



# Transportation Planning Capacity Building Program

## **New Orleans Regional Planning Commission Scenario Planning Workshop**

***Sponsored by the Federal Highway  
Administration***

Location: New Orleans, Louisiana  
Date: August 12-13, 2015  
Host Agency: New Orleans Regional Planning Commission  
Peer Agencies: Baltimore Metropolitan Council  
Hillsborough Metropolitan Planning Organization for Transportation  
Federal Agencies: Federal Highway Administration



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## Report Purpose

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This report documents a 1.5-day scenario planning workshop held August 12-13, 2015, in New Orleans, Louisiana, and hosted by the New Orleans Regional Planning Commission. The Federal Highway Administration (FHWA) sponsored this workshop under its Scenario Planning Program, which is run jointly with the Federal Transit Administration (FTA). The Scenario Planning Program is also part of the FHWA-FTA Transportation Planning Capacity Building Program.

## Executive Summary

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This report documents a 1.5-day scenario planning workshop held August 12-13, 2015, in New Orleans, Louisiana, and hosted by the New Orleans Regional Planning Commission (NORPC). The Federal Highway Administration (FHWA) sponsored this workshop under its Scenario Planning Program, which is run jointly with the Federal Transit Administration (FTA). The Scenario Planning Program is also part of the FHWA-FTA Transportation Planning Capacity Building (TPCB) Program. The Volpe National Transportation Systems Center (Volpe) provided event planning and documentation.

The workshop introduced the topic of scenario planning to NORPC staff and representatives of Louisiana's seven other metropolitan planning organizations (MPOs).<sup>1</sup> Approximately 30 participants attended; see [Appendix B](#) for a list of workshop participants.

NORPC is the regional planning agency for six parishes in southeast Louisiana and serves a population of approximately 1.3 million. NORPC is the MPO for four designated urbanized areas (UZAs): the Greater New Orleans Transportation Management Area (TMA), Mandeville-Covington UZA, Slidell UZA, and South Tangipahoa UZA.<sup>2</sup>

In January 2015, NORPC adopted regional transportation plans (RTPs) for the years 2015 through 2044 for the New Orleans, Mandeville-Covington, and Slidell UZAs. The most recent RTP for the Tangipahoa UZA was adopted in 2014. NORPC is beginning to plan for its next RTP updates, which it anticipates will be adopted in 2019, and is considering how scenario planning can be used in this update. NORPC requested the FHWA-sponsored workshop to learn more about scenario planning, to gain insights from peer agencies about best practices when developing and applying scenarios, and to provide an opportunity for information-sharing among Louisiana MPOs.

During the workshop, NORPC staff shared information on the current and future regional trends in the New Orleans region. This information helped frame the later break-out group discussions, as participants discussed themes and challenges faced by Louisiana MPOs and potential opportunities for the MPOs to apply scenario planning approaches.

Two peer experts participated in the workshop to share their agencies' experiences and perspectives in using scenario planning:

- Beth Alden, Executive Director, Hillsborough MPO for Transportation (Hillsborough MPO); and
- Terry Freeland, Senior Transportation Planner, Baltimore Metropolitan Council (BMC).

The peers provided an overview of how their regions used scenario planning and discussed how the process and results informed development of their long-range transportation plans (LRTPs). Key themes that emerged from the peers' presentations included:

- A scenario planning process can and should be tailored to fit a region's specific goals, priorities, budget, and timeframe.
- Scenario planning can be an effective public engagement tool, both as a way to get the public's input on a regional vision, goals, and spending priorities and as a way to educate the public about long-range planning and fiscal constraint.

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<sup>1</sup> The participating MPOs were: NORPC, Acadiana Planning Commission, Imperial Calcasieu Regional Planning and Development Commission, Houma-Thibodaux Metropolitan Planning Organization, Capitol Region Planning Commission, Ouachita Council of Governments, Rapides Area Planning Commission, and Northwest Louisiana Council of Governments.

<sup>2</sup> A UZA is a Census-designated urban area with a population of 50,000 residents or more. A TMA is a UZA with a population of 200,000 or more.

- Many people may find it difficult to think about what the world will be like in 25 years, but scenario planning can provide a structure for productive discussions about how best to plan for an uncertain future.

On the second day of the workshop, a smaller group of participants convened to discuss specific thematic areas of interest for NORPC as it considers how to integrate scenario planning into its transportation planning activities. Roundtable discussions with the peers, NORPC, FHWA, and FTA staff allowed for information-sharing and lessons learned on these topics.

Overall, the workshop provided an opportunity for NORPC and other Louisiana MPOs to learn from peer experts about scenario planning and how it can enhance metropolitan transportation planning activities. Post-workshop evaluations submitted by participants indicated that their knowledge of scenario planning grew as a result of the workshop and that they found value in the workshop content and peer presentations.

## Overview of the Workshop

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### Goals of the Workshop

The FHWA-NORPC scenario planning workshop focused on how scenario planning can complement an MPO's transportation planning process and on best practices for scenario planning. The goal of the workshop was to build awareness about scenario planning among Louisiana's MPOs, including NORPC.

As many of the Louisiana MPOs are relatively new to scenario planning, the workshop provided an opportunity to share information and learn from two peer agencies on this topic. Workshop participants also participated in a prioritization exercise in which they identified trends and challenges in Louisiana that could potentially benefit from scenario planning approaches.

### Selecting the Peers

In advance of the event, the workshop planning team identified MPOs that could serve as peers during the workshop and share their perspectives on scenario planning. Peers were selected based on their recent experience in using scenario planning, their thematic areas of focus, and their similarities to NORPC and its planning region. Based on these criteria, the workshop planning team extended invitations to two MPO representatives to participate as peers:

- Beth Alden, Executive Director, Hillsborough MPO for Transportation (Hillsborough MPO); and
- Terry Freeland, Senior Transportation Planner, Baltimore Metropolitan Council (BMC).

Contact information for each of the peer representatives is included in [Appendix A](#) of this report.

### Format of the Event

NORPC hosted the 1.5-day workshop at its offices in New Orleans, Louisiana, on August 12-13, 2015. The workshop was attended by the two peer presenters, NORPC staff, FHWA and FTA staff, and representatives of other Louisiana MPOs and the Louisiana Department of Transportation and Development (LaDOTD). [Appendix B](#) of this report provides a full list of attendees.

The workshop incorporated peer presentations, group discussions, and break-out discussions. The agenda for the workshop is provided in [Appendix C](#) of this report.

During the morning of Day One, NORPC, FHWA, and FTA offered opening remarks, NORPC provided an introduction to trends in the Greater New Orleans region, and FHWA provided a Federal perspective on scenario planning. The peers provided information on their agencies' scenario planning processes, including why their agencies decided to use scenario planning approaches.

In the afternoon of Day One, workshop participants discussed potential themes and challenges in Louisiana for which scenario planning might be useful. The peers then presented about their experiences integrating scenario planning into their agencies' long-range transportation planning processes. Following the second peers' session, workshop participants met in small groups to prioritize the themes and challenges identified earlier in the day. To conclude Day One, workshop participants discussed possible stakeholders and next steps for developing a scenario planning process.

On Day Two, a smaller group consisting of the peers and NORPC, FHWA, and FTA staff convened to hold follow-up discussions on how scenario planning could be applied and enhanced in the NORPC region. Participants focused on how NORPC could use scenario planning to explore issues related to freight and climate resiliency and began to identify potential next steps that NORPC could use going forward.

## Introduction

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### Louisiana MPO Background

The State of Louisiana has 8 Federally recognized MPOs, which provide transportation planning for 11 UZAs (Figure 1). According to the U.S. Census, in 2010 approximately two-thirds of Louisiana residents lived within an MPO region. Louisiana's MPOs vary widely in geographic size, land use, and population served—from smaller MPOs like Alexandria-Pineville and Houma-Thibodaux to more urban MPOs like NORPC.

Figure 1. Louisiana's MPOs and UZAs

MPO Name	Urbanized Area	UZA Population, 2010
New Orleans Regional Planning Commission	New Orleans	899,703
	Slidell	91,151
	Mandeville-Covington	88,925
	South Tangipahoa	67,629
Capital Region Planning Commission	Baton Rouge	583,310
Northwest Louisiana COG	Shreveport	298,317
Acadiana Planning Commission	Lafayette	252,720
Imperial Calcasieu Regional Planning & Development Commission	Lake Charles	143,440
Ouachita Council of Governments	Monroe	116,331
Houma-Thibodaux Metropolitan Planning Organization	Houma-Thibodaux	114,179
Rapides Area Planning Commission	Alexandria-Pineville	79,590

Source: NORPC, FHWA Office of Planning HEPGIS

### NORPC Background

NORPC was created in 1962 by the Louisiana State Legislature to provide regional coordination among Federal, State, parish, municipal, and other government agencies.<sup>3</sup> Today, NORPC is the regional planning agency for 6 parishes in southeast Louisiana and serves a population of approximately 1.3 million.<sup>4</sup> NORPC's planning area includes a wide range of land use types, including dense urban areas, suburban developments, and rural communities. NORPC serves as the MPO for four designated UZAs:

1. Greater New Orleans
2. Slidell
3. Mandeville-Covington
4. South Tangipahoa

The Greater New Orleans UZA is located on the south shore of Lake Pontchartrain, and the other three UZAs are located on the north shore of Lake Pontchartrain (Figure 2). Greater New Orleans is the most populous urbanized area in Louisiana.

NORPC is governed by a board of local elected officials from each of the six member parishes. The Transportation Policy Committee, established in 1992, is the decision-making body for Federal transportation policy and programs within the metropolitan planning area. The Transportation Policy Committee has 44 members, including the full NORPC board and representatives of the Governor of Louisiana, local transit authorities, the Port of New Orleans, the New Orleans Public Belt Railroad, and citizens from each parish.

