Transportation Planning Capacity Building Program

Hampton Roads Transportation Planning Organization Scenario Planning Workshop

Sponsored by the Federal Highway Administration

Location:	Chesapeake, VA
Date:	November 8-9, 2016
Host Agency:	Hampton Roads Transportation Planning Organization
Peer Agencies:	Atlanta Regional Commission (Atlanta, GA) Hillsborough Metropolitan Planning Organization for Transportation (Tampa, FL)
Federal Agency:	Federal Highway Administration

U.S. Department of Transportation
Federal Highway Administration

REPORT DOCUMENTATION PAGE		Form Approved OMB No. 0704-0188
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.		
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE January 2017	3. REPORT TYPE AND DATES COVERED Final Report (November 8-9, 2016)
4. TITLE AND SUBTITLE Hampton Roads Transportation Planning Organization Scenario Planning Workshop: Sponsored by the Federal Highway Administration		5. FUNDING NUMBERS HW2LA4/QB619
6. AUTHOR(S) Jenna Overton		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of Transportation John A. Volpe National Transportation Systems Center 55 Broadway Cambridge, MA 02142		8. PERFORMING ORGANIZATION REPORT NUMBER DOT-VNTSC-FHWA-17-06
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Federal Highway Administration Office of Planning 1200 New Jersey Avenue, SE Washington, DC 20590		10. SPONSORING/MONITORING AGENCY REPORT NUMBER FHWA-HEP-17-040
11. SUPPLEMENTARY NOTES		
12a. DISTRIBUTION/AVAILABILITY STATEMENT		12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) This report summarizes noteworthy practices and key recommendations shared during a scenario planning workshop, hosted by the Hampton Roads Transportation Planning Organization, on November 8-9, 2016, in the Hampton Roads region of Virginia. The Federal Highway Administration (FHWA) sponsored this event as part of its Scenario Planning Program and in connection with the Transportation Planning Capacity Building Program jointly run by FHWA and the Federal Transit Administration.		
14. SUBJECT TERMS Keywords: Scenario Planning; Scenarios; Scenario Development and Analysis		15. NUMBER OF PAGES: 27 16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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Executive Summary

This report summarizes a 1.5-day scenario planning workshop held November 8-9, 2016, in Chesapeake, Virginia, and hosted by the Hampton Roads Transportation Planning Organization (HRTPO). 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; for more information, see Appendix A of this report. Contact information for the FHWA and HRTPO representatives involved in workshop planning as well as the workshop peers is included in Appendix B of this report.

The workshop focused on noteworthy practices for scenario planning, particularly incorporating scenario planning into resiliency, military base planning, and transportation planning; connecting public engagement opportunities with scenario planning efforts; and identifying opportunities for integrating new technologies into the transportation planning process. The workshop planning team designed the workshop to build awareness of scenario planning and encourage information-sharing between HRTPO, neighboring metropolitan planning organizations (MPOs) in Virginia, and the two peer agencies.

HRTPO is the body created by the Hampton Roads localities and appropriate State and Federal agencies to perform the duties of an MPO under Federal regulations. HRTPO's planning area includes the City of Chesapeake, the City of Franklin, Gloucester County, the City of Hampton, Isle of Wight County, James City County, the City of Newport News, the City of Norfolk, the City of Poquoson, the City of Portsmouth, Southampton County, the City of Suffolk, the City of Virginia Beach, the City of Williamsburg, and York County. As the MPO, HRTPO develops the region's Long Range Transportation Plan (LRTP) and maintains the Transportation Improvement Program (TIP) to manage short-range federally-funded transportation projects. HRTPO staff is now considering ways to integrate scenario planning techniques more substantially into its 2045 LRTP update.

During the workshop, HRTPO staff shared information on their region and planning processes as they prepare to embark upon scenario planning efforts. Workshop participants offered insights on their agencies' scenario planning activities and discussed opportunities for using scenario planning in the Hampton Roads region through full-group, break-out, and roundtable discussions.

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

- Beth Alden, Executive Director, Hillsborough Metropolitan Planning Organization for Transportation (Hillsborough MPO); and
- David Haynes, Long Range Planning Manager, Transportation Access and Mobility Division, Atlanta Regional Commission (ARC).

