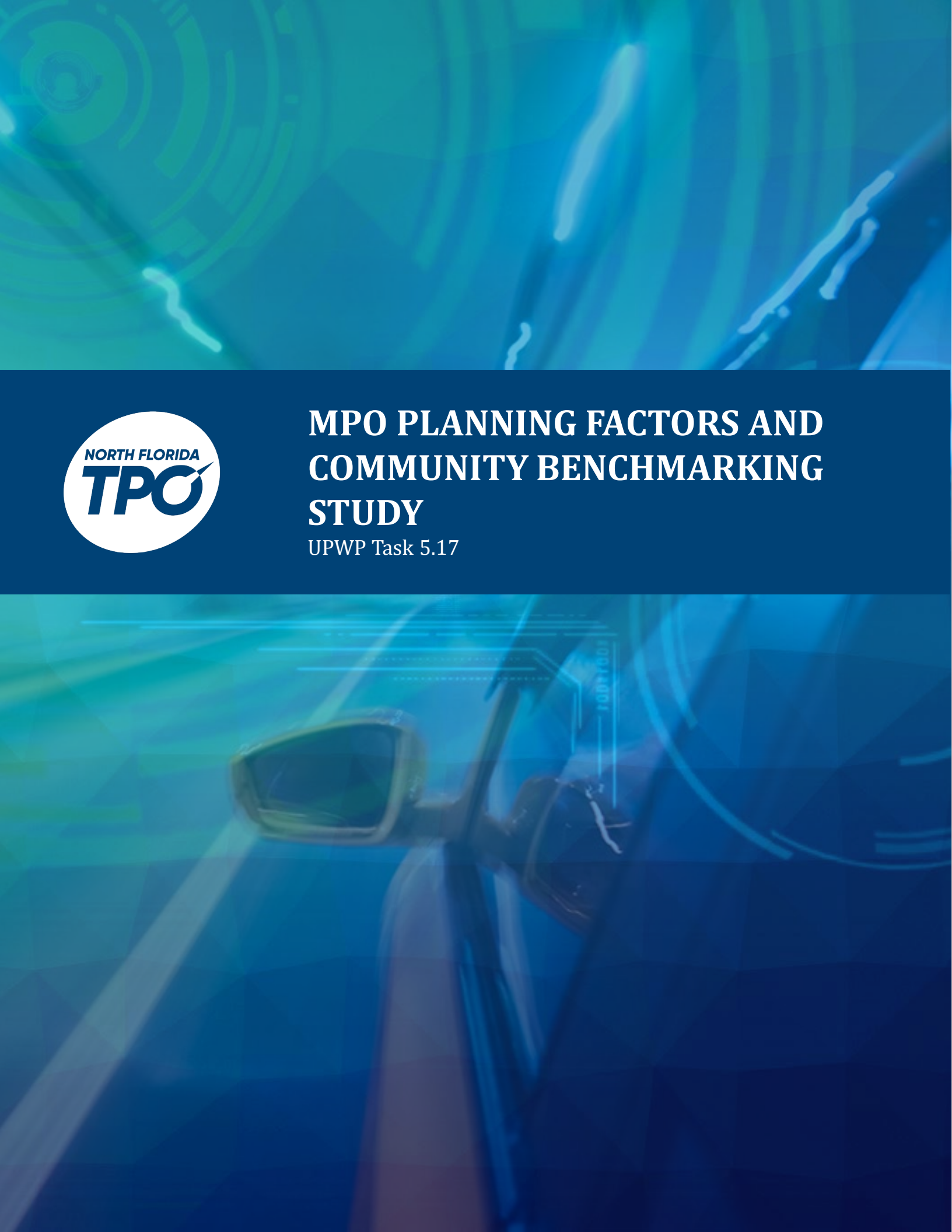

MPO PLANNING FACTORS AND COMMUNITY BENCHMARKING STUDY

UPWP Task 5.17

Notice

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Summary

This project performed the following tasks: (1) a peer review of planning activities other Metropolitan Planning Organizations (MPOs) are performing as part of their Unified Planning Work Programs (UPWPs), (2) a review of community indicators for mobility and quality of life, and (3) smart city rankings.

Planning Activities

The planning activities of 17 MPOs shown on Exhibit 1 were evaluated. Each MPO's UPWP was reviewed and planning activities were summarized and categorized into a common typology that allowed for comparisons between MPOs. The North Florida Transportation Planning Organization (TPO) is one of the five MPOs evaluated that are considering 10 or more of the planning factors. Transit funding from the Federal Transit Administration and recurring MPO tasks such as the development of the long-range transportation plan, UPWP, transportation improvement program, public outreach and agency coordination were not considered.

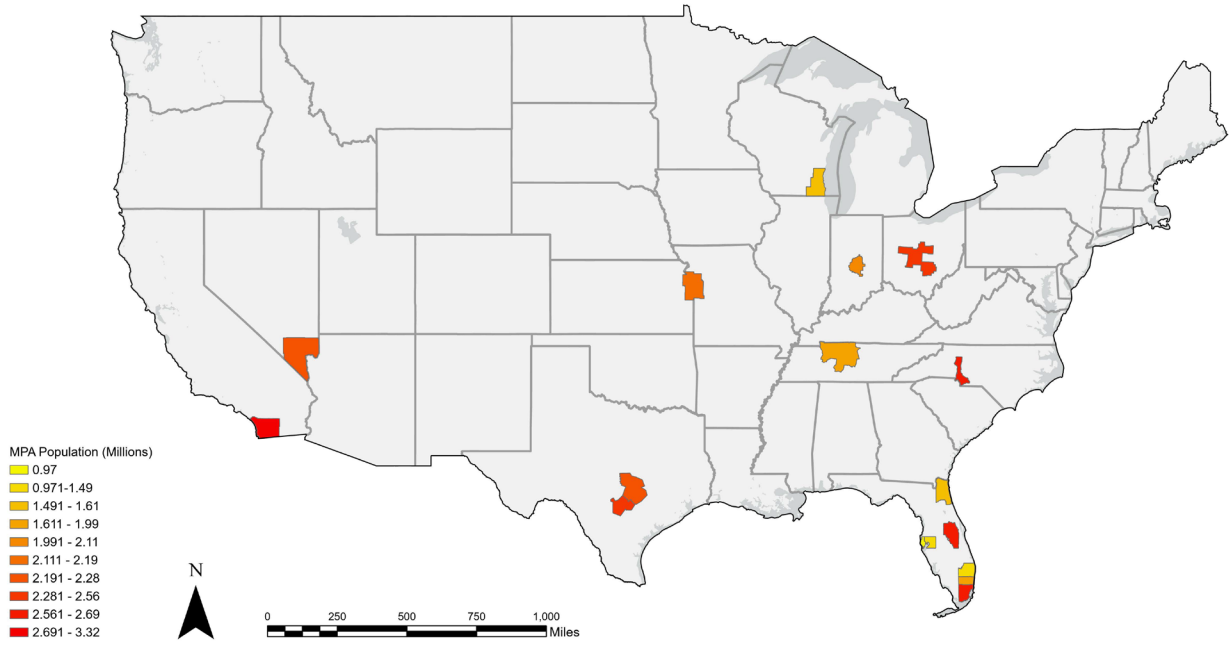
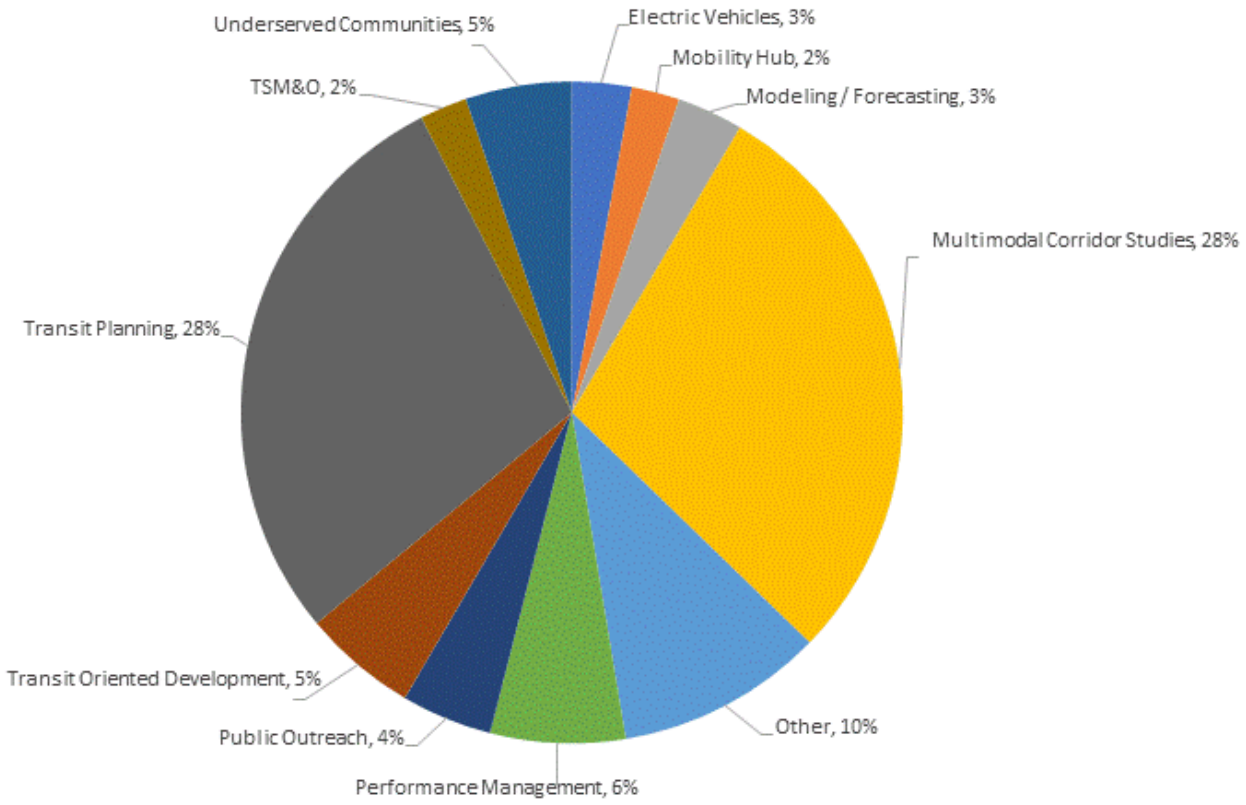


Exhibit 1. Peer MPOs

Exhibit 2 summarizes the activities inventoried. Multimodal corridor studies are the most heavily funded of the planning activities. New planning factors are enhanced in the Bipartisan Infrastructure Bill (BIL) for: clean fuels, electric vehicles and mobility for underserved communities. The North Florida TPO embraced these new planning activities prior to the passage of the BIL and will continue to invest in these areas. Another new factor is to consider affordable housing in metropolitan planning. The North Florida TPO will continue to partner with the Northeast Florida Regional Council to provide mobility for these critical populations.

Exhibit 2. Summary of Planning Activities (% of $ Amount)



Smart City Rankings

We looked beyond the United States, shown on Exhibit 3, when considering smart city rankings to allow us to identify innovative programs that may be an inspiration for future efforts in North Florida. Jacksonville is not included in the listed rankings. We considered the evaluation criteria used in many of the ranking systems and our progress, particularly smart mobility ecosystem, is as advanced as any community. Our mobility ecosystem is tailored to meet our unique needs. For example, London, UK's zone-based congestion charge is highlighted by many as a reason London ranks highly as a smart city for mobility. Deployment of that technology is not the right fit in our community.

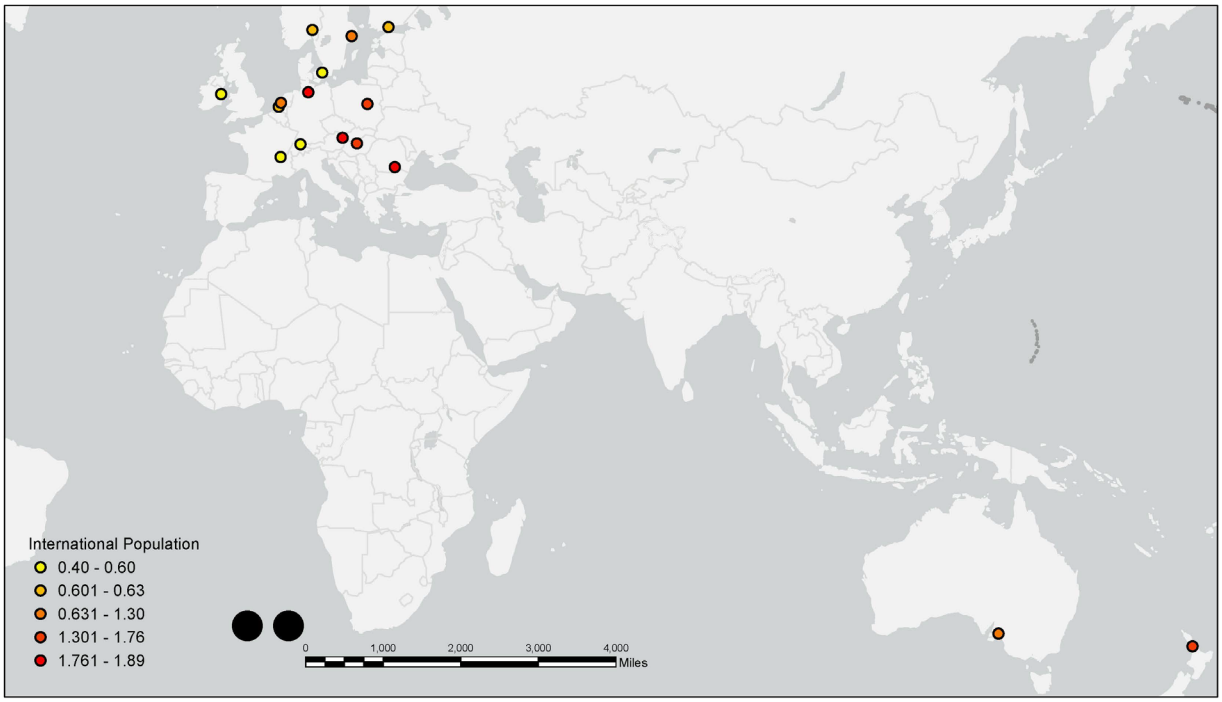


Exhibit 3. International Peer Communities

Mobility

Jacksonville ranks between the 72nd and 77th of the most congested cities by the Texas Transportation Institute based on the metrics shown in Exhibit 4.

Exhibit 4. Urban Mobility Report Ranking

Person Hours of Delay	Cost of Congestion per Commuter	Travel Time Index
Austin	Austin	Austin
Oklahoma City	San Jose	Oklahoma City
Kansas City	Kansas City	San Antonio
San Antonio	San Antonio	San Jose
San Jose	San Diego	San Diego
Milwaukee	Nashville	Kansas City
Nashville	Oklahoma City	Denver
Columbus	Milwaukee	Columbus
Indianapolis	Columbus	Milwaukee
Denver	Charlotte	Las Vegas
San Diego	Denver	Indianapolis
Charlotte	Indianapolis	**Jacksonville (75)**
Jacksonville (77)	**Jacksonville (72)**	Nashville
Las Vegas	Las Vegas	Charlotte
Raleigh-Cary	Raleigh-Cary	Raleigh-Cary

Source: TTI Urban Mobility Report. Retrieved December 2021.

Quality of Life

Numbeo provides quality of life rankings for 252 cities across the world. It is an independent research organization considers Jacksonville to have the 59th best quality of life of the 252 cities evaluated. Exhibit 5 summarizes the ratings and Exhibit 6 shows the rankings vs. the peer communities included in Numbeo's system.

Exhibit 5. Numbeo Quality of Life Indicators for Jacksonville

Indicator	Score	Rating
Purchasing Power Index	121.81	Very High
Safety Index	43.18	Moderate
Health Care Index	69.66	High
Climate Index	87.81	Very High
Cost of Living Index	71.90	Moderate
Property Price to Income Ratio	3.59	Very Low
Traffic Commute Time Index	35.33	Moderate
Pollution Index	41.87	Moderate
Quality of Life Index	**171.09**	**Very High**

Exhibit 6. Quality of Life Indicators

Quality of Life	Purchasing Power	Safety	Health Care	Cost of Living	Property Price to Income	Traffic Commute	Pollution	Climate
Adelaide	Austin	Zurich	Adelaide	Bucharest	Indianapolis	Adelaide	Helsinki	Auckland
Charlotte	San Jose	Munich	Vienna	Budapest	San Antonio	Columbus	Vienna	San Diego
Columbus	Charlotte	Helsinki	Lyon	Warsaw	Kansas City	Oklahoma City	Zurich	San Jose
Zurich	Columbus	Warsaw	Oslo	San Antonio	Charlotte	Kansas City	Adelaide	Adelaide
Austin	Jacksonville (8)	Vienna	Copenhagen	Oklahoma City	Jacksonville (19)	Vienna	Stockholm	Lyon
Oklahoma City	San Antonio	Copenhagen	Munich	Austin	Oklahoma City	Las Vegas	Copenhagen	Rotterdam
San Jose	Indianapolis	Bucharest	Helsinki	Kansas City	Las Vegas	Copenhagen	Oklahoma City	Jacksonville (80)
San Diego	Kansas City	Adelaide	Rotterdam	Indianapolis	Columbus	Helsinki	Oslo	Amsterdam
Kansas City	Zurich	Amsterdam	Oklahoma City	Vienna	Austin	Indianapolis	Munich	Dublin
Copenhagen	Oklahoma City	Oslo	Kansas City	Las Vegas	Nashville	Amsterdam	Columbus	Charlotte
San Antonio	Las Vegas	Budapest	Hamburg	Jacksonville (165)	Adelaide	Rotterdam	Charlotte	Copenhagen
Jacksonville (29)	San Diego	Rotterdam	Charlotte	Charlotte	San Jose	San Antonio	Auckland	Nashville
Vienna	Nashville	San Diego	Zurich	Columbus	San Diego	Oslo	Amsterdam	Hamburg
Munich	Adelaide	Austin	Columbus	Hamburg	Rotterdam	Munich	Hamburg	Austin
Helsinki	Hamburg	Hamburg	San Jose	Nashville	Zurich	Zurich	Kansas City	Vienna
Indianapolis	Munich	Columbus	Auckland	San Jose	Dublin	San Diego	San Diego	Zurich
Amsterdam	Stockholm	Charlotte	Indianapolis	Rotterdam	Lyon	Austin	Nashville	San Antonio
Nashville	Amsterdam	San Jose	San Antonio	San Diego	Copenhagen	Hamburg	Austin	Budapest
Rotterdam	Rotterdam	Auckland	Austin	Munich	Bucharest	Charlotte	Dublin	Oklahoma City
Hamburg	Copenhagen	Stockholm	San Diego	Adelaide	Amsterdam	Stockholm	Jacksonville (100)	Munich
Oslo	Oslo	Nashville	Jacksonville (112)	Lyon	Oslo	Warsaw	Indianapolis	Bucharest
Auckland	Auckland	San Antonio	Amsterdam	Helsinki	Auckland	Jacksonville (138)	Rotterdam	Kansas City
Stockholm	Lyon	Lyon	Stockholm	Dublin	Hamburg	Lyon	San Antonio	Warsaw
Las Vegas	Helsinki	Oklahoma City	Nashville	Stockholm	Stockholm	Auckland	San Jose	Columbus
Lyon	Dublin	Dublin	Warsaw	Auckland	Helsinki	San Jose	Lyon	Indianapolis
Dublin	Vienna	Las Vegas	Las Vegas	Amsterdam	Vienna	Nashville	Las Vegas	Stockholm
Budapest	Budapest	Jacksonville (203)	Bucharest	Copenhagen	Budapest	Budapest	Budapest	Helsinki
Warsaw	Bucharest	Indianapolis	Dublin	Oslo	Munich	Dublin	Warsaw	Oslo

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Purpose

This project will assist the North Florida Transportation Planning Organization (TPO) in establishing innovative mobility strategies in future updates of the Long-Range Transportation Plan (LRTP) by performing a peer review of planning for other planning agencies and benchmarking North Florida vs. other peer regions.