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<sup>3</sup> More information about NORPC is available at <http://www.norpc.org/>

<sup>4</sup> NORPC's member parishes are Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany, and Tangipahoa Parishes.



Figure 2. Map of NORPC's member parishes and urbanized areas.

In January 2015, NORPC adopted 2015-2044 RTPs for the New Orleans, Mandeville-Covington, and Slidell UZAs. The most recent RTP for the Tangipahoa UZA was adopted in 2014. NORPC is beginning to plan for its next RTP updates, which it anticipates will be adopted in 2019, and is considering how scenario planning can be used in these updates. NORPC requested the FHWA-sponsored workshop to learn more about scenario planning, to gain insights from peer agencies about best practices when developing and applying scenarios, and to provide an opportunity for information-sharing among Louisiana MPOs.

## What is Scenario Planning?

**Scenario planning** is a process that transportation agencies can use to assess and prepare for possible conditions using multiple plausible stories about the future. Originally used in a military context in the 1960s, businesses, government, and nongovernment agencies today use scenario planning to facilitate a common understanding of values and evaluate how these values relate to factors affecting transportation, such as demographics, land use patterns, economic development, and technological advances. The development of scenarios can help a community plan strategically for its future and determine the allocation of future investments. Scenario planning is an enhancement of, not a replacement for, the traditional transportation planning process and can be adapted to fit different purposes, scales, and areas. Scenario planning from its earliest stages through implementation typically takes approximately 12 to 36 months.

## Presentations and Discussion Highlights

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### Welcome and Introduction

Representatives from NORPC, FHWA, and FTA provided introductory remarks and welcomed participants to the workshop. Brian Betlyon, Metropolitan Planning Specialist with the FHWA Resource Center, facilitated the event.

Jeff Roesel, NORPC Deputy Director; Todd Jeter, Assistant Division Administrator of the FHWA Louisiana Division; and Don Koski, Director of Planning and Program Development of FTA Region VI, each offered remarks. The speakers thanked the peers for their participation and expressed interest in learning more about how scenario planning can be used to improve long-range transportation planning.

Following the introductory remarks, workshop participants introduced themselves and briefly described their reasons for attending. Workshop participants included representatives of each of Louisiana's eight MPOs, LaDOTD, FHWA, and FTA. A full list of workshop participants is provided in [Appendix B](#).

### Trends in the Region

John King, Transportation Planner at NORPC, and Meredith Soniat, Sustainability Planner at NORPC, introduced the Trends in the Region presentation and encouraged workshop participants to reflect on how trends in their MPOs are similar or different from trends in NORPC.

Lynn Dupont, Principal Planner and GIS Coordinator at NORPC, presented on New Orleans regional trends and NORPC's previous experience using land use scenarios. Her presentation included an overview of demographic trends, data sources, and a regional land use charrette exercise held in 2010.

For questions and responses provided throughout the presentations, see [Appendix D](#).

### Demographic Trends

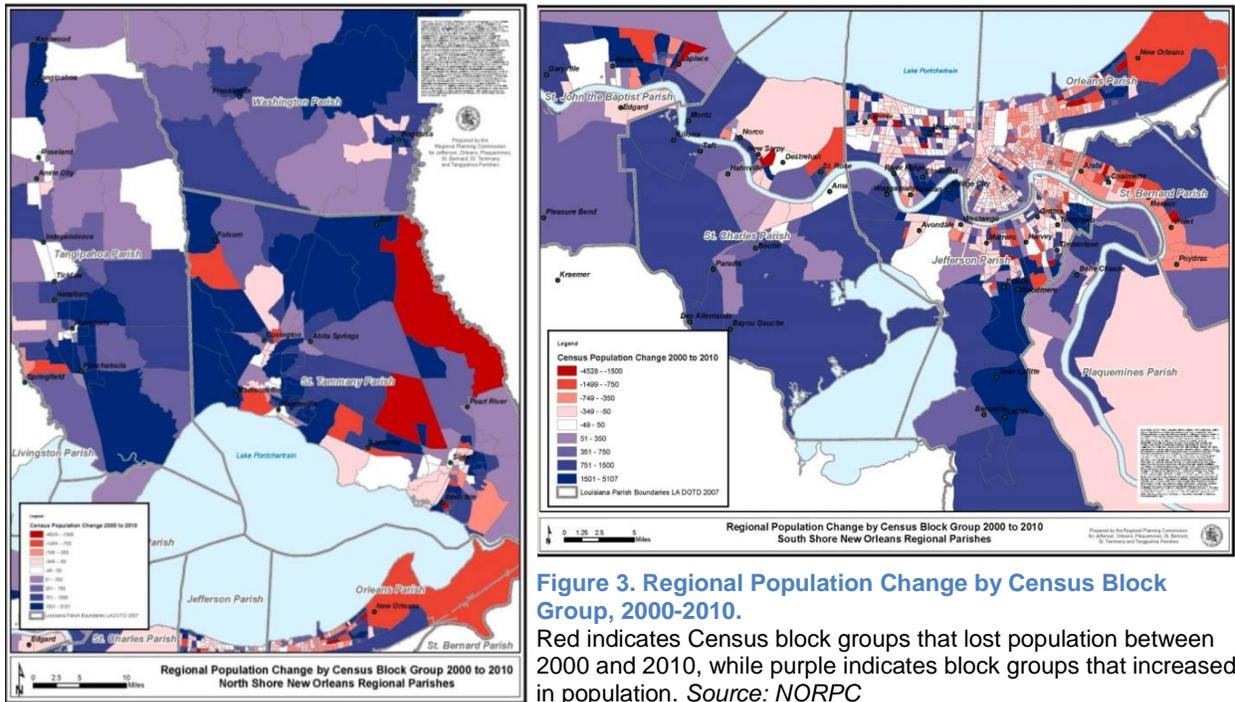
Hurricane Katrina, which hit the Gulf Coast in August 2005, had major impacts on demographic and socioeconomic trends in the NORPC region. Ms. Dupont noted that many trends in the New Orleans region are best analyzed in terms of pre-Katrina and post-Katrina periods. However, the U.S. Decennial Census only provides data for 1990, 2000, and 2010.

The region's population grew between 1990 and 2000, particularly in suburban and outlying areas. Between 2000 and 2010, regional population remained approximately the same—with about 1.3 million people—but there were major changes to population distribution throughout the region (Figure 3). In general, areas that flooded during Hurricane Katrina decreased in population, while areas at higher elevation increased in population. Many communities on the north shore of Lake Pontchartrain grew rapidly following Hurricane Katrina, as people displaced during the hurricane moved to higher ground. For example, St. Tammany Parish reached its projected 2020 population growth in 2007, two years after Hurricane Katrina.

In St. Tammany Parish, growth in low-density suburban development patterns spurred the Parish's interest in smart growth scenarios. In 2015, NORPC worked with St. Tammany to model how smart growth principles—including increased urban infill and decreased rural development—would affect the Parish's population distribution.<sup>5</sup>

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<sup>5</sup> More information about NORPC's Smart Growth program is available at: [http://www.norpc.org/smart\\_growth.html](http://www.norpc.org/smart_growth.html).



Ms. Dupont noted the challenges that NORPC faced in getting accurate demographic and socioeconomic data in a post-disaster region. For example, NORPC uses InfoUSA, a commercial provider of business data, for their employment data.<sup>6</sup> Following Hurricane Katrina, many businesses that had closed or relocated were still included in the InfoUSA data. Because NORPC’s travel demand model relies on accurate data inputs, NORPC cleans the data manually.

After Hurricane Katrina, NORPC needed to know where low-income families were living in order to prioritize transit service. NORPC worked with the Louisiana Department of Children & Family Services to get data on the location of people participating in the Supplemental Nutrition Assistance Program (SNAP; formerly Food Stamps). Ms. Dupont noted that the SNAP data has been more accurate for mapping low-income populations in post-Katrina New Orleans than income data from the American Communities Survey. NORPC currently uses SNAP data to support transit planning and analysis of gentrification.

Hurricane Katrina also caused changes in where people of different races live. The City of New Orleans has a larger share of white residents and Hispanic residents than it did before the storm. Following Hurricane Katrina, people from around the country came to New Orleans to participate in recovery efforts. These volunteers were predominantly young, white, and urban. Many of them decided to move to New Orleans permanently, a trend that is driving gentrification in historic neighborhoods in central New Orleans.

### Freight Trends

Freight is of major economic importance to the NORPC region. Each year, more than 11,000 oceangoing vehicles move through the Lower Mississippi River. NORPC’s models predict steady increases in maritime freight exports over the next 25 years, with the largest increases in the agricultural and coal/petroleum sectors. Railroads are a major component of the region’s freight network; six major national railroads operate in the New Orleans area. In 2008, the region’s rail networks handled 119 million tons of freight.

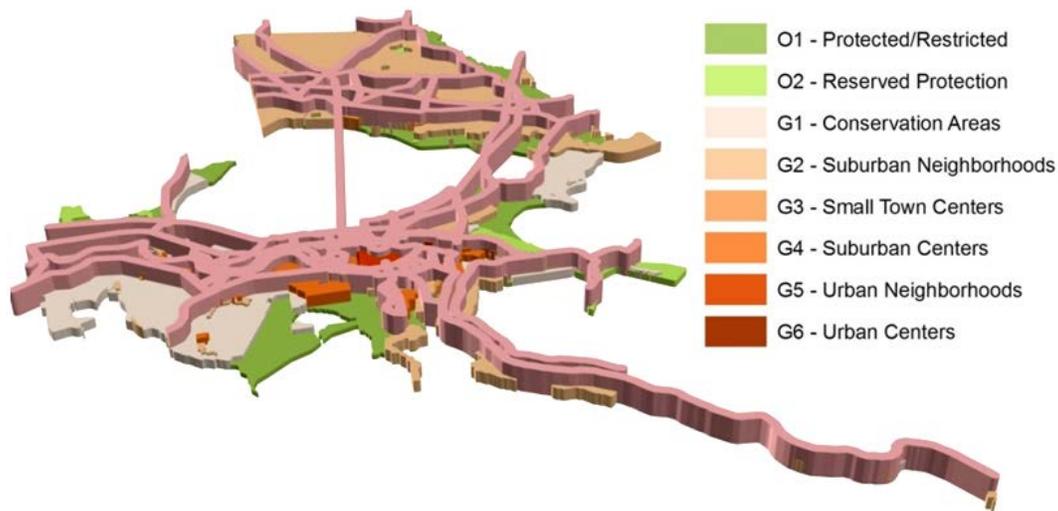
<sup>6</sup> This is not an endorsement by FHWA. FHWA recognizes that there are many sources of employment data that can be used for travel demand modeling and scenario planning purposes.

NORPC facilitates a Regional Freight Roundtable that meets quarterly to discuss freight needs and solutions. Several freight projects in the region are planned, including improvements to intermodal facilities.

### *NORPC Land Use Charrettes*

In 2010 and 2011, NORPC held a 3-day land use charrette to assemble a regional growth framework. The goal of the charrette was to review Parish land use plans for coordination with the RTP. NORPC worked with a consultant to model future land uses in the INDEX software package and lead a visioning process.<sup>7</sup>

The charrette resulted in agreement on a regional map of generalized future land uses (Figure 4). NORPC used a 40-acre grid for generalizing land use data.



**Figure 4. NORPC's 2010-2011 charrette resulted in a regional map of generalized future land uses.**  
*Source: NORPC*

As a result of the regional map exercise, NORPC identified five regional themes and principles:

- **Vitalization and Revitalization** – Enhance existing vibrant land use patterns and address the opportunities of vacant and underutilized properties.
- **Resiliency** – Protect, conserve, and restore sensitive areas and minimize risk to development.
- **Accessibility** – Provide choices in transportation, housing, and amenities and encourage walkable vibrant places.
- **Prosperity** – Attract and secure capital investment that provides for new opportunities and stabilizes existing development.
- **Preservation** – Preserve the essential character of the region's unique cultural resources, heritage, and way of life while promoting environmental benefits of preservation.

In closing, Ms. Dupont noted the importance of clearly explaining terms when conducting regional planning exercises. The language that technical staff use to describe modeling inputs and results often determines how stakeholders understand, and ultimately receive, a transportation project. Land use descriptions like “dense urban” can have different meanings to different people.

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<sup>7</sup> This is not an endorsement by FHWA. FHWA recognizes that there are many software tools that can be employed for scenario planning purposes.

## Federal Perspectives on Scenario Planning

Mr. Betlyon presented on scenario planning perspectives at the Federal level.

Scenario planning helps transportation agencies create multiple plausible stories about what the future could be. Through the scenario planning process, agencies can build a common understanding of the issues and driving forces of change that affect transportation. The scenarios created can also help assess and prepare for possible future conditions.

The “traditional” scenario planning process typically integrates transportation and land use planning. Similar to visioning and alternatives analyses, scenario planning allows agencies to ask “what if” questions, compare and assess future likely land uses, and examine the interactions between multiple factors and trends.

Mr. Betlyon explained how scenario planning connects to integrated planning, performance-based planning and programming (PBPP), and Planning and Environment Linkages (PEL):

- *Integrated planning*: Scenario planning can help agencies and stakeholders compare transportation choices and consequences, allowing for better, more informed decisions. It can also promote greater interest from a broader set of the population by engaging stakeholders in the process of creating and evaluating alternative futures.
- *PBPP*: In connecting to PBPP, FHWA has seen a growing trend in the use of performance measures and indicators to evaluate scenarios. Using these indicators allows agencies to develop more robust scenarios and to share information with stakeholders and decisionmakers about the differences between scenarios and tradeoffs.
- *PEL*. Scenario planning supports linking transportation planning and National Environmental Policy Act (NEPA) requirements by helping inform NEPA’s identification of a range of reasonable alternatives for individual transportation projects. For example, if the scenario planning process concludes a mass transit scenario is not realistic because the community does not have sufficient density to support mass transit, this conclusion can be used during the NEPA phase when identifying the range of reasonable alternatives.

Lastly, Mr. Betlyon shared information on the language about scenario planning in the Moving Ahead for Progress in the 21st Century (MAP-21) Act. MAP-21 includes language that provides the option for MPOs to use scenario planning.<sup>8</sup> Under MAP-21, when applying a scenario planning approach, MPOs should consider components such as regional investment strategies, population, and employment; revenue constrained scenarios; and the estimated costs and potential revenues available to support each scenario.

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<sup>8</sup> Information about MAP-21 is available at: [www.fhwa.dot.gov/map21/](http://www.fhwa.dot.gov/map21/).

## Peer Approaches to Scenario Planning

Two peer agencies—Hillsborough MPO and BMC—shared their experiences in applying scenario planning. The two peer sessions held during the workshop focused on two topics: a) creating a scenario planning process that fits an agency’s needs; and b) integrating scenario planning with the LRTP process. This report summarizes the presentations by peer. For information on the questions and responses provided throughout the sessions, please refer to [Appendix D](#).

### *Beth Alden, Hillsborough MPO for Transportation*

The Hillsborough MPO for Transportation serves Hillsborough County, Florida, which contains the City of Tampa. Approximately 1.3 million people live in Hillsborough County. Hillsborough County serves an area of about 1,000 square miles, and, like NORPC, its region contains a wide range of land use types, including a dense urban core, suburban sprawl, and rural lands.

A very large share of residents lives in unincorporated Hillsborough County; as a result, the County handles many land use and transportation functions that are typically governed at the municipal level in other regions. The Hillsborough Planning Commission (TPC), the entity that hosts the MPO, is responsible for developing comprehensive plans for the County and its three municipalities.<sup>9</sup> TPC has approximately 40 staff, 12 of whom work for the MPO.

Ms. Alden’s presentations focused on how Hillsborough MPO used scenario planning to inform the development of its 2040 LRTP, *Imagine 2040*. Going into the LRTP update process, Hillsborough MPO faced a number of uncertainties and challenges, including:

- The potential need for an expansion of its Urban Service Area;
- Declining Federal and State transportation funding and uncertainty around local willingness to pay for transportation improvements;
- Uneven economic recovery; and
- External factors, including demographic, technological, and environmental shifts.

Ms. Alden attended a FHWA scenario planning workshop in 2011 and thought that scenario planning would be a powerful tool for addressing the region’s transportation planning uncertainties in an integrated, stakeholder-driven way. In 2012, Hillsborough MPO partnered with TPC to use a scenario planning approach to gather public input on possible futures for Hillsborough County in the year 2040. The initiative, *Imagine 2040*, provided a way to coordinate long-range transportation and land use planning in the region, and the results informed updates to the region’s LRTP and the comprehensive plans for Hillsborough County, Tampa, Temple Terrace, and Plant City. All five plans share a common horizon year of 2040.

The scenario planning for *Imagine 2040* included two phases:

- Phase 1. Land Use and Transportation Scenarios for Growth
- Phase 2. Transportation Investment Scenarios

### ***Phase 1: Land Use and Transportation Scenarios for Growth***

In 2012, Hillsborough MPO began stakeholder involvement efforts and identified issues for incorporation into scenarios. MPO staff held visioning workshops with a variety of stakeholders, including civic groups, chambers of commerce, MPO committees, and elected officials.

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<sup>9</sup> Hillsborough County contains three cities: Tampa, Temple Terrace, and Plant City.

Using the results of the visioning workshops, the MPO developed three “stories” or scenarios about what land use and transportation might look like in 2040. The scenarios were designed to exaggerate the differences between the scenarios and to promote discussions about tradeoffs.

- **“Suburban Dream,”** which emphasized outward growth similar to recent trends.
- **“Bustling Metro,”** which envisioned urban redevelopment and increased investment in transit.
- **“New Corporate Centers,”** which highlighted job growth concentrated in new corporate parks along major highways with express toll lanes.

Hillsborough MPO analyzed how each scenario would perform under 12 performance measures—including traffic delay, job creation, and infrastructure cost—and developed simplified scorecards (Figure 5). Hillsborough MPO conducted the data analysis in-house; a consultant was used to support the graphic design and public involvement components.



Figure 5. Hillsborough MPO used simplified graphics to show how each of its 3 scenarios would perform under 12 performance measures.

Source: Hillsborough MPO for Transportation

Once the scenarios and performance measures were complete, Hillsborough MPO launched a three-month public involvement campaign to gather public feedback on the three scenarios. Hillsborough MPO developed a website and online survey to present the scenarios and collect responses. In addition, MPO staff presented at 94 public meetings across the region and collected paper surveys from audience members at the meetings. The MPO also placed survey kiosks in malls, colleges, and community centers to provide additional opportunities for the public to take the survey. To further promote its website and survey, Hillsborough MPO partnered with the *Tampa Bay Times* to include a full-page insert about Imagine 2040. The Imagine 2040 survey received more than 3,500 responses. Approximately two-thirds of the responses came through the website, and 17% of responses came from paper surveys at community meetings.

The survey asked participants to choose their top five priorities from among the 12 performance measures and to rate each scenario on a 1 to 5 star scale (Figure 6). The Bustling Metro scenario received the highest ratings.

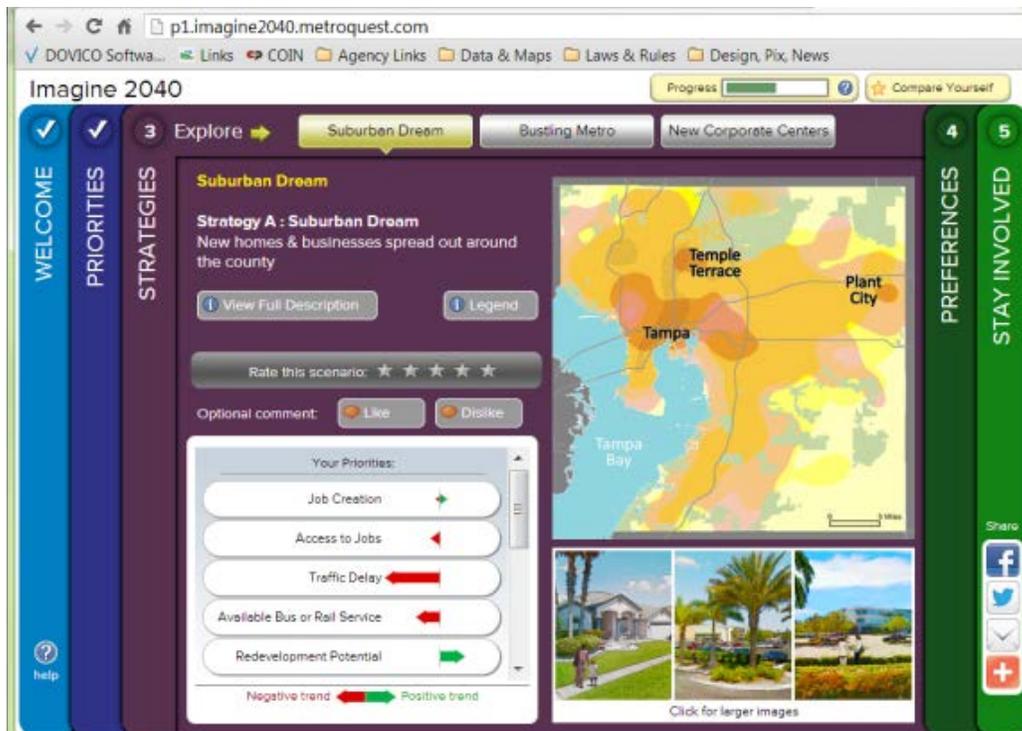


Figure 6. Hillsborough MPO used an online survey to provide information about how each scenario would affect the 12 performance measures and to collect public feedback.

Source: Hillsborough MPO for Transportation

## Phase 2: Transportation Investment Scenarios

Based on the Imagine 2040 survey results, Hillsborough MPO developed a hybrid scenario to form the basis of a regional long-range vision for land use and transportation. In order to bring the hybrid scenario into the cost-constrained LRTP update and to better understand the public's priorities for transportation investment, Hillsborough MPO conducted a second public engagement effort to get feedback about spending priorities.

To develop the transportation investment scenarios, Hillsborough MPO first grouped transportation projects into four categories:

1. **Preserve the System**, which included projects related to road resurfacing, bridge repair, and vehicle replacement.
2. **Reduce Crashes and Vulnerability**, which included projects to reduce crashes and fatalities and project that would reduce the economic impact of a major storm surge.
3. **Minimize Traffic for Drivers and Shippers**, which included projects to improve peak-hour travel time reliability and reduce freight congestion.
4. **Real Choices When Not Driving**, which included improvements to transit, paratransit, bicycle, and pedestrian networks.

Next, Hillsborough MPO developed performance measures for each category to show the public how performance would change with low, medium, and high levels of investment. (In each category, the low investment level was based on current spending in Hillsborough County.) For example, at the low investment level for the "Preserve the System" category, roads would be repaved every 50 years, and buses would be replaced every 26 years. At the high investment level, roads would be repaved every 17 years, and buses would be replaced every 10 years. Through the survey, members of the public could

choose their own investment scenarios by funding each category at low, medium, or high levels. The survey tool showed each respondent how much they had spent in relation to a baseline budget based on current revenues. Respondents could also allocate budget for “big-ticket” projects, including major road widening projects, express toll lanes, and mass transit projects. If respondents spent more than the baseline budget, the survey asked them if they would rather reduce spending or raise taxes/fees to cover the deficit. Most chose to raise taxes/fees.

Using the survey results on investment levels, Hillsborough MPO developed a number of financial scenarios and evaluated each scenario based on the performance measures. In the Baseline Scenario, which includes no new revenues, most categories could be funded at the lowest investment level. In the preferred scenario, which incorporates a 1 cent sales tax, most project categories could be funded at the highest investment level. These financial scenarios are included in the 2040 LRTP, which was adopted in December 2014.

### ***Lessons Learned***

Throughout her presentations, Ms. Alden shared several lessons learned, including:

- **When going to the public for feedback, be deliberate about how information is presented.** Throughout her presentation, Ms. Alden emphasized the importance of not overloading participants with too much data. Hillsborough MPO simplified and streamlined its scenarios, performance measures, and investment levels to make sure that the public would receive meaningful information but not be overwhelmed by details and miss seeing the forest because of all the trees.
- **Use technology to facilitate public involvement and leverage MPO staff resources.** For its interactive online surveys, Hillsborough MPO used MetroQuest’s scenario planning public involvement tool, which it found very easy to use.<sup>10</sup> For the audience participation for the transportation investment scenarios, Hillsborough MPO used an inexpensive tool called Poll Everywhere to provide real-time cell phone polling at community meetings. However, not all technologies are appropriate in every situation; Ms. Alden noted that the survey kiosks had a lower return on investment than other outreach methods; response rates were relatively low, and the kiosks required large amounts of staff time to maintain.
- **Target your scenario planning process to address no more than a few strategic policy questions, to allow for a deeper dialogue.** For Hillsborough MPO, a major question going into the 2040 LRTP update was the feasibility of increasing local funding for transportation. Despite the defeat of a 2010 sales tax referendum for funding transportation projects, the Imagine 2040 outreach results showed that many citizens would be open to increasing taxes or fees to fund transportation, provided that the package of proposed improvements met their expectations.
- **Leverage MPO resources effectively.** Hillsborough MPO used consultants to assist with graphic design and public involvement, but performed all modeling and data analysis in-house. According to Ms. Alden, this proved to be an effective division of labor for the MPO. However, each MPO has different strengths and resources.

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<sup>10</sup> This is not an endorsement by FHWA. FHWA recognizes that there are many software tools that can be employed for scenario planning and public engagement purposes.

## *Terry Freeland, BMC*

BMC provides regional transportation, environmental, and emergency preparedness planning for the five-county and Baltimore City region in Maryland.<sup>11</sup> The MPO for the region, Baltimore Regional Transportation Board (BRTB), is organized as a component of BMC. Approximately 2.6 million people live in the region served by BMC and BRTB. BMC has approximately 36 staff members, 25 of whom work in the Transportation Division.

BMC used scenario planning approaches to inform its two most recent LRTP updates. In 2010, for the development of its 2035 LRTP update, “Plan It 2035,” BMC conducted a scenario planning process that looked at the interaction between four land use patterns and four transportation systems.<sup>12</sup> In 2014, as part of the development of the 2040 LRTP update “Maximize2040,” BMC took a different approach, which Mr. Freeland referred to as “scenario thinking.” Mr. Freeland’s two presentations focused on BMC’s scenario planning effort for Maximize2040.

For *Maximize2040: A Performance-Based Transportation Plan*, BMC wanted to develop an LRTP that emphasized efficient use of resources and connected with the performance-based elements in MAP-21.<sup>13</sup> One of BMC’s goals was to think strategically about future needs and to explore if the LRTP update could provide a tool for anticipating and planning for uncertain future events. A basic question that informed the process was, “How can the region make informed decisions about the future when there are so many uncertainties?” In particular, BMC wanted to avoid planning for projects that would be inefficient or irrelevant in the future.

The traditional approach to updating a LRTP uses travel demand modeling to predict future transportation needs. “Scenario thinking” is a complementary approach that considers external forces and their possible outcomes. For example, if Trend X accelerates, what would that mean for regional transportation indicators? Mr. Freeland noted that the scenario thinking approach used by BMC is more common in private businesses than in public agencies. For example, BMC looked at previous studies done by Metropolitan Washington Council of Governments and the Sonoran Institute.<sup>14</sup>

The scenario planning for Maximize2040 included 4 main steps:

1. Public survey
2. Focus group input on uncertain outcomes
3. Scenario development
4. Workshop

### ***Step 1: Public Survey***

The first step in BMC’s process was a public survey on the external factors and forces that could have the greatest effects on transportation, the environment, and growth in the Baltimore region between 2014 and 2040. BMC organized external forces into five categories—social-demographic, technological, economic, environmental, and political. (This method of organizing external forces is also known by its acronym: STEEP.) The survey asked respondents to choose the most important forces in each of the five categories. The forces that received the most votes in each category were:

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<sup>11</sup> More information about BMC is available at: <http://www.baltometro.org/>

<sup>12</sup> More information about Plan It 2035 is available at: <http://www.baltometro.org/our-work/transportation-plans/long-range-planning/final-plan-it-2035>

<sup>13</sup> More information about Maximize2040 is available at: <http://www.baltometro.org/our-work/transportation-plans/long-range-planning/maximize2040>

<sup>14</sup> More information about Metropolitan Washington Council of Governments’ scenario planning is available at: [http://www.mwcog.org/store/item.asp?PUBLICATION\\_ID=349](http://www.mwcog.org/store/item.asp?PUBLICATION_ID=349).

More information about the Sonoran Institute’s scenario planning is available at: <http://www.sonoraninstitute.org/xsp.html>

- *Social-demographic*: Older and more diverse population
- *Technological*: Innovations in interconnected systems (vehicle-to-vehicle and vehicle-to-network)
- *Economic*: Long-term systemic unemployment
- *Environmental*: Climate change
- *Political*: Political will to tap new sources of transportation funding

BMC's survey was open in June-July 2014 and received 209 responses.

### ***Step 2: Focus Group Input on Uncertain Outcomes***

In July 2014, BMC convened a focus group to discuss the survey results and develop recommendations for scenarios. The focus group included representatives of stakeholder agencies and organizations, including the City of Baltimore, the Regional Transportation Agency of Central Maryland, the Maryland Department of Transportation, the University of Maryland, and the Mid-Atlantic Regional Air Management Association. The focus group concluded that the two most frequently chosen trends—older and more diverse population, and limited funding resources—were nearly certain to happen in the future. Thus, these trends should be underlying assumptions in all the scenarios. The focus group recommended developing scenarios around:

- Changes in patterns and preferences with respect to work, lifestyle, and travel;
- Climate change effects on regional transportation systems and low-lying communities; and
- Innovations in interconnected systems, vehicles, and devices.

### ***Step 3: Scenario Development***

Based on the focus group's recommendation, BMC staff developed three scenarios of plausible futures for the Baltimore region:

- **“Wash Overflow.”** In this scenario, population and economic growth from the Washington, DC region has spilled over into the Baltimore region.
- **“Simmered Up.”** In this scenario, climate change has led to rising sea level and an increase in the number and severity of extreme weather events.
- **“Zuber Connected.”** In this scenario, significant advances in vehicle-to-vehicle and vehicle-to-network communications systems have occurred, which enable on-demand car-sharing of autonomous vehicles.

Each scenario was qualitative and included descriptions of possible events and conditions.

### ***Step 4: Workshop***

In September and December 2014, BMC convened two workshops in order to gather stakeholder feedback on the three scenarios. The workshops included 38 participants from a range of organizations, including the BRTB's Public Advisory Committee, local jurisdictions, universities, businesses, non-profit organizations, and advocacy groups.

BMC used a concentric circle metaphor to frame the stakeholder discussion and illustrate its approach (Figure 7). The outermost circle, External Forces, represents the external forces that are likely to be critical to the region. Each of the three scenarios—Wash Overflow, Simmered Up, and Zuber Connected—corresponds to a key external force. The middle circle, Trends/Values, represents the effects that each force will have on regional performance measures and trends. The innermost circle, Organizational Actions, represents the actions that BMC can take to prepare for the future.



**Figure 7: BMC used a concentric circle diagram to illustrate its approach to thinking about the future.**

Source: BMC

At the workshops, BMC divided participants into break-out groups to focus on each of the three scenarios. Participants were asked to assume that their scenario had occurred in 2039 (25 years in the future.) Each group had two tasks:

1. Come to consensus on how the scenario would affect regional trends and performance measures. (This step corresponds to the middle circle in the diagram.)
2. Identify the most important transportation investment strategies for preparing for the scenario. (This step corresponds to the innermost circle in the diagram.)

At the conclusion of each workshop, break-out group participants reconvened and discussed the investment strategies that would enable BMC to prepare for all three scenarios, and what actions BMC could take in 2014 to prepare for these possible futures (Figure 8). The workshops concluded that three investment strategies would be urgent and important in all three scenarios:

- Road and bridge asset management and maintenance
- Expansion of commuter transit service
- Emissions reduction strategies

Important and Urgent	Important, but action can wait	Not as important or urgent	
	Wash Overflow	Simmered	Connected
<b>Investment Strategies</b>			
• Road/bridge maint./relocation	Red	Red	Red
• Transit vehicle maint./replacement	Red	Red	Yellow
• Road technologies	Red	Yellow	Grey
• Transit technologies	Red	Yellow	Yellow
• NHS road expansion	Grey	Red	Grey
• Non-NHS road expansion	Yellow	Grey	Grey
• Intersection/interch. improvements	Yellow	Red	Red
• Inter-regional transit expansion	Grey	Red	Red
• Commuter transit expansion	Red	Red	Red
• Local transit expansion	Red	Yellow	Grey
• Transit station improvements	Yellow	Yellow	Yellow
• Bike/walk access improvements	Red	Yellow	Red
• Emissions reduction	Red	Red	Red

**Figure 8. At two workshops, BMC gathered stakeholder feedback on which investment strategies would be most important and urgent in each scenario.**

Source: BMC

Workshop participants also recommended that the BRTB develop structures and agreements that will allow it to partner with other agencies and the private sector to find alternative sources of funding, implement new technologies, and provide transportation options.

### ***Transition into the LRTP***

BMC presented the results of the scenario planning exercise to the Technical Committee (which advises the BRTB on technical matters) and the BRTB (the decision-making body for the MPO). For these presentations, BMC asked for volunteers from the workshop participants to explain the process and the value of the discussions generated by the scenarios. Mr. Freeland noted that having non-BMC staff present the findings was valuable for getting the attention of the Board and emphasizing the stakeholder process. The purpose of the presentation was to give the Board additional information to use in project evaluation for the LRTP. A secondary goal of the presentation was to educate the Board about possible external forces.

The results of the scenario planning process were based on qualitative analysis by workshop participants; BMC did not conduct modeling to analyze the scenarios' possible impacts on performance measures. Although one Technical Committee member raised concerns about the lack of quantitative data, on the whole Board members, Technical Committee members, and other stakeholders found the results useful and complementary to the traffic demand modeling results.

In conclusion, Mr. Freeland noted the difficulty in changing the course of transportation projects that have been in development for years. The goal of BMC's scenario thinking process was to "nudge the ship" in a direction that minimizes surprises and best prepares BMC to respond to future trends. Moving forward, BMC plans to continue to revisit these issues periodically by bringing in experts to speak to the Technical Committee and Board.

### ***Lessons Learned***

Throughout his presentations, Mr. Freeland shared observations about scenario planning and lessons that BMC learned during the process:

- **Thinking long-term is difficult but vital.** Mr. Freeland noted the difficulty of getting people to try to anticipate what the world may look like 25 years into the future. People often have a tendency to rely on recent trends and underestimate the impact of major shifts. When presenting to stakeholders and Board members, BMC used analogies to illustrate how much can change in 25 years. For example, few people in 1989 anticipated how the World Wide Web and the evolution of smartphones would transform the ways we live and work.
- **The STEEP model is useful for organizing possible drivers of change.** BMC found the STEEP model to be effective for organizing external forces into a coherent framework and soliciting public feedback. In addition, using the STEEP model can help ensure that agencies do not overlook major categories of external forces when planning for the future.
- **Scenario planning can be scaled to fit an MPO's purpose, timeframe, and budget.** BMC used scenario planning to inform its 2035 and 2040 LRTP updates, but in very different ways. The effort for Plan It 2035, known as imagine 2060, used a consultant and took approximately 12 months. The "scenario thinking" exercise for Maximize 2040 did not use any consultants and was completed within 6 months. Mr. Freeland emphasized that neither approach was superior; the two had different purposes and results. In BMC's case, it was beneficial to start with the Plan It 2035 scenario planning in order to gauge public opinion on possible future land use and transportation patterns.

## Group Discussions

Throughout the workshop, participants engaged in discussions to share questions, feedback, and ideas.

### *Break-Out Groups: Applying Scenario Planning to the Louisiana Context – Prioritizing Themes and Challenges*

After the second peer session, participants divided into three break-out groups to discuss how scenario planning approaches could be used by Louisiana MPOs (Figure 9). Each group was asked to prioritize 1) the top three themes or topics in Louisiana that could benefit from scenario planning, and 2) the top three challenges faced by Louisiana and its MPOs.

The top themes chosen by the breakout groups were:

- Sustainability and resiliency (2 groups)
- Changing demographics, including aging population and millennial generation (2 groups)
- Balancing land use and economic development
- Land use and growth management
- Congestion
- Technology impacts

The top challenges chosen by the breakout groups were:

- Funding (all 3 groups)
- Environmental issues, including air quality and coastal erosion (2 groups)
- Getting political support for smart growth and multidisciplinary planning processes
- Managing stakeholder and taxpayer expectations given fiscal and political realities
- Effective public involvement/outreach

### *Group Discussion – Moving Towards Implementation*

At the conclusion of Day One of the workshop, Mr. Betlyon led participants in a discussion about possible next steps for implementing scenario planning in Louisiana. Participants generated a list of stakeholders who may be included in a scenario planning approach. The list of potential stakeholders included: local governments, LaDOTD, transit authorities, public health organizations, business councils, academia, community groups, advocacy groups, realtors, and the freight sector.

### *Roundtable Discussions*

On the second day of the workshop, NORPC staff convened with the peers and FHWA and FTA representatives to debrief on the discussions from the previous day and to discuss areas of interest for NORPC, including scenario planning for extreme weather events and freight. Potential next steps for NORPC's implementation of scenario planning were also discussed. Ideas shared during the roundtable discussions are summarized below.

- **Best Practices for Scenario Development and Outreach**
  - **Exaggerate scenarios to emphasize distinctions.** Scenario planning can be more effective when the scenarios are exaggerated to show the differences between different options. If the differences between scenarios are too subtle, it can be difficult to collect meaningful public feedback. Mr. Betlyon noted that one common technique is to get public feedback on a number of exaggerated scenarios and then use the analysis results to develop a more realistic hybrid scenario.
  - **Simplify.** Peers and workshop participants noted the importance of not overwhelming the public with too much data. When asking for public feedback about levels of investment in

different program areas, Hillsborough MPO simplified spending amounts into low, medium, and high levels. Documenting assumptions ensures that technical detail is available for MPO Board members and other interested parties.

- **New Orleans Context**

- ***Working with local partners will be a key step in NORPC's scenario planning process.*** Because NORPC does not have regulatory authority over land use, NORPC will need to work with its member parishes and cities on implementation of any land use recommendations that may come out of a scenario planning process. This is a challenge faced by many MPOs around the country. NORPC worked successfully with its member parishes on the 2010-2011 regional land use visioning project and through its smart growth program.
- ***NORPC faces specific challenges—and opportunities—due to Hurricane Katrina recovery.*** For example, NORPC worked with FHWA, LaDOTD, and the City of New Orleans to find a way to use FHWA Emergency Relief funds to allow new striping of bicycle lanes.
- ***Bicycle and pedestrian infrastructure is a major area of interest in New Orleans.*** Mr. Betlyon noted that FHWA published a Statewide Pedestrian and Bicycle Planning Guidebook in 2014.<sup>15</sup> A similar handbook for MPOs is currently under development. Other resources on bicycle and pedestrian planning are available from FHWA, the FHWA/FTA TPCB Program, and the Pedestrian and Bicycle Information Center.<sup>16</sup> The State of Louisiana is working on a design manual to promote implementation of the State's Complete Streets policy.

- **Extreme Weather Events**

- ***Vulnerability to extreme weather events or climate change can be incorporated into broader scenario planning processes.*** Both peers included climate change or extreme weather in their scenario approaches. For example, one of Hillsborough MPO's four investment areas (or buckets) included projects to increase safety and reduce vulnerability to storm surges and sea level rise. This included preliminary estimates of costs to raise the elevation of vulnerable major roadways. One of BMC's three scenarios envisioned major effects from climate change; at BMC's workshops, participants prioritized which investment strategies would be most urgent and important for BMC to prepare the region for rising sea levels.
- ***Tailor the message to the audience.*** In Louisiana, as in other parts of the country, the term "climate change" can be politically polarizing. However, there is widespread support for strategies to reduce vulnerability to extreme weather events. Hillsborough MPO modeled storm surge inundation rather than sea level rise, which helped to de-politicize the effort. Several workshop participants noted that the term "extreme weather events" is an effective alternative to the term "climate change."
- ***Consider how to address regional resiliency.*** Although NORPC has assessed extreme weather vulnerability at the project-specific level, it has not analyzed what it would take to improve resiliency at the regional scale. One possible next step for NORPC would be to analyze regional scenarios for extreme weather resiliency at three different cost levels. The effort could potentially model how the transportation network would respond at various levels of inundation, and how much it would cost to protect vulnerable transportation assets. NORPC already has much of the input data that would be necessary for the effort. Hillsborough MPO recommended Fort Myers, Florida, as a possible example. A 2014 report from the National Cooperative Highway Research Program (NCHRP) on climate change may also provide useful information for NORPC.<sup>17</sup>

- **Freight**

- ***Scenario planning may be a useful tool for analyzing freight trends, priorities, and investments.*** With four maritime ports and six major railroad companies operating in the

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<sup>15</sup> [https://www.fhwa.dot.gov/planning/processes/pedestrian\\_bicycle/pedestrian\\_bicycle\\_handbook/](https://www.fhwa.dot.gov/planning/processes/pedestrian_bicycle/pedestrian_bicycle_handbook/)

<sup>16</sup> FHWA Bicycle and Pedestrian Program: [http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/)  
TPCB Active Transportation Focus Area: [https://planning.dot.gov/focus\\_activeTrans.asp](https://planning.dot.gov/focus_activeTrans.asp)  
Pedestrian and Bicycle Information Center: <http://www.pedbikeinfo.org/>

<sup>17</sup> NCHRP Report 750, Strategic Issues Facing Transportation, Volume 2: Climate Change, Extreme Weather Events, and the Highway System: Practitioner's Guide and Research Report. 2014. <http://www.trb.org/Main/Blurbs/169781.aspx>

- region, NORPC has a number of questions about how to prioritize freight investments, minimize trucking and rail congestion, and plan for future macroeconomic trends. NORPC is interested in using scenario planning to anticipate future freight trends but would like to explore how freight scenario planning could be integrated with broader scenario planning processes. Workshop participants noted the relationship between freight and climate change; in New Orleans, rising sea levels would likely impact port infrastructure and river access.
- **Many resources about freight scenario planning are available.** Workshop participants suggested a number of resources that provide more information about freight scenario planning. NCHRP Report 750, Volume 1 provides a detailed methodology for freight scenario planning.<sup>18</sup> A webinar on scenario planning for freight is available on the TPCB website.<sup>19</sup> The Delaware Valley Regional Planning Commission (DVRPC) published a white paper on scenario planning that describes how its freight scenario planning process integrated with other scenario planning efforts.<sup>20</sup> FHWA Resource Center has specialists in freight modeling and forecasting.<sup>21</sup>

## Conclusion and Next Steps

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The FHWA scenario planning workshop, hosted by NORPC, provided an overview of scenario planning and demonstrated how two expert peer agencies are using this process to advance their LRTP activities.

Through the participation of Hillsborough MPO and BMC, workshop participants learned about best practices in scenario planning and ideas that NORPC and other Louisiana MPOs could potentially leverage in their transportation planning processes. The workshop allowed for the sharing of perspectives about themes and challenges that can benefit from scenario planning.

Feedback provided by participants through evaluation forms submitted at the end of the workshop indicated that their knowledge of scenario planning grew as a result of the event. Participants also found value in the workshop content and peer presentations. The discussions on the second day of the workshop helped NORPC identify possible next steps for applying scenario planning in the New Orleans region.

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<sup>18</sup> NCHRP Report 750, Strategic Issues Facing Transportation, Volume 1: Scenario Planning for Freight Transportation Infrastructure Investment. 2013. <http://www.trb.org/main/blurbs/168694.aspx>

<sup>19</sup> "Scenario Planning Applications for Freight Transportation," July 30, 2014. <https://planning.dot.gov/webinars.asp>

<sup>20</sup> DVRPC White Paper: The Future of Scenario Planning, 2014. <http://www.dvrpc.org/reports/WP14038.pdf>

<sup>21</sup> <http://www.fhwa.dot.gov/resourcecenter/teams/planning/>

## **About the FHWA-FTA Scenario Planning Program**

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The [Transportation Planning Capacity Building \(TPCB\) Program](#) is a joint venture of FHWA and FTA that delivers products and services to provide information, training, and technical assistance to the transportation professionals responsible for planning for the capital, operating, and maintenance needs of our nation's surface transportation system. The TPCB Program website ([www.planning.dot.gov](http://www.planning.dot.gov)) serves as a one-stop clearinghouse for state-of-the-practice transportation planning information and resources. This includes over 70 peer exchange reports covering a wide range of transportation planning topics.

The TPCB Scenario Planning Program, jointly offered by FHWA and FTA, advances the state of the practice in scenario planning by encouraging agencies to learn more about or apply scenario planning as part of their transportation planning activities. The program offers a range of resources for agencies interested in scenario planning or in need of scenario planning technical assistance, including on-call technical assistance, peer-to-peer sharing, and customized webinars and workshops.

## Appendices

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### A. Key FHWA-FTA Contacts

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## B. Event Participants

FIRST NAME	LAST NAME	AGENCY
Beth	Alden	Hillsborough MPO for Transportation
Brian	Betlyon	FHWA Resource Center
Chandra	Bondzie	FHWA Louisiana Division
Melanie	Bordelon	Acadiana Planning Commission
Walter	Brooks	New Orleans Regional Planning Commission
Chris	Cole	Acadiana Planning Commission
Lynn	Dupont	New Orleans Regional Planning Commission
Terry	Freeland	Baltimore Metropolitan Council
Nick	Hernandez	Imperial Calcasieu Regional Planning & Development Commission
Mike	Hollier	Acadiana Planning Commission
Todd	Jeter	FHWA Louisiana Division
John	King	New Orleans Regional Planning Commission
Donald	Koski	Federal Transit Administration
Kate	Macfarlane	U.S. DOT / Volpe
Josh	Manning	Houma-Thibodaux Metropolitan Planning Organization
Leo	Maretta	Houma-Thibodaux Metropolitan Planning Organization
Kimberly	Marousek	Capital Region Planning Commission
Doug	Mitchell	Ouachita Council of Governments
Karen	Parsons	New Orleans Regional Planning Commission
Sooraz	Patro	Rapides Area Planning Commission
Chris	Petro	Northwest Louisiana Council of Governments
Nath	Ponnasureddy	Capital Region Planning Commission
Jeff	Roesel	New Orleans Regional Planning Commission
Kent	Rogers	Northwest Louisiana Council of Governments
Dawn	Sholmire	Louisiana Department of Transportation and Development (LaDOTD)
Meredith	Soniat	New Orleans Regional Planning Commission
Mary	Stringfellow	FHWA Louisiana Division

## C. Workshop Agenda

New Orleans Regional Planning Commission (NORPC)  
 Scenario Planning Workshop  
 Sponsored by the Federal Highway Administration (FHWA)  
 New Orleans, Louisiana

**Dates:** August 12-13, 2015

**Host Agency:** NORPC

**Facilitator:** Brian Betlyon, FHWA Resource Center

**Peers:**

- Hillsborough MPO for Transportation
- Baltimore Metropolitan Council (BMC)

**Workshop Overview:**

This 1.5-day workshop, hosted by NORPC, focuses on best practices for scenario planning to build awareness and encourage information-sharing among NORPC, other Louisiana MPOs, and two peer agencies.

**DAY ONE**

Time	Session	Speaker(s)	Objective(s)
8:30 - 9:00	Registration and Check-in		
9:00 - 9:15	Welcome and Introduction	<ul style="list-style-type: none"> <li>• Jeff Roesel Deputy Director, NORPC</li> <li>• Todd Jeter FHWA Louisiana Division</li> <li>• Don Koski FTA Region VI</li> </ul>	
9:15 - 10:15	Trends in the Region	<ul style="list-style-type: none"> <li>• John King, Transportation Planner, NORPC</li> <li>• Meredith Soniat, Sustainability Planner, NORPC</li> <li>• Lynn Dupont, Principal Planner/GIS Coordinator, NORPC</li> </ul>	
10:15 - 10:30	BREAK		
10:30 - 11:00	Federal Overview of Scenario Planning	<ul style="list-style-type: none"> <li>• Brian Betlyon FHWA Resource Center; Workshop Facilitator</li> </ul>	

11:00 - 12:15	Peer Presentation 1: Scenario Planning 101: Creating a Scenario Planning Process That Fits Your Needs	<ul style="list-style-type: none"> <li>Beth Alden Executive Director Hillsborough MPO for Transportation</li> <li>Terry Freeland Senior Transportation Planner Baltimore Metropolitan Council</li> </ul>	
12:15 - 1:15	LUNCH		
1:15 - 1:30	Group Discussion: Brainstorming Potential Themes and Challenges	Workshop Facilitator, Participants	<ul style="list-style-type: none"> <li>Identify themes in Louisiana that might benefit from scenario planning</li> <li>Identify present and future challenges faced by Louisiana and its MPOs</li> </ul>
1:30 - 2:45	Peer Presentation 2: Implementing Scenario Planning: Integration with LRTP Process	<ul style="list-style-type: none"> <li>Beth Alden Executive Director Hillsborough MPO for Transportation</li> <li>Terry Freeland Senior Transportation Planner Baltimore Metropolitan Council</li> </ul>	
2:45 - 3:00	BREAK		
3:00 - 3:45	Break-out Group Discussion: Applying Scenario Planning to the Louisiana Context – Prioritizing Themes and Challenges	Workshop Facilitator, Participants	<ul style="list-style-type: none"> <li>Prioritize the top three themes in Louisiana that might benefit from scenario planning</li> <li>Prioritize the top three challenges faced by Louisiana and its MPOs</li> </ul>
3:45 - 4:30	Group Discussion: Applying Scenario Planning to the Louisiana Context – Moving Towards Implementation	<ul style="list-style-type: none"> <li>Workshop Facilitator, Participants</li> </ul>	
4:30 - 4:45	Recap of Day / Next Steps	<ul style="list-style-type: none"> <li>Brian Betlyon FHWA Resource Center; Workshop Facilitator</li> </ul>	
4:45	ADJOURN		

## DAY TWO

Time	Topic	Speaker
8:30 am - 9:00	Registration and Check-in	N/A
9:00 – 10:00	Review of Day One / Set the Stage	Workshop Facilitator, Peers, NORPC Staff
10:00 - 10:45	Round Table Discussion #1: Climate	NORPC Staff, Peers, FHWA and FTA Staff
10:45 - 11:00	BREAK	
11:00 - 11:45	Round Table Discussion #2: Freight	NORPC Staff, Peers, FHWA and FTA Staff
11:45 am - 12:00 pm	Wrap-up and Conclusions	Workshop Facilitator, NORPC Staff

## D. Session Questions and Responses

Participants offered the following questions and responses during the workshop's sessions. Content shared in these questions and responses may not reflect the opinions or policies of FHWA or FTA. Responses are summarized below.

### Trends in the Region

1. *How were you able to get the food stamps data? Does Social Services provide the data in GIS-compatible format?*

(NORPC) Louisiana has a State GIS Council. I sat next to the Social Services representative at State GIS Council meetings and talked to him about the data. They are not able to share the raw data due to data sensitivity, but they were excited about the possibility of sharing it in an aggregated format. The data did not come in GIS format; I visited the Social Services offices to geocode it, and I showed my contact how to sum it and then do a spatial join.

2. *Could you help other Louisiana MPOs get access to the food stamps data?*

(NORPC) Sure, if you think it's pertinent. Social Services cannot share the raw values, but they can likely share aggregated data. Once I got the initial data from Social Services, I prepared maps and sent them back to the Secretary of Social Services with a thank you letter.

3. *As a smaller jurisdiction, we have problems getting all the data about housing and transit that is requested in Department of Housing and Urban Development (HUD) grant applications. How do you deal with this?*

(NORPC) We are working with the City on a couple of HUD applications. InfoUSA data can be used for a number of different topics, including farmers' markets. We also get data to fill in those gaps. For example, it takes a lot of work in order to get a really good college and university layer. We rely on interns to help clean the data.

4. *Could you briefly comment on water management and living with water?*

(NORPC) Living with water refers to working with the water we have rather than draining it away. There are some issues with that; a lot of us remember malaria and mosquitos. Recently we have had designers come in and talk about how we can redesign our canals so that they aren't so ugly and so that we're using them better. We're also looking at cutting down on the amount of water that goes into water treatment infrastructure. That's now a mandate with the new code. Building footprints, parking lots, type of paving material (asphalt, concrete, gravel) all have different percolation rates. We have color infrared imagery for the State, which enables us to use remote sensing to see building footprints and impervious surfaces. Currently, no one has data on parking lots. In the future, you can start tracking where you install permeable pavements. That's a big deal, because there are going to be bonus points in applications for Livable Cities for where you retain your water. At the site development level, a lot of the developments are working with permeable pavements.

5. *Does NORPC include transit in its travel demand model? What about air quality and riders of choice?*

(NORPC) Yes. It is a significant investment because you have to build in mode choice, and to be able to segregate out transit versus highway trips, and assign those to a network. Once you go

through the process once or twice, it's not terrible. But it does require an investment in your model to make sure you're able to do mode choice.

We determine (and this is supported by a travel survey) who are the most likely transit riders and project over time the growth or diminution of that population. We calculate air quality benefit through reduction in VMT and analysis in MOVES [Motor Vehicle Emission Simulator]. In my mind, that's the chain of events that drives it. Especially here, we have a fairly significant transit ridership, and it's worth the investment to be able to forecast need going forward.

For modeling, it requires a fixed route.

6. *How long did it take to clean up the employment data from InfoUSA?*

(NORPC) It's a lot; about a month of solid work. We rely on interns to help us with this work. InfoUSA actually gives us a discount because we clean it so much. Most people use their data for marketing and mass mailers.

7. *Can you say something about the travel speed data that NORPC gets?*

(NORPC) FHWA has made available the National Performance Measure Research dataset. It's a HERE product.<sup>22</sup> They supplement it with data from American Transportation Research Institute on speeds on the national highway system. The National Performance Measure Research dataset is free and available to all MPOs. It includes information on travel speeds by vehicles, split by freight vehicles. What we've been doing is purchasing a similar product, also from HERE. It was just sold to an auto maker, so I'm not familiar with the future of it. What we've been using it for is our congestion management system, to see where your congestion is and to get a measure of delay. We've been purchasing it at a regional level. We purchased it for all the parishes in our population. I know other States have purchased it at a statewide level, with sub-licenses for all the data. It's a significant investment, but worthwhile. MAP-21 says you have to do this type of performance-based planning. I believe it costs \$40,000 for one year for the metro area.

## Peer Presentations

### *Peer Session #1 –Scenario Planning 101: Creating a Scenario Planning Process that Fits Your Needs*

#### *Hillsborough MPO:*

8. *What did TPC think of the Bustling Metro scenario?*

(Hillsborough) We adopted the LRTP last November, and the comprehensive plans are being presented and workshopped right now. For the most part, the LRTP includes a lot of focus on infill and development, as in the Bustling Metro scenario. Our biggest challenge is with the unincorporated county and the question of whether to expand the urban services boundary.

9. *Can you give us a definition of the urban services boundary? What does that include?*

(Hillsborough) The urban services boundary focuses primarily on water infrastructure. It is where local government is willing to extend a water main. In our case, it's the county that does that. The county takes on a lot of the functions of a city in other cases.

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<sup>22</sup> FHWA contracted with HERE North America, LLC (formerly known as Nokia/NAVTEQ) to provide this dataset.

10. *What was the public's answer on the funding?*

(Hillsborough) I'm going to talk a little more about funding this afternoon. Briefly, they liked tolls on new lanes, they liked fees, and they liked sales tax. Sales tax rated higher than gas tax, property tax, and utility tax.

11. *We have a kind of consensus about a Bustling Metro – how do you get from that vision to projects identified in a financially constrained plan? How is that different from what the MPO has traditionally done? I'm curious programmatically how that works; if you are devoting X amount of money to X projects, and how the ship has to turn. How does that work? To add to that, when you put the survey to the public, how did you put forward the costs of each plan for them to understand and comprehend?*

(Hillsborough) Those are all great questions. We struggled with whether to explore those financial questions. On a survey there is only so much you can ask the public to get through. We had a Phase 1 and a Phase 2. Phase 1 was nearly a year. Phase 2 looked at funding sources and what we could potentially afford with some of those. There are topics of improvement that we felt like we hadn't adequately defined the needs for. We did new needs assessments. For the survey, we grouped similar types of projects into programs, and we created funding levels for several illustrative questions.

*BMC*

12. *Did the results of the BMC process turn into projects in the LRTP?*

(BMC) Going into this, we realized that jurisdictions and modal agencies had projects in the pipeline for years, and those weren't going to change. What we wanted to do was inform people. If you think of the LRTP as a big ship, we want to turn it a little bit. It did open eyes, when we presented it to the Board. There were some technical committee members who hadn't heard of these concepts, like the Internet of Things.

13. *How did you steer your stakeholders away from talking about their projects, and into the forward thinking?*

(BMC) There were a few representatives from the Mobility Lab, but the group was mostly outsiders. As I said before, we purposely mixed things up a little bit in order to stimulate discussion. We didn't want to have all the climate change people in the climate change group. Most people were okay with that, but one person was disappointed with the group that they were placed in. In hindsight, we could have done a better job communicating in advance with the workshop participants.

14. *How were your numbers in terms of participation, and how did that translate in terms of being able to present this in terms of consensus? How did you ensure their viewpoints were representative of the population of a whole?*

(BMC) We had our public advisory committee members, in addition to representatives of transit providers, colleges and universities, businesses, environmental groups, and public health organizations. One of the public advisory committee members was a member of a transit advocacy organization. In the scenario he was working on, he was able to observe that transit wouldn't be as important in that scenario.

15. *Did the process finalize one of the scenarios?*

(BMC) No, we just used it as an exploratory tool and an informational tool. We wanted to look at "what if" questions to try to get people thinking outside of their boxes a little bit. What if parts of

Annapolis are underwater in 2030? What if the safety and congestion projects become less relevant because of connected vehicles?

16. *It sounds like it was very important who you invited. How did you choose the participants?*

(BMC) We did internal brainstorming, and picked the brains of focus group members. We tried to get a diverse mix of people. One thing I think was valuable was having the local colleges and universities, and the local head of Zipcar.

17. *Was this process concurrent with the LRTP process, or before?*

(BMC) It was right in the middle. We started planning for the current LRTP in 2014; it was about an 18 month process. We started to get demographic projections from forecasting group and look at financial projects. In the middle of that, we crafted this piece. After this, we focused on performance measures – what do we want to change from previous plan, and what do we want to add?

18. *Did you have any of your MPO board members participate in the scenario planning workshops?*

(BMC) MPO board members attended as observers but did not participate.

19. *When you brought the scenarios back to the MPO Board, what was their response?*

(BMC) The board members were happy to see more of this type of input. We did get pushback from technical committee members; one of them didn't see the value of this type of exercise. He wanted us to use rigorous modeling approaches. So, yes, we did get that feedback from the technical committee.

(Hillsborough) The most pushback we got was from folks who were sensitive about reopening conversations about a sales tax referendum.

20. *I'm interested in level of effort, including cost, length of time, and staff. How might you write this up in your Unified Planning Work Program?*

(BMC) We did this entirely in-house. We started thinking about this back in spring 2014. We did the online survey in June-July 2014. The focus group was in July. Then we crafted the scenario. We held the workshops in late September. It was a compressed schedule, but it didn't require an analytical technical effort. We presented the results in the fall of 2014, about a month or two after we had the September workshop. In Baltimore the actual politicians only attend meetings once per quarter, so we presented to representatives of the elected officials.

(Hillsborough) It has taken us awhile to bring elected leadership along so that they feel comfortable that it isn't going to blow up in the next election campaign. We use on-on-one meetings. Community stakeholders also talk to politicians.

(Hillsborough) For level of effort, we did three different socioeconomic datasets for the horizon year, so that was time consuming. Once you get the infrastructure in place to create one dataset, it's not hard to adjust the assumptions and create a different one, particularly if you're using a spreadsheet model that lets you adjust the assumptions. We had all hands on deck for presentations to community groups for 2-3 months, but we do that for plan updates typically anyway. It was a lot of work, but all of our plan updates are a lot of work.

## Hillsborough MPO

1. *What is the current sales tax rate in Tampa?*

(Hillsborough) 7%. We were talking about 8%. We looked at comparing ourselves to other States and other tax rates, and we think we're in a similar range.

2. *How are your toll roads built and governed?*

(Hillsborough) Florida DOT (FDOT) has a Florida Turnpike Enterprise. Geographic districts of FDOT have started to get into building toll roads. The proposed express toll lanes through Tampa are proposed by FDOT District 7.

3. *What is the population of Tampa?*

(Hillsborough) About 1.3 million.

4. *Could the public choose which buckets their money would go to?*

(Hillsborough) People could choose in each category whether they wanted Level 1, Level 2, or Level 3 investment level. We had a website where you would see each bucket. It included information about how much each level costs, what you get for each spending level, what you've spent so far, and what the existing budget is.

5. *Was this something that you designed in house?*

(Hillsborough) No, this was a standard package that MetroQuest offers.

(FHWA) MetroQuest.com has more information about the package that Beth mentioned. Other MPOs, including Denver and Chicago, have used MetroQuest for public outreach and participation.

6. *When you were talking about sales tax, did you consider presenting a list of projects that you would do, and associating that with the increased tax?*

(Hillsborough) That's an excellent question, and there's a lot of feedback about needing to have specific projects developed. We didn't do that. That exercise is going on right now in Tampa. This was more about documenting need to raise revenue.

## BMC

7. *Were any third party consultants involved?*

(BMC) No, not for this effort. We used consultants for the previous scenario planning initiative, but this effort was done entirely in-house. We looked at what some other transportation agencies had done and what private agencies have done. One of the staff members who ran the workshops has been involved in smart growth and helped us with that.

8. *Did you re-evaluate your Transportation Improvement Program (TIP) to see which projects fell in line with the priority investment strategies?*

(BMC) In Maryland, the TIP is a very state-driven process. It's mainly the projects that come out of the state plan that go in the TIP. We're trying to improve coordination, but it's a slow process.

9. *Many of the words you use—including urgent, “minimize surprises,” resiliency, prepare, adapt, risks—start to sound like risk management. Your scenarios are looking at what risks do we see, and if something happens, how can we be prepared.*

(BMC) Right. This approach makes sense since we don't have a lot of funding to play with.

10. *Do you have any metropolitan-wide transportation tax?*

(BMC) There's no local transportation funding. There was a measure a few years ago to raise the fuel tax a little bit, so we have a little additional funding. The 2013 plan was adapted to take advantage of those additional funds.

## Group Discussions

1. *From the Federal perspective, what's a statistically significant portion of the population at a public involvement exercise?*

(FHWA) It's not so much the number but the outcome and the process. Affording opportunities for public involvement is very important. For statistical significance, it has to be a random sample. The number for statistical significance isn't a Federal requirement; it's sampling statistics. There is a distinction between public involvement and statistical significance.

2. *BMC had two scenario planning processes that were slightly different. Would you recommend that a region stage it like that, or could we go straight into the second one?*

(BMC) For us, it was beneficial to start with the one, but every region is different. It worked well for us to do that because we got an idea of where people stood on a number of issues. Yes, we could have done the second process without having done the first.

3. *Hillsborough MPO, you had one large scenario planning process and put a lot of energy into it. Were you able to take those findings and put it into project prioritization?*

(Hillsborough) Yes, particularly in the second round; it helped us justify the financial scenario that included the sales tax.

4. *What other lessons learned can you share?*

(BMC) I can't think of anything beyond what I've already mentioned. It's hard to get people thinking about long term.

(Hillsborough) That's what I tell people about why we did scenario planning, is to make planning easier for regular folks to relate to. Have you ever looked at the percent of the population that is different Myers Briggs personality types? Most people are Sensing, but planners are more Intuitive. We're seeing things that aren't necessarily in front of everyone else. It's so much harder for folks that we're talking to play out in their heads how the issues we're talking about might evolve and connect. Playing out a scenario for them helps move the conversation around, to have something that's a little more tangible. That's why people like stories, for example, how does Citizen Jill get to her job. You just have to craft those stories in the right way.

## E. Additional Resources

FHWA Scenario Planning Website.

[http://www.fhwa.dot.gov/planning/scenario\\_and\\_visualization/scenario\\_planning/](http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/)

FHWA-FTA TPCB Website.

<https://www.planning.dot.gov/>

FHWA Scenario Planning Guidebook.

[http://www.fhwa.dot.gov/planning/scenario\\_and\\_visualization/scenario\\_planning/scenario\\_planning\\_guidebook/](http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/scenario_planning_guidebook/)

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 1: Scenario Planning for Freight Transportation Infrastructure Investment.

<http://www.trb.org/main/blurbs/168694.aspx>

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 2: Climate Change, Extreme Weather Events, and the Highway System.

<http://www.trb.org/Main/Blurbs/169781.aspx>

FHWA Webinar: "Scenario Planning Applications for Freight Transportation," July 30, 2014.

<https://planning.dot.gov/webinars.asp>

DVRPC White Paper: The Future of Scenario Planning, 2014.

<http://www.dvrpc.org/reports/WP14038.pdf>

## F. Acronyms

BMC	Baltimore Metropolitan Council
BRTB	Baltimore Regional Transportation Board
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	Geographic Information Systems
HUD	Department of Housing and Urban Development
LaDOTD	Louisiana Department of Transportation and Development
LRTP	Long-Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21 <sup>st</sup> Century
MPO	Metropolitan Planning Organization
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
PBPP	Performance-Based Planning and Programming
PEL	Planning-Environment Linkages
NORPC	New Orleans Regional Planning Commission
RTP	Regional Transportation Plan
SNAP	Supplemental Nutrition Assistance Program
STEEP	Social, Technological, Economic, Environmental, Political
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TPC	Hillsborough County Planning Commission
TPCB	Transportation Planning Capacity Building
USDOT	U.S. Department of Transportation
UZA	Urbanized Area