Additionally, transportation planning staff from other local agencies participated in the workshop to provide presentations on local experiences in using scenario planning:

- Will Cockrell, Director of Planning, Charlottesville MPO (CAMPO; Thomas Jefferson Planning District Commission);
- Chris Gay, Senior Supervising Planner with Parsons Brinckerhoff, on behalf of the Fredericksburg MPO (George Washington Regional Commission);
- Sulabh Aryal, Senior Planner, Richmond MPO (Richmond Regional Transportation Planning Organization/Planning District Commission); and
- Chris Wichman, Senior Planner, Richmond MPO (Richmond Regional Transportation Planning Organization/Planning District Commission).

The workshop also featured two technical experts who spoke about scenario planning for the future through the lens of emerging technologies:

- Catherine C. McGhee, Director, Virginia Transportation Research Council; and
- Michael Mollenhauer, Director, Center for Technology Implementation, Virginia Tech Transportation Institute.

Key takeaways shared throughout the workshop included:

  - Scenario planning is not a one-size-fits-all process; it can be implemented in a variety of ways.
  - Public involvement is critical to successful scenario planning, and being able to communicate plans and analyses to the public in laymen's terms is essential to effective public engagement.
  - Having a clear definition of plausibility—i.e. the degree to which a given scenario could believably take place—and viewing scenarios through the lens of plausibility can be very valuable.

The workshop allowed HRTPO staff, neighboring MPOs, and their partners to discuss noteworthy scenario planning practices and opportunities for applying scenario planning in the Hampton Roads region. Post-workshop evaluations submitted by participants indicated that their knowledge of scenario planning improved as a result of their participation and that they found value in the presentations, peer agency perspectives, and discussions held during the event.

Overview of the Workshop

Goals of the Workshop

The HRTPO scenario planning workshop focused on noteworthy practices for scenario planning, particularly incorporating scenario planning into resiliency, military base, and transportation planning; connecting public engagement opportunities with scenario planning efforts; and identifying opportunities for integrating new technologies into the transportation planning process. The workshop planning team designed the workshop to build awareness of scenario planning and encourage information-sharing among HRTPO staff, neighboring MPOs, and the peer agencies.

Selecting the Peers

In preparing for the event, the workshop planning team identified possible MPOs that could serve as peers during the workshop and share their perspectives on and experiences in applying scenario planning. Peers were selected based on their past use of scenario planning as well as their similarities to the HRTPO and the Hampton Roads region. Based on these criteria, the workshop planning team extended invitations to two MPO representatives to participate as peers:

- Beth Alden Executive Director, Hillsborough Metropolitan Planning Organization for Transportation; and
- David Haynes, Long Range Planning Manager, Transportation Access and Mobility Division, Atlanta Regional Commission.

The workshop also featured two technical experts who spoke about scenario planning for the future through the lens of emerging technologies, specifically, connected and autonomous vehicles:

- Catherine C. McGhee, Director, Virginia Transportation Research Council; and
- Michael Mollenhauer, Director, Center for Technology Implementation, Virginia Tech Transportation Institute.

Format of the Event

The HRTPO hosted the 1.5-day workshop in Chesapeake, VA, on November 8-9, 2016. The peer presenters, HRTPO and FHWA staff, and representatives from other local MPOs and transportation agencies, including the Virginia Transportation Research Council and the Virginia Tech Transportation Institute, attended the workshop. A full list of attendees is available in Appendix C of this report.

The workshop featured presentations, full group discussions, and break-out and roundtable discussions. On Day One, FHWA provided a brief overview of scenario planning and examples around the country. Representatives from the HRTPO, Charlottesville MPO, Fredericksburg MPO, and Richmond MPO presented summaries of recent scenario planning efforts throughout Virginia. The MPO peers from Tampa and Atlanta participated in two panel sessions, offering perspectives on how their agencies started and further implemented scenario planning activities. The technical experts discussed potential implications of emerging technologies on transportation planning processes. Full- and break-out group discussions focused on how participants could apply scenario planning in their agencies, opportunities and challenges in using scenario planning, and how scenario planning could be used to address to specific challenges in the Hampton Roads region. On Day Two, the peers and other participants mostly consisting of HRTPO staff focused discussions on two roundtable topics relating to 1) scenario planning tools and implementation; and 2) scenario planning connections to performance-based planning and programming (PBPP). The workshop agenda is provided in Appendix D of this report.

