive	\$5,000
42	Dorchester Road & West Hill Boulevard	\$2,000
45	Sam Rittenberg & Old Towne Road	\$4,000
47	US-17A & Central Avenue	\$2,000
48	Cosgrove Avenue & Azalea Drive	\$2,000
51	St. Andrews Blvd. & 5th Avenue	\$2,000
52	Coleman Blvd. & Patriots Point Blvd.	\$5,000
53	Folly Road & Wesley Drive	\$5,000
56	Morrison Drive / Cooper Street / Lee Street	\$1,000
<i>Continued on next page</i>		

Table 6-5: Ranked Intersection Projects (cont.)

Rank	Intersection	Cost (1000s)
60	Maybank Highway & River Road	\$2,000
67	US-17A & Tupperway Drive	\$5,000
73	Ben Sawyer Blvd. & Rifle Range Rd.	\$1,500
79	Rifle Range Road & Bowman Road	\$3,000
87	Orangeburg Road & E. Butternut Road / Mallard Road	\$4,000
98	Rifle Range Road & Venning Road	\$3,000
100	SC-61 & Shadowmoss Pkwy.	\$1,500
102	IOP Connector & Rifle Range Road	\$2,000
108	Miles Jamison Road & Gahagan Road	\$4,000
109	Maybank Highway & Main Road	\$4,000
113	US-176 & Black Tom Road	\$5,000
115	Betsy Kerrison Pkwy. / Bohicket Road & River Road	\$2,000
121	Maybank Highway & Riverland Drive	\$5,000
124	Coleman Blvd. & Chuck Dawley Blvd.	\$6,000
126	Old US-52 & Gaillard Road	\$2,500
130	SC-165 & County Line Road	\$4,000
135	Folly Road & Sol Legare Road	\$4,000
137	Wescott Blvd. & Patriot Blvd.	\$4,000
Grand Total		\$139,000

Note: Overall Ranking is shown in Table 6-1.

Project Horizon Years (Fiscal Constraint)

The CHATS MPO currently obtains the majority of its programmed funding through federal and state guideshare funding. Guideshare funds are distributed from SCDOT to the ten MPOs and Councils of Governments throughout the state. Allocation of guideshare funds to the various planning regions are formulae based, and are proportional to the current and projected regional population and vehicle miles traveled within each area. As a result, funding levels are not expected to increase substantially over the life of this Plan. However, these are not the only funding sources that are currently being used within the CHATS planning area for transportation improvements. The current funding sources (average annual allocation) used with the CHATS MPO include the following programs.

Current Funding Sources (Through 2022)

Based on the committed projects already accounted for in the TIP, a portion of guideshare funds will be required over the next few years (through 2022) to complete already committed projects. Thus this plan anticipates the balance of uncommitted guideshare funds totalling \$8.4 million will be available from 2021-2022 for allocation to new projects identified in this LRTP process.

The CHATS Complete Streets strategy appropriates approximately \$1 million annually of guideshare funds to Complete Streets projects which include multi-modal improvements (intersection improvements, access management improvements, pedestrian and bicycle improvements and transit projects). This plan assumes a \$5.4 million carry-over of guideshare funds dedicated to Complete Streets from the previous plan period.

Current Debt Service (average annual)

Additionally, CHATS is paying back debt service for borrowed money (principal and interest) associated with moving ahead several transportation infrastructure projects. Advanced Payback is utilized when the MPO and another governing agency such as SCDOT enter an agreement to move forward and fund a project that is not included in the adopted work program. By 2023 the Debt Service will be paid off, making available another \$5.7m for allocation to new projects.

CHATS Guideshare Funding (2023-2040)

Therefore, between 2023 to 2040, annual guideshare funds of \$19 million totalling \$323 million over the 17-year period, will be available for funding transportation projects. (Note - this includes \$17 million set aside to Complete Streets projects). When aggregated, the CHATS total anticipated guideshare funding available for the 2021-2040 plan period totals \$336.8 million.

It is also important to note that other funding sources such as the current Transportation Sales Tax Programs and Transportation Alternatives Program (TAP) funding can be used to leverage construction of these projects, but the funding from these programs are not presumed in the fiscally constrained plan.

Table 6.6 outlines the CHATS Guideshare funding and expenditures anticipated for the Plan period 2021-2040 .

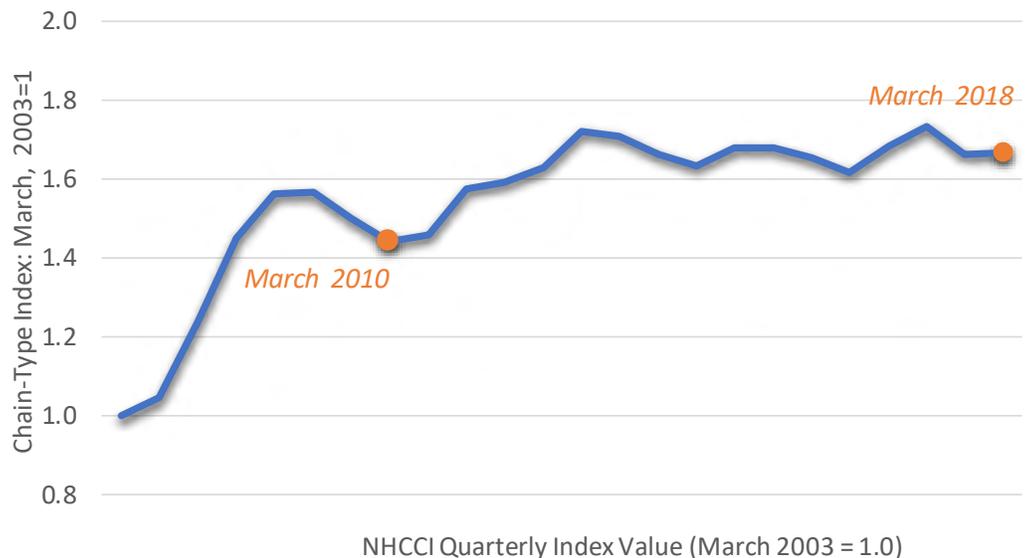
Table 6-6: CHATS Guideshare Funding/Expenditures

CHATS Anticipated Guideshare Funding 2021-2040	Present Value (2018) (estimated)	Year-of-Expenditure Conversion (2021 & 2030)
2021-2022 Transportation Funding Revenue	\$8,400,000	\$8,940,391
2023-2040 Transportation Funding Revenue	\$306,000,000	\$392,672,359
Complete Streets Guideshare Revenue (set aside/ carryover)	\$22,400,000	\$28,744,643
Transportation Guideshare Expenditures 2021- 2040	\$336,800,000	\$432,196,244
Total Guideshare Expenditures (Top 39 projects)	\$276,700,000	\$355,073,339
Complete Streets Expenditures	\$22,400,000	\$28,744,643
Transit Related Expenditures	\$37,700,000	\$48,378,261
Expenditures Grand Total	\$336,800,000	\$432,196,244

(source: BCDCOG)

The Year-of-Expenditure (YOE) conversion, as required by federal regulation, is an inflated value of present dollars to reflect changes in the purchasing power of construction, right-of-way acquisition, planning/design services) to the mid-point of the future year scenarios 2021 or 2030 in this instance; refer to Guidance: Major Project Program Cost Estimating Guidance for selection of midpoint value: www.fhwa.dot.gov/majorprojects/cost_estimating/guidance.cfm. The assumed inflation rate is 2.1% per annum, a value indicated by the March 2010 to March 2018 inflation index cited by FHWA's National Highway Construction Cost Index (NHCCI: www.fhwa.dot.gov/policy/otps/nhcci). This time period was selected to establish the inflation trend because (1) it was the most recent available, and (2) it represents a post-recessionary timeframe to improve relevancy to current and anticipated future financial conditions.