The evaluation consists of the following:

1. Review of the planning activities performed by peer Metropolitan Planning Organizations (MPOs) to determine if there are emerging planning activities can be models for the North Florida TPO.

2. Summary of North Florida's ranking in publications for mobility, smart regions or quality of life. There are many performance measures used for ranking or assessing regions for their quality of life. Some of these measures are congruent and overlap between the two types of analysis.

Peer Review of MPO Planning Activities

Peer MPOs were selected based on:

- The seven metropolitan areas in Florida with 1 million population or more
- Other MPOs outside of Florida were selected based on population size. The populations are summarized in Figure 1.
- The San Diego Association of Governments (SANDAG) which represents a larger metropolitan area (based on population) was included because their recognition in smart city activities.

Table 1 summarizes the 17 MPOs evaluated and the date of the UPWPs reviewed. Figure 1 shows the location of each MPO.

Table 1. Peer MPOs

MPO Name	Abbreviation	Central City	UPWP Date	Fiscal Year
Alamo Area Metropolitan Planning Organization	AAMPO	San Antonio	May 23, 2022	2022/2023
Broward Metropolitan Planning Organization	BMPO	Broward	May 14, 2020	2021/2022
Capital Area Metropolitan Planning Organization	CAMPO	Austin	June 14, 2021	2022/2023
Charlotte Regional Transportation Planning Organization	CRTPO	Charlotte	March 23, 2022	2023
Forward Pinellas	FP	Clearwater	June 28, 2021	2021/2022
Greater Nashville Regional Council	GNRC	Nashville	August 18, 2021	2022/2023
Hillsborough Transportation Planning Organization	HTPO	Hillsborough	April 29, 2022	2021/2022
Indianapolis Metropolitan Planning Organization	IMPO	Indianapolis	February 22, 2022	2021/2022
Mid-America Regional Council	MARC	Kansas City	October 18, 2021	2022
Miami-Dade TPO	MDTPO	Miami	April 23, 2020	2021/2022
Mid-Ohio Regional Planning Commission	MORPC	Columbus	May 7, 2021	2022
Metroplan Orlando	MPO	Orlando	May 16, 2022	2022/2023
North Florida Transportation Planning Organization	NFTPO	Jacksonville	May 13, 2021	2020/2021
Palm Beach Transportation Planning Agency	PBTPA	West Palm Beach	May 19, 2022	2023/2024
Regional Transportation Commission of Southern Nevada	RTCSNV	Las Vegas	June 17, 2022	2020/2021
San Diego Association of Governments	SANDAG	San Diego	June 1, 2022	2023
Southeastern Wisconsin Regional Planning Commission	SWRPC	Milwaukee	September 30, 2020	2021

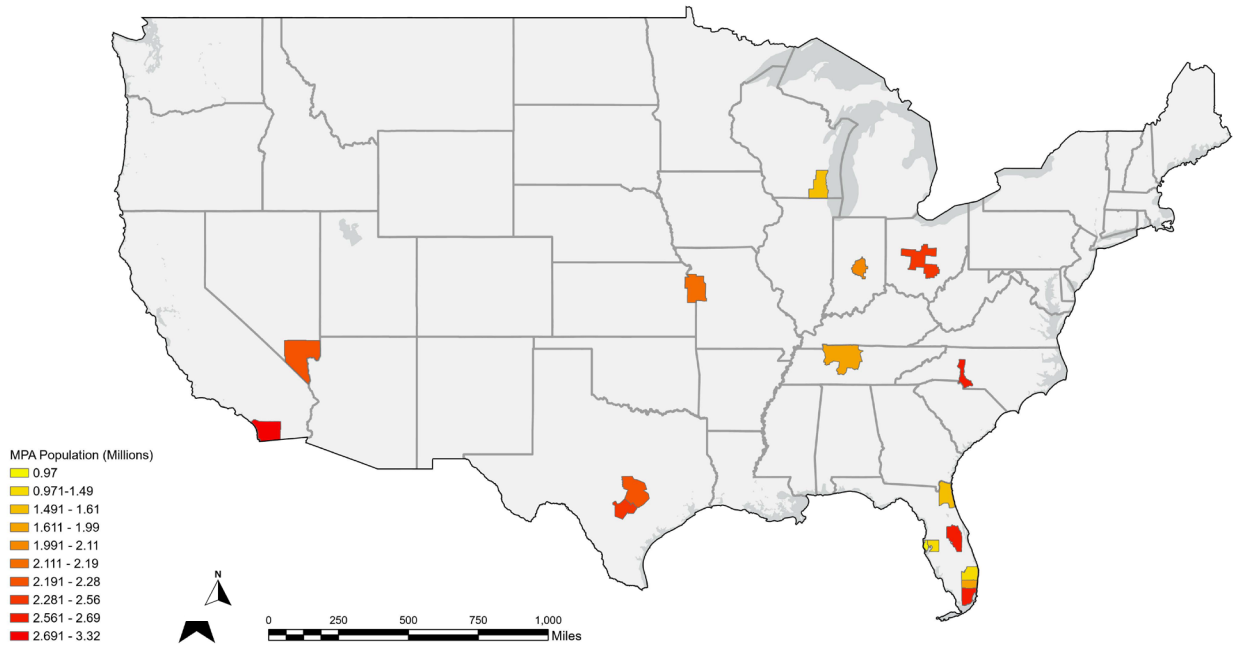


Figure 1. Peer MPOS

Funding

MPOs are funded through the US Department of Transportation (DOT). Under the Bipartisan Infrastructure Law (BIL) § 11201; 23 U.S.C. 134, MPOs are allocated funding through the Metropolitan Planning Program (commonly referred to as PL funds). These funds are overseen by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) and apportioned to the state for its allocation to each MPO. The PL program also has requirements for allocation to State Planning and Research Programs (2.5%) if Complete Streets standards or policies is not in place. The funding is allocated on an 80% federal, 20% state funding share.

Figure 2 summarizes the budgeted amounts for the activities considered vs. the population of the metropolitan statistical areas for the peer MPOs. A stronger correlation between the funding and planning activities was intuited. The lower level of correlation can be explained by:

- Funding for development of Long Range Transportation Plans (LRTPs), Transportation Improvement Programs (TIPs) and Unified Planning Work Programs (UPWPs) are not included. LRTPs are developed once every five years and the funding for other studies is typical reduced by the MPO during the year(s) the LRTP update is occurring.
- Some MPOs are receive additional funding from the states or local governments.
- Other funding sources can be used by MPOs planning activities such as the Congestion Mitigation and Air Quality (CMAQ) Program and Surface Transportation Block Grant Program (commonly called SU).

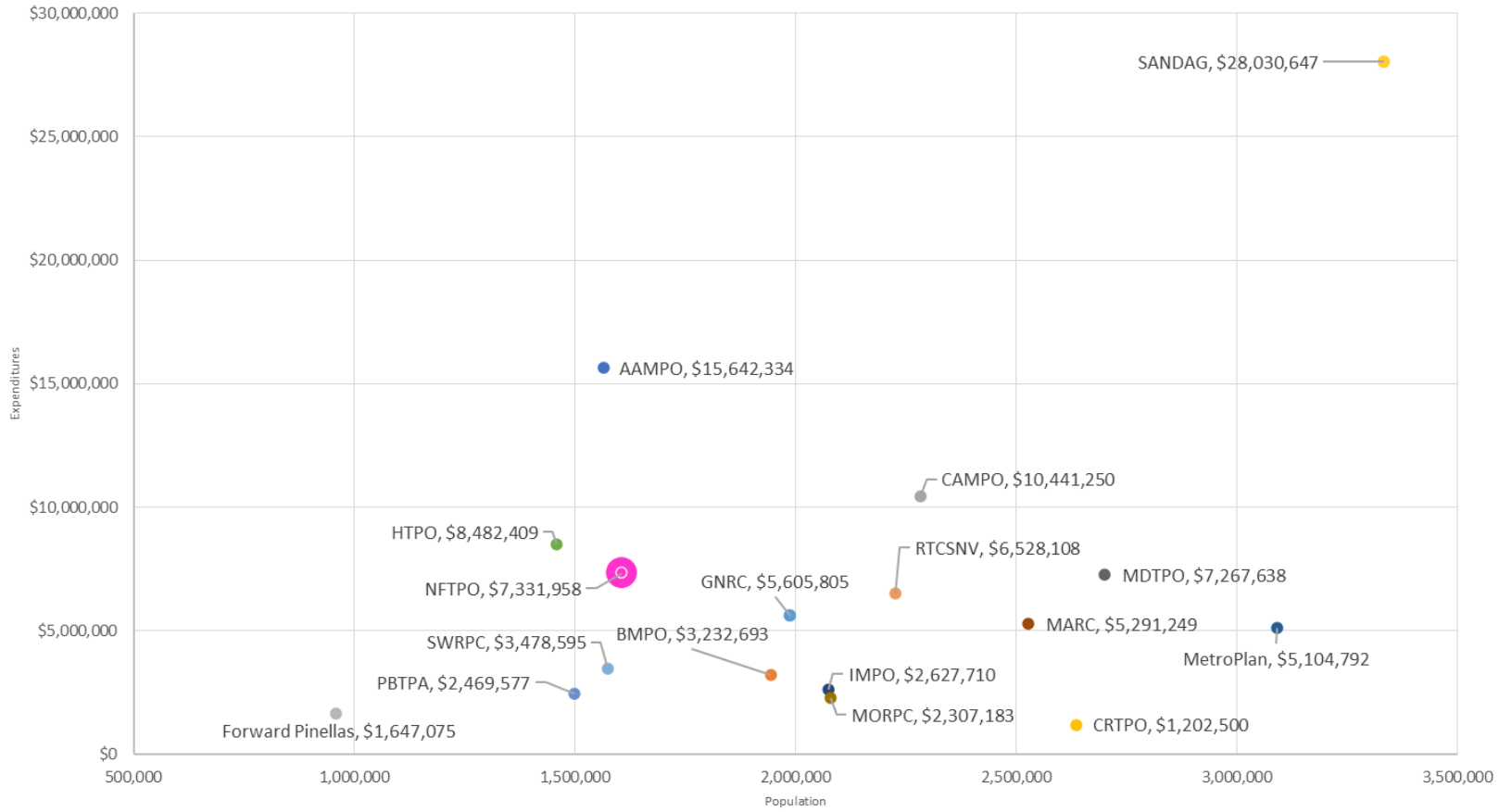


Figure 2. Expenditures vs. Population

Planning Activities

A review of the peer MPOs UPWPs was performed to assess the type of planning activities being performed. There is a wide variety of the format of the UPWPs, project descriptions and typology used by the MPOs both within and outside of Florida. The project team reviewed the descriptions of planning tasks and grouped the planning activities into the following groups.

- Active Transportation Planning – planning to promote a more active life styles. This task could be combined with bicycle and pedestrian planning but entails a broader analysis of land use integration and reducing distances for non-motorized trips.
- Aviation Planning – aviation planning activities for landside activities not funded by the Federal Aviation Authority.
- Bicycle and Pedestrian Planning – planning for bicycle and pedestrian facilities.
- Climate Action – planning to promote carbon emission reductions.
- Complete Streets – planning for roadways inclusive of bicyclists, motorists, pedestrians and transit riders. These activities could have been combined with multimodal corridor studies but these studies were typically smaller in scale than the multimodal corridor studies and focused on lower functional classifications (collectors and local streets).
- Curb Management – planning for parking, micromobility, ride-sharing loading zones and other activities that occur along the edge of a street adjacent to the curb.
- Electric Vehicles and Clean Fuels – planning focused specifically on electrification of fleets or providing charging stations or use of other alternative fuels.
- Environmental Planning – integrating environmental analysis in the planning process.
- Freight Planning – planning for the movement of goods by truck, rail, ports or airports.
- Grant Program – grant programs administration and support were identified by two agencies specific for preparing and managing discretionary grant programs.
- Land Use – land use planning was identified as integral for transportation planning. Activities included in LRTP updates were removed.
- Mobility Hubs – mobility hubs focus on the "last-mile" in a trip. Strategies include integrating land use, parking, transit stops and amenities.
- Modeling / Forecasting – efforts to develop and maintain the region's travel demand forecasting. If the description of the project was directly included in LRTPs the activity was not included.
- Multimodal Corridor Studies – planning along major corridors (freeways, toll roads or arterials) to integrate modes and enhance the mobility of travelers.
- Parking – projects focused on areawide or regional parking planning.
- Performance Management – development of data for performance-based planning. The data development and reporting included a broad range of applications.
- Resiliency Study – planning for sustainability and measures to address sea-level rise.
- Safety Planning – planning to address safety within a specific area, corridor or regionally.
- Travel Demand Management – activities to provide ridesharing were included in this classification.
- Transportation Systems Management and Operations (TSM&O) and Smart Cities – the application of technology and operational strategies to provide a safe transportation system

and ensure the reliable mobility of people and goods while enhancing economic prosperity and preserving the quality of the environment and communities.
- Underserved Communities – specific planning activities focused on environmental justice, Title VI or other underserved communities.

The project scopes for the planning tasks considered are summarized by MPO in **Appendix A.**

Table 2 summarizes the FY 2020/2021 and 2021/2022 activities in the North Florida TPO UPWP considered.

Table 3 summarizes the budgeted expenditures in each of the categories identified above. The funding allocated to each project type by MPO is provided in Figure 3.

The total allocation of planning tasks by MPO is dominated by multimodal corridor studies. They are the most commonly performed and highest funded project type at 29%

Transit planning funds provided by the FTA are allocated separately than the PL funds but are required to be reported in the UPWP. Some MPOs provide these planning and services directly and others just report the amounts as required and the local transit agency performs the planning functions (as is the case with the North Florida TPO).

- Transit Oriented Development – planning to integrate transit and land use to increase property values and enhance access to transit.
- Transit Planning – projects specifically focused on corridors or transit development plans.
- Transit Technology – these activities could have been combined with Transportation Systems Management and Operations (TSM&O) activities but tasks funded through Federal Transit Administration programs was kept separate.

The projects were inventoried but are not summarized in all of the analysis.

Multimodal corridor planning and transit planning consume about two-thirds of the total funding. The remaining one-third are allocated among the remaining activities.

The funding dedicated to these activities varies from year to year based on LRTP cycles and local priorities. The analysis is only a snapshot of the planning that was identified in the UPWPs at the time of this analysis. The latest adopted UPWPs were retrieved in May of 2022 from the agency websites. Many MPOs fiscal years run from July 1 to June 30 each year and does not capture any tentative UPWPs that may have been available at that time.