Introduction

HRTPO Background

HRTPO is responsible for transportation planning and programming for the Hampton Roads Metropolitan Planning Area (MPA). As the MPO, the HRTPO develops the region's LRTP and maintains the TIP to manage short-range, federally-funded transportation projects. HRTPO includes fifteen cities and counties. The HRTPO Board includes a number of voting representatives, such as elected officials member cities and counties, representatives from the Virginia Senate and House of Delegates, the Virginia Department of Transportation, regional transit agencies, the Virginia Department of Rail and Public Transportation, and the Virginia Port Authority. Non-voting members include representatives from FHWA, FTA, and Federal and State airport agencies. Other important participants on the Board include representatives from the Commonwealth Transportation Board and military liaisons.

The Hampton Roads region is home to approximately 1.7 million people. Unique characteristics of Hampton Roads that impact regional transportation planning include geographic features (coastal zone, the Hampton Roads Harbor, and other natural water barriers), military bases, ports, and tourism. HRTPO works to address the challenges caused by these area-specific features while providing a reliable transportation network to its residents and workforce.

HRTPO staff expects to use scenario planning for the first time to inform its 2045 LRTP update by developing scenarios in year 1 (2016-2017), soliciting public input and refining scenarios in year 2 (2017-2018), and continuing scenario planning practices in year 3 (2018-2019).

Presentation and Discussion Highlights

Welcome and Introduction

HRTPO and FHWA representatives welcomed participants to the workshop and provided opening remarks. Brian Betlyon, Metropolitan Planning Specialist with the FHWA Resource Center, facilitated the event.

Robert Crum, HRTPO Executive Director, and Jessie Yung, Administrator at the FHWA Virginia Division, thanked participants and the peers for attending and supporting the workshop. Both expressed hope that the presentations and discussions planned as part of the workshop would help promote information-sharing on scenario planning. Mr. Crum emphasized the value of holding peer exchange workshops in

allowing transportation planners and other practitioners to learn from each other in an accessible and meaningful way.

Scenario Planning Perspectives

Mr. Betlyon, along with Camelia Ravanbakht, Deputy Executive Director at HRTPO, first provided overviews of scenario planning both generally and within the Hampton Roads region. Mr. Betlyon focused on a general overview of scenario planning, its benefits, and examples of use across the country. Dr. Ravanbakht provided a background on HRTPO and described the agency's approach to developing its next LRTP. Additional presenters on scenario planning perspectives in other regions of Virginia included:

- Will Cockrell, Director of Planning, Charlottesville MPO (CAMPO; Thomas Jefferson Planning District Commission);
- Chris Gay, Senior Supervising Planner with Parsons Brinckerhoff, on behalf of the Fredericksburg MPO (George Washington Regional Commission);
- Sulabh Aryal, Senior Planner, Richmond MPO (Richmond Regional Transportation Planning Organization/Planning District Commission); and
- Chris Wichman, Senior Planner, Richmond MPO (Richmond Regional Transportation Planning Organization/Planning District Commission).

Overview of Scenario Planning

Scenario planning is a flexible process that helps transportation agencies create multiple plausible stories about what the future could look like and prepare for these alternative futures. Through a scenario planning approach, agencies can address uncertainty, evaluate trade-offs, and explore the interaction of transportation and other related factors, such as current and future land use and system improvement assumptions.

Mr. Betlyon provided brief descriptions of three types of scenario planning approaches: predictive, normative, and exploratory. Predictive scenario planning is an approach in which an agency develops alternative scenarios in response to predictable, probable trends, such as financial capacity or observable rates of population and employment growth. Normative scenario planning is an approach in which an agency develops alternative scenarios in response to a desirable future condition, such as achieving a certain percentage of carless commuters by a target year. Exploratory scenario planning is an approach in which an agency develops alternative scenarios that attempt to address future unknowns or uncertainties, such as addressing future effects of climate change, technology advances, energy use, and economic cycles.