Figure 6-2: National Highway Construction Cost Index (NHCCI)



Horizon Year Projects (2030 & 2040)

This chapter section highlights the potential projects selected for Guideshare funding for the 2021 – 2040 horizon years. The total amount dedicated to Capacity Improvement, Corridor Studies, Access Management, and Intersection projects for the period 2021-2040 is \$276.7 million, of which \$134.0 million is applied between 2021-2030, and \$142.7 million is applied between 2031-2040. Through the SCDOT approved ranking process, the projects in this report are allocated in the financial plan based on the ranking of each project. With this in mind, there are several assumptions that were required. All projects selected were based on the project prioritization described earlier in this chapter. Additional assumptions and methodology included:

1. Initial Guideshare funding applied to the remaining funding needed to finish “committed” projects in TIP (current year – 2021)
2. Selected each Capacity Improvement, Corridor Study, Access Management and Intersection projects based on priority ranking and cost/benefit ratio (see Appendix for Evaluation Matrix and ranking)
3. Projects identified for inclusion in the constrained projects list was based on its overall project ranking, regardless of project category. Available guideshare funds were applied to projects in sequence until available funds were exhausted.
4. If a project overlapped Horizon Years, then that project would be fully funded in the subsequent Horizon Year.

Following the stated assumptions, the top 39 ranked projects were identified for funding and included on the fiscally constrained project list. Tables 6.7 and 6.8 provide the fiscally constrained projects broken down by horizon years.

Table 6-7: Roadway Projects 2021-2030 Horizon Years

1	Montague Avenue	Capacity Improvement	International Boulevard to I-26 Interchange	0.50	\$10,000	1
2	Rivers Avenue & Greenridge Road	Intersection Improvement	-	-	\$1,500	2
3	North Rhett Avenue	Capacity Improvement	I-526 Interchange to Yeamans Hall Road	1.93	\$42,185	3
4	US-17A / North Main Street	Corridor Study	I-26 Interchange to Berlin Myers Parkway	0.77	\$8,705	4
5	US-17 & Long Point Road	Intersection Improvement	-	-	\$3,000	5
6	Dorchester Road & Ladson Road	Intersection Improvement	-	-	\$2,000	6
7	US-17 & Anna Knapp Blvd.	Intersection Improvement	-	-	\$1,500	7
8	South Main Street	Access Management	Carolina Street to US-78	1.67	\$2,512	8
9	Jedburg Road	Capacity Improvement	Wildgame Road to Dropoff Drive	0.91	\$7,863	9
10	Jedburg Road	Capacity Improvement	Old Dairy Road to US-78	2.34	\$20,544	9
11	Remount Road	Capacity Improvement	Yeamans Hall Road to Rivers Avenue	0.35	\$8,427	10
12	College Park Road	Capacity Improvement	Crowfield Boulevard to I-26 Interchange	1.34	\$14,532	11
13	US-17A & US-176	Intersection Improvement	-	-	\$5,000	12
14	Clements Ferry Road	Corridor Study	I-526 Interchange to St. Thomas Island Drive	0.39	\$2,786	13
15	Long Point Road	Access Management	I-526 to Whipple Road	0.97	\$1,453	14
16	Ladson Road & Lincolnville Road	Intersection Improvement	-	-	\$2,000	15
Grand Total					\$134,007	

Map 6-2: 2021-2030 Project Locations

Horizon Year 2030

Project Type

- Capacity Improvement (New Roadway Facility)
- Capacity Improvement (Existing Roadway Facility)
- Corridor Study
- Access Management
- Intersections

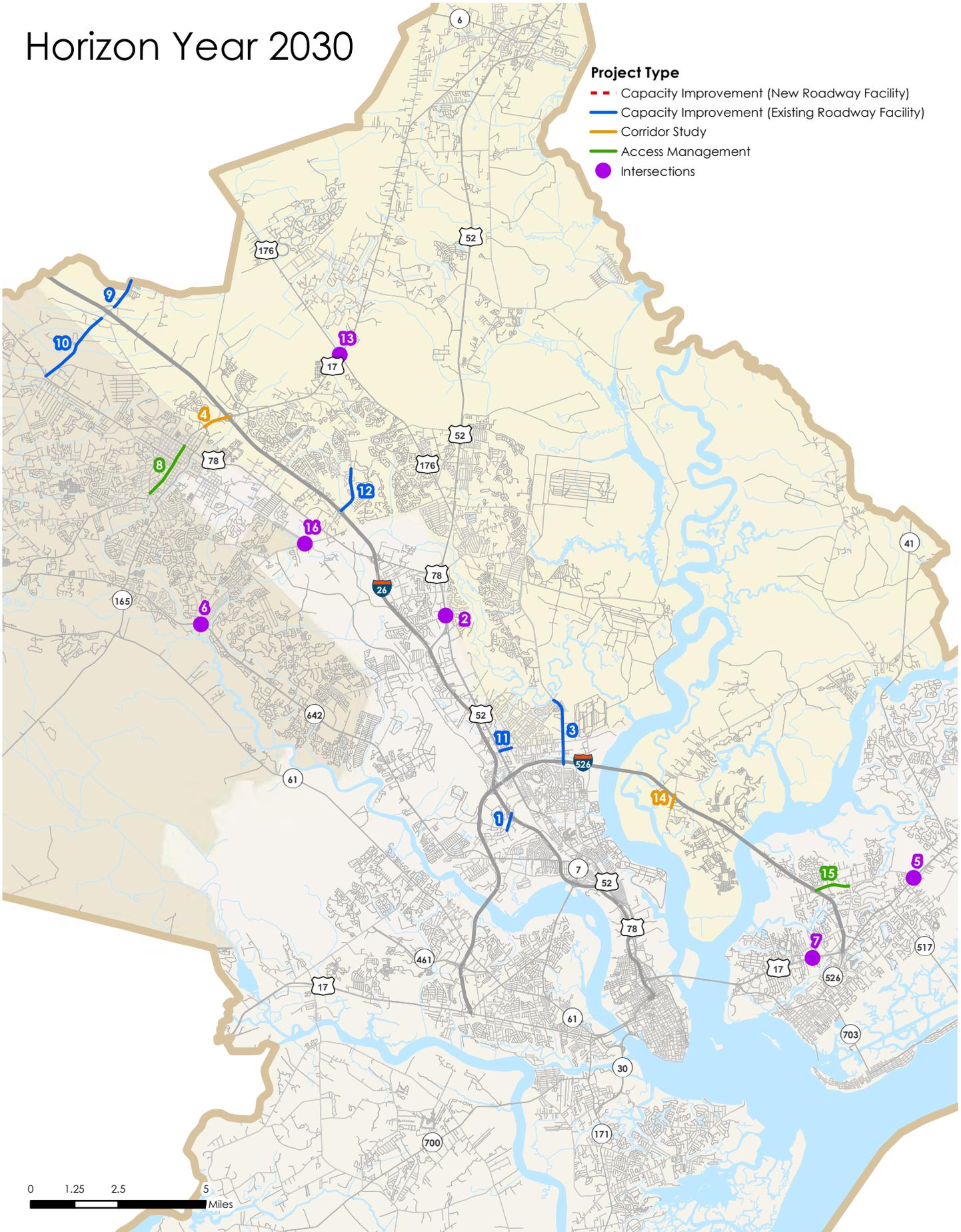


Table 6-8: Roadway Projects 2031-2040 Horizon Years

Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)	Project Ranking
US-52 & Liberty Hall Road	Intersection Improvement	-	-	\$2,000	16
US-52	Access Management	Button Hall Avenue to Red Bank Road	0.55	\$823	17
Ashley Phosphate Road	Corridor Study	Cross County Road to Rivers Avenue	2.01	\$14,139	18
US-78 & Ladson Road / Ancrum Road	Intersection Improvement	-	-	\$4,000	19
US-17 & Shelmore Blvd.	Intersection Improvement	-	-	\$1,500	20
US-176	Access Management	Old Mt. Holly Road to N. Goose Creek Blvd.	2.86	\$4,291	21
US-17 & Wappoo Road	Intersection Improvement	-	-	\$1,500	21
Folly Road	Capacity Improvement	SC-30 Off-Ramp to Highland Avenue	0.64	\$10,000	23
Cross County Road	Capacity Improvement	Dorchester Road to Hill Park Drive	1.47	\$12,097	24
SC-41 & US-17 Intersection	Capacity Improvement	-	-	\$43,000	25
Dorchester Road & Old Trolley Road	Intersection Improvement	-	-	\$5,000	26
US-17 / West Oak Forest Drive / Farmfield Avenue	Intersection Improvement	-	-	\$1,500	27
US-17 / Ravenel Bridge Southbound Approach	Capacity Improvement	Magrath Darby Blvd. to Wingo Way On-Ramp	0.27	\$3,034	28
US-17 & Porcher's Bluff Road	Intersection Improvement	-	-	\$4,000	29
Rivers Avenue & Remount Road	Intersection Improvement	-	-	\$5,000	30
US-17 / Ravenel Bridge Northbound Off-Ramp	Capacity Improvement	US-17/Coleman Split o Sessions Way	0.55	\$3,775	31
US-52 & Cypress Gardens Road	Intersection Improvement	-	-	\$1,000	32

Table 6-8: Roadway Projects 2031-2040 Horizon Years (cont.)