Table 2. North Florida TPO FY 2020/21 UPWP

Task Name		Responsible Agency	TOTAL without Non Cash Match	Included?
FISCAL YEAR 2020/2021				
SECTION 1 ADMINISTRATION				
1.1	Program Administration	NFTPO	1,086,835	
1.3	Training/Travel	NFTPO	50,000	
1.4	Unified Planning Work Program	NFTPO	90,000	
1.5	General Consultant Services	NFTPO	83,991	
1.6	Annual Audit	NFTPO	25,000	
SECTION 2 DATA COLLECTION				
2.1	Data Analytic Platform Update	NFTPO	250,000	✓
SECTION 3 TRANSPORTATION IMPROVEMENT PROGRAM				
3.1	Transportation Improvement Program	NFTPO	54,600	
3.2	List of Priority Projects	NFTPO	-	
SECTION 4 LONG RANGE TRANSPORTATION PLAN				
4.1	GIS/Model Update/Maintenance	NFTPO	145,500	✓
4.2	Establishing Performance Targets	NFTPO	-	
4.3	2045 LRTP Plan Amendments & Modifications	NFTPO	-	
4.4	Efficient Transportation Decision Making	NFTPO	-	
SECTION 5 SPECIAL PROJECTS				
5.1	Annual Mobility Report	NFTPO	75,000	✓
5.2	A1A/Anastasia Boulevard (St. Johns County) Speed Management by De	FDOT	100,000	✓
5.3	A1A/Anastasia Boulevard (St. Augustine) Complete Streets Study	NFTPO	100,000	✓
5.4	Hodges Boulevard (Jacksonville) Corridor Study	NFTPO	100,000	✓
5.5	JAXPORT Origin/Destination Study	NFTPO	75,000	✓
5.6	Radar Road Extension (Clay County) Feasibility Study	NFTPO	100,000	✓
5.7	Parental Home Road (Jacksonville) Corridor Study	NFTPO	75,000	✓
5.8	SR A1A (NS Mayport) Resiliency Study	NFTPO	100,000	✓
5.9	14th Street (Nassau County) Bicycle and Pedestrian Safety Study	NFTPO	50,000	✓
5.3	Mobility for the Underserved/Ladders of Opportunity	NFTPO	50,000	✓
5.32	Clay County Pavement Management Pilot Study	NFTPO	-	✓*
5.36	SMART St. Augustine/IDE Integration	NFTPO	100,000	✓
SECTION 6 PUBLIC INVOLVEMENT				
6.1	Public Involvement Program	NFTPO	490,000	

Task Name		Responsible Agency	TOTAL without Non Cash Match	Included?
SECTION 7 SYSTEMS PLANNING				
7.0	Clean Fuels Coalition	NFTPO	225,000	✓
7.1	Bicycle/Pedestrian Faculties Planning	NFTPO	50,000	✓
7.2	First Coast Commuter Services	NFTPO	25,000	✓
7.3	Transit Planning for the St. Augustine UA	NFTPO	110,000	
7.4	Smart North Florida Coalition	NFTPO	250,000	✓
7.5	Transportation Disadvantaged Related Planning	NFTPO	38,877	✓
7.7	JTA Premium Transit and Fixed Guideway Service	JTA	550,000	✓
7.8	JTA Transit Development Plan Update	JTA	110,000	✓
7.9	JTA Transit Vision	JTA	70,000	✓
7.1	JTA Develop Transit Educational Campaign	JTA	75,000	✓
7.11	JTA General Transit and Regional Planning	JTA	200,000	✓
7.12	JTA Sustainability Program	JTA	35,000	✓
7.13	JTA Strategic Technology Planning	JTA	50,000	✓
7.16	JTA Transit Model Enhancements	JTA	50,000	✓
7.17	JTA Organizational Improvement and Customer Focused Initiative	JTA	88,938	✓
7.19	JTA- Operations Training Plan	JTA	50,000	✓
7.20	JTA- Automation Planning	JTA	80,000	✓
7.21	JTA Transit Facilities, ADA and DBE Planning	JTA	150,000	✓
7.22	JTA Post COVID-19 Strategic Plan	JTA	200,000	✓
	JTA TOD for First Coast Flyer Green Line	JTA	$392,760	✓
	JTA Commuter Rail Planning	JTA	$365,445	✓
FISCAL YEAR 2021/2022				
SECTION 1 ADMINISTRATION				
1.1	Program Administration	NFTPO	1,029,155	
1.3	Training/Travel	NFTPO	50,000	
1.4	Unified Planning Work Program	NFTPO	50,000	
1.5	General Consultant Services	NFTPO	250,649	
1.6	Annual Audit	NFTPO	25,000	
2.1	Data Analytic Platform Update	NFTPO	250,000	✓
3.1	Transportation Improvement Program	NFTPO	54,600	
3.2	List of Priority Projects	NFTPO	5,000	
4.1	GIS/Model Update/Maintenance	NFTPO	170,500	✓
4.2	Establishing Performance Targets	NFTPO	5,000	
4.3	2045 LRTP Plan Amendments & Modifications	NFTPO	10,000	
4.4	Efficient Transportation Decision Making	NFTPO	5,000	

Task Name		Responsible Agency	TOTAL without Non Cash Match	Included?
SECTION 5 SPECIAL PROJECTS				
5.1	Annual Mobility Report	NFTPO	75,000	✓
5.10	East Coast Greenway (Beaches) Feasibility Study	NFTPO	125,000	✓
5.11	Clay-Duval County Trail Feasibility Study	NFTPO	80,000	✓
5.12	US 17 (Green Cove Springs) Corridor Study	NFTPO	102,000	✓
5.13	First Coast Expressway Impact Study	NFTPO	55,000	✓
5.14	Pages Dairy Road Extension Feasibility Study	NFTPO	80,000	✓
5.15	Pearce Street Corridor Study	NFTPO	95,000	✓
5.16	Probe Vehicle Data Verification	NFTPO	75,000	✓
5.17	SMART North Florida Report Card	NFTPO	50,000	✓
5.18	Town of Baldwin Storm Water Study	NFTPO	75,000	✓
5.19	8th Street Corridor Study	NFTPO	95,000	✓
SECTION 6 PUBLIC INVOLVEMENT				
6.1	Public Involvement Program	NFTPO	390,000	
SECTION 7 SYSTEMS PLANNING				
7.0	Clean Fuels Coalition	NFTPO	212,500	✓
7.1	Bicycle/Pedestrian Faculties Planning	NFTPO	50,000	✓
7.2	First Coast Commuter Services	NFTPO	50,000	✓
7.3	Transit Planning for the St. Augustine UA	NFTPO	60,000	✓
7.4	Smart North Florida Coalition	NFTPO	250,000	✓
7.5	Transportation Disadvantaged Related Planning	NFTPO	-	✓
7.7	JTA Premium Transit and Fixed Guideway Service	JTA	450,000	✓
7.8	JTA Transit Development Plan	JTA	20,000	✓
7.9	JTA Transit Vision	JTA	-	✓
7.10	JTA Develop Transit Educational Campaign	JTA	75,000	✓
7.11	JTA General Transit and Regional Planning	JTA	200,000	
7.12	JTA Sustainability Program	JTA	25,000	✓
7.13	JTA Strategic Technology Planning	JTA	25,000	✓
7.15	JTA Transit Oriented Development (TOD) Planning	JTA	100,000	✓
7.16	JTA Transit Model Enhancements	JTA	50,000	✓
7.17	JTA Organizational Improvement and Customer Focused Initiative	JTA	86,438	✓
7.18	JTA Transit Asset Management Plan (TAMP) Update	JTA	300,000	✓
7.19	JTA Operations Training Plan	JTA	50,000	✓
7.20	JTA Automation Planning	JTA	80,000	✓
7.21	JTA Transit Facilities, ADA and DBD Planning	JTA	150,000	✓

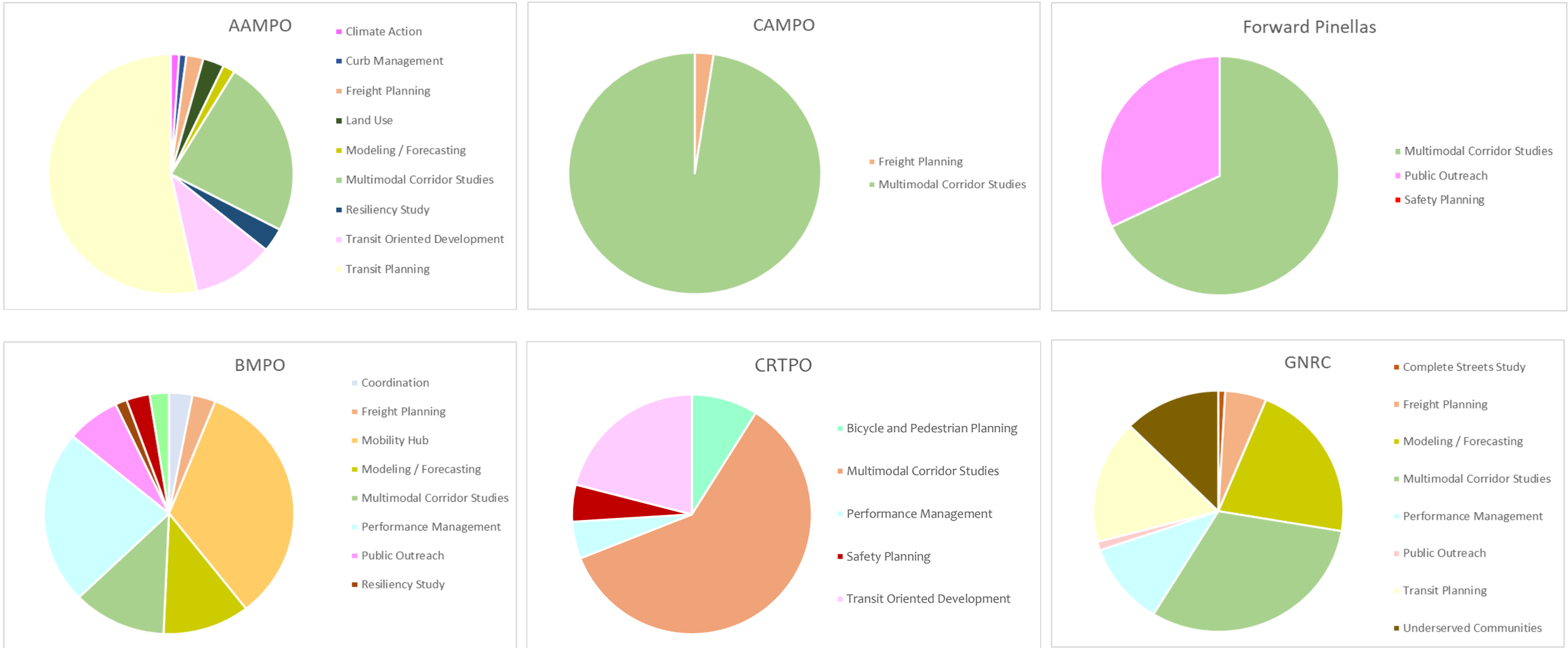
Table 3. Summary of Planning Activities

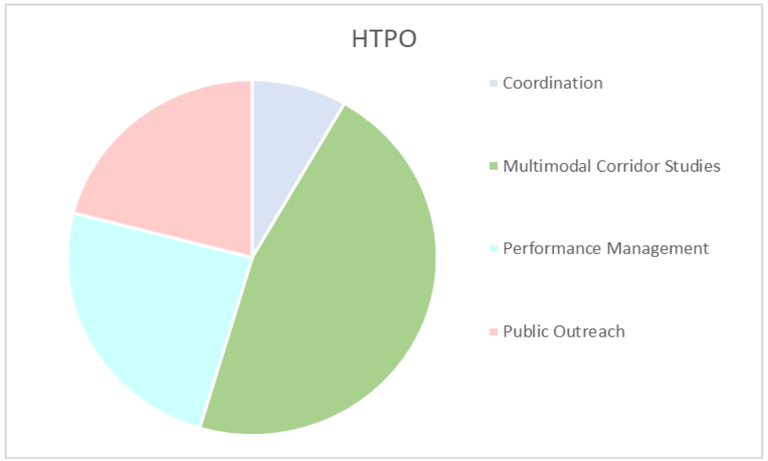
Planning Activity	AAMPO	BMPO	CAMPO	CRTPO	GNRC	HTPO	IMPO	MARC	MDTPO
Active Transportation Planning								$128,452	
Aviation Planning								$2,518	
Bicycle and Pedestrian Planning				$107,500	$0				
Climate Action	$170,000							$103,000	
Complete Streets Study					$50,000				
Curb Management	$150,000								
Electric Vehicles and Clean Fuels									
Environmental Planning							$2,000		
Freight Planning	$350,000	$100,000	$250,000		$300,000		$150,000	$84,535	
Grant Program									
Land Use	$436,036						$26,000		
Mobility Hub		$1,108,498			$0				
Modeling and Forecasting	$250,000	$372,338			$1,200,000		$479,690	$617,360	
Multimodal Corridor Studies	$3,750,000	$400,000	$10,191,250	$722,500	$1,740,000	$3,925,209		$971,542	$2,211,638
Parking									
Performance Management		$771,857		$60,000	$620,000	$2,074,618	$40,000	$1,008,283	$250,000
Public Outreach		$230,000			$65,000	$1,777,243	$440,000		$470,000
Resiliency Study	$500,000	$50,000							
Safety Planning		$100,000		$60,000			$60,000	$101,239	
Transit Oriented Development	$1,675,072			$252,500				$500,000	$271,000
Transit Planning	$8,361,226				$930,805		$712,500	$1,440,000	$4,065,000
Transit Technology									
Transportation Improvement Program		$82,533				$458,355	$120,392		$180,000
Travel Demand Management									
TSM&O and Smart Cities								$81,586	
Underserved Communities					$700,000		$317,520	$252,734	
Total	**$15,642,334**	**$3,315,226**	**$10,441,250**	**$1,202,500**	**$5,605,805**	**$8,940,764**	**$2,748,102**	**$5,291,249**	**$7,517,638**

Table 2. Summary of Planning Activities Continued

Planning Activity	MORPC	MPO	NFTPO	PBTPA	RTCSNV	SANDAG	SWRPC	Forward Pinellas	Total	Count	Percent of Expenditures
Active Transportation Planning			$75,000		$983,981	$636,673			$1,749,106	4	1.49%
Aviation Planning									$2,518	2	0.00%
Bicycle and Pedestrian Planning	$225,000		$380,000	$150,000	$385,579	$397,537			$1,720,616	9	1.46%
Climate Action						$389,310		1720	$662,310	4	0.56%
Complete Streets Study			$100,000		$211,656	$342,212			$703,868	6	0.60%
Curb Management									$2,506,875	6	2.13%
Electric Vehicles and Clean Fuels			$437,500			$2,909,620			$150,000	2	0.13%
Environmental Planning							$140,000		$3,347,120	3	2.85%
Freight Planning			$75,000			$548,991			$142,000	3	0.12%
Grant Program						$570,854			$1,858,526	9	1.58%
Land Use							$1,330,000		$570,854	2	0.49%
Mobility Hub					$515,000	$1,084,800			$1,792,036	4	1.53%
Modeling and Forecasting			$316,000			$402,377	$75,000		$2,708,298	5	2.30%
Multimodal Corridor Studies	$250,000	$1,643,085	$702,000	$1,100,000	$444,002	$4,124,001		$880,712	$3,712,765	9	3.16%
Parking						$158,178			$33,055,939	16	28.13%
Performance Management	$350,000		$775,000	$145,000			$1,485,057		$158,178	2	0.13%
Public Outreach	$50,000					$1,665,698		$414,404	$7,579,815	12	6.45%
Resiliency Study			$175,000			$286,529	$448,538		$5,112,345	9	4.35%
Safety Planning				$125,000					$1,460,067	6	1.24%
Transit Oriented Development	$500,000		$958,205		$2,270,000				$446,239	7	0.38%
Transit Planning	$432,183	$3,461,707	$3,315,376		$280,000	$9,750,970			$6,426,777	8	5.47%
Transit Technology			$75,000						$32,749,767	12	27.87%
Travel Demand Management			$75,000		$104,000				$75,000	2	0.06%
TSM&O and Smart Cities			$600,000		$1,190,000	$800,332			$179,000	3	0.15%
Underserved Communities	$500,000		$88,877		$143,890	$3,962,565			$2,671,918	6	2.27%
Total	**$2,307,183**	**$5,104,792**	**$7,331,958**	**$2,469,577**	**$6,528,108**	**$28,030,647**	**$3,478,595**	**$1,647,075**	**$117,507,523**		