Scenario planning fosters many benefits, including that it:

- Provides opportunities for active stakeholder involvement;
- Encourages collaboration among partners from various sectors, such as transportation, land use, economic development, and the environment;
- Enhances the decision-making process for transportation projects and policies; and
- Supports performance-based planning and programming.

Mr. Betlyon described the scenario planning process using the framework identified in the FHWA Scenario Planning Guidebook.[1] The guidebook presents six key phases for scenario planning:

- Phase 1: *How should we get started?*
- Phase 2: *Where are we now?*
- Phase 3: *Who are we, and where do we want to go?*
- Phase 4: *What could the future look like?*
- Phase 5: *What impacts will scenarios have?*

[1] The FHWA Scenario Planning Guidebook is available on the FHWA scenario planning website at: http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/scenario_planning_guidebook/.

- Phase 6: *How will we reach our desired future?*

Mr. Betlyon further shared examples of how agencies have used scenario planning. Agencies often develop a series of scenarios to demonstrate the differences between a trend scenario and several alternative scenarios. There is no limit to the number of scenarios that may be created; however, Mr. Betlyon noted that oftentimes agencies may wish to "keep it simple" and limit the number of scenarios or performance measures used to assess scenarios. Agencies should also solicit stakeholder feedback throughout the scenario planning process, whether in person at public meetings or online through interactive websites.

Lastly, Mr. Betlyon shared information on the FHWA scenario planning website, which provides additional resources on scenario planning, reports on previous workshops around the country and contact information for FHWA Scenario Planning Program managers and specialists.

Virginia Scenario Planning Perspectives

Camelia Ravanbakht, Deputy Executive Director of HRTPO, presented on behalf of the host agency, focusing on how HRTPO staff will incorporate scenario planning as they begin to develop their 2045 LRTP. HRTPO's 2040 LRTP was adopted in July 2016. HRTPO staff plans to carry out scenario planning over the next few years and incorporate its findings into the next LRTP. Agency staff plan to develop scenarios in year 1 (2016-2017), solicit public input and continue refining scenarios in year 2 (2017-2018), and then continue its scenario planning in year 3 (2018-2019).

Dr. Ravanbakht provided an overview of the planning agency and its specific challenges, including the challenge of maintaining infrastructure related to military bases, goods movement to and from ports, and tourism. The region has a population of 1.7 million people and has seen consistent annual population growth of 1% for the past 50 years. The region's population is also aging; in 20 years, approximately 20% of the population will be over age 65. The agency has forecasted population and employment from the present year until 2040 to help inform transportation investment decisions. Through this analysis, HRTPO staff has identified areas in the