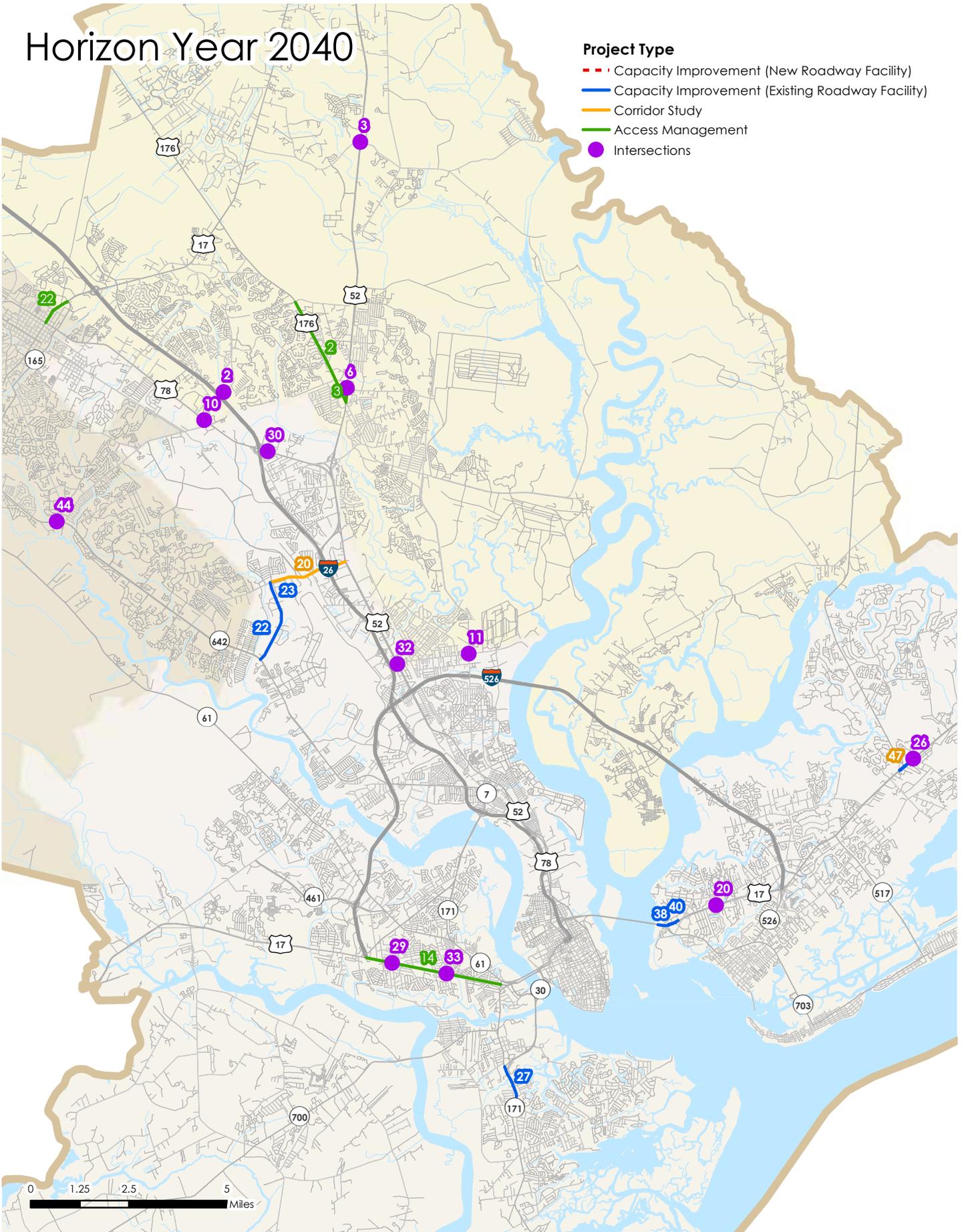
Roadway Facility	Project Type	Project Limits	Length (Miles)	Cost (1000s)	Project Ranking
Remount Road & Rhett Avenue	Intersection Improvement	-	-	\$4,000	33
Savannah Highway	Access Management	Wesley Drive to I-526	3.49	\$5,239	34
North Main Street	Access Management	5th Street to Berlin Myers Parkway	0.81	\$1,212	35
Cross County Road	Capacity Improvement	Hill Park Drive to Ashley Phosphate Road	0.68	\$6,628	36
College Park Road & Treeland Drive	Intersection Improvement	-	-	\$4,000	37
US-78 / University Blvd. & Medical Plaza Drive	Intersection Improvement	-	-	\$5,000	38

Map 6-3: 2031-2040 Project Locations

Horizon Year 2040

Project Type

- Capacity Improvement (New Roadway Facility)
- Capacity Improvement (Existing Roadway Facility)
- Corridor Study
- Access Management
- Intersections





policy actions

Image: NACTO,
*Urban Street
Design Guide*

Updates of transportation and comprehensive plans occur at various intervals, often five years or longer. In between these major update cycles, agencies can continue building on the recommendations contained in the plan, not only in terms of funding, design, and construction, but working with their many partners to improve local practices that can make an even larger shift towards a healthy, vibrant, and active transportation system and community.

The BCDCOG and partnering organizations within the CHATS planning area already have many policies describing communication practices, design standards, and other items discussed in this section. However, during the course of the planning process, some places where enhancements to policies can be made, were inevitably discussed. The purpose of the policy and practices section is to ensure that projects are implemented with best practices in mind and offers guidance to issues that may arise during project development. The following are not intended to critique current practices, or supersede them, but instead to suggest enhance practices that would support the physical recommendations contained in this plan.

A few guiding principles should be followed to identify and describe the policy topics:

- Acknowledge what is being done now;
- Create specific and actionable steps that, even if they are not followed to the letter, are achievable, get people thinking, and get them excited about their work and their community; and
- Develop the policy topics consistently, with issues, importance, and strategies for each topic, as well as examples of best practices that can provide insight from other places.

Lastly, linkages between some of the topics, such as communication, performance, and equitable engagement, occur frequently. Pursuing and achieving multiple action items on some topics as a “package” will enhance the return on investment.

The Appendix of this document includes detailed policy recommendations for stormwater best management practices (BMPs), complete street design and policy implementation and access management BMPs and policy strategies.

This section was developed in accordance to comments received during the public input phase of the project. Areas of improvement that were identified included the need for complete streets, detailed sidewalk policies, connectivity, greenway/trail requirements, traffic impact studies and the importance of partnerships and equitable public engagement. Lastly, the topic of resiliency was added since it is a premier discussion happening across the country, particularly in coastal communities.

A comprehensive treatise on each topic is not warranted or possible, but specific, actionable practices are suggested as well as examples of where good practices are already being applied.

“Yet no matter how good it may be, a plan by itself cannot bring about immediate transformation. Almost always, it is a spark that sets off a current that begins to spread.”



—Jaime Lerner, Author,
*Urban Acupuncture:
 Celebrating Pinpricks of
 Change that Enrich City Life*

REGIONAL POLICY NEEDS

Priorities for Long-Term Viability

In fast-growing places like the CHATS planning area, few tasks are as important as aligning policy with infrastructure needs. The private sector plays a major, ongoing role in terms of financing improvements through property taxes as well as indirectly through sales, income, and other taxes levied on employees, residents, and workers that support them with everything from lawn care to lending services.

Because of their importance, the project team undertook a survey of both municipal and county policies in place around the CHATS planning area. The findings painted a picture of varying practices even within a fairly narrow geographic range: impact fees, greenway requirements, and site development can all vary across the landscape.

Here are the top policy needs identified by the 13 jurisdictions that were surveyed (three tiers of respondent importance):

- ▶ Sidewalks
- ▶ Complete Streets
- ▶ Connectivity
- ▶ Greenways/Trails
- ▶ Traffic Impact Study Requirement
- ▶ Transit
- ▶ Parking
- ▶ Streetscape
- ▶ Roadways
- ▶ Driveway / Access Management
- ▶ Commercial Development Design
- ▶ Corridor Overlay Districts
- ▶ Impact Fees
- ▶ Setbacks Associated with Transportation Plan

▶ Thanks to our respondents!

Berkeley County
 Charleston County
 Dorchester County
 City of Charleston
 Folly Beach
 Hanahan
 James Island
 Monck's Corner
 Mt. Pleasant
 North Charleston
 Seabrook Island
 Summerville
 Sullivan's Island

sidewalk development

Why It Is Important:

Perhaps no other piece of infrastructure is as observable as the ubiquitous sidewalk. But sidewalks are not created equally, or cheaply. Here are some concepts and practices to consider as the role of the pedestrian continues to grow in the urban landscape.

Issues and Barriers to Success:

At the time of this plan preparation, one of the biggest economic splashes being made was by Amazon, which announced that it was commencing its search for a second headquarters location. One of the big factors in Amazon's search was locating in a place that was really urban: walkable, bikeable, and possessing great public transit access just like the first headquarters in Seattle. Market analysts have commented well before the Amazon HQ2 craze on the trend for young talent pools to form in the environments where owning a car isn't a foregone conclusion.

But in many communities, including those in the CHATS planning area, there are barriers that increase cost and decrease constructability of sidewalks along roadways.

- **Narrow Streets or Limited Rights-of-Way.** Although narrow streets are capable of slowing cars, narrow rights-of-way make land acquisition for sidewalks expensive, especially if buildings and parking lots are in the way.
- **Utility Relocation.** If power lines or storm drain inlets have to be relocated, costs for construction go up - fast.
- **More Pavement = More Stormwater Runoff.** Alternative pavement technologies or allocating space to allow rainwater to infiltrate work, but will change initial and lifecycle costs.
- **Desire may be Lacking.** If adjacent property owners do not want them, sidewalks usually do not happen.

Strategies for Improvement:

There are several considerations for developing sidewalks that work:

- The sidewalk width and choice of material should be flexible to meet the needs of the environment; 10' and wider sidewalks in commercial and high-traffic areas are appropriate; brick pavers and integrated streetscaping can fit into historical environmental contexts.
- Sidewalks should be required to be constructed by new development on both sides of the street, every time except in very low-density (e.g., less than two units per acre) residential communities.
- No room for sidewalks? Consider a shared street instead. Shared streets balance cars, pedestrians, and cyclists in primarily residential and highly mixed-use communities.
- Accessibility is key to an aging population, so installing curb ramps and pedestrian signals - even during routine utility construction - is important.
- Work with SCDOT on repaving work (in advance) to ensure that sidewalk construction efforts are coordinated with the plan.



Source: Stantec, Ashley Bonawitz

Where to Start Walking?

Shared Streets: <https://nacto.org/publication/urban-street-design-guide/streets/residential-shared-street>

Sidewalk Standards: www.planning.org/pas/reports/report95.htm

Economic Impacts: <https://americas.uli.org/report/active-transportation-real-estate-next-frontier>

traffic impact studies

Why It Is Important:

Most communities in the CHATS planning area do not require the submission of a traffic impact study (TIS) to assess the potential impacts of a new or expanded development. This is one tool that can be implemented to assist municipalities in determining how new development impacts the transportation system.

Issues and Barriers to Success:

Traffic studies are nothing new, and are expected by developers of private properties over a certain size (or trips that are expected to be generated). However, the analysis and thresholds should be context-sensitive: a Level-of-Service-only standard will not be desirable, or even possible, in a downtown area. Further, all TIS documents and processes should contemplate all modes of travel, including transit access/stops, connectivity by sidewalks, and requirements for connecting on-site pedestrian networks to the nearest intersection, even if that connection requires going off-site (off-site signal and intersection improvements are commonplace requirements).

Strategies for Improvement:

- **Start off right** by requiring the site location map to extend to the nearest intersections, and display both existing and planned future transit routes/stops, historic / overlay districts, pedestrian facilities (including greenways), and bicycle accommodations - crucial particularly for major (over 100 units) residential developments.
- **Conduct a scoping meeting** with the developer and her engineer to be certain that the TIS study area, intersections, phasing of development, growth/peak hour factors, and thresholds are established.
- **List the performance measures** by area and/or by street and mode to ensure that service standards respond to the needs of individual communities. Also make sure that connectivity and design standards for transit facilities, biking connections, and other provisions tied to historic preservation districts, zoning, land use plans, and this transportation plan are understood and enforced. Do not forget about accommodating all users during construction with signs and detours.



Source: Zanetta Illustrations



TIS Better to Give...: Fort Collins, CO

Chapter 4 of the Urban Area Street Standards (well worth reviewing in general) addresses TIS guidance and requirements. Unlike most, Fort Collins emphasizes multi-modal impacts and assessment.

Fort Collins, Co: www.larimer.org/sites/default/files/ch04_2016.pdf
Calgary TIS Guidelines: www.tccs.act.gov.au/_data/assets/pdf_file/0009/991989/Transport-Impact-Assessment-Guidelines.pdf
Practice(Book): ITE, Transportation Impact Analyses for Site Development, 2010.

SCDOT: www.scdot.org/doing/technicalPDFs/publicationsManuals/trafficEngineering/ARMS_2008.pdf

In Depth: https://nacto.org/docs/usdg/nchrp_rpt_616_dowling.pdf
Easy Tool to Calculate Multi-modal LOS: www.fdot.gov/planning/systems/programs/sm/los

greenways & trails

Why It Is Important:

People always say they prefer to bike and walk away from traffic - always. In the CHATS planning area, trails and greenways allow for connections between neighboring communities and benefit stormwater management.

Issues and Barriers to Success:

As with connecting streets, connecting greenways and off-road trails can be daunting through existing neighborhoods and across streets, so it is better to plan ahead and map out the network in an adopted greenway, comprehensive, or transportation plan. The “corridor of crime” argument is still there, even if there is little justification for it. If push comes to shove, enforcing eminent domain across private property requires careful thought and preparation.

Strategies for Improvement:

- **Honor the “green” in greenway** by remembering that the term was intended to connect islands of green space and parks together for habitat conservation - an important consideration in a rapidly developing area. Mapping out key conservation areas is a crucial first step to preserving and connecting them as part of a regional conservation plan.
- **Incorporating greenways** into private developments by allowing an equal or even double amount of area be applied towards open space requirements or provide other incentives like density bonuses. This can help smooth the policy pathway for private sector greenway construction and connections.
- **Fostering Partnerships** between community stakeholders. One of this plan’s authors worked with a local high school to clear a “soft trail” behind the school to delineate a three-foot-wide clear space for a future hard surface trail to be funded later. Local engineering companies helped provide expertise on stream crossing permits and pedestrian bridge design - which was built and moved by the high school’s shop class. Nature conservation areas, public trail art, and butterfly or rain gardens can - and should - be done in concert with the community to get their support and help.



Source: Scott Lane



A Trail, Softly: Wake Forest, NC

The Town of Wake Forest worked with Heritage High School to clear a narrow “soft trail” through the wooded property behind the school to a major intersection, a distance of about 0.8 miles. Students were shown safety tips on using tools first, then led out in a group to work together on the trail. The school’s shop class built a pedestrian bridge over a creek with permit and design help donated by a local engineering firm.

Wake Forest’s Soft Trail Site: www.wakeforestnc.gov/heritage-high-soft-trail.aspx

Book: Randolph T. Hester, Design for Ecological Democracy. 2006.
Book: Hellmund and Smith, Designing Greenways: Sustainable Landscapes for Nature and People. 2006.

connectivity

Why It Is Important:

The pace of growth in both the urban and rural portions of the CHATS planning area requires more than wider arterial roads. Trip lengths and number depend on a well-connected system.

Issues and Barriers to Success:

It is much easier to create connectivity in a greenfield (not developed) situation than to connect existing neighborhoods to each other or commercial areas. Fears of “cut-thru” traffic are real, although they can be mitigated by better, slower street design. Ensuring that local policies require one or more “stub-out” connections to the edges of property lines helps make future connections possible - but not inevitable: people will still vocalize concerns about connections to neighborhoods or uses that they perceive as driving traffic into and through their neighborhood, even on public streets.