Figure 3. Expenditures by MPO

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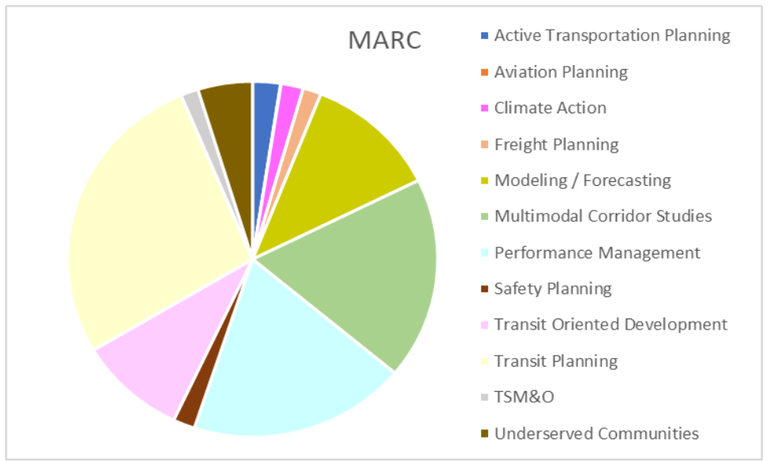
Multimodal Corridor Studies
Performance Management
Public Outreach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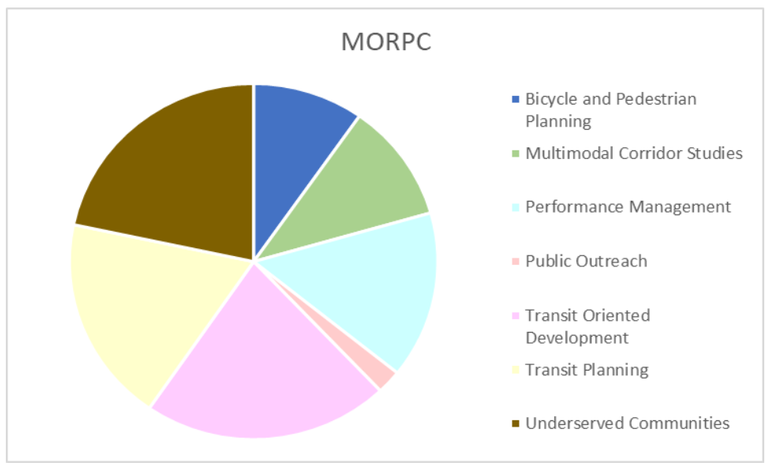
Aviation Planning
Climate Action
Freight Planning
Modeling / Forecasting
Multimodal Corridor Studies
Performance Management
Safety Planning
Transit Oriented Development
Transit Planning
TSM&O
Underserved Communities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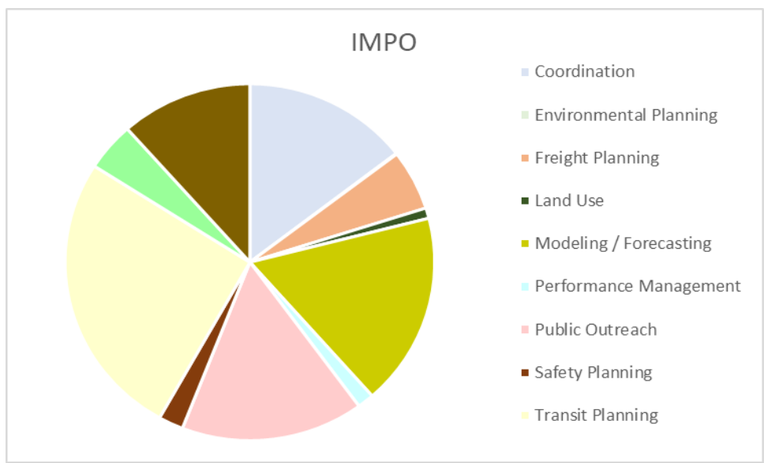
Performance Management
Public Outreach
Transit Oriented Development
Transit Planning
Underserved Communities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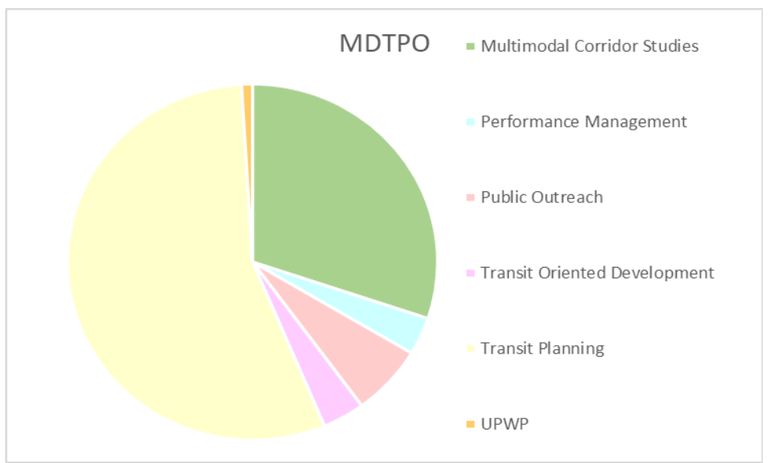
Land Use
Modeling / Forecasting
Performance Management
Public Outreach
Safety Planning
Transit Planning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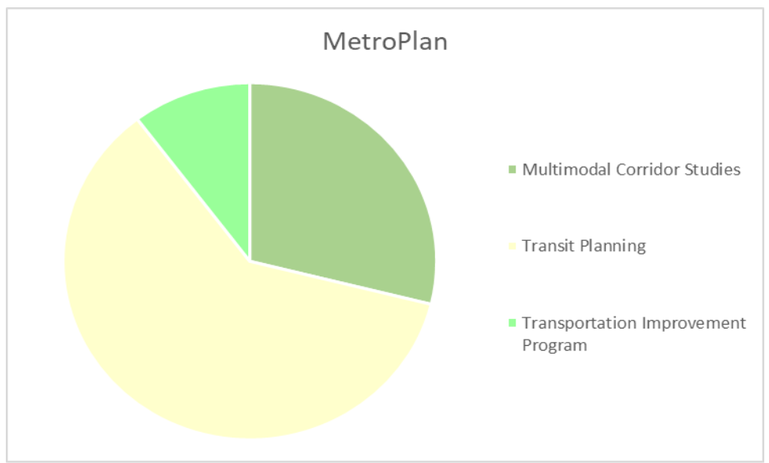
Performance Management
Public Outreach
Transit Oriented Development
Transit Planning
UPWP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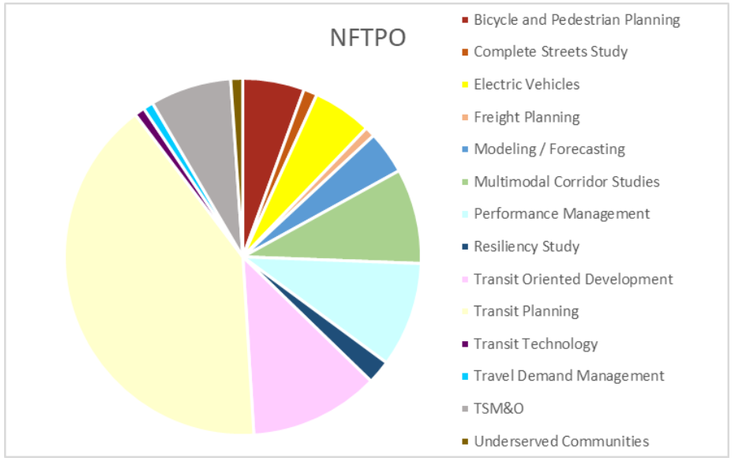
Multimodal Corridor Studies
Transit Planning
Transportation Improvement Program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Complete Streets Study
Electric Vehicles
Freight Planning
Modeling / Forecasting
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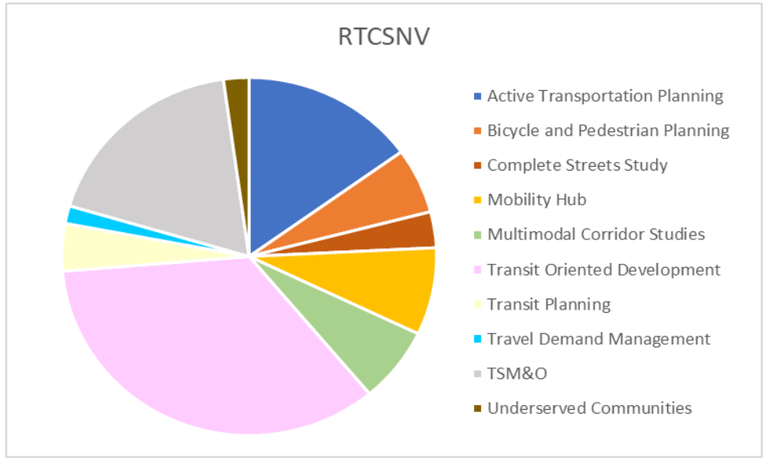
Performance Management
Resiliency Study
Transit Oriented Development
Transit Planning
Transit Technology
Travel Demand Management
TSM&O
Underserved Communities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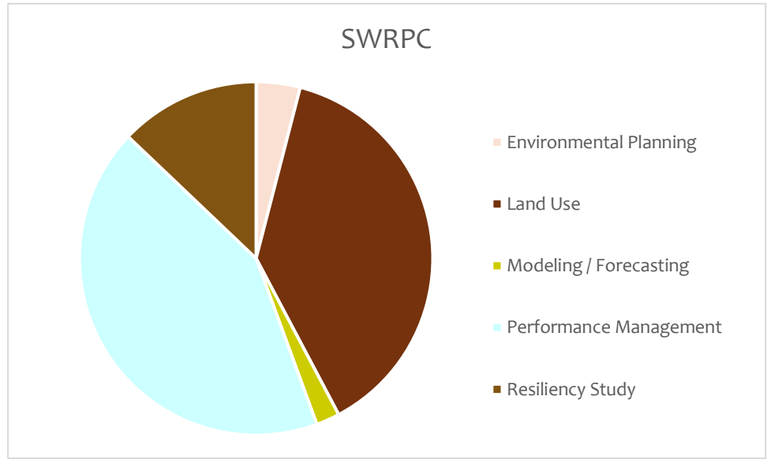
Complete Streets Study
Mobility Hub
Multimodal Corridor Studies
Transit Oriented Development
Transit Planning
Travel Demand Management
TSM&O
Underserved Communities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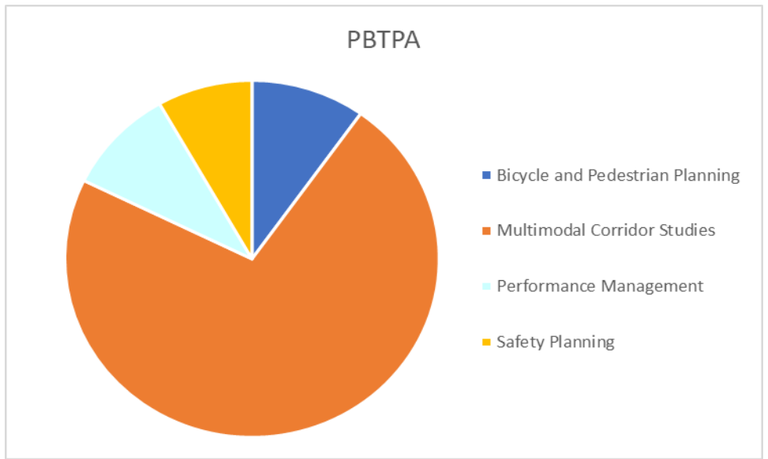
Land Use
Modeling / Forecasting
Performance Management
Resiliency Study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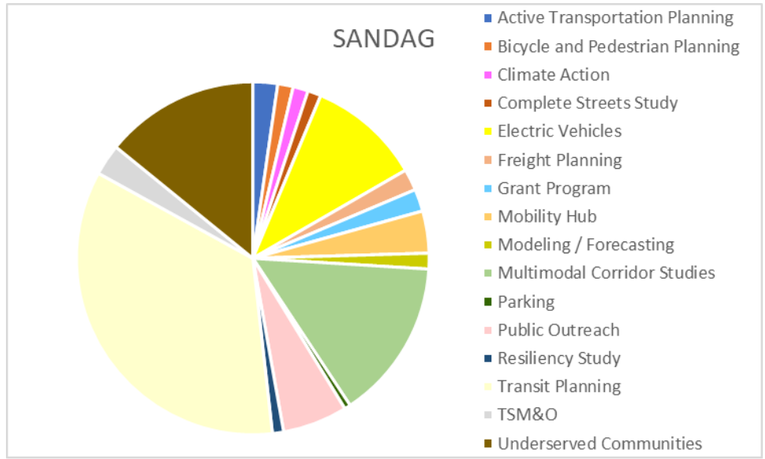
Multimodal Corridor Studies
Performance Management
Safety Planning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Bicycle and Pedestrian Planning
Climate Action
Complete Streets Study
Electric Vehicles
Freight Planning
Grant Program
Mobility Hub
Modeling / Forecasting
Multimodal Corridor Studies
Parking
Public Outreach
Resiliency Study
Transit Planning
TSM&O
Underserved Communities

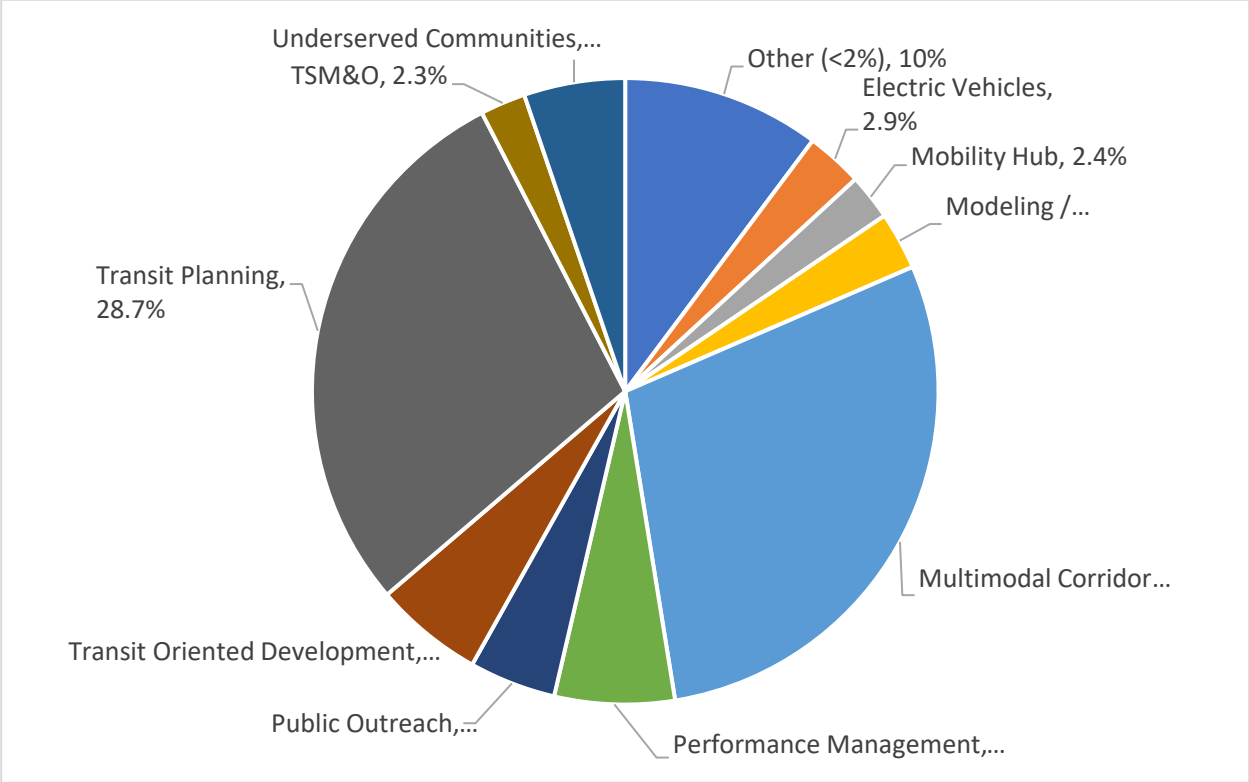

Figure 4. Planning Activities by All MPOs

Summary of North Florida TPO Planning Activities

The North Florida TPO has a diverse and comprehensive approach to regional planning as summarized in Table 3. The North Florida TPO recently completed, or has plans to complete, a planning project in the current UPWP in most of the factors summarized.

Table 4. Summary of the North Florida TPO Planning Activities

Planning Activity	Prior Studies	Current UPWP	Current or Recent Activities
Active Transportation Planning	✓	✓	A Blue Zone study will begin in FY 22/23 to coordinate with regional agencies and propose strategies. Policies were included in prior LRTPs.
Aviation Planning	✓	✓	Aviation planning is performed by Jacksonville Aviation Authority and Northeast Florida Regional Airport and funded by the FAA. No recent studies were performed for landside access that are funded using PL funds. The FAA tasks are included by reference to summarize all federal transportation spending.
Bicycle and Pedestrian Planning	✓	✓	A regional Bicycle and Pedestrian Plan is performed every five years in support of the LRTP.
Climate Action			North Florida is designated as a maintenance area in accordance with the National Ambient Air Quality Standards of the Clean Air Act. No climate action plan or detailed air-quality planning is performed outside of the attainment analysis in the State Implementation Plan completed by Florida DOT (FDOT).
Complete Streets Study	✓	✓	A complete street policy was adopted in the 2040 Long Range Transportation Plan and corridor studies are performed on a regular basis at the request of stakeholder agencies.
Curb Management	✓		Curb management studies were performed for the City of St. Augustine as part of the For-hire Vehicle Study and Atlantic/Neptune Beach Parking Study. No designated activities are included in the UPWP.

Planning Activity	Prior Studies	Current UPWP	Current or Recent Activities
Electric Vehicles and Clean Fuels	✓	✓	The Clean Fuels Coalition supports electric vehicle planning and deployment of charging stations in partnership with stakeholder agencies.
Environmental Planning	✓		No dedicated environmental planning activities were identified but environmental analysis is part of many planning projects. During the LRTP a high-level analysis is performed through FDOT's Effective Transportation Decision Making (ETDM) process.
Freight Planning	✓	✓	A regional freight plan is prepared every five years in support of the LRTP.
Grant Program			No dedicated grant program support is designated but the North Florida TPO participates in grant applications as a lead or supporting agency.
Land Use	✓	✓	Alternate land use scenarios are developed during the LRTP process every five years. Other MPOs land use studies that were included were not specifically related to the LRTP but broader policy plans or for travel demand forecasting.
Mobility Hub	✓		Mobility hubs are considered as needed in projects. For example, SMART St. Augustine project includes mobility hubs. There are no projects in the current UPWP that include mobility hubs.
Modeling and Forecasting	✓	✓	A regional travel demand forecasting model undergoes a major update as part of the LRTP effort every five years. Recurring model updates and refinements are continuously performed between updates.
Multimodal Corridor Studies	✓	✓	The North Florida TPO regularly funds multimodal corridor studies at the request of stakeholder organizations.
Parking	✓		Recent parking projects include the SMART St. Augustine and Atlantic/Neptune Beach Parking Study. There are no parking studies in the current UPWP.

Planning Activity	Prior Studies	Current UPWP	Current or Recent Activities
Performance Management	✓	✓	Performance management and data analytics have been a focus area for the TPO for several years through the Congestion Management Process.
Public Outreach	✓	✓	Public outreach is not included in all of the analysis in this study since they can be programmed as part of each planning task or as a general budget. The North Florida TPO has a strong public outreach program that involves web sites, virtual and hybrid meetings, engagement with community organizations and social media as a "general" task and is also included in individual projects.
Resiliency Study	✓	✓	A regional resiliency plan is being prepared in FY 22/23. Other project specific planning tasks were part of prior UPWPs.
Safety Planning	✓	✓	A reginal strategic safety plan is prepared every five years to support the LRTP.
Travel Demand Management	✓	✓	The North Florida TPO supports ridesharing programs through its Cool to Pool program.
TSM&O and Smart Cities	✓	✓	The North Florida TPO has invested significantly in TSM&O and Smart Cities for over a decade.
Underserved Communities	✓		The North Florida TPO completed a Ladders of Opportunity study to identify and evaluate mobility options to improve these populations in North Florida. No specific planning tasks are included in the current UPWP.

Rising Policy-based Emphasis Areas

The metropolitan planning program of the BIL identified three new planning factors that impact the North Florida TPO. As the North Florida TPO moves forward, additional investments may be needed in these areas based on the final rule making and policy interpretation.

We anticipate the US DOT will issue a Notice of Proposed Rule-Making in the future to further define how MPOs will adopt these requirements.

Affordable Housing

The BIL makes several changes to include housing considerations in the metropolitan transportation planning process, including—

- *adding affordable housing organizations to a list of stakeholders MPOs are required to provide a reasonable opportunity to comment on the metropolitan transportation plan; and [§ 11201(d)(4)(B); 23 U.S.C. 134(i)(6)(A)]*
- *within a metropolitan planning area that serves a transportation management area, permitting the transportation planning process to address the integration of housing, transportation, and economic development strategies through a process that provides for effective integration, including by developing a housing coordination plan. [§ 11201(d)(5); 23 U.S.C. 134(k)]*

Housing Coordination Plans are defined in U.S.C. as follows

> *(C) Housing coordination plan.—*
>
> *(i) In general.—*
>
> *A metropolitan planning organization serving a transportation management area may develop a housing coordination plan that includes projects and strategies that may be considered in the metropolitan transportation plan of the metropolitan planning organization.*
>
> *(ii) Contents.—A plan described in clause (i) may—*
>
> *(I) develop regional goals for the integration of housing, transportation, and economic development strategies to—*
>
> *(aa) better connect housing and employment while mitigating commuting times;*
>
> *(bb) align transportation improvements with housing needs, such as housing supply shortages, and proposed housing development;*
>
> *(cc) align planning for housing and transportation to address needs in relationship to household incomes within the metropolitan planning area;*
>
> *(dd) expand housing and economic development within the catchment areas of existing transportation facilities and public transportation services when appropriate, including higher-density development, as locally determined;*

> *(ee) manage effects of growth of vehicle miles traveled experienced in the metropolitan planning area related to housing development and economic development;*
>
> *(ff) increase share of households with sufficient and affordable access to the transportation networks of the metropolitan planning area;*
>
> *(II) identify the location of existing and planned housing and employment, and transportation options that connect housing and employment; and*
>
> *(III) include a comparison of transportation plans to land use management plans, including zoning plans, that may affect road use, public transportation ridership, and housing development.*

Affordable housing and land use planning is more broadly addressed in North Florida by the Northeast Florida Regional Council (NEFRC). https://www.nefrc.org/.

> *Regional Planning Councils are authorized by Florida Statutes. There are 10 Regional Planning Councils in the State of Florida. The Northeast Florida Regional Council, which covers Regional District 4, was formed in 1977 by an inter local agreement, pursuant to Chapter 163, Florida Statutes, to "… establish an organization that will promote area-wide coordination and related cooperative activities of federal, state, and local governments ensuring a broad based regional organization that can provide a truly regional perspective and enhance the ability and opportunity of local governments to resolve issues and problems transcending their individual boundaries.*

In practice, the NEFPC focuses on the following areas:

- Emergency preparedness
- Local government assistance in
    - Comprehensive plans and Evaluation and Appraisal Reports (EARs)
    - **Land development policies and regulations**
    - GIS data integration
    - **Affordable housing**
- Resiliency
    - Regional planning and policy coordination
    - Development of a risk exposure tool (GIS on-line analysis of potential sea-level rise and emergency preparedness)
- Healthcare coalition support to the Department of health
- Economic development strategies and analysis

Complete Streets

Complete streets policies are encouraged in the BIL by allowing agencies with a coordinated standard or policy to bypass the 2.5% allocation of PL funds to the State Planning and Research Programs.

- The Florida Department of Transportation adopted a complete streets law in 1994. It has a complete streets program that addressed all state-maintained facilities http://www.flcompletestreets.com/

- The City of Jacksonville developed a complete streets policy standards and a Context Sensitive Standards Committee meets regularly to review compliance with these standards
- The North Florida TPO adopted in the 2040 Path Forward Long Range Transportation Plan complete street/context sensitive solutions goals and objectives. https://issuu.com/northfloridatpo/docs/tech_memo__9_-_css_guidelines

Impact Analysis

The US DOT is required to:

> *develop, and make publicly available, a multimodal web-based tool to enable States and MPOs to evaluate the effect of highway and transit investments on the use and conditions of all transportation assets within the State or area served by the metropolitan planning organization, as applicable. [§ 11205(b)(3)]*

The NEFRC uses the REMI model to estimate the economic impact of projects which can be used in the interim. The economic impacts of transportation investment and the social costs of congestion and safety are estimated as part of the North Florida TPO's Congestion Management Process and reported each year in their Annual Mobility Report as the following link https://northfloridatpo.com/uploads/documents/2021_Annual_Mobility_Report.pdf.

US DOT has not published their rule-making or web-based tool for this planning factor.

Underserved Populations

The BIL adds significant funding to improve public transportation and access for America's in need of greater access to food, medical care, other social services and employment opportunities.

The North Florida TPO completed a Ladders of Opportunity study to identify and evaluate mobility options to improve these populations in North Florida.
https://northfloridatpo.com/uploads/Studies/Ladders-of-Opportunity-Final-Report.pdf

Peer Review of City Rankings

Research institutions and information providers use a wide range of definitions and typologies when ranking cities. The methods for collecting and performing rankings include:

- Using publicly available data for population or other demographics
- Disseminating electronic or call-back surveys or solicitations for communities to participate in evaluations.

There is no consistent method for selecting cities for assessments in the ranking systems.

The following summarizes our inclusion and ranking in assessments of

- Smart cities
- Quality of life
- Mobility

Peer Cities

A total of 30 international and domestic cities were identified for consideration based on a review of rankings and or commonly cited as peer cities. Twelve (12) cities have populations less than the Jacksonville Metropolitan Statistical Area (MSA) and 17 have larger populations. The international peer cities considered are shown on Figure 5.

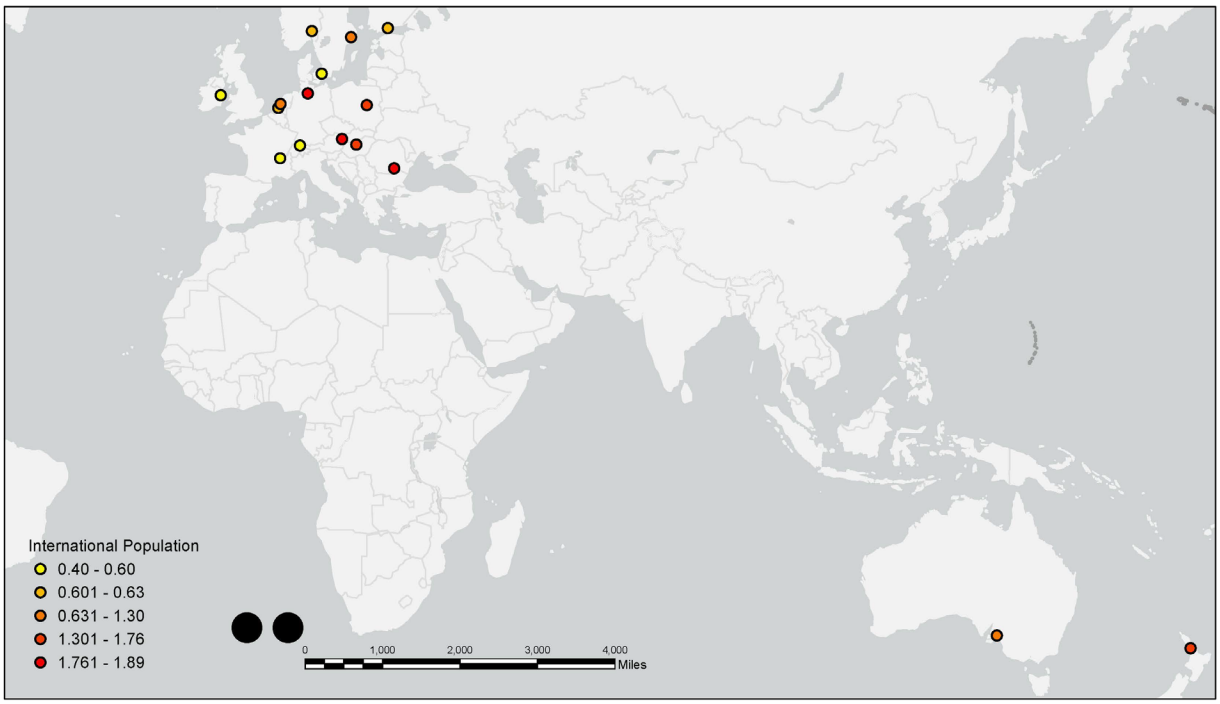

Figure 5. International Peer Cities

Table 4 summarizes the population of these communities. The evaluation for smart city and mobility peers included some but not all of the MPOs evaluated.

Table 5. Peer Cities

City Pop. Rank	Name	Country	City Population	Metropolitan Area Population
548	Rotterdam	Netherlands	1,010,026	1,010,026
521	Oslo	Norway	1,041,377	1,041,377
469	Amsterdam	Netherlands	1,148,972	1,148,972
425	Dublin	Ireland	1,228,179	1,228,179
397	Helsinki	Finland	1,304,851	1,304,851
385	Adelaide	Australia	1,336,403	1,336,403
378	Copenhagen	Denmark	1,346,485	1,346,485
367	Zurich	Switzerland	1,395,356	1,395,356
851	Oklahoma City	United States	662,202	1,425,695
332	Munich	Germany	1,538,302	1,538,302
325	San Antonio	United States	1,564,490	1,564,490
978	Milwaukee	United States	588,939	1,574,490
604	Jacksonville	United States	920,577	1,605,848
306	Auckland	New Zealand	1,606,564	1,606,564
304	Stockholm	Sweden	1,632,798	1,632,798
291	Lyon	France	1,719,268	1,719,268
281	Budapest	Hungary	1,768,073	1,768,073
277	Warsaw	Poland	1,783,251	1,783,251
278	Hamburg	Germany	1,789,954	1,789,954
275	Bucharest	Romania	1,803,247	1,803,247
252	Vienna	Austria	1,929,944	1,929,944
551	San Jose	United States	1,015,570	1,971,160
842	Nashville	United States	674,634	1,989,519
643	Indianapolis	United States	881,808	2,075,000
615	Columbus	United States	906,237	2,078,725
853	Las Vegas	United States	659,410	2,227,053
550	Austin	United States	995,347	2,283,371
1164	Kansas City	United States	498,642	2,528,644
618	Charlotte	United States	898,902	2,636,883
360	San Diego	United States	1,425,780	3,334,227

Source: Population rank based on the https://worldpopulationreview.com/ of 1,170 cities world-wide. Retrieved December 2021.

2020 populations are shown as reported for the city and metropolitan area. Metropolitan area and city populations for foreign countries are the same. Domestically, the values refer to the core city jurisdictional boundaries only.

Smart Cities

Jacksonville as a city and North Florida is generally not well known or recognized for our work in the smart cities and even though our ranking may have been significant in some indices we were not included. The sources reviewed are summarized in Table 5.

Table 6. Summary of Literature Review

Primary Type	Source	Jacksonville City or MSA Ranking
Smart City	Y/zen Smart Centres Index	Not included in the 70 international cities considered.
Smart City	Institute for Management Development and Singapore University, SCO Smart City Observatory	Not included in the 118 international cities evaluated.
Smart City	Eden Strategy Institute ranking of Smart Cities	Not included in the 50 cities considered.
Smart City	EasyPark Cities of the Future Index	Not included in 150 international cities considered.
Smart City	Cities in Motion, Statista Smart City Rankings	Not included as one of the 174 international cities evaluated.
Smart City	The Intelligent Community Forum	Not included in the 21 international cities considered.
Smart City	Roland Berger Smart City Strategy Index	Shown on map as a city considered but no ranking provided other than the top 15 cities of which Jacksonville is not part of.
Smart City	Juniper Research Smart Cities – What's in it for Citizens	Not included as one of the 20 international cities considered.

Source: Kimley-Horn

We looked beyond the US, shown on Figure 5 when considering smart city rankings to allow us to identify innovative programs that may be inspiration for future efforts in North Florida. Unfortunately, Jacksonville is not well known for our work in the smart cities and is not included in any rankings. We considered the evaluation criteria used in many of the ranking systems and our progress, particularly smart mobility ecosystem, is as advanced as any community. Our mobility ecosystem is tailored to meet our unique needs. For example, London, UK's zone-based congestion charge is highlighted by many as a reason London ranks highly as a smart city for mobility. Deployment of that technology is not the right fit in our community.

Quality of Life

There are several quality of life and systems to rank the quality of mobility that were reviewed and they are summarized in Table 7.

Table 7. Quality of Life and Mobility Ranking Systems

Primary Type	Source	Jacksonville City or MSA Ranking
Quality of Life	Numbeo	Indexed in several measures out of 253 international urban areas.
Quality of Life	Florida Chamber	Statewide and county data is provided for comparisons but no rankings.
Quality of Life	US News Best Places to Live	Jacksonville ranked 22nd out of 150 cities.
Quality of Life	Northeast Florida Regional Planning Council	No comparisons to other areas made.
Quality of Life	Community Indicators Consortium	N/A – a guidebook.
Infrastructure	American Society of Civil Engineers Infrastructure Report Card and Florida State Infrastructure Grade	Only comparisons to other states are areas made.
Mobility	North Florida TPO 2045 Long Range Transportation Plan	No comparisons to other areas made.
Mobility	North Florida TPO Congestion Management Process	No comparisons to other areas made.
Mobility	Texas Transportation Institute Urban Mobility Report	Jacksonville ranked 77th for commuter delay and 75th for planning index out of 101 urban areas.
Infrastructure	American Society of Civil Engineers Infrastructure Report Card and Florida State Infrastructure Grade	Only comparisons to other states are areas made.

Numbeo is one of the more complete rating systems and provides quality of life rankings for 252 cities across the world. It is an independent research organization considers Jacksonville to have the 59th best quality of life of the 252 cities evaluated. Table 8 summarizes shows Jacksonville's rankings vs. the peer communities included in Numbeo's system. Table 9 shows the specific ratings for the Jacksonville.

Table 8. Numbeo Quality of Life Indicators

Quality of Life	Purchasing Power	Safety	Health Care	Cost of Living	Property Price to Income	Traffic Commute	Pollution	Climate
Adelaide	Austin	Zurich	Adelaide	Bucharest	Indianapolis	Adelaide	Helsinki	Auckland
Charlotte	San Jose	Munich	Vienna	Budapest	San Antonio	Columbus	Vienna	San Diego
Columbus	Charlotte	Helsinki	Lyon	Warsaw	Kansas City	Oklahoma City	Zurich	San Jose
Zurich	Columbus	Warsaw	Oslo	San Antonio	Charlotte	Kansas City	Adelaide	Adelaide
Austin	Jacksonville (8)	Vienna	Copenhagen	Oklahoma City	Jacksonville (19)	Vienna	Stockholm	Lyon
Oklahoma City	San Antonio	Copenhagen	Munich	Austin	Oklahoma City	Las Vegas	Copenhagen	Rotterdam
San Jose	Indianapolis	Bucharest	Helsinki	Kansas City	Las Vegas	Copenhagen	Oklahoma City	Jacksonville (80)
San Diego	Kansas City	Adelaide	Rotterdam	Indianapolis	Columbus	Helsinki	Oslo	Amsterdam
Kansas City	Zurich	Amsterdam	Oklahoma City	Vienna	Austin	Indianapolis	Munich	Dublin
Copenhagen	Oklahoma City	Oslo	Kansas City	Las Vegas	Nashville	Amsterdam	Columbus	Charlotte
San Antonio	Las Vegas	Budapest	Hamburg	Jacksonville (165)	Adelaide	Rotterdam	Charlotte	Copenhagen
Jacksonville (29)	San Diego	Rotterdam	Charlotte	Charlotte	San Jose	San Antonio	Auckland	Nashville
Vienna	Nashville	San Diego	Zurich	Columbus	San Diego	Oslo	Amsterdam	Hamburg
Munich	Adelaide	Austin	Columbus	Hamburg	Rotterdam	Munich	Hamburg	Austin
Helsinki	Hamburg	Hamburg	San Jose	Nashville	Zurich	Zurich	Kansas City	Vienna
Indianapolis	Munich	Columbus	Auckland	San Jose	Dublin	San Diego	San Diego	Zurich
Amsterdam	Stockholm	Charlotte	Indianapolis	Rotterdam	Lyon	Austin	Nashville	San Antonio
Nashville	Amsterdam	San Jose	San Antonio	San Diego	Copenhagen	Hamburg	Austin	Budapest
Rotterdam	Rotterdam	Auckland	Austin	Munich	Bucharest	Charlotte	Dublin	Oklahoma City
Hamburg	Copenhagen	Stockholm	San Diego	Adelaide	Amsterdam	Stockholm	Jacksonville (100)	Munich
Oslo	Oslo	Nashville	Jacksonville (112)	Lyon	Oslo	Warsaw	Indianapolis	Bucharest
Auckland	Auckland	San Antonio	Amsterdam	Helsinki	Auckland	Jacksonville (138)	Rotterdam	Kansas City
Stockholm	Lyon	Lyon	Stockholm	Dublin	Hamburg	Lyon	San Antonio	Warsaw
Las Vegas	Helsinki	Oklahoma City	Nashville	Stockholm	Stockholm	Auckland	San Jose	Columbus
Lyon	Dublin	Dublin	Warsaw	Auckland	Helsinki	San Jose	Lyon	Indianapolis
Dublin	Vienna	Las Vegas	Las Vegas	Amsterdam	Vienna	Nashville	Las Vegas	Stockholm
Budapest	Budapest	Jacksonville (203)	Bucharest	Copenhagen	Budapest	Budapest	Budapest	Helsinki
Warsaw	Bucharest	Indianapolis	Dublin	Oslo	Munich	Dublin	Warsaw	Oslo

Source: Numbeo. Retrieved December 2021.

Table 9. Quality of Life Indicators

Indicator	Score	Rating
Purchasing Power Index	121.81	Very High
Safety Index	43.18	Moderate
Health Care Index	69.66	High
Climate Index	87.81	Very High
Cost of Living Index	71.90	Moderate
Property Price to Income Ratio	3.59	Very Low
Traffic Commute Time Index	35.33	Moderate
Pollution Index	41.87	Moderate
Quality of Life Index:	**171.09**	**Very High**

Source: Numbeo. Retrieved December 2021.

Mobility

Jacksonville ranks between the 72nd and 77th of the most congested cities by the Texas Transportation Institute based on the metrics shown in Table 10.