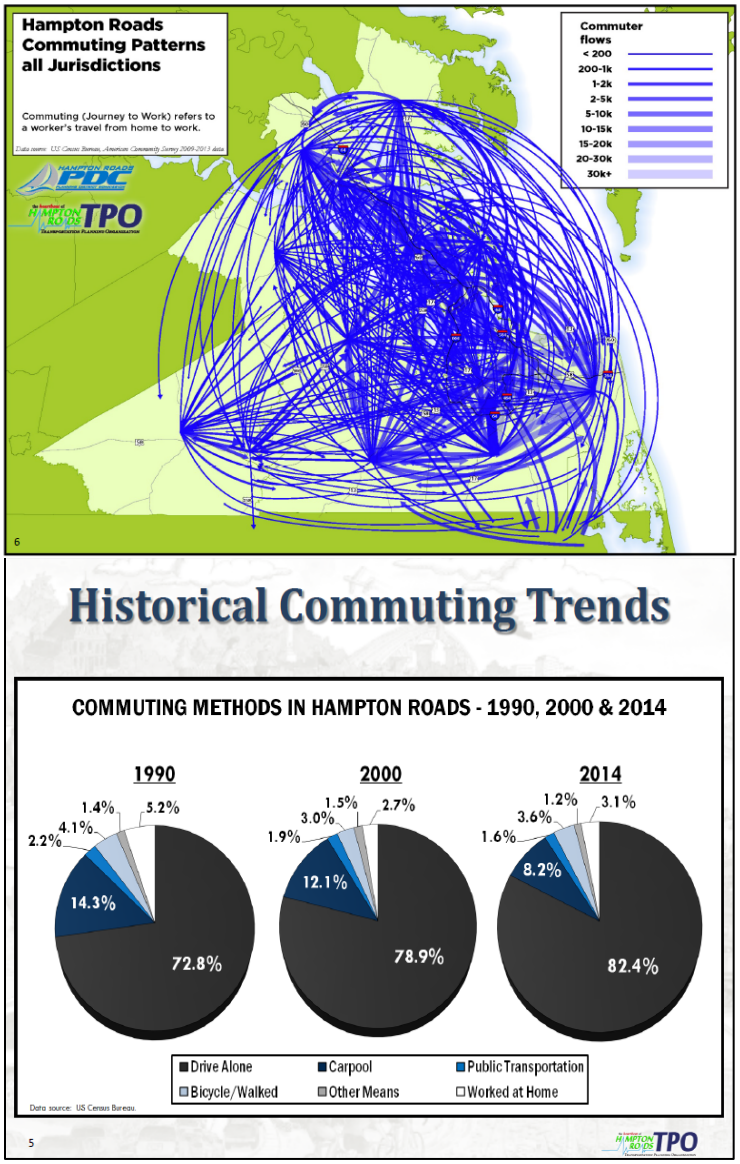

Figure 1: HRTPO has analyzed commuting patterns in its region across multiple decades to inform transportation planning decisions.
Source: Hampton Roads Transportation Planning Organization

region with high population and employment densities, as well as other fast-growing areas that previously had low densities. HRTPO staff is able to use this data to inform transportation investment decisions that will allow it to better plan for the projected increase in people commuting into and around Hampton Roads each day.

In the last few years, HRTPO staff has put increased emphasis on developing maps and graphics depicting compiled data on transportation issues such as commuting trends, major chokepoints, and traffic patterns. This approach has helped HRTPO better visualize the transportation challenges faced by its residents. Through this mapping and analysis, HRTPO staff has been able to quantify that the number of commuters who drive alone increased from 72.8% in 1990 to 82.4% in 2014. An added challenge is that just one main interstate (I-64), travels into and out of the region. To help alleviate stress on I-64, one of HRTPO's goals is to expand other transportation options by strengthening multimodal systems.

HRTPO's top regional transportation concerns include:

- Regional economic drivers, such as the military presence, ports, and tourism;
- Multimodal connectivity, in the form of high capacity transit corridors, passenger rail, active transportation
- Possible impacts of connected and autonomous vehicles;
- Resiliency and geographic considerations, such as sea level rise and storm surge; and
- Funding constraints.

Dr. Ravanbakht also provided an overview of Hampton Road's transportation funding sources. The Hampton Roads Transportation Fund (HRTF) consists of a 0.7% sales tax, a wholesale tax on motor fuels, and an additional 2.1% in fuel tax. HRTPO works closely with the Hampton Roads Transportation Accountability Commission, which develops funding plans, leverages HRTF funds, and allocates HRTF funds to move projects forward. Through this collaboration, the Hampton Roads region can now fund several regional priority projects that bring significant benefit to residents and businesses across the area.

Other Virginia Perspectives

Will Cockrell, Director of Planning at the Charlottesville-Albemarle MPO (CAMPO), delivered a presentation on his agency's approaches to scenario planning and lessons learned from the experience. CAMPO first used scenario planning to inform its 2040 LRTP. Mr. Cockrell described the agency's six-step process to scenario planning: (1) Develop goals for the region, (2) Create performance measures, (3) Identify transportation deficiencies, (4) Develop a candidate list of capacity improvement projects, (5) Evaluate projects as scenarios, and (6) Develop the preferred scenario. Mr. Cockrell also described lessons learned throughout the scenario planning process, such as the unavoidable presence of politics in decision-making and challenges associated with reconfiguring existing data. For example, the agency found that reliable crash data was difficult to acquire and manipulate into a useable format for the evaluation process.