Strategies for Improvement:

- **Great connectivity doesn't happen by accident.** A secondary street plan, sometimes called a collector street plan, shows where road connections have to be made as a prerequisite of new private development or future public investment. These plans should show cross sections, streetscaping, and traffic calming (including required frequency of curves and small curb radii standards) tied to residential and commercial properties.
- **The number of stub-outs** required by new development should be scaled to the number of units or square footage being constructed at full build out (e.g., all phases.)
- **Stub-out connections** have to be signed (prominently) and noted on plats and deeds.
- **Real estate agents are required by law to disclose features of properties** that they sell. Conduct an annual meeting of invited real estate agents (or have a “traveling road show” that can be conducted for real estate agencies periodically) to impart information about future road connections.
- **Shorter block faces** - less than 500' - helps to slow traffic and promote walking and transit use.



Source: CNU

The Benefits of Making Connections

- ▶ Street systems with greater degrees of connectivity offer greater resiliency and possibilities for rerouting traffic during an emergency
- ▶ Higher degrees of connectivity imply a more robust transportation system, one that is able to provide users with greater degrees of freedom in making travel choices during periods of heavy traffic and accommodating trip chaining (making brief stops at different places during a trip) in areas with lower-income populations
- ▶ Greater connectivity typically equates to a greater capacity for moving and distributing traffic, thereby reducing congestion levels
- ▶ Areas with greater connectivity have better land access to local businesses, with implications for the diversity and intensity of potential developments in those areas

Way to Go Ohio:

OKI Regional Council of Governments

Regional bodies can promote connectivity by creating standards and policies for their member agencies to follow. The OKI version talks benefits, model code, and block lengths.
<http://rpf.oki.org/wp-content/uploads/2016/08/OKI-Street-Connectivity.pdf>
CNU: www.cnu.org/our-projects/street-networks/street-networks-101



activating partnerships: slicing the silos

Why It Is Important:

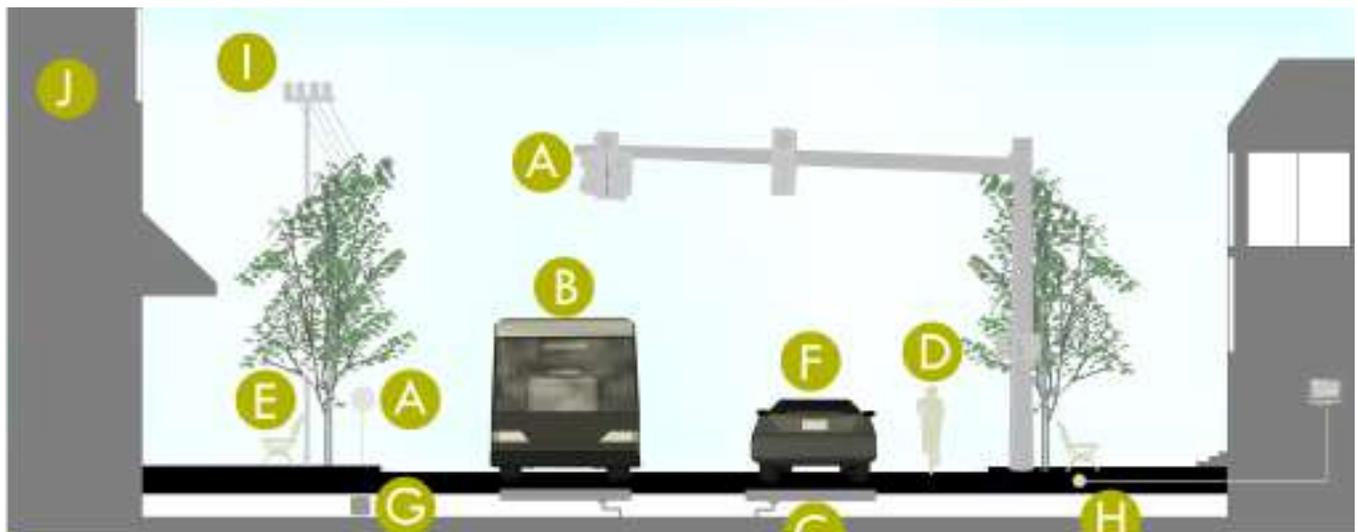
The BCDCOG is a large, diverse organization that collaborates with the counties and municipalities in the planning area. Each of these agencies in the CHATS planning area must work cooperatively and effectively with each other and other large, diverse organizations to plan, implement, and maintain transportation projects and services.

Issues and Barriers to Success:

Each municipality has its own leadership and multiple departments are busy agencies working toward internal objectives, some of which represent core missions. It is easy to misunderstand, lose track of, and delay projects that require cross-collaboration among the staff of different municipalities. For example, the Transportation Department in the City of Charleston has a mission that depends on close cooperation with the Counties, SC Department of Transportation, and the

BCDCOG for short- and long-range planning, design/ construction, and maintenance of Charleston's core transportation infrastructure. This is similar for all the smaller towns and communities in the CHATS planning area. Discussing these issues, much less doing the things necessary to make improvements, require time from busy professionals. The purpose of establishing ongoing communication is to create a more efficient delivery of services to the community in the future. Few people realize how many agencies and departments are required to deliver common public services. The figure below illustrates how many entities are potentially engaged in providing typical services and emergency responses in a street corridor.

Figure 6-2: Typical Street Services



- A** Traffic Signals and Signs: Traffic & Transportation (Municipality, SCDOT)
- B** Buses and Public Transportation including Carpool/Vanpool: BCDCOG (Regional/Private Contractor)
- C** Street Maintenance and Drainage Issues: Stormwater (Municipality)
- D** On-Road Bicycle and Pedestrian Facility Repairs: Streets & Sidewalks (Municipality)
- E** Street Trees and Furniture: Parks & Recreation (Municipality)
- F** Traffic Enforcement: Police Departments (State, Municipality)
- G** Water/Sewer Repairs: Public Works, Solid Waste (County/Private Utility Providers)
- H** Internet Issues: AT&T or other provider (Private)
- I** Electrical Outage or Downed Power Lines: SC Electric & Gas or Berkeley Coop (Private)
- J** Planning/Permitting: Planning, Engineering, Inspections (Municipality)

Strategies for Improvement

The following are a few ideas for working collaboratively across municipalities in the CHATS planning area.

- **Foster a performance-based atmosphere.** The more an organization focuses on performance, the more its people realize the need for effective and efficient collaboration. An era of top-down, “cascade” goal-setting is being replaced by transparency and performance-based planning. Leaders work with their staffs to collectively identify objectives, how to reach them, and measure progress of projects (performance measures). While beyond the scope of this study, this process should be ongoing, with clear metrics related to performance readily available to a broad audience. Common measures that could be considered when determining the success of a project may include number of issues resolved, time taken from reporting to closing out the issue, and various costs. Ultimately, performance of agency staff gets tied to staff pay merit increases and other actions to celebrate excellence. Bonus: the public can access this information (see box) and realize that the leadership in the planning area is doing a lot more for them than they realized.
- **Joint Review Committees: Let the outside in.** Site plan review committees, emergency response personnel, and other collaborations are areas where cities, states, counties, and other agencies have to work together to be successful. The project team notes that in every city or region where they have worked, people from different entities that come together in focus groups invariably exchange valuable information that they would not have been likely to do otherwise. If internal groups meet quarterly, then action-oriented groups with external partners should happen at least twice each year with the same standards for coordination and follow-up as the quarterly internal meetings.
- **Team Understanding.** Create a quarterly meeting where team leaders spend a half-day discussing one or two common and cross-cutting (at least two departments or divisions are involved) issues and steps to take to resolve or at least improve the situation – and report the next quarter on what seems to be working or not.



Communicating:

Boyne City, MI



The Boyne City municipal dashboard is straightforward, fitting on a single screen on their website. Clicking any item provides a yearly trend line.

www.accessmygov.com

resiliency: the link with transportation

Why It Is Important:

The very thing that led to the development of communities within the CHATS planning area as it exists today also presents a very real threat in the future; a choice location seaside, plus an active earthquake zone, create the need for addressing resiliency in transportation planning, design, and construction.

Issues and Barriers to Success:

During the preparation of the plan, on July 19, 2017 shortly after 5:00 pm, a tarp used for controlling paint spray broke loose from its moorings and drifted down on the Don Holt Bridge, the only bridge connecting North Charleston with Mt. Pleasant and Daniel Island. All lanes were closed to traffic during rush hour, and remained closed until the following day. This led to a sharp increase in traffic and congestion on the other connections as travelers were rerouted. Reminders of the vulnerability and frailty of the transportation system are not uncommon, especially during major storm events.

The CHATS planning study area experiences frequent flooding. Planning for future development and emergency management needs can be complex especially when

considering that 51% of the CHATS planning area includes areas of wetlands and open water land uses. Significant flooding events are likely to occur often with the land cover in the area as well as the small grades and slopes in the region attribute to rapid ponding on and along roadways that can turn a small event into a major flooding event quickly.

Barriers to moving forward on resiliency measures and policies typically center around the trade-offs between the short-term and tangible impacts of compliance to businesses or public sector projects, and the long-term, largely invisible prospects for a serious disaster affecting thousands of people.



“ Ranking near the bottom of most-desirable sights on the commute home (source: N. Charleston Police Department)

Strategies for Improvement

Stronger, more coordinated, and mutually supportive policies are generally necessary to strengthen the redundancy and reliability of the transportation network. The following describe actions that will strengthen one or more aspects of the Disaster Management Cycle: Mitigation, Preparedness, Response, Recovery.



“ Disaster Mitigation Cycle

Think Big: conduct a region-wide emergency management plan. Disaster planning, preparation, event actions, and post-event recovery are extremely important to the Tri-County Region, given the integration of waterways into the urban fabric; proximity of major economic and military assets to the shoreline; and degree of existing and anticipated future growth in places that are vulnerable to natural disasters. The BCDCOG, home to the CHATS Metropolitan Planning Organization, plays substantial roles in the development and execution of hazard avoidance and mitigation planning, event, and post-event/recovery actions. Since disaster threats and responses are likely to involve the entirety of the three counties and not just the CHATS MPO study area, many actions would logically be served by considering impacts and actions at the scale of full counties and the entire region. By



Get in the Game:

Resources

Resilient Cities Report 2015
www.usgbc.org/resources/2015-resilient-cities-summit-report

ICLEI Resilient Cities
<http://resilient-cities.iclei.org/>

Urban Land Institute
<http://americas.uli.org/uli-connect/tools-resiliency-planning-age-extreme-weather/>

serving as a coordinating force for disaster planning, the BCDCOG and its transportation planning component CHATS can help focus attention on cross-jurisdictional actions. Currently, the counties of Dorchester, Charleston, and Berkeley have individual plans that describe how they would deal with an emergency such as a catastrophic storm. While generally similar in content, the alignment isn't exact and may not contain similar detail on emergency action planning. The three counties are inextricably linked together, however, and have overlapping resources, transportation networks, and partners. When creating a region-wide emergency management plan, the process should include modeling of the impacts of specific conditions (e.g., bridge failure), and tie that information back to emergency response planning and actions.

Grants being managed at the time of this writing by the Sea Grant Consortium present critical opportunities to integrate transportation, land development, and other pertinent policy actions into an integrated resiliency framework. The individual Hazard Mitigation Plans developed by each of the three counties in the planning area are important, but a stronger regional plan could be integrated into a streamlined and coordinated document with a regional set of strategies led by a coalition of BCDCOG, municipalities, counties, and other partners such as the Charleston Resilience Network (CRN; www.charlestonresilience.net). The CRN website is also going to house updates to the grant-sponsored projects mentioned previously.

More Strategies.....

- “Resiliency” is often too restricted to environmental catastrophe, but individuals and communities need to contemplate how they can grow their economies, combat poverty, reduce crime, and acknowledge the realities of aging infrastructure and affordable housing. In an era of fiscal conservatism, addressing each problem in isolation is not an affordable proposition. These issues are best tackled collectively through broad dialogues and expanding the concept of what a comprehensive plan really could mean and how it might provide specific actions and measures that could create mutually reinforcing, “virtuous circle” dynamics across many areas.
- The current planning processes and state prioritization models emphasize (appropriately) congestion, safety, economics, and other factors with some mention of resiliency in the form of evacuation routes. A stronger role for resiliency that incorporates a vulnerability assessment could greatly improve the standing of projects that provide increased network redundancy, for example.
- Some types of poorly drained soils, limited transportation accessibility to emergency services, and flood-prone areas create places that are highly problematic for new or more intensive development. The CHATS MPO can help bring together external practitioners familiar with various environmental limitations into a group process that includes property owners, private developers, real estate professionals, emergency service personnel, and experts on land policy to help come up with a strategic plan. Such a plan might include a greenprint-type of document that clearly identifies sensitive environmental areas

and constraints across the region; best development practices (e.g., low-impact development) for new / expanded private development, and appropriate language for insertion into municipal and county ordinances to protect, preserve, avoid, and even enhance areas that are often worthy of saving as well as difficult to service well with transportation infrastructure.

- Not only cars and people get transmitted across the Tri-County Region: identification of key communication networks, including fiberoptic, gas, and other physical infrastructure elements, is important to understanding vulnerabilities during a disaster. It does little good to have a coordinated plan before an event and be unable to execute the necessary communication requirements to act during the event. An important task is the creation (and maintenance) of a database of seismically vulnerable structures and infrastructure as well as high-risk geographic areas in the Tri-County Region. The NOAA grant, one of the two being managed by Sea Grant, will help create high-resolution mapping to identify these vulnerable areas and assess threats and actions at community and even neighborhood scales.
- The bridges spanning the major waterways in the CHATS MPO present a vulnerability that could be realized during a major earthquake. Improving the seismic design qualities of these bridges, to the extent that retrofitting can be accomplished, is an important partnership action with the relevant state transportation authorities.
- A major element of concern presented by a fast-growing, economically successful region like the CHATS planning area and Tri-County Region is development of formerly “greenfield,” rural, or agricultural properties that exist in flood-prone or hard-to-access areas. Often, it is these very places – near beaches and rivers – that people find so attractive to live near. Construction techniques and on-site retention of stormwater play critical roles in this type of development, as do zoning, density, and preservation actions.
- Creating a compendium of locally sustainable actions, beginning with the Sea Grant efforts (refer to <https://seagrant.noaa.gov/Our-Work/RCE>, for example), is a natural fit for regional agencies like BCDCOG that communicate with many local government agencies. Smaller units of government do not have the resources to create a dedicated resiliency or sustainability expert position; providing that expert resource can be a part of the BCDCOG mission.

- Developing an education resource to instruct home and business owners what to do before, during, and after an earthquake or major storm event will help to reinforce positive behaviors like securing furnishings inside and outside the home; considering retrofit building techniques such as steel reinforcement of chimneys that extend six feet or higher above the roofline; and how to access resources available to them with and without power or internet services. One of the current resiliency projects driven by grants ongoing at the time of this writing is to develop a statewide resource for data warehousing and distribution, which would support some of the other recommendations contained herein, particularly if its scale were to include all three counties in the region.
- Regardless of advance planning efforts, disasters are going to continue to occur. While preparation and avoidance are crucial now, identifying and maximizing resources are equally important after disaster strikes. Building a resiliency resource therefore involves financial recovery efforts, such as leveraging Housing and Urban Development (HUD) program funds (which do not have a federal identity) to match post-recovery FEMA funds is an example. Note also that FEMA funds are often available well after a natural disaster to finance recovery and avoidance initiatives that can help mitigate human and property losses from future events. This allowance has produced such efforts as the Project Impact (www.charlestoncounty.org/index.php) resource in Charleston County that provides information about building construction techniques, guidance for homeowners, and resources for children and adults to help understand the threats posed by various types of natural disasters.

many trips begin and end in these different communities and counties across the CHATS MPO planning area and Tri-County Region. Rick DeVoe, manager of the Sea Grant resiliency grant-driven initiatives already discussed, noted that working across so many jurisdictions is challenging, but subsequent phases could push the resources out to neighboring communities outside of the City of Charleston and Charleston County.

As noted, opportunities for regional collaboration still exist to avoid duplicating efforts and increase the potential for improving actions that would benefit from a regional response to an emergency. An example is the Project Impact website that is directed at Charleston County, but the information and actions recommended could be adopted at a larger scale and help to guide mitigation and recovery efforts. While a great resource in its own right, such tools may have a better “reach” and impact if they were coordinated across many jurisdictional boundaries –

measuring performance

Performance-Based Planning and Programming

Performance-based planning and programming (PBPP) applies system data to inform investment and policy decisions to achieve desired outcomes set for the region's multi-modal transportation system. It is a federal requirement that PBPP be applied as a standard state of the practice in the planning and programming process and should be integrated throughout the decision-making process and within the development of an area's Long-Range Transportation Plan (LRTP); other plans and processes including those federally mandated such as Strategic Highway Safety Plans, Asset Management Plans, Congestion Management Process, Transit Agency Asset Management Plans and Transit Agency's Safety Plans; as well as in programming documents such as the statewide and metropolitan transportation investment plans (STIPs and TIPs).

The goal of PBPP is to ensure efficient investment of federal transportation funds by increasing accountability and transparency to the public, and provide for better investment decisions that focus on advancing the key outcomes related to established national goals.

The CHATS MPO is currently developing its PBPP process to meet federal requirements (including tracking specific measures and setting targets) and to also meet the unique local planning needs of the area. This section is meant to serve as a bridge as

CHATS transitions from the traditional transportation planning process to a more strategic PBPP. This document describes:

- National Goal Areas and Measures;
- Federal Requirements;
- Safety Goal Area and Targets;
- Asset Condition and System Reliability Performance Targets; and
- Next steps for the MPO to build its PBPP practices, process, and policies.

National Goal Areas and Federal Requirements Highway Performance

Through the federal rule-making process, the Federal Highway Administration (FHWA) is requiring state DOTs and MPOs to monitor the transportation system using specific performance measures. These measures are associated with the national goal areas prescribed in MAP-21 and the FAST Act. The following table describes these national goal areas, performance areas, and prescribed performance measures. It should be noted that CHATS can choose to adopt additional measures beyond what is described in the following, however, what is outlined must be addressed at a minimum.

Table 6-9: National Goal Areas and Performance Measures

National Goal Area	Performance Area	Performance Measure
<p>Safety: To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.</p>	Injuries and Fatalities	<ul style="list-style-type: none"> ■ Number of Fatalities ■ Fatality rate (per 100 million VMT) ■ Number of serious injuries ■ Number of non-motorized fatalities and non-motorized serious injuries
<p>Infrastructure Condition: To maintain the highway infrastructure asset system in a state of goods repair.</p>	Pavement Condition	<ul style="list-style-type: none"> ■ Percent of pavements on the Interstate System in Good Condition ■ Percent of pavements on the Interstate System in Poor Condition ■ Percent of pavements on the non-Interstate System in Good Condition ■ Percent of pavements on the non-Interstate System in Poor Condition
	Bridge Condition	<ul style="list-style-type: none"> ■ Percent of NHS bridges classified as in Good Condition ■ Percent of NHS bridges classified as in Poor Condition
<p>System Reliability: To improve the efficiency of the surface transportation system.</p>	Performance of the National Highway System	<ul style="list-style-type: none"> ■ Percent of person miles traveled on the Interstate System that are reliable ■ Percent of person miles traveled on the non-Interstate NHS that are reliable
<p>Freight Movement and Economic Vitality: To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.</p>	Freight Movement on the Interstate System	<ul style="list-style-type: none"> ■ Truck Travel Time Reliability
<p>Congestion Reduction: To achieve a significant reduction in congestion on the Nation Highway System.</p>	Traffic Congestion	<ul style="list-style-type: none"> ■ Annual hours of peak-hour excessive delay per capita ■ Percent of non-single-occupant vehicle traffic
<p>Environmental Sustainability: To enhance the performance of the transportation system while protecting and enhancing the natural environment.</p>	On-Road Mobile Source Emissions*	<ul style="list-style-type: none"> ■ Total emissions reduction*
<p><i>*Note: This measure only applies to non-attainment or maintenance areas over a prescribed population threshold. This measure does not apply to the CHATS planning area since the area is an attainment area.</i></p>		

Transit Performance Measures

Recipients of public transit funds—which can include states, local authorities, and public transportation operators—are required to establish performance targets for safety and state of good repair; to develop transit asset management and transit safety plans; and to report on their progress toward achieving targets. Public transportation operators are directed to share information with MPOs and states so that all plans and performance reports are coordinated. Table 6-10 identifies performance measures outlined in the National Public Safety Transportation Plan, released by the Federal Transit Administration (FTA), and in the final rule for transit asset management. The CHATS MPO will coordinate with public transit providers to set targets for these measures.

Table 6-10: National Goal Areas and Performance Measures for Transit

National Goal Area	Transit Performance Area or Asset Category	Performance Measure
Safety	Fatalities	■ Total number of reportable fatalities and rate per total vehicle revenue miles by mode
	Injuries	■ Total number of reportable injuries and rate per total vehicle revenue miles by mode
	Safety Events	■ Total number of reportable events and rate per total vehicle revenue miles by mode
	System Reliability	■ Mean distance between major mechanical failures by mode
Infrastructure Condition (State of Good Repair: Transit Asset Management)	Equipment	■ Percent of vehicles that have met or exceeded their Useful Life Benchmark (ULB)
	Rolling Stock	■ Percent of revenue vehicles within a particular asset class that have met or exceeded their ULB
	Facilities	■ Percent of facilities within an asset class rated below 3.0 on the FTA Transit Economic Requirement Model scale

Additional Federal PBPP Requirements

Additional federal requirements as it pertain to target setting, reporting and performance assessments are as follows:

Targets -

- The MPO is required to establish performance targets no later than 180 days after SCDOT or a public transportation operator sets performance targets.
- For each performance measure, the Policy Committee will decide whether to support a statewide target, or to establish a quantifiable target specific to the CHATS area.
- SCDOT, MPOs and public transit operators must coordinate targets for performance measures to ensure consistency to the maximum extent practicable.

Reporting -

- The LRTP must describe the performance measures and targets, evaluate the performance of the transportation system, and report on progress made.
- The TIP must link investment priorities to the targets in the LRTPs and describe, to the maximum extent practicable, the anticipated effect of the program toward achieving established targets.
- The MPO must also report baseline roadway transportation system condition and performance data and progress toward the achievement of targets to SCDOT.

Assessments -

- FHWA and FTA will not directly evaluate CHATS progress toward meeting targets for required performance measures.
- FHWA will determine if SCDOT has met or made significant progress towards attaining these selected targets for the highway system.

The CHATS MPO has elected to accept and support the targets set by the State for the safety, infrastructure condition and system reliability performance measures. Performance reports will be added to the LRTP as data becomes available.

Highway Performance Measures and Targets

The following summarizes Highway performance measures and targets set by SCDOT.

SAFETY

The State of South Carolina has the highest fatality rate in the nation; it is 67% higher than the national rate and 40% higher than the states in the southeast. Reducing the number of transportation-related collisions, injuries, and fatalities—is the SCDOT’s highest priority and makes safety everyone’s business. In 2011, the Director of the SC Department of Public Safety (SCDPS), who also serves as the Governor’s Representative for Highway Safety in South Carolina, announced the Agency’s goal of zero traffic related deaths for the State. This goal, also strongly supported by the South Carolina Department of Transportation (SCDOT) and the South Carolina Department of Motor Vehicles, became the starting point for the State’s update of the Strategic Highway Safety Plan (SHSP), entitled Target Zero. Target zero is an aspirational target for South Carolina based on the philosophy that no fatalities are acceptable for any household. The state will set targets advancing towards this goal over the next 20-years.

SCDOT evaluated and reported on safety targets for the five required measures on August 31, 2017. This action started the 180 day clock for the MPO to take action to evaluate and set regionally specific targets or to accept and support the state’s targets. The following table shows the baseline information for the CHATS area, and the State of South Carolina, as well as the targets set for the State that are accepted by the CHATS Policy Committee.

For the 2018 performance period, the CHATS MPO has elected to accept and support the State of South Carolina’s safety targets for all five safety performance measures. This means CHATS will:

- Address areas of concern for fatalities or serious injuries within the metropolitan planning area through coordination with SCDOT and incorporation of safety considerations on all projects;
- Integrate safety goals, objectives, performance measures, and targets into the planning process; and
- Include the anticipated effect toward achieving the targets noted above within the TIP, effectively linking investment priorities to safety target achievement.

SAFETY STRATEGIES

The CHATS MPO has identified that improving the safety of the area’s transportation system across all modes is of great importance. The 2040 LRTP has identified and allocated Guideshare funds to intersection and, a new project category, corridor study projects which were identified and ranked based, in part, by the safety benefits that can be gained by implementing these projects. The proportion of guideshare funds allocated to intersection and safety related projects is increased over LRTP 2035 levels.

The 2040 LRTP continues to support the Complete Streets strategy by setting aside Guideshare funds to implement multi-modal projects. Complete Street funds could be employed for intersection improvements, access management improvements, as well as additional pedestrian and bicycle

Table 6-11: Safety Measures Baseline and Target

Measure	Traffic Fatalities	Fatality Rate*	Severe Injuries	Severe Injuries Rate*	NMU Fatalities & Severe Injuries
State Baseline (2012-2016 Average)	890.2	1.75	3194.4	6.3	376.4
State Targets (2018 Approved)	970.4	1.18	3067.0	5.71	371.3
CHATS Baseline (2012-2016 Average)	70.8	1.44	307.4	6.38	51.4
<i>*Note: Rate per 100 million vehicle miles traveled.</i>					

improvements and transit projects that contribute to creation of a complete street.

The MPO has also established a Safety Improvements Committee, comprised of county and municipal government staff, public safety personnel, public transportation service representatives, school district staff, active transportation advocacy group representatives, and SCDOT staff, in an effort to collectively identify locations with high safety concerns for both motorized and non-motorized users, and propose appropriate safety countermeasures to mitigate them. The CHATS MPO, through the Safety Improvements Committee, will also activity seek out opportunities to work with regional partners to improve safety through education, enforcement and encouragement

programs. These projects and programs should help support or advance the safety targets set by the State.

INFRASTRUCTURE CONDITION

Existing System and Baseline Conditions

SCDOT owns and maintains over 41,000 centerline miles, encompassing over 90,000 lane-miles, of roadway and approximately 8,400 bridges on its network.

For federal purposes, FHWA only requires targets for the interstate and non-interstate NHS pavement systems and the NHS bridge system. Table 6-12 details the baseline data SCDOT used to develop its infrastructure targets and the corresponding targets for the CHATS planning area. The pavement baseline numbers are based on the federal metric, which uses rideability, cracking percentage, rutting, and faulting condition data. For bridges, data is based on the National Bridge Inventory (NBI) measure and is calculated as a percentage of total system deck area.

Table 6-12: Infrastructure Baseline Conditions

	SCDOT Baseline		CHATS Baseline	
	% Good	% Poor	% Good	% Poor
Pavements				
Interstate	61.4%	1.7%	51.9%	1.6%
Non-Interstate NHS	10.3%	2.6%	11.3%	5.4%
Bridges				
NHS	41.6%	4.2%	18.6%	1.2%

Pavements

SCDOT implements a combination of pavement investment strategies based on system conditions, funding, and risk. The current policy of SCDOT is to allocate funding to the different pavement strategies based on the ratio of pavements eligible for that type of strategy. The three strategies SCDOT follows include pavement preservation, pavement rehabilitation, and pavement reconstruction/replacement. Due to SCDOT owning and maintaining all but 4.2 centerline miles of the NHS in South Carolina, and collecting condition data for the entire NHS, almost all infrastructure improvement projects are developed and managed by SCDOT. However, because SCDOT does not currently have an off-interstate NHS widening program, it depends on coordination and efficient collaboration with CHATS and other MPOs and COGs within the State of South Carolina.

The following table outlines 2- and 4-year statewide targets SCDOT established for its interstate and non-interstate NHS pavement systems. These targets are projected conditions of the respective systems during 2020 and 2022. SCDOT developed its targets by modeling the deterioration of its pavement assets and projecting pavement condition improvements based on planned and programmed preservation, rehabilitation, and reconstruction/replacement projects that will be completed and have updated condition data collected within the 2- and 4-year timeframes.

CHATS agree to adopt and support SCDOT's statewide targets supporting planned and programmed projects that SCDOT has identified for inclusion in the CHATS LRTP and Transportation Improvement Plan.

Table 6-13: Infrastructure Target Conditions for Pavement

Measure	2-Year Target	4-Year Target
% of Interstate Pavements in Good Condition	N/A	71.0%
% of Interstate Pavements in Poor Condition	N/A	3.0%
% of non-Interstate NHS Pavements in Good Condition	14.9%	21.1%
% of non-Interstate NHS Pavements in Poor Condition	4.3%	4.6%

Bridges

Similar to pavements, SCDOT owns and maintains most of the federal-aid eligible bridges on the South Carolina Highway System. SCDOT adopts cost-effective bridge investment strategies, such as bridge preservation, which includes preventative condition-driven maintenance and bridge replacement as integral components of its bridge asset management program.

Table 6-14 outlines 2- and 4-year statewide targets SCDOT established for its NHS bridge systems. These targets are projected conditions of the respective systems during 2020 and 2022. SCDOT developed its targets by modeling the deterioration of its bridge assets and projecting bridge condition improvements based on planned and programmed bridge replacement projects that will be completed and have updated condition data collected within the 2- and 4-year timeframes. CHATS has agreed to adopt SCDOT's statewide targets by supporting planned and programmed projects that SCDOT has identified for inclusion in the CHATS LRTP and Transportation Improvement Plan.

Table 6-14: Infrastructure Target Conditions for Bridges

Measure	2-Year Target	4-Year Target
% of NHS Bridges in Good Condition	42.2%	42.7%
% of NHS Bridges in Poor Condition	4.0%	6.0%

SYSTEM RELIABILITY

The Federal Highway Administration developed three measures to track travel reliability on the road networks: percent of reliable person-miles traveled on the interstate; percent of reliable person-miles traveled on the non-interstate NHS; and an index of truck travel time reliability. These measures collectively report reliability of the NHS network as required by MAP-21. Table 6-15 outlines baseline reliability data for the State and CHATS for 2017.

SC SCDOT staff explored the relationship between reliability and other data measures such as vehicle miles traveled to develop a model that predicts system reliability in 2- and 4-year periods. The methodology also examined the effect of construction projects on the NHS and completion of any widening projects within the timeframe. Table 6-16 outlines statewide reliability targets for South Carolina based on this analysis.

CHATS has agreed to adopt and support SCDOT's statewide targets by supporting planned and programmed projects that SCDOT has identified for inclusion in the CHATS LRTP and Transportation Improvement Plan.

System Reliability Strategies

The CHATS 2040 LRTP allocates guideshare funding to access management projects which are identified for corridors that may benefit from applied access management strategies to improve safety, and increase capacity and reliability. The CHATS MPO, Berkeley-Charleston-Dorchester Council of Governments, in partnership with the SCDOT and FHWA, and major employers and stakeholders in the region is currently facilitating the "Lowcountry Go" rideshare program. The program supports carpools, vanpools, public transportation, walking, biking and other programs that encourage a shift in commuter behavior toward alternative transportation commute options. "Lowcountry Go" also works with regional employers to promote sustainable commute options such as flextime, staggered shifts and incentives. The BCDCOG has also identified a portion of guideshare funding that will be used for transit related projects to enhance the current system, including park-and-ride facilities, to promote greater use of alternative transportation modes. These projects and programs should help support or advance the system reliability targets set.

Table 6-15: System Reliability Baseline Data

Measure	% of Person-Miles Traveled on the Interstate that are Reliable	% of Person-Miles Traveled on the non-Interstate NHS that are Reliable	Truck Travel Time Reliability Index
State 2017 Baseline Data	94.8%	89.8%	1.34
CHATS 2017 Baseline Data	73.9%	78.4%	2.22

Table 6-16: System Reliability 2- and 4-Year Targets

Measure	2-year Target	4-yr Target
% of Person-Miles Traveled on the Interstate that Are Reliable	91.0%	90.0%
% of Person-Miles Traveled on the non-Interstate that Are Reliable	N/A	81.0%
Truck Travel Time Reliability Index	1.36	1.45

NEXT STEPS

The CHATS MPO has agreed to adopt and support SCDOT's statewide targets set for the federally required performance measures identified to-date, and will update or add additional federally mandated measures and/or targets as they are established and within the prescribed timelines.

As the MPO transition from the traditional transportation planning process to a more strategic, performance based planning and programming (PBPP) process it will continue to work on identifying and refining additional (non-federally required) measures that are deemed useful in planning for, monitoring and evaluating the region's transportation system. This includes developing relevant baseline conditions and establishing associated performance targets which will be added to this document on an on-going basis until the next LRTP update.