Table 10. Mobility Performance Measures

Person Hours of Delay	Cost of Congestion per Commuter	Travel Time Index
Austin	Austin	Austin
Oklahoma City	San Jose	Oklahoma City
Kansas City	Kansas City	San Antonio
San Antonio	San Antonio	San Jose
San Jose	San Diego	San Diego
Milwaukee	Nashville	Kansas City
Nashville	Oklahoma City	Denver
Columbus	Milwaukee	Columbus
Indianapolis	Columbus	Milwaukee
Denver	Charlotte	Las Vegas
San Diego	Denver	Indianapolis
Charlotte	Indianapolis	**Jacksonville (75)**
Jacksonville (77)	**Jacksonville (72)**	Nashville
Las Vegas	Las Vegas	Charlotte
Raleigh-Cary	Raleigh-Cary	Raleigh-Cary

Source: TTI Urban Mobility Report. Retrieved December 2021.

Summary of Metrics

Table 11 summarizes the metrics that were identified in the literature review. There are a wide range on measures used for similar purposes. When selecting the measures for any evaluation, the measure used needs to be selected specifically to the purpose of the analysis. No single metric can capture the intent for all studies or communities.

Table 11. Summary of Metrics

Metrics	ASCE Infrastructure Report Card	Eden Strategy Institute Ranking of Smart Cities	Florida Chamber	Community Indicators Consortium	Cities in Motion, Statistica Smart City Rankings	IMD & SUTD Smart City Observatory	Smart Cities World & Philips Lighting	Intelligent Community Forum Smart21	EasyPark Cities of the Future Index	Roland Berger Smart City Strategy Index
Activities						•				
Aviation	•									
Bridges	•									
Broadband	•									
Budget										•
Buildings										•
Business Climate & Competitiveness			•							
Business Tech Infrastructure									•	
Civics & Governance			•							
Connect								•		
Connectivity							•			
Coordination										•
Dams	•									
Development of Private/Public Partnerships							•			
Digital Life									•	
Drinking Water	•									
Economy					•					
Ecosystems		•								
Education				•						
Education										•
Energy & Environment										•
Engage								•		
Environment					•					
Financial		•								
Governance					•					
Governance						•				
Government										•
Hazardous Waste	•									
Health										•
Health & Safety						•				
Human capital					•					
Include								•		
Infrastructure										•
Infrastructure & Growth Leadership			•							
Infrastructure/Transportation				•						
Inland Waterways	•									

Metrics	ASCE Infrastructure Report Card	Eden Strategy Institute Ranking of Smart Cities	Florida Chamber	Community Indicators Consortium	Cities in Motion, Statistica Smart City Rankings	IMD & SUTD Smart City Observatory	Smart Cities World & Philips Lighting	Intelligent Community Forum Smart21	EasyPark Cities of the Future Index	Roland Berger Smart City Strategy Index
Inner-operability of Systems							•			
Innovate								•		
Innovation & Economic Development			•							
International projection					•					
Leadership		•								
Levees	•									
Local Economy				•						
Mobility						•				
Mobility										•
Mobility and transportation					•					
Mobility Innovation									•	
Opportunities						•				
People-centricity		•								
Plan										•
Policies		•								
Policy & Legal Framework										•
Ports	•									
Public Parks	•									
Quality of Life			•							
Rail	•									
Resident Health				•						
Roads	•									
Schools	•									
Security							•			
Social cohesion					•					
Solid Waste	•									
Stake-holders										•
Stormwater	•									
Support Programs		•								
Sustain								•		
Sustainability							•			
Sustainability									•	
Sustainability/Environment				•						
Talent Supply & Education			•							
Talent-readiness		•								
Technology					•					
Track Record		•								
Transit	•									

Metrics	ASCE Infrastructure Report Card	Eden Strategy Institute Ranking of Smart Cities	Florida Chamber	Community Indicators Consortium	Cities in Motion, Statistica Smart City Rankings	IMD & SUTD Smart City Observatory	Smart Cities World & Philips Lighting	Intelligent Community Forum Smart21	EasyPark Cities of the Future Index	Roland Berger Smart City Strategy Index
Transportation							•			
Urban Planning					•					
Vision		•								
Wastewater	•									
Work								•		

Note: Metrics were only combined when they were assessed similarly

Literature Review

Smart Cities World and Philips Lighting and Y/zen Smart Centres Index

Y/zen Smart Centres Index and
https://smartcitiesworld.net/AcuCustom/Sitename/DAM/012/Understanding_the_Challenges_and_Opportunities_of_Smart_Citi.pdf

The Y/zen Smart Centres Index is the actual source for the Smart Cities World Rankings. A summary of the measures reported in the Smart Cities World Ranking is found below.

Smart Cities World, in partnership with Philips Lighting, launched a survey that "looked to understand and identify key attitudes and perceptions around the implementation of the smart city infrastructure". The target audience for the survey comes from six infrastructure categories: Connectivity, Data, Buildings, Transportation, Governance and Energy. The survey found that Singapore, London and Barcelona were the three best smart cities in the world. The survey also found that the following were most-often listed as key components of a smart city:

- Inner-operability of systems
- Sustainability
    - Energy
    - Water
- Connectivity
- Security
- Transportation
- Development of private/public partnerships

Table 12 summarizes the ranking and rating of each of the peer communities.

Table 12. Y/zen Smart Communities Index

Name	Rank	Rating
Rotterdam		
Oslo		
Amsterdam	19	684
Dublin	10	693
Helsinki		
Adelaide		
Copenhagen	8	695
Zurich	7	696
Oklahoma City		
Munich	52	619
San Antonio		
Milwaukee		
Jacksonville		
Auckland		
Stockholm	9	694
Lyon		
Budapest	56	613
Warsaw	61	603
Hamburg	51	620
Bucharest		
Vienna	39	650
San Jose		
Nashville		
Indianapolis		
Columbus		
Las Vegas		
Austin	39	645
Kansas City		
Charlotte		
San Diego		

Source: Y/zen. Cities are arrayed based on MSA population.
Retrieved December 2021. Empty rows are shown to demonstrate that the peer communities were not included in the ranking (some international and some domestic cities were).

Institute for Management Development and Singapore University, SCO Smart City

https://www.imd.org/smart-city-observatory/smart-city-index/

The Institute for Management Development (IMD) and Singapore University of Technology and Design (SUTD) joined forces in 2017 to produce a smart city index for cities all over the globe. Since then, they have released the index annually. The index surveys hundreds of citizens from over a hundred cities about five key areas in two pillars:

- Structures
    - Health and safety
        - Sanitation
        - Recycling services
        - Public safety
        - Air pollution
        - Medical services
        - Affordable housing
    - Mobility
        - Traffic congestion
        - Public transportation
    - Activities
        - Green spaces
        - Cultural activities
    - Opportunities
        - Employment services
        - School quality
        - Job creation
        - Minority treatment
    - Governance
        - Information on local government readily available
        - Corruption of city officials
        - Residents contribute to decision making of local government
        - Residents provide feedback on local government projects
- Technologies
    - Health and safety
        - Online reporting of city maintenance problems provides a speedy resolution
        - Website or app allows residents to give away unwanted items
        - Free public Wi-Fi has improved access to city services
        - CCTV cameras have made residents feel safer
        - Website or app that allows residents to monitor air pollution
        - Arranging medical appointments online has improved access
    - Mobility
        - Car-sharing apps have reduced congestion
        - Apps that direct you to an available parking space have reduced journey time
        - Bicycle hiring has reduced congestion

        - Online scheduling and ticket sales has made public transport easier to use
        - The city provides information on traffic congestion through mobile phones
    - Activities
        - Online purchasing of tickets to shows/museums has made it easier to attend
    - Opportunities
        - Online access to job listings has made it easier to find work
        - IT skills are taught well in schools
        - Online services provided by the city has made it easier to start a new business
        - The current internet speed and reliability meet connectivity needs
    - Governance
        - Online public access to city finances has reduced corruption
        - Online voting has increased participation
        - An online platform where residents can propose ideas has improved city life
        - Processing identification documents online has reduced waiting times

Cities are arrayed based on MSA population. The indexes provided were transformed to a rank order with 1 being the best to be consistent with other ranking systems. Rank based on 118 cities. Assigned groups represent the level of maturity, with 1 being best. Rankings are based on the Finch System where:

1. AAA (best)
2. AA (very good)
3. A (good)
4. BBB (above average)
5. BB (somewhat better than average)
6. B (marginally better than average)
7. CCC (average)
8. CC (below average)
9. C (very below average)
10. D (deficient or default)

Table 13 summarizes the ratings of the peer communities.

Table 13. Institute for Management and Development (IMD) Smart City Rankings

Name	Rank	Rating	Structures	Technology	Assigned Group
Rotterdam	29	BBB	A	BBB	1
Oslo	5	AA	AAA	A	1
Amsterdam	9	A	AA	A	1
Dublin	34	BBB	BBB	BBB	1
Helsinki	2	AA	AAA	AA	1
Adelaide					
Copenhagen	6	AA	AA	A	1
Zurich	3	AA	AAA	A	1
Oklahoma City					
Munich	11	A	AA	BBB	1
San Antonio					
Milwaukee					
Jacksonville					
Auckland	4	AA	AA	AA	1
Stockholm	16	A	A	BBB	1
Lyon	51	BBB	BB	BB	2
Budapest	77	CCC	CCC	CCC	3
Warsaw	55	B	B	B	3
Hamburg	22	A	A	BB	1
Bucharest	87	CC	CC	CCC	3
Vienna	25	BBB	A	BB	2
San Jose					
Nashville					
Indianapolis					
Columbus					
Las Vegas					
Austin					
Kansas City					
Charlotte					
San Diego					

Source: IMD. Retrieved December 2021. Empty rows are shown to demonstrate that the peer communities were not included in the ranking (some international and some domestic cities were).

The US Cities evaluated are summarized in Table 14.

Table 14. IMD Ranking of US Cities

Name	Rank	Rating	Structures	Technology	Assigned Group
Boston, MA	36	BBB	A	BBB	1
Chicago, IL	41	BBB	BB	BBB	1
Denver, CO	35	BBB	A	BBB	1
Los Angeles, CA	26	BBB	BBB	A	1
New York, NY	10	A	A	AA	1
Philadelphia, PA	52	BB	BB	BB	1
Phoenix, AZ	39	BBB	A	BB	1
San Francisco, CA	27	BBB	BBB	BBB	1
Seattle, WA	37	BBB	BBB	BBB	1
Washington, D.C.	12	A	A	A	1

Source: IMD. Retrieved December 2021.

Eden Strategy Institute Ranking of Smart Cities

https://www.smartcitygovt.com/methodology

The Eden Strategy Institute is a consulting firm that specializes in business system innovation. The Eden Strategy Institute's ranking of smart cities focuses "explicitly on the role of city governments in driving smart city development". The 2020/2021 edition studied a total of 235 cities from around the world. All 235 cities received a "Call for Proposals" that invited the government representatives to provide news articles, documents and data to supplement Eden Strategy Institute's secondary research. Eden Strategy Institute then uses ten key factors, in which cities are ranked from one to four, with four being the highest, to rank each city overall.

The indicators used includes:

- Vision
  - A clear and well-defined strategy to develop a "smart city"
- Leadership
  - Dedicated City leadership that steers smart city projects
- Budget
  - Sufficient funding for smart city projects
- Financial
  - Financial incentives to effectively encourage private sector participation
- Support Programs
  - Programs to encourage private actors to participate
- Policies
  - A conducive policy environment for smart city development
- Ecosystems
  - A comprehensive range of engaged stakeholders to sustain innovation
- People-centricity

    - A sincere, people-first design of the future city
- Talent-readiness
    - Program to equip the city's talent with smart skills
- Track Record
    - The government's experience in catalyzing successful smart city initiatives

Table 15 summarizes the rankings for the peer communities.

Table 15. Eden Strategy Smart City Index

Name	Eden Rank 2019	Eden Rank 2020
Rotterdam	47	
Oslo	27	
Amsterdam	10	13
Dublin	26	41
Helsinki	5	5
Adelaide	31	
Copenhagen	35	24
Zurich	45	
Oklahoma City		
Munich		
San Antonio		
Milwaukee		
Jacksonville		
Auckland		
Stockholm	50	15
Lyon		45
Budapest		
Warsaw		21
Hamburg		
Bucharest		
Vienna	9	12
San Jose		
Nashville		
Indianapolis		
Columbus	11	25
Las Vegas		
Austin		
Kansas City		38
Charlotte		20
San Diego		

Notes are on next page.

Notes: Eden Retrieved December 2021. Empty rows are shown to demonstrate that the peer communities were not included in the ranking (some international and some domestic cities were). Cities are arrayed based on MSA population. Eden rank is based on 50 international cities that were reported.

EasyPark Cities of the Future Index

https://easyparkgroup.com/studies/cities-of-the-future/en/

EasyPark's vision is to make cities more livable. Their app helps users locate available parking near their destination, making life easier, smarter and more fun. EasyPark uses technology to "break barriers and improve the urban life experience". EasyPark's Cities of the Future Index studied several thousand cities around the world to determine which cities are "leading the way in implementing the use of new technologies" and split the rankings into three size categories: over 3,000,000, between 600,000 – 3,000,000 and between 50,000 and 600,000. Their study focused on the following metrics:

Digital Life

- Citizen Adoption
    - Number of startups in healthcare, lifestyle and internet service sectors
    - Number of app downloads and ranking in food, navigation, travel, education and financial services
- Government Adoption (Sources: IMD Business School, Information Technology & Innovation Foundation, United Nations, World Bank.)
    - National digital infrastructure indices
    - Digital economy score
- Healthcare Innovation (Sources: The Lancet, App Ranking Directories, Startup Directories)
    - Healthcare quality and access index
    - Startups in the healthcare sector
    - Number of app downloads and ranking
- Tech Education (Sources: University Rankings Directories)
    - Ranked universities for computer science
    - Ranked universities for engineering

Mobility Innovation

- Parking Innovation (Sources: OpenStreetMap, EasyPark proprietary data, IMD World Competitiveness Center)
    - Number of parking spaces per capita
    - Number of parking spaces taking digital payment
    - Number of parking providers operating in the city
    - Civilian adoption of parking technology
    - Level of parking technology implementation
- Traffic Management (Sources: Numbeo, Navigation Providers)
    - Congestion levels
    - Time spent in traffic during a commute

    - Dissatisfaction due to long commute times
- Clean Transport (Sources: International Energy Agency (IEA), Numbeo, e-charging station directories)
    - Electric cars per capita and new electric car sales.
    - Electric car charging stations per capita.
    - CO_2 emissions.

Business Tech Infrastructure

- Business innovation (Sources: Startup Directories)
    - Startup Activity
        - Healthcare
        - Internet Services
        - Financial Services
        - Lifestyle Services
        - Media
- ePayments (Sources: World Bank, YouGov)
    - Percentage of the population that is in favor of a cashless society
    - Percentage of the population that has been cashless since the beginning of the pandemic
    - Number of cashless retail transactions per 1,000 adults
    - Credit card ownership
    - Debit card ownership
    - Percentage of the population that paid bills or bought something online in the past year.
- Internet connectivity (Sources: The Economist, Internet Speed Measurement Apps)
    - Median download and upload speeds
    - 5G deployment and government efforts to promote 5G
    - 5G availability in major cities
    - Number of 5G providers per city

Sustainability

- Green Energy (Sources: Our World in Data, US Energy Information Administration (EIA))
    - Share of nationwide energy consumed from renewable sources
    - Share of electricity consumption from renewable sources
    - Green Buildings
    - Waste Management
    - Climate Response
- Green Buildings (Sources: Green Building Information Gateway, USA Green Building Council)
    - Number of certified green buildings
    - Building activities
    - Activities per square foot
    - Percentage of total buildings certified as green
- Waste Management (Source: Waste Atlas)
    - Waste generated per capita

    - Waste collection coverage
    - The recycling rate in each country
- Climate Response (Sources: Climate Change Performance Index, Germanwatch, Grantham Research Institute on Climate Change, International Energy Agency, International Monetary Fund, Our World in Data, Yale Center for Environmental Law & Policy)
    - Estimated percentage increase in greenhouse gas emissions
    - Total CO_2 emissions from fuel combustion
    - Expenditure on environment protection
    - Change in CO_2 emissions per capita over time
    - Number of climate laws, policies and targets in place

With this index, each factor consists of one or more indicators which were scored and averaged. The equation for scoring is as follows. For columns where a low value is better, the score is inverted so that a high score is always better. Data is normalized on a [50-100] scale, with 100 being the best score. Therefore, the higher the score, the better the city ranks for that factor in comparison to the other cities in the index. The final score was determined by calculating the sum of the weighted average score of all the indicators.

These rankings are summarized in Table 16.

Cities in Motion, Statista Smart City Rankings

https://www.statista.com/statistics/1233581/smart-cities-ranking-worldwide/

Founded in 2007, Statista is a German company specializing in market and consumer data. According to the company, its platform contains more than 1,000,000 statistics on more than 80,000 topics from more than 22,500 sources and 170 different industries. In 2020, the leading city on the cities in motion index was London with a score of 100. New York, Paris, Tokyo, and Reykjavik rounded out the top five on the ranking. Overall, 174 cities from 80 countries were examined across nine dimensions:

- Governance
- Urban planning
- Technology
- Environment
- International projection
- Social cohesion
- Human capital
- Mobility and transportation
- Economy

These rankings are summarized in Table 17.