Chris Gay, Senior Supervising Planning with Parsons Brinckerhoff presenting on behalf of the Fredericksburg MPO (FAMPO)/George Washington Regional Commission (GWRC), presented on FAMPO/GWRC's scenario planning process. The agency identified three different scenarios to inform its 2045 LRTP update: (1) All-in-Transit, (2) Telecommuting, and (3) Thinking Cars. The agency identified and evaluated different assumptions associated with each scenario to evaluate future alternatives; for example, the "All-in-Transit" scenario assumed that all future transportation investments would be devoted to transit, and none would go to roadway enhancements. The agency then analyzed how the factors of each future scenario would affect vehicle miles of travel, vehicle hours of travel, average speed, and percentage travel on congested roadways. Ultimately, the agency decided to incorporate elements of all three of its scenarios into planning for the future. This was a recurring theme among several of the agencies at the workshop who had embarked upon scenario planning efforts—as opposed to implementing one scenario planning alternative in its entirety, many agencies selected the best features of different scenarios and used the hybrid to inform its transportation planning and investment decisions.

Sulabh Aryal and Chris Wichman, both Senior Planners at the Richmond Regional Transportation Planning Organization (RRTPO), delivered a joint presentation on RRTPO's perspectives on scenario planning. They framed the agency's progress in scenario planning implementation as a "crawl, walk, run," progression and noted that RRTPO is currently in the "walk" phase. RRTPO hosted a FHWA scenario planning workshop in November 2014 and learned two crucial elements for success: substantial public outreach to secure buy-in and the ability to conduct self-assessments. RRTPO used allocation scenario planning to inform its recent LRTP, plan2040, and piloted a scenario planning approach in its Commerce Corridor Transportation Study, which analyzes short-, medium-, and long-term improvements to the vital industrial and commercial corridor along 13 miles of Interstate 95 spanning from the James River in the City of Richmond to Route 10 in Chesterfield County. Moving forward, the agency hopes to continue applying scenario planning in RRTPO-led corridor studies, develop a scenario planning feasibility white paper, and embed scenario planning in its next LRTP, plan2045.

Peer Approaches to Scenario Planning

Following the presentations on Virginia perspectives, the peer agencies—Hillsborough MPO and ARC—shared their scenario planning experiences as part of two peer sessions focused on (1) creating a scenario planning process that fits your needs; and 2) key themes, considerations, and methods for scenario development and implementation. The summary below compiles information shared during the peer sessions.

Figure 2: Beth Alden, Hillsborough MPO Executive Director, presents on the Imagine 2040 Visioning effort.
Source: USDOT Volpe Center

Peer Panel 1: Creating a Scenario Planning Process That Fits Your Needs

Beth Alden
Executive Director, Hillsborough Metropolitan Planning Organization for Transportation

Hillsborough MPO for Transportation is the MPO for Tampa, FL. Hillsborough MPO covers approximately 1,266 square miles and serves 1.3 million people. Traffic in the area is the sixth worst in the United States, and Hillsborough County has one of the highest pedestrian fatality rates in the nation.

Ms. Alden noted that she attended a FHWA-FTA national scenario planning peer exchange in 2012, which sparked Hillsborough MPO's interest in using scenario planning.[2] She began by describing the three-step process the agency used to approach scenario planning: (1) identifying issues, (2) developing "stories" about land use and transportation, and (3) developing transportation investment scenarios. Step 1, identifying issues, involved substantial public engagement. In February 2013, Hillsborough MPO and its partner, the City-County Planning Commission, launched an Imagine 2040 Visioning Workshop to bring members of the public and other interested stakeholders together to inform the agency's next LRTP as well as local government comprehensive plan updates. This would serve as the first of two visioning workshops. A working group composed of civic and neighborhood groups, chambers and development interest, MPO committee members, and elected officials worked to identify the major issues of the public and other stakeholders. At the visioning workshop, Hillsborough MPO conducted smartphone-based polls in real time to gain a better understanding of the public's opinions on various issues. Fundamental questions included, *How much should we grow?* and, *What are the greatest challenges facing the county and cities as we continue to grow?* Hillsborough MPO spent approximately eight months holding and analyzing the feedback received in the visioning workshops.

[2] Information on the 2012 FHWA-FTA National Scenario Planning Peer Exchange can be found at: http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/peer_exchange/peer_exchange_report/.

Next, the agency developed “stories” about land use and transportation by developing three potential future alternatives for growth and transportation planning in the region. Alternative Future A reflