CAMBRIDGE SYSTEMATICS

Think Forward

Performance Management in Planning

Practical Considerations for MPOs

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Performance Management Practice

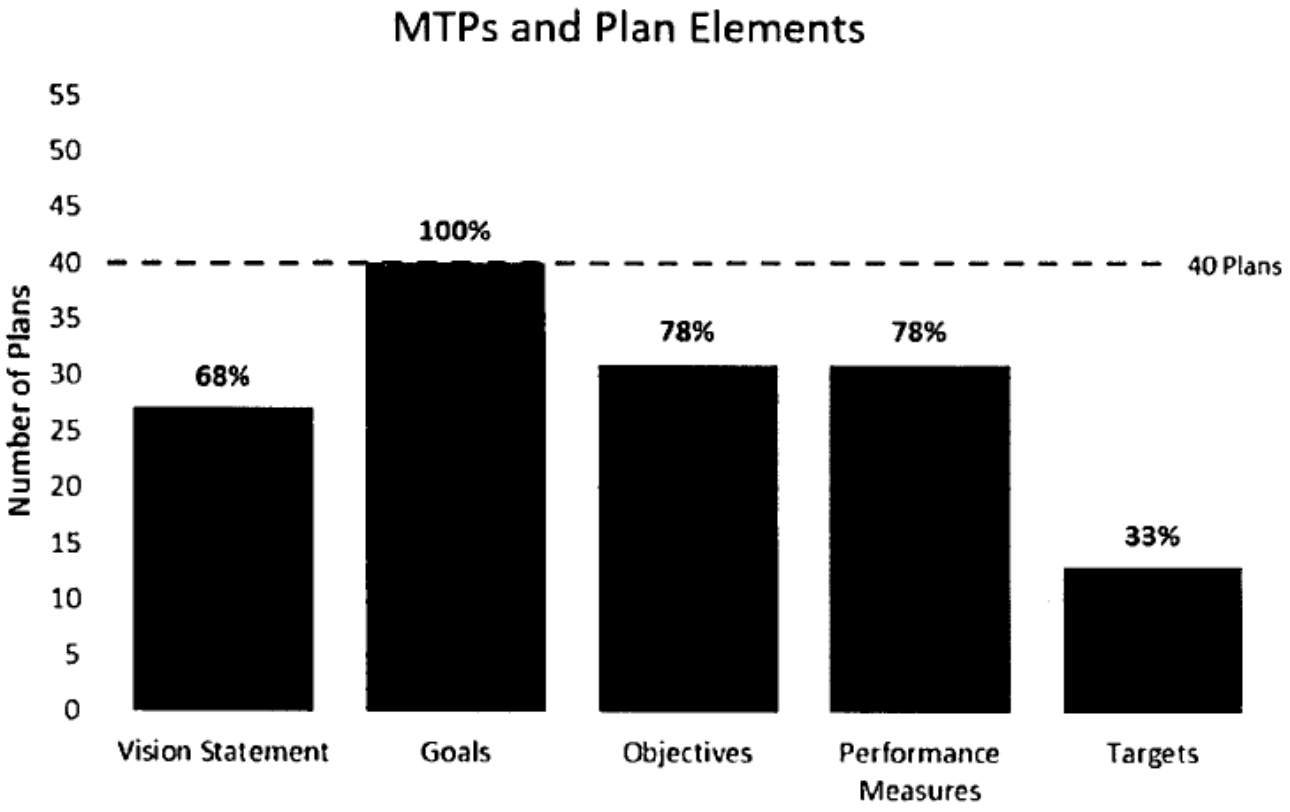
Most MPOs use performance measures in some fashion in their LRTP

Some use performance measures to evaluate projects for the TIP

Some use performance targets to select projects for funding in the TIP

All State DOTs, MPOs, and transit providers are transitioning to the federal PBPP process

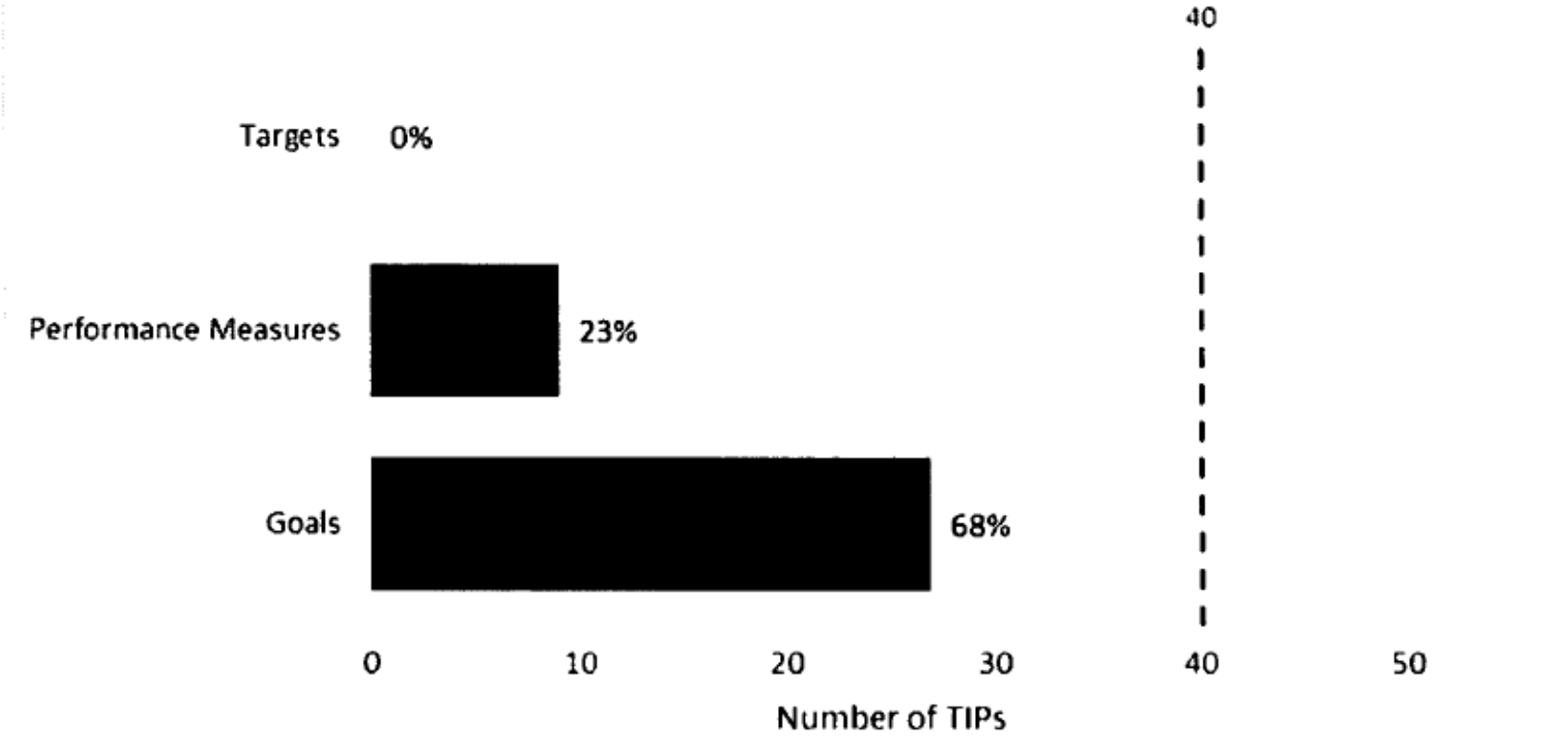
Performance Management Practice



MTPs with PBPP elements, including vision statement, goals, objectives, performance measures, and performance targets (sample size: 40)

Source: USDOT PBPP Report to Congress, January 2018

Performance Management Practice



Number of TIPs that reference MTP goals, performance measures, and targets in relation to project selection (sample size: 40)

Source: USDOT PBPP Report to Congress, January 2018

Federal PBPP Definitions

Term	Definition
Goal	A statement that describes a desired end state
Objective	A specific, measurable statement that supports achievement of a goal
Performance Measure	An expression based on a metric that is used to establish targets and to assess progress toward meeting the established targets
Metric	A quantifiable indicator of performance or condition
Target	A quantifiable level of performance or condition, expressed as a value for the measure, to be achieved within a time period

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Performance Management is now part of the Planning Process

- LRTPs and TIPs must be developed through a performance-driven, outcome-based approach
- The MPO planning process must:
  - Use a performance-based approach to transportation decision-making to support the national goals
  - Integrate other plans (state and public transportation) that are required as part of a performance-based program (TAMP, HSIP, TAM, PTASP, etc.)

What's Different for MPOs?

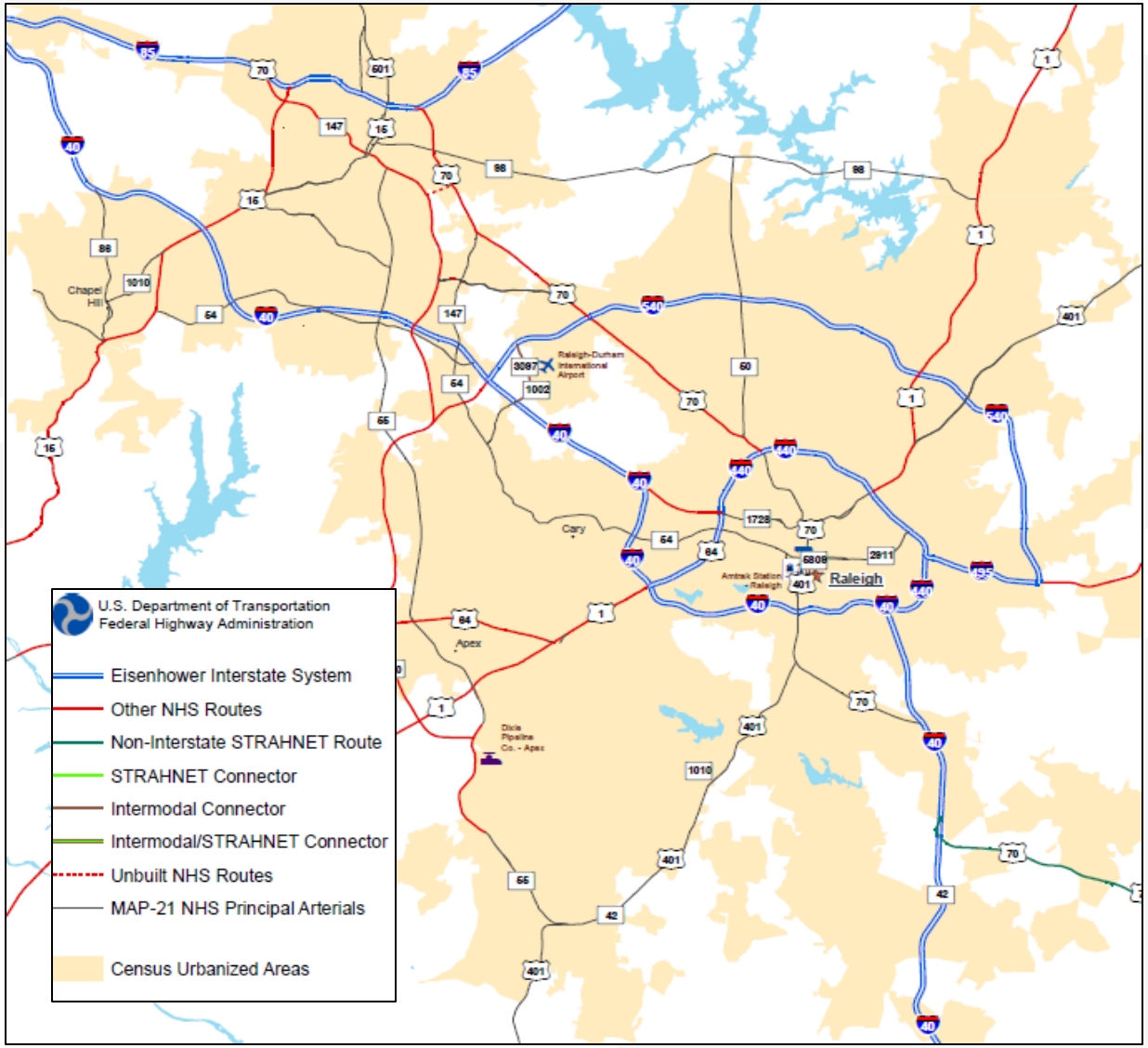
- Set targets for the federal performance measures
- Incorporate national goals, performance measures and targets into LRTPs and TIPs
  - Design the TIP such that once implemented, it makes progress toward achieving the performance targets
  - Describe how the TIP is anticipated to help meet targets, linking investment priorities to the targets
  - Report performance over time and progress achieved by the MPO towards achieving targets in the LRTP

MPO Target Setting Considerations

Support the state targets or set my own?

- How well do MPO priorities align with National Goals and federal performance measures?
- How well do we understand the metrics for each measure and influences of multiple factors?
- Does performance in your MPO differ widely from statewide?
- How much funding do you have to program?

MPO Priority Areas and National Goals



Applicability

PM2 and PM3 measures apply to the NHS.

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Understanding the Federal Measures

- How well do we understand:
  - The measure?
    - Does reliable mean no congestion?
    - Why is this region more reliable than that one?
  - The metrics and the data?
  - The influencing factors?
    - Truck crashes, weigh stations, work zones, population trends, technologies
    - How many roadway segments are just below the threshold for reliability? How many bridges are in Fair condition?

Rating	Good	Fair	Poor
IRI *(inches/mile)*	<95	***95-170***	***>170***
PSR* *(0.0-5.0 value)*	≥4.0	2.0-4.0	≤2.0
Cracking Percent *(%)*	<5	***CRCP: 5-10 Jointed: 5-15 Asphalt: 5-20***	***>10 >15 >20***
Rutting *(inches)*	<0.20	0.20-0.40	>0.40
Faulting *(inches)*	***<0.10***	0.10-0.15	>0.15

*PSR may be used only on routes with posted speed limit < 40mph.

NBI Rating Scale *(from 0 – 9)*		9 8 7 Good	6 5 Fair	4 3 2 1 0 Poor
Bridge	Deck *(Item 58)*	≥7	5 or 6	≤4
	Superstructure *(Item 59)*	≥ 7	5 or 6	≤ 4
	Substructure *(Item 60)*	≥ 7	5 or 6	≤ 4
	Culvert *(Item 62)*	≥ 7	5 or 6	≤ 4

MPO Performance Compared to the Rest of the State

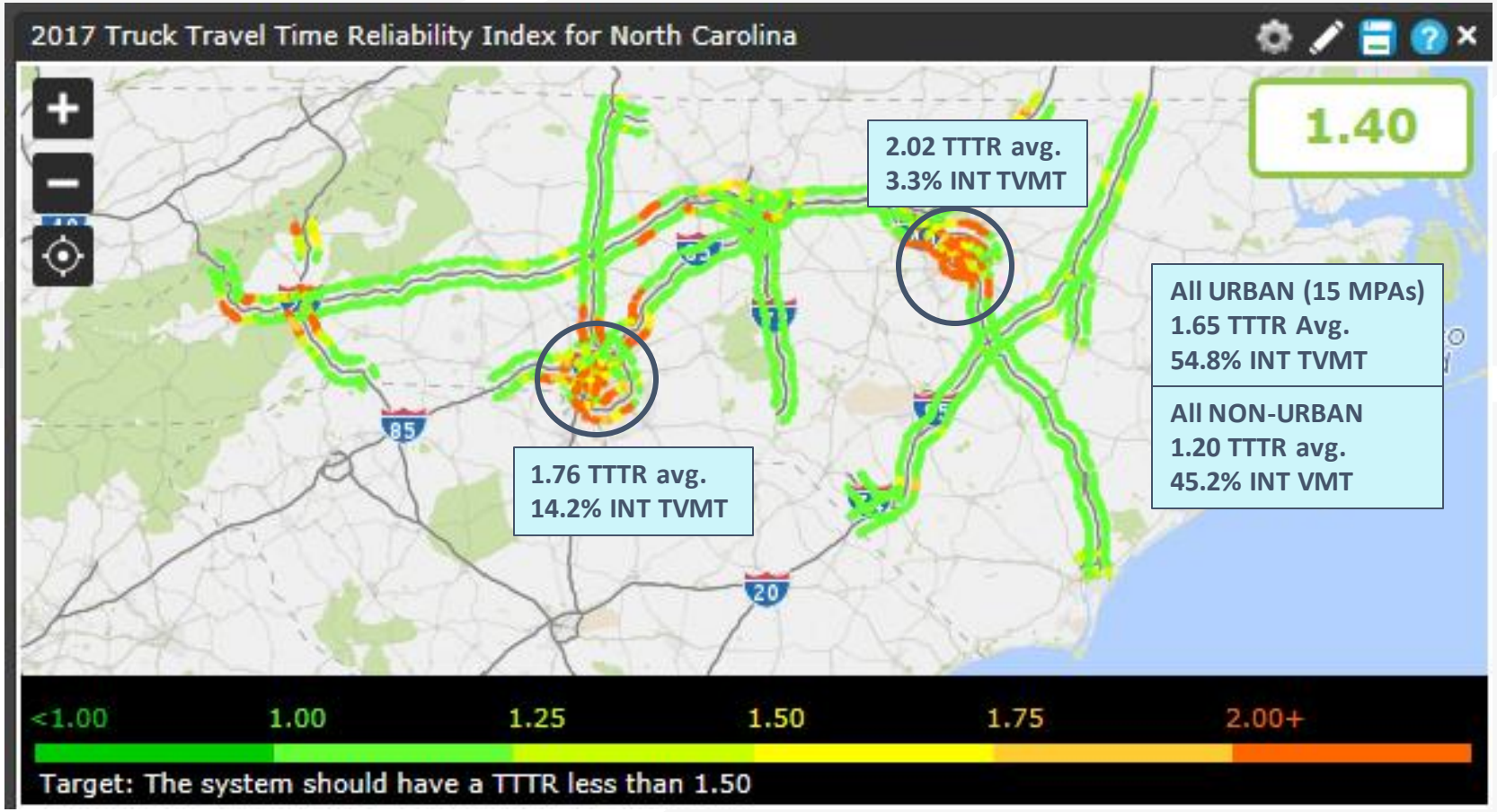
Performance in your MPO relative to the rest of the state

MPA	LOTTR-INT
CAMPO	69.3%
CRTPO	74.8%
CRMPO	81.8%
GCLMPO	85.5%
DCHCMPO	87.2%
NC	**87.9%**
FBRMPO	95.8%
GUAMPO	98.9%
GHMPO	100.0%
BGMPO	100.0%
FAMPO	100.0%
HPMPO	100.0%
WSMPO	100.0%
NBMPO	N/A
GVMPO	N/A
RMMPO	100.0%
WMPO	100.0%
GBMPO	100.0%
GSATS	N/A
JUMPO	N/A

MPA	LOTTR-NHS
CRTPO	70.5%
DCHCMPO	75.2%
CAMPO	81.3%
WSMPO	87.2%
HPMPO	87.4%
NC	**88.4%**
GCLMPO	88.8%
FBRMPO	90.3%
CRMPO	91.1%
GUAMPO	91.4%
BGMPO	92.7%
WMPO	93.2%
FAMPO	97.8%
GHMPO	91.0%
NBMPO	N/A
GVMPO	N/A
RMMPO	92.6%
GBMPO	95.1%
GSATS	N/A
JUMPO	90.7%

MPO Performance Compared to the Rest of the State

Truck Travel Time Reliability statewide vs. MPO



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How Much Funding Does it Take to Impact Performance

- Federal targets are set for 1, 2, or 4 years
- Is this TIP radically different than previous TIPs?
  - » New project selection criteria?
  - » Additional funding?
- Are trends changing?

How much can we move the performance needle in the short term?

MPO Approaches

- Develop their own measures and set targets for them (example - the federal PM measures apply to NHS roads only; an MPO could measure reliability on selected non-NHS roads)
- Use a combination of federal and locally-developed performance measures and set targets for both (Some MPOs are doing this with their CMP)
- Set longer-term MPO targets for the federal measures (ex. 10 year target, LRTP horizon year)
- Monitor and report on performance for the federal measures without setting MPO targets (many DOTs and MPOs have been doing this since before MAP-21)
- Set long-term aspirational targets (ex. Vision Zero)

Evansville MPO

Aligned MPO goals and performance measures with federal measures

MPO goal areas:

- Quality of life/health
- Economic vitality
- Environment
- Safety & security

Report on both in the LRTP

Quality of Life & Health		
Goal: Provide a variety of transportation options for all residents to improve connectivity and enhance quality of life, community health and transportation equity.		
Objective: Increase the availability of bicycle and pedestrian facilities to provide better connections between residential areas, workplaces, schools, shopping, parks/recreational facilities and other services.		
Approach:	**Performance Measure:**	**Federal:**
During the planning and development of road projects, local bicycle and pedestrian plans should be reviewed to identify options for including bicycle and pedestrian facilities. Existing plans identify the best type of facility that helps complete the overall bicycle and pedestrian network. All types of facilities (sidewalks, bike lanes, cycle tracks, greenways, shared use paths, etc.) should be considered to provide the most effective connections between residences and shopping, recreational and entertainment destinations.	# of on-street bicycle miles (since MTP 2040)	
	# of greenway/shared use path miles (since MTP 2040)	
	# of sidewalk miles on arterials and collectors (since MTP 2040)	
Objective: Increase transit access to provide better connections between residential areas, workplaces, schools, shopping, parks/recreational facilities and other services.		
Approach:	**Performance Measure:**	**Federal:**
METS, HART and WATS should provide connections between neighborhoods and major shopping, entertainment, and reacretional destinations. Routes may need to be reviewed to ensure the most effective connections. Service area, number of routes, number of bus shelters, technology used, etc. should also be reviewed periodically to provide the best possible service for the highest number of people.	# of people within 1/4 mile of a transit route	
Objective: Provide travel time reliability to ensure the most efficient use of time for commuters.		
Approach:	**Performance Measure:**	**Federal:**
Reduce congestion to maintain travel times by encouraging the adoption of access management principles that maintain mobility on higher volume roadways; supporting the completion of I-69 within the region and statewide to divert pass-through trips from more congested areas; modernizing, improving coordination, and/or removing traffic signals when possible; encouraging grade separation of rail crossings; and encouraging the implemention of Traffic Incident Management (TIM) standards to quickly clear non-recurring incidents.	% of person-miles traveled on interstate system that are reliable	✔
	% of person-miles traveled on non-interstate NHS system that are reliable	✔
	Travel Time Index (TTI)	
	Volume-to-Capacity Ratio (V/C)	

Oahu MPO

Screen candidate projects using MPO-developed performance measures and federal measures

MPO goal areas:

- Congestion
- Multimodal
- Reliability
- Infrastructure condition
- Safety
- Freight

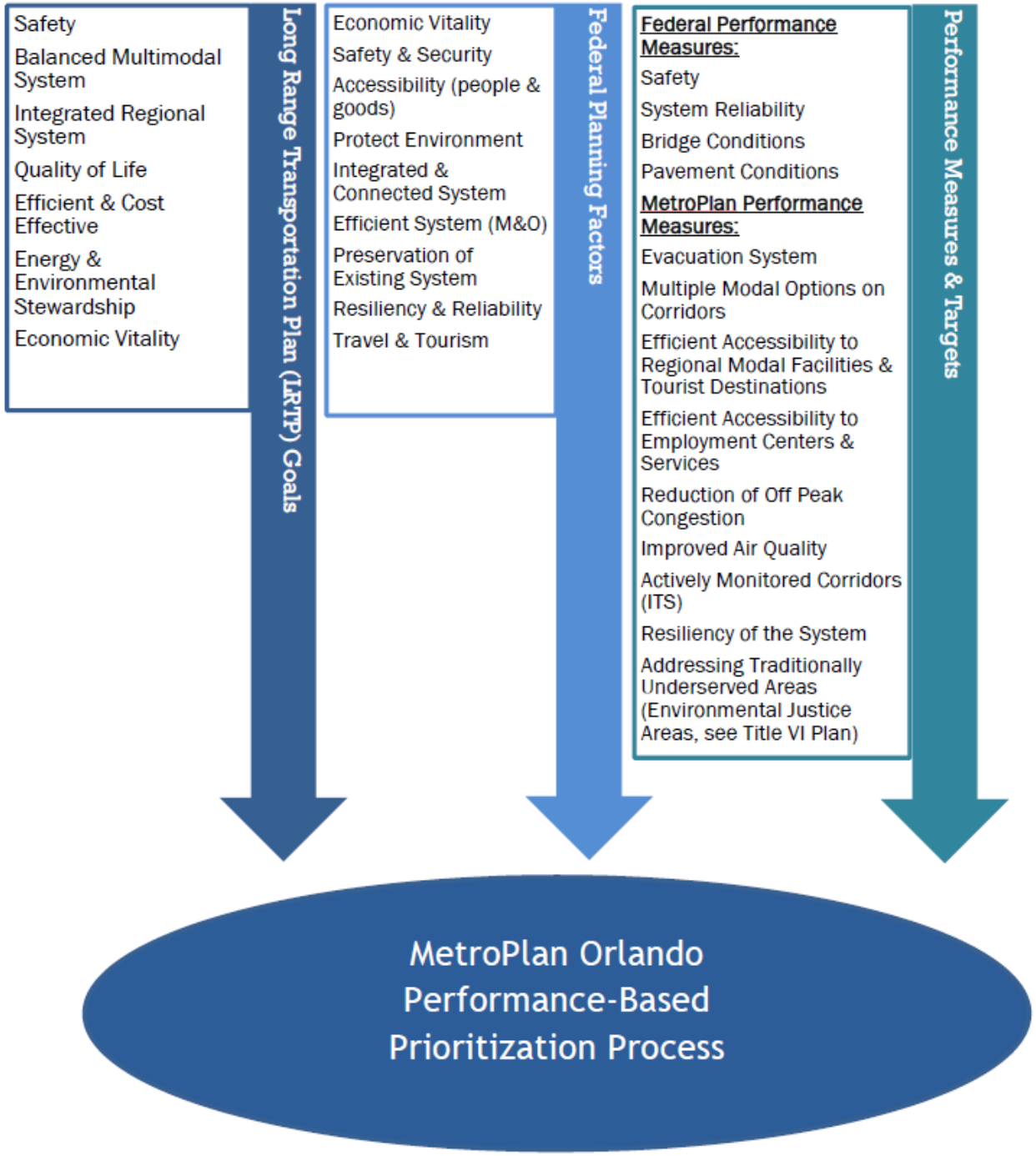
GOAL	PERFORMANCE MEASURE	TYPE OF MEASURE	EXPLANATION
Increase the reliability of the transportation system so that travelers can be secure that they will arrive by chosen mode in a timely manner from the following nodes within the COTS area: • Wahiawa (California Avenue/Kamehameha Highway) • Mililani Mauka (Mililani Middle School) • Mililani (Meheula Pkwy/Lanikuhana Ave) • Waipio (Crestview Community Park) • Waikele (Fire Station)	MEASURE 4: Provide local congestion relief for auto travel within the COTS area to the following destinations: • Mililani Town Center • Mililani Mauka Park and Ride • Central Oahu Regional Park • Koa Ridge • Wahiawa (California Avenue/Kamehameha Highway)	Quantitative	Measures reduction of time spent in congested lanes or intersections.
CATEGORY 2: MULTI-MODAL SYSTEM			
Provide a balanced, multi-modal transportation system that allows transportation choices for all residents.	MEASURE 5: Travel time between origins and destinations in Measure 4 via biking and walking	Quantitative	Measures the improvement in non-auto travel time.
	MEASURE 6: Amount of transit service	Quantitative	Measures the number of service hours of transit per population.
	MEASURE 7: Connectivity to rail transit and frequency of intermodal connections	Quantitative/ Qualitative	Methods and means for making inter-modal transfer to and from rail.
	MEASURE 8: Amount of pedestrian infrastructure	Quantitative	Measures miles and widths of pedestrian facilities.
	MEASURE 9: Amount of bicycle infrastructure	Quantitative	Measures miles and type of bicycle facilities.
	MEASURE 10:	Qualitative	Connectivity of pedestrian

MetroPlan Orlando

Mix of MPO and federal performance measures

Developed MPO vision and goals and aligned with National Goals:

- Safety
- Balanced multimodal system
- Integrated regional system
- Quality of life
- Efficient and cost effective
- Energy and env. Stewardship
- Economic vitality



MetroPlan Orlando – Regional Scorecard

	Federal Performance Measures	Target		MetroPlan Region	MetroPlan Urbanized Area	Environmental Justice Areas
PM1 - Safety	Number of Fatalities (Motorized)	Vision Zero - Zero (0) fatalities, Zero (0) Serious Injuries and Rate of Zero (0) per 100 million VMT	–	186	158	44
	Number of Fatalities (Transit)		–			
	Number of Fatalities (Bicycle)		–	11	11	3
	Number of Fatalities (Pedestrian)		–	78	74	41
	Number of Serious Injury (Motorized)		–	2614	2361	1115
	Number of Serious Injury (Transit)		–			
	Number of Serious Injury (Bicycle)		–	119	114	54
	Number of Serious Injury (Pedestrian)		–	220	203	109
	Rate of Fatalities per 100 million vehicle miles of travel (all modes)		–	0.828	1.406	1.054
	Rate of Serious Injuries per 100 million vehicle miles of travel (all modes)		–	11.638	21.005	26.713
PM2 - Bridge & Pavement Condition	Percent of National Highway Bridges in Good condition	> 60% in good condition & < 5% in poor condition	=	99.18		
	Percent of National Highway Bridges in Poor condition		=	0.82		
	Percent of interstate pavement in Good condition	> 40% in good condition & < 5% in poor condition	=	100%		
	Percent of interstate pavement in Poor condition		=	0%		
	Percent of non-interstate pavement in Good condition	> 50% in good condition & < 10% in poor condition	–	94.90%		
	Percent of non-interstate pavement in Poor condition		–	5.10%		
PM3 - System Performance	Travel Time Reliability – Percent of interstate providing reliable travel times	70% reliable	–	52%		
	Travel Time Reliability – Percent of non- interstate providing reliable travel times	50% reliable	–	84%		
	Truck Travel Time Reliability Index	2	–	2.62		

LEGEND

= Meets the target

– Less than the target

+ Exceeds the target

Measure that needs to be reduced

	MetroPlan Orlando Performance Measures	Target		MetroPlan Region	MetroPlan Urbanized	Environmental Justice Areas
1	Evacuation route lane miles per 1,000 household	4 Lane miles per 1,000 households	–	2.480		
2	Transportation System miles that include more than three (3) of the following (auto, transit, designated bike & sidewalk) designed and functioning up to code per Person	75%		Data not available		
3	Federal Aid System Miles within 20 minutes travel time to Attractions (Auto/Transit)	50%	–	29.40%		
	Federal Aid System Miles within 20 minutes travel time to Convention Center (Auto/Transit)		–	17.84%		
	Federal Aid System Miles within 20 minutes travel time to Regional Airports (Auto/Transit)		–	21.44%		
4	Percent of Population within 30 minute travel time to Activity Center (Auto/Transit)	90%	+	90.42%	87.36%	92.60%
5	Number of Performance Measures or indicators where Environmental Justice Areas fall below the regional measure or indicator	0	–	7		
6	Percent of Limited Access, Arterials & Freight Corridors with Average Speed / Posted Speed Ratio less than 0.75	100%		Data not available		
7	Total Carbon dioxide equivalent Emissions in million metric tons	3% less than 16.7mT (2016)	+	16.2 mT		
	Total Particulate Matter (Highest daily average reading for 2016)	35 µg/m3	+	27.5 µg/m3		
	Total Ozone (in 3 year (2016) fourth highest average in Parts per billion)	70 ppb	+	62 ppb		
8	System miles that are actively managed / monitored (TSMO)	50%	–	30%		
9	% of System miles that have documented storm water issues	0%	–	Data not available		

LEGEND

= Meets the target

– Less than the target

+ Exceeds the target

Measure that needs to be reduced

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Baltimore Target Setting

Maximize2040: A Performance-Based Transportation Plan:

- Reduce serious injuries per 100 million VMT to 3.0 by 2040
- Increase bike-ped-to-work mode share to 4.0% by 2040
- Increase average weekday transit ridership to 500,000 by 2040
- Increase % of State-owned urban area roadway miles that have sidewalks to 25% by 2040
- Reduce transit preventable crashes to zero by 2040

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Closing Thoughts

- What does TPM mean for large, medium, and small MPOs?
- How will PBPP requirements change the way we do things?
  - Project selection criteria / call for projects
  - Maintain focus on existing priority areas that may be different from federal measures? (e.g., equity, access to jobs, transit on time performance, etc.)
- Coordinating targets across the performance areas (pavement, bridge, safety, freight, congestion/mobility, reliability, emissions, transit assets and safety)?
  - What policy and investment tradeoffs will be made?
- What do we need to do to evolve with the TPM approach?
  - Existing projects in the TIP

Thank you!

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