Table 16. EasyPark Smart City Rankings

Name	Citizen Adoption	Government Adoption	Healthcare	Tech Education	Parking Management	Traffic Management	Clean Transport	Business Innovation	ePayment	Internet Connectivity	Green Energy	Green Building	Waste Management	Climate Response	Total
Rotterdam	44	18	37	76	21	31	13	103	1	26	96	31	68	23	12
Oslo	1	1	21	134	62	95	42	33	26	88	1	30	76	25	5
Amsterdam	6	26	48	61	1	84	24	10	1	39	123	82	81	20	6
Dublin	96	129	63	39	111	148	66	20	102	140	84	139	77	60	119
Helsinki	31	38	70	70	67	79	39	21	11	44	42	77	121	11	17
Adelaide	126	103	85	37	117	101	112	131	56	85	115	71	53	136	138
Copenhagen	8	37	54	91	5	83	1	29	34	5	23	106	69	34	1
Zurich	73	53	74	18	6	114	16	41	50	10	27	84	35	37	10
Oklahoma City															
Munich	63	64	99	12	135	106	46	34	67	133	55	112	6	44	63
San Antonio															
Milwaukee															
Jacksonville															
Auckland	148	148	124	62	134	128	137	81	47	54	10	16	17	61	146
Stockholm	7	16	38	67	9	113	55	13	5	13	11	68	29	30	4
Lyon	136	120	118	113	65	93	94	106	57	147	103	99	115	74	140
Budapest															
Warsaw															
Hamburg	88	69	132	122	19	127	50	52	67	116	55	114	6	44	75
Bucharest															
Vienna	102	76	106	86	34	100	10	57	126	138	18	88	78	115	65
San Jose															
Nashville															
Indianapolis	83	54	146	143	53	34	138	62	111	90	143	96	131	121	125
Columbus															
Las Vegas															
Austin	18	20	86	17	73	73	140	5	111	14	133	1	131	121	51
Kansas City															
Charlotte															
San Diego	62	36	13	53	97	11	87	64	86	33	32	29	83	87	40

Source: EasyPark. Retrieved December 2021. Empty rows are shown to demonstrate that the peer communities were not included in the ranking (some international and some domestic cities were).

Rank is based on 150 cities and the rank order changed so 1 is the best to be consistent with other ranking systems summarized.

Table 17. Cities in Motion Smart City Rankings

Name	Overall Rank	Economy	Human Capital	Social Cohesion	Environment	Governance	Urban Planning	International Outreach	Technology	Mobility
Rotterdam	43	69	62	35	49	101	16	92	47	16
Oslo	14	17	71	20	8	52	54	19	17	20
Amsterdam	3	10	36	38	28	27	11	2	7	11
Dublin	37	26	105	42	24	67	92	30	28	69
Helsinki	22	32	55	10	12	8	64	39	66	47
Adelaide										
Copenhagen	8	25	28	11	3	12	75	16	10	25
Zurich	15	22	35	1	25	9	68	21	25	55
Oklahoma City										
Munich	27	36	63	16	69	32	58	28	38	8
San Antonio	62	27	37	63	135	57	44	103	51	99
Milwaukee										
Jacksonville										
Auckland	35	30	95	25	7	38	53	51	37	106
Stockholm	13	18	58	60	5	24	48	24	14	21
Lyon	56	62	52	41	64	66	72	75	64	51
Budapest	73	105	42	108	38	85	83	37	67	61
Warsaw	69	78	79	69	96	77	20	53	124	45
Hamburg	34	45	32	74	57	28	55	46	59	14
Bucharest	103	72	102	97	104	122	88	78	81	127
Vienna	10	57	23	31	15	25	45	7	13	7
San Jose										
Nashville										
Indianapolis										
Columbus										
Las Vegas										
Austin										
Kansas City										
Charlotte										
San Diego	49	23	21	62	138	10	61	52	45	122

Source: Cities in Motion. Retrieved December 2021. Empty rows are shown to demonstrate that the peer communities were not included in the ranking (some international and some domestic cities were).

Cities are arrayed based on MSA population. The indexes provided were transformed to a rank order with 1 being the best to be consistent with other ranking systems. Rank based on 174 cities.

Quality of Life and Mobility Rankings

There are several quality of life and systems to rank the quality of mobility that were reviewed and they are summarized in Table 18.

Table 18. Quality of Life and Mobility Ranking Systems

Primary Type	Source	Jacksonville City or MSA Ranking
Quality of Life	Numbeo	Indexed in several measures out of 253 international urban areas.
Quality of Life	Florida Chamber	Statewide and county data is provided for comparisons but no rankings.
Quality of Life	US News Best Places to Live	Jacksonville ranked 22nd out of 150 cities.
Quality of Life	Northeast Florida Regional Planning Council	No comparisons to other areas made.
Quality of Life	Community Indicators Consortium	N/A – a guidebook.
Infrastructure	American Society of Civil Engineers Infrastructure Report Card and Florida State Infrastructure Grade	Only comparisons to other states are areas made.
Mobility	North Florida TPO 2045 Long Range Transportation Plan	No comparisons to other areas made.
Mobility	North Florida TPO Congestion Management Process	No comparisons to other areas made.
Mobility	Texas Transportation Institute Urban Mobility Report	Jacksonville ranked 77th for commuter delay and 75th for planning index out of 101 urban areas.
Infrastructure	American Society of Civil Engineers Infrastructure Report Card and Florida State Infrastructure Grade	Only comparisons to other states are areas made.

Numbeo

Quality of Life (numbeo.com)

Numbeo is a collection of Web pages containing numerical and other itemizable data about cities and countries. Numbeo provides a tool to see, share and compare information about communities worldwide. It indexes communities and provides the following measures:

- Quality of Life Index
- Purchasing Power Index -
- Safety Index
- Health Care Index
- Cost of Living Index
- Property Price to Income Index
- Traffic Commute Index

- Pollution Index
- Climate Index

These rankings are shown on Table 12.

Florida Scorecard

https://thefloridascorecard.org/?AspxAutoDetectCookieSupport=1

The Florida Chamber of Commerce developed a research program called The Florida 2030 Blueprint. The Florida 2030 Blueprint engaged business and community leaders across the state to help identify key trends and factors that drive their regional economies. The Florida Scorecard was developed as part of this blueprint to provide local stakeholders with "metrics needed to measure progress within their own communities". The Florida Scorecard categorizes its large data pool into one of six categories.

These categories are:

- Talent Supply and Education *Florida Department of Education*
    - Kindergarten readiness
    - School ranking
    - Graduation rates
- Innovation and Economic Development
    - Gross Domestic Product (GDP) *https://www.bea.gov/iTable/index.cfm*
    - Spending by vacationers *Visit Florida*
    - Research and development funding *The Milken Institute - State Technology and Science Index*
- Infrastructure and Growth Leadership
    - Percentage of land in conservation *https://www.fnai.org/conservationlands.cfm*
    - Population *U.S. Census Bureau.*
    - Energy Ranking *U.S. Energy Information Administration*
    - Broadband availability *Broadbandnow.com*
- Business Climate and Competitiveness

Table 19 summarizes the ratings for the peer communities.

Table 19. Numbeo Quality of Life Rankings

Name	Quality of Life	Purchasing Power	Safety	Health Care	Cost of Living	Property Price to Income	Traffic Commute	Pollution	Climate
Rotterdam	70	85	88	46	200	77	70	103	79
Oslo	82	105	77	31	248	146	84	28	215
Amsterdam	61	81	75	124	226	143	66	54	82
Dublin	138	112	178	234	220	104	185	93	88
Helsinki	46	111	31	36	213	185	56	3	209
Adelaide	3	57	52	11	209	46	16	9	41
Copenhagen	26	87	42	32	239	124	48	16	110
Zurich	6	24	7	67	253	96	106	8	127
Oklahoma City	12	28	168	49	135	20	18	19	145
Munich	36	73	8	34	207	203	105	33	154
San Antonio	27	12	165	101	126	7	73	109	133
Milwaukee									
Jacksonville	29	8	203	112	165	19	138	100	80
Auckland	84	107	146	80	224	154	156	51	2
Stockholm	94	80	148	144	223	177	134	11	181
Lyon	118	108	166	29	212	123	141	134	70
Budapest	167	162	83	235	86	193	175	146	139
Warsaw	180	180	36	196	117	223	135	167	161
Hamburg	71	72	125	56	174	154	126	56	116
Bucharest	187	164	47	228	73	136	192	218	156
Vienna	32	120	38	22	157	188	31	7	125
San Jose	21	4	144	78	199	71	169	117	36
Nashville	66	44	150	166	186	35	174	74	114
Indianapolis	51	17	207	81	153	5	61	101	180
Columbus	5	6	131	75	173	28	17	37	175
Las Vegas	112	29	200	223	161	27	38	143	227
Austin	7	3	96	103	143	33	122	78	121
Kansas City	24	20	209	54	144	11	29	59	158
Charlotte	4	5	143	63	170	14	127	49	105
San Diego	23	34	95	105	201	73	116	70	24

Source: Numbeo. Retrieved December 2021.

Cities are arrayed based on MSA population. The indexes provided were transformed to a rank order with 1 being the best to be consistent with other ranking systems. Rank based on 253 cities.

Recession probability *Florida Chamber Foundation* https://www.flchamber.com/foundation

- Sales tax revenue *Florida Department of Revenue*
- Open jobs *The Conference Board Help Wanted OnLine® (HWOL)*
- Unemployment *U.S. Bureau of Labor Statistics*

- Civics and Governance
  - Voter participation *Florida Division of Elections*
  - Inmate population *Florida Economic and Demographic Research*
  - State debt *State Board of Administration of Florida*
- Quality of Life
  - Poverty rate *U.S. Census Bureau.*
  - Child health ranking *Annie E. Casey Foundation*
  - Income per capita *Bureau of Economic Analysis* https://www.bea.gov
  - Home ownership rate *U.S. Census Bureau.*
  - Crime Rate *Florida Department of Law Enforcement*

These rankings are shown on Table 20.

Table 20. Florida Scorecard Metrics

Metric	Florida	Duval	Broward	Hillsborough	Miami-Dade	Orange	Palm Beach	Pinellas
Population (millions)	21.70	0.96	1.95	1.47	2.72	1.39	1.50	0.98
GDP per capita	$51,352	$72,143	$58,768	$65,637	$64,659	$74,237	$58,190	$55,880
Income per Capita	$52,426	$47,475	$52,308	$48,452	$54,902	$46,250	$83,268	$55,607
Wealth Migration (millions)	$8,760.00	$48.80	$270.90	$285.50	(126.00)	$186.70	$1,655.20	$368.80
Small Businesses (%)	59.9%	26.6%	37.3%	26.9%	38.5%	23.3%	41.9%	34.8%
Manufacturing Jobs (%)	5.1%	5.4%	4.1%	4.5%	4.2%	5.0%	3.7%	8.6%
New Jobs	428,600	33,181	73,881	60,545	94,680	64,660	50,387	39,734
Job Growth Rate	5.6%					9.8%	7.5%	8.6%
Unemployed Persons	491,000	20,808	44,786	30,852	50,950	33,168	30,161	18,277
Unemployment Rate	4.6%	4.0%	4.2%	3.8%	3.8%	4.4%	4.0%	3.5%
New Housing Starts	11,310	5,647	1,431	8,896	2,133	5,317	4,244	932
High Speed Communications	96.2%	98.2%	99.3%	99.6%	98.6%	99.6%	99.1%	100.0%
Poverty Rate	14.0%	14.5%	13.1%	14.6%	17.1%	14.9%	12.2%	12.2%
Children in Poverty	829,342	44,842	72,975	62,378	126,004	62,427	50,177	26,400
Children in Poverty (%)	20.1%	21.5%	18.0%	19.8%	23.0%	21.0%	18.1%	16.9%
ALICE Households (%)	46.0%	40.0%	50.0%	42.0%	54.0%	49.0%	46.0%	46.0%
Housing Cost Burdened	52.9%	48.5%	57.8%	49.5%	61.4%	54.2%	56.3%	50.2%
Free and Reduced Lunch	55.3%	52.2%	56.1%	60.8%	73.9%	49.5%	65.1%	47.6%
Third Grade Reading Scores (%)	54.0%	48.0%	53.0%	51.0%	57.0%	55.0%	54.0%	54.0%
High School Graduation Rate (%)	90.0%	90.2%	89.4%	88.8%	86.6%	90.4%	90.2%	91.5%
Associate Degree (%)	39.7%	40.0%	42.0%	43.0%	39.1%	45.5%	45.7%	41.5%
Bachelor's Degree (%)	29.9%	30.0%	32.4%	33.5%	29.8%	34.6%	36.7%	31.7%
Crimes (per 100,000 population)	2,152	3,508	2,435	1,400	2,816	2,804	2,299	2,252
Inmate Population	116,980	566	1,167	848	9,706	3,877	2,847	985
Persons with Disabilities Working	386,739	23,529	33,540	27,241	34,443	27,292	23,682	21,048
Sales Tax Revenue (millions)	$40,164	$161	$320	$534	$455	$235	$243	$146
Land in Conservation	28%	17%	62%	17%	69%	17%	37%	13%
Voter Participation	77.0%	74.7%	76.1%	76.8%	74.6%	75.4%	76.3%	79.3%

Source: Florida Chamber. Retrieved December 2021.

US News & World Report's Quality of Life Index

How We Rank the Best Places to Live & Retire (usnews.com)

The Quality-of-life Index measures how satisfied residents are with their daily lives in each ranked metro area. To calculate Quality of Life scores, we evaluated multiple aspects of life in each metro area using a weighted average. To determine the weightings, we surveyed people across the U.S. to see the importance they place on each aspect evaluated in the index. The index takes into account:

- *Crime Rates (25%): We measured each metro area's murder, violent crime and property crime rates per 100,000 people, as determined by the FBI's Uniform Crime Reports.*
- *Quality and Availability of Health Care (10%): Using data from the U.S. News Best Hospitals rankings, we measured the availability of quality health care by determining the quantity of ranked facilities within 50, 100 and 250 miles of each metro area.*
- *Quality of Education (20%): Using data from the U.S. News Best High Schools rankings, we determined the availability of a quality education by calculating the average college readiness score of all public schools in each metro area and comparing it with that of all the other ranked metro areas.*
- *Well-being (20%): We used the composite score from Sharecare's Community Well-Being Index (which analyzes resident satisfaction in the following areas: purpose, social, financial, community and physical) as a representation of whether residents of each metro area are generally happy with their day-to-day lives.*
- *Commuter Index (17%): The Commuter Index used the U.S. Census' calculation of average commute time, which is a composite of the time spent traveling door to door, whether by foot, public transit, car or bicycle.*
- *Air Quality Index (AQI) (8%): We utilized the most recent monthly average air quality index from the U.S. Environmental Protection Agency.*

Table 21 summarizes the rankings of peer communities.

Table 21. US News Quality of Life Rankings

Name	US News Best Places to Live
Oklahoma City	68
San Antonio	75
Milwaukee	92
Jacksonville	22
San Jose	36
Nashville	30
Indianapolis	66
Columbus	54
Las Vegas	137
Austin	5
Kansas City	57
Charlotte	20
San Diego	97

Source: US News. Cities are arrayed based on MSA population. Retrieved December 2021.

Texas Transportation Institute Annual Mobility Report

2021 Urban Mobility Report and Appendices - Mobility Division (tamu.edu)

The Annual Mobility Report prepared by Texas Transportation Institute since 1987 provides regional area estimates of mobility performance measures. The methodologies are outlined in greater detail on the link provided above.

Table 22 provides a summary of the rankings for the peer communities.

Table 22. TTI Mobility Report Rankings

Name	Person-Hours of Delay	Travel Time Index	Extra Travel Time	Vehicle-miles Traveled	Annual Congestion Costs per Commuter	Total Annual Congestion Costs	Excess Truck Travel Time	Annual Truck Congestion Costs	Travel Time Index	Commuter Stress Index
Oklahoma City	87	91	87	71	74	71	75	75	91	87
San Antonio	80	91	80	79	78	79	83	83	91	87
Milwaukee	72	44	72	62	62	62	66	66	44	26
Jacksonville	24	26	24	53	29	51	39	39	26	26
San Jose	77	91	77	81	86	82	84	85	91	77
Nashville	65	26	65	66	75	68	73	73	26	26
Indianapolis	54	26	54	61	35	61	68	68	26	26
Columbus	59	57	59	67	62	67	64	30	57	57
Las Vegas	14	44	14	59	13	59	58	48	44	26
Austin	94	95	94	83	95	83	81	80	95	91
Kansas City	85	72	85	74	84	74	85	84	72	70
Charlotte	38	26	38	60	60	60	59	45	26	26
San Diego	38	72	38	85	77	85	77	77	72	70

Source: TTI. Retrieved December 2021.

Cities are arrayed based on MSA population. The indexes provided were transformed to a rank order with 1 being the best to be consistent with other ranking systems. Ranking out of 101 largest metropolitan areas in the US.

Juniper Research Smart City – What's in it For Citizens

Smart Cities - What's In It For Citizens (intel.com)

An assessment of cities was performed largely through literature review of trade magazines for municipal governments and then the cities were screened to the top 20 to be evaluated within their rankings. The screening criteria are summarized in Table 23.

Table 23. Juniper Research Top-level Information

Datapoint	Source	Purpose – What does this indicate?
Smart City Vision	Municipal authority publications	Depth & overall strategy, KPIs & success measures
Horizontal Platform Deployment	Municipal publications, press releases	Inter-agency integration potential
Open/Proprietary Technology	Vendor & city case studies	Future-proof/effectiveness
Open Data	Open data depositories	Open data breadth & potential
Communications Technology	City, regional or national data	City/citizen preparedness for smart city services
Life Expectancy	City, regional or national data	Life expectancy improvement potential
GVA (Gross Value Added)	City/regional publications	Quality of life indicator, economic improvement potential
Population	City/census information	City size

Source: Juniper Research. Retrieved December 2021.

Table 24, Table 25,Table 26 and Table 27 summarize the rankings of peer communities.

Table 24. Juniper Research Mobility Metrics

Datapoint	Source	Purpose – What does this indicate?
Average Vehicle Speed	City publications, press releases, third party sources	Peak time congestion & time-benefit potential indicator
Private Vehicles per Capita	City publications, press releases, third party sources	Congestion driver
Cycle Scheme Roll-Out	Vendor existence & city announcements	Congestion reduction & health improvement driver
Mobility-as-a-Service	Vendor existence & city strategic vision publications	Congestion reduction driver
Congestion Charge	City publications	Air quality improvement & congestion reduction driver
Road Accident Injuries per Capita	Transport statistics releases	Public health reduction driver
Air Quality	World Health Organization (WHO)	Public health reduction driver
Electric Vehicle Charging Stations	Cross-network charging station maps	Next-gen transport preparedness
Public Transport Journeys per Capita	Transport statistics releases	Network performance, availability & uptake
ePayment Infrastructure	Transport service provider websites	Transport payment convenience, time-benefit indicator
Autonomous Vehicle Testing	Press releases/city strategic vision	Next-gen transport preparedness
Smart Transport Initiatives, of which:	City strategic vision, vendor case studies, press	
- Smart traffic light phasing		Congestion reduction driver & time-benefit indicator
- Smart parking Congestion		reduction driver & time-benefit indicator
- Open data for transport		Congestion reduction driver & time-benefit indicator
- Strategy to reduce motor vehicle use		Congestion reduction driver & time-benefit indicator
- Strategy to increase public transport use		Congestion reduction driver & time-benefit indicator
- Citizen information dissemination solutions		Congestion reduction driver & time-benefit indicator
- Interagency collaboration strategy		Congestion reduction driver & time-benefit indicator
- Road safety strategy		Healthcare improvement indicator

Source: Juniper Research. Retrieved December 2021.

Table 25. Juniper Research Healthcare Metrics

Datapoint	Source	Purpose – What does this indicate?
Hospital Beds per Capita	City, regional or national healthcare statistics	Bed availability & time-benefit indicator
Hospital Bed Occupancy	Rate City, regional or national healthcare statistics	Bed availability & time-benefit indicator
Congestion Charge	City publications	Air quality improvement & congestion reduction driver
Cycle Scheme Roll-Out	Vendor existence & city announcements	Congestion reduction & health improvement driver
Public Transport Journeys per Capita	Transport statistics releases	Network performance, availability & uptake
Road Accident Injuries per Capita	Transport statistics releases	Public health reduction driver
Violent Crime Rate	Law enforcement statistics	Public health & safety reduction driver
Police Force Size	Law enforcement statistics	Public health & safety improvement driver
Higher Education	Third party indices & statistical releases	Public health & safety improvement driver
City Terrorist Attacks since 2013, Domestic & Foreign	Initiated Global Terrorism Database	Public health & safety reduction driver
Public Safety Index	Numbeo	General safety & health
Air Quality	WHO	Public health reduction driver
Electric Vehicle Charging Stations	Cross-network charging maps	Public health improvement driver
Autonomous Vehicle Testing	Press releases/city strategic vision Public health improvement driver	
Smart Healthcare Initiatives, of which:	City strategic vision, vendor case studies, press	
- Telehealth/Remote healthcare services		Healthcare service improvement & time-benefit
- Digital health portals		Healthcare service improvement & time-benefit
- Chatbot services		Healthcare service improvement & time-benefit
- Digital healthcare for elderly strategy		Healthcare service improvement & time-benefit
- Transparent healthcare KPIs		Healthcare improvement
- Active lifestyle strategy		Healthcare improvement
- Road safety strategy		Healthcare improvement

Source: Juniper Research. Retrieved December 2021.

Table 26. Juniper Research Public Safety Metrics

Datapoint	Source	What does this indicate?
Smart Street Lighting	Utilities, municipal energy departments	Public safety improvement indicator
Intelligent Video Surveillance	Press releases, law enforcement case studies	Public safety improvement & time-benefit indicator
Congestion Charge	City publications	Public safety/road traffic safety improvement indicator
Cycle Scheme Roll-Out	Vendor existence & city announcements	Public safety reduction indicator
Emergency services response co-ordination	City publications	Public safety improvement & time-benefit indicator
Violent Crime Rate	Law enforcement statistics	Public health & safety reduction driver
Police Force Size	Law enforcement statistics	Public health & safety improvement driver
Predictive Crime Software	Press releases, law enforcement case studies	Public safety improvement & time-benefit indicator
Fire/Flood Prediction Software	Press releases, vendor case studies	Public safety improvement & time-benefit indicator
Higher Education	Third party indices & statistical releases	Public health & safety improvement driver
City Terrorist Attacks since 2013,	Domestic & Foreign Initiated	Global Terrorism Database Public health & safety reduction driver
Public Safety Index	Numbeo	General safety & health indicator
Smart Public Safety Initiatives, of which:	City strategic vision, vendor case studies, press	
- Emergency services integration		Public safety improvement & time-benefit indicator
- Road safety strategy		Public safety improvement & time-benefit indicator
- Disaster plan		Public safety improvement & time-benefit indicator
- Crime reduction strategy		Public safety improvement indicator
- Cybersecurity strategy		Public safety improvement indicator

Source: Juniper Research. Retrieved December 2021.

Table 27. Juniper Research Productivity Metrics

Datapoint	Source	What does this indicate?
Project Funding Sources	City publications, press releases	Service expansion & productivity improvement indicator
Public-Private Partnership Incentives	City/national publications	Service expansion & productivity improvement indicator
Talent Acquisition Incentives	City/national publications	Service expansion & productivity improvement indicator
Ease of Doing Business	World Bank	Time-benefit potential
Digital Education Policies	City/national publications	Productivity improvement indicator
City Governance	Municipal websites	Regulatory complexity, time-benefit indicator
City Chief Technology Office/Equivalent	Municipal websites	Service expansion & productivity improvement indicator
Smart City Conference Hosting	Press/event releases	Engagement & productivity improvement indicator
Smart City Hackathons	Press/event releases	Engagement & productivity improvement indicator
Smart Productivity Initiatives, of which:		City strategic vision, vendor case studies, press
- Digital services access		Productivity improvement & time-benefit indicator
- Smart education projects		Productivity improvement indicator
- Cybersecurity & privacy strategy		Service uptake & productivity improvement indicator
- Equality strategy		Productivity improvement indicator
- Retail & city services cashless payments		Productivity improvement & time-benefit indicator

Source: Juniper Research. Retrieved December 2021.

North Florida TPO 2045 Long Range Transportation Plan

In February of 2020, the North Florida TPO released its Long Range Transportation Plan (LRTP). The performance measures identified related to goals and objectives and are duplicative in some areas. The list below removes duplication. The following performance measures were included and are generally in the same order as the measures included in the Congestion Management Process, but the measures are different in some areas:

Safety

- Automobile Safety
  - Number of fatalities
  - Rate of fatalities per 100 million vehicle-miles traveled
  - Number of serious injuries
  - Rate of serious injuries per 100 million vehicle-miles traveled
- Transit Safety
  - Total number of reportable fatalities
  - Rate of reportable fatalities per total vehicle revenue miles by mode
  - Total number of reportable injuries
  - Rate of reportable injuries per total vehicle revenue miles by mode
  - Total number of reportable safety events
  - Rate of reportable events per total vehicle revenue miles by mode
  - System reliability - Mean elapsed time between major mechanical failures by mode
- Non-motorized Travelers Safety
  - Number of non-motorized fatalities
  - Number of non-motorized serious injuries

Quantity of Travel

- Quantity of Travel
  - Vehicle-miles traveled
  - Person-miles traveled
  - Truck-miles traveled
  - Vehicle occupancy
  - Transit ridership

Quality of Travel

- Vehicle System Performance
  - Average travel speed
  - Average vehicle delay
  - Annual hours of peak hour excessive delay per capita (PHED)
  - Average commute time
  - Percent of person-miles on Interstate system that are reliable (Level of Travel Time Reliability) (LOTTR)
  - Percent of person-miles on non-Interstate NHS that are reliable (LOTTR)

  - Truck Travel Time Reliability index (TTTR)
  - Percent of non-single occupant vehicle (SOV) travel*
  - Level of Service (LOS) on rural facilities
  - Cumulative 2- and 4-year reduction of on-road mobile source emissions (NOx, VOC, CO, PM10, and PM2.5) for CMAQ-funded projects*
  - Cost of congestion
  - Cost of congestion per capita

Accessibility

- Non-motorized Travel
  - Percent of system with bicycle accommodations
  - Percent of system-miles with pedestrian accommodations
- Transit Accessibility
  - Percent of the population within one-quarter mile of a transit stop
  - Percent of the population within 5 miles of a park-n-ride facility
  - Complete a First-mile, Last-mile Connection Plan
- Access to jobs, services and retail
  - Jobs within one-half mile of a major arterial
  - Projects that enhance access to jobs through transit

Utilization

- Vehicle Travel
  - Percent of system heavily congested
  - Percent of travel heavily congested
  - Vehicles per lane mile
  - Duration of congestion
- Transit
  - Average passenger load
  - Passengers per revenue mile
  - Passengers per vehicle revenue hour

Infrastructure Condition

- Pavement Condition
  - Percent of Interstate pavements in good condition
  - Percent of Interstate pavements in poor condition
  - Percent of non-Interstate National Highway System (NHS) pavements in good condition
  - Percent of non-Interstate NHS pavements in poor condition
- Bridge Condition
  - Percent of NHS bridges (by deck area) classified as in good condition
  - Percent of NHS bridges (by deck area) classified as in poor condition
- Transit Assets

    - Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their useful life benchmark
    - Percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark
    - Percentage of facilities within an asset class rate below condition 3 on the Transit Economic Requirements Model (TERM) scale
    - Percent of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark(ULB) of equipment or non-revenue vehicles within a particular asset class that have met or exceeded their ULB
    - Percent of facilities with a condition rating below 3.0 on the FTA TERM Scale
- Maximize return on investment
    - Benefit: cost ratio
    - Return on Investment (ROI)
- Non-motorized Travel (transit access)
    - Percent of the population within one-quarter mile of a transit stop
    - Percent of the population within 5 miles of a park-n-ride facility
- Transit Performance
    - Passengers per revenue mile
    - Passengers per vehicle revenue hour

Planning Process

- Environmental Screening Performed
- Consistency with Land Use Planning
- Adherence to the Public Involvement Plan

Sustainability and Resiliency

- Consideration of Vulnerable and At-risk Facilities
- Number of Projects on Evacuation Routes

Security

- Security
    - All transit projects are required to have a Threat and Vulnerability Assessment
    - Implement Cybersecurity Plan
    - Implement Security Credential Management System on Connected Corridors

Smart Cities and Technology

- Complete the Integrated Data Exchange
- Develop a Connected Vehicle Module for the Northeast Florida Regional Planning Model-Activity Based (NERPM-AB)
- Miles of Connected Vehicle Roadside Communications
- Miles of Fiber Optic Cable
- Complete a Connected and Autonomous Vehicle Policy Plan
- Include Autonomous, Connected, Electric and Shared (CASE)Vehicle Scenario in Planning
- Study CASE Dedicated or Lanes

Tourism

- Complete Regional Tourism Management Plan
- Number of Projects in High Tourist Areas
- County Comprehensive Plans Include Alternatives for Tourists

Underserved Populations

- Number of Projects in Low Income and Minority Areas

Jacksonville Community Council, Inc. (JCCI)

The Jacksonville Community Council, Inc. (JCCI) was a non-profit organization that focused on providing a neutral forum for concerned citizens to discuss community issues from 1974 to 2017. It prepared a quality-of-life indicators report to "give residents, leaders, and decision-makers a comprehensive look at the quality of life in Jacksonville".

The indicators used included:

- Education
    - Kindergarten readiness
    - Adults with bachelor's degrees or higher
    - Higher education degrees and certificates awarded
    - Recreational computer use among students
    - Public high school graduation rates
- Economy
    - Annual unemployment rate
    - Total employment growth
    - Per capita income
    - Average annual wage
    - Youth (under 18) in poverty
    - Percent in poverty
- Environment
    - Tributary compliance with dissolved oxygen standards
    - Annual energy use per person (kWh)
    - Survey: recreational activity on the river
    - Gallons of motor fuel sold per person
- Where People Matter
    - Survey: Do you volunteer
    - Verified child abuse reports per 1,000 children
    - Survey: Seniors feel safer in their neighborhoods
    - Suicide rate per 100,000 people
    - SNAP recipients per 1,000 people
- Arts and Entertainment
    - Average annual wage in arts, entertainment and recreation
    - Attendance at sports facilities per 1,000 per person
    - Fine art degrees awarded locally

    - Tourist development tax (bed tax)
    - Museum attendance per 1,000 people
- Distinctive Neighborhoods and Urban Heart
    - Number of downtown residents
    - Downtown office vacancy rates

Northeast Florida Regional Planning Council

https://www.nefrc.org/

The Northeast Florida Regional Planning Council (NEFRC) is one of ten regional planning councils in Florida. The NEFRC was formed in 1977 and represents seven counties – Baker, Clay, Duval, Flagler, Putnam, Nassau and St. Johns, as well as 26 municipalities. The mission of the NEFRC is to "celebrate the unique assets of Northeast Florida and to engage its people, businesses, governments and organizations".

American Society of Civil Engineers Infrastructure Report Card

https://www.infrastructurereportcard.org

The American Society of Civil Engineers (ASCE) was founded in 1852 and represents over 150, 000 civil engineers. The ASCE Infrastructure Report Card has been issued since 1998 but took on its "A to F" grading format and began releasing the Report Card every four years in 2001. The Report Card "examines current infrastructure conditions and needs, assigns grades, and makes recommendations for how to improve in 17 categories of infrastructure".

The indicators used includes:

- Aviation
    - Condition & capacity
    - Flight delays
    - Funding & future need
    - Operations, maintenance & innovation
- Broadband
    - Connection speeds
    - Availability of connection services that meet the FCC's definition of broadband
    - Availability for underserved populations
- Drinking Water
    - Capacity & condition
    - Funding
    - Operations and maintenance
    - Future need
    - Public Safety
    - Resilience & innovation
- Hazardous Waste
    - Capacity & condition

        - Superfund sites
    - Public Safety & Resilience
    - Innovation
- Levees
    - Condition & capacity
    - Operations & maintenance
    - Funding & future need
    - Public safety & resilience
    - Innovation
- Public Parks
    - Condition & capacity
    - Operations & maintenance
    - Funding & future need
    - Resilience & public safety
    - Innovation
- Roads
    - Condition, capacity & public safety
    - Congestion and reliability
    - Funding & future need
    - Innovation
    - Resilience and operations & maintenance
- Solid Waste
    - Capacity & condition
    - Operation & maintenance
    - Public safety
    - Funding and future need
    - Resilience & innovation
- Transit
    - Capacity & condition
    - Funding & future need
    - Public safety
    - Resilience
    - Innovation
- Bridges
    - Condition & capacity
    - Funding & future need
    - Innovation
    - Operations & maintenance
    - Resilience & public safety
- Dams
    - Condition & capacity
        - High-hazard-potential
        - Significant hazard-potential
    - Funding & future need
    - Public safety

    - Resilience & innovation
- Energy
    - Condition & capacity
    - Operations & maintenance
    - Energy sources
    - Power outages
    - Oil and gas
    - Funding & future need
    - Resilience & innovation
    - Public safety
- Inland Waterways
    - Condition & capacity
        - Lock chambers
    - Delays
    - Funding & future need
    - Operations & maintenance
    - Public safety & resilience
    - Innovation
- Ports
    - Capacity & condition
        - Docks, piers, channels, harbors
    - Funding & future need
    - Operations & maintenance
    - Public safety & Resilience
    - Innovation
- Rail
    - Condition & capacity
        - Freight rail
        - Passenger rail
    - Funding and future need
    - Operation & maintenance
    - Public safety
    - Innovation and resilience
- Schools
    - Capacity & condition
    - Operation & maintenance
    - Funding & future need
    - Public safety & resilience
- Stormwater
    - Capacity & condition
    - Operations & maintenance
    - Funding
    - Future need
    - Public safety
    - Resilience & innovation

- Wastewater
    - Capacity & condition
    - Operation & maintenance
    - Funding
    - Future need
    - Public safety
    - Resilience & innovation

Community Indicators Consortium

https://communityindicators.net/

Founded in 2005, the Community Indicators Consortium (CIC) provides tools and resources to help "communities and practitioners advance the practice and effective use of community indicators". CIC recognizes that communities are striving for an increased quality of life for its residents and that establishing indicators provides a tangible way of measuring progress on important issues. Each year, the CIC recognizes community indicator projects from around the world by issuing Impact Awards to those "that best demonstrate the power of indicators to drive positive community change".

Commonly used indicators by awardees are:

- Education
    - Graduation rates
    - Percentage of college degree-holders
- Resident health
    - Life expectancy
    - Obesity rate
- Infrastructure/Transportation
    - Public transit
    - Walkability
    - Internet access
- Local economy
    - Unemployment rate
    - Income
    - Home prices
    - Living wage
- Sustainability/Environment
    - Water demand
    - Renewable energy
    - Air quality

The Intelligent Community Forum Smart21

https://www.intelligentcommunity.org/smart21

The Intelligent Community Forum (ICF) is a global thinktank that "connects hundreds of cities and regions on five continents for collaboration on economic development and for exchange of expertise and information that drives progress". Smart21 is ICF's first stage in its annual Intelligent Community Awards cycle and ranks the top 21 participating communities in six categories referred to as the "ICF Method":

- Connect
- Work
- Innovate
- Sustain
- Include
- Engage

Applications were submitted from cities that were then ranked qualitatively.

Roland Berger Smart City Strategy Index

https://www.rolandberger.com/en/Insights/Publications/Smart-City-Strategy-Index-Vienna-and-London-leading-in-worldwide-ranking.html

Roland Berger is an international consulting firm based in Munich, Germany. The 2019 iteration of their Smart City Strategy Index (SCSI) was the firm's second, expanding from studying 87 cities in 2017 to 153. Roland Berger's SCSI analyzes cities with an official Smart City strategy and ranks each one. Roland Berger uses the following metrics for its rankings:

- Buildings
    - Facility management
    - Home applications
    - Construction
- Energy and environment
    - Energy management
    - Water management
    - Waste management
- Mobility
    - Traffic management
    - Multi-modality
    - Logistics
- Education
    - Education platforms
    - Learning formats
    - Digital skills
- Health
    - Health information systems

    - Ambient assisted living
    - Telemedicine
- Government
    - E-services
    - Digital public administration
    - Civil security
- Infrastructure
    - Open data
    - High speed internet
    - Connectivity technology
- Policy & legal framework
    - Regulation
    - Innovation and financial support
    - IT & data security
- Stakeholders
    - Citizen acceptance
    - Partnerships
- Coordination
    - Executive priority
    - Administrative coordination
- Plan
    - Time plan
    - Measurable goals
- Budget
    - Funding and financing

The measures were qualitatively assigned a score.

The data sources were not identified and no technical appendices were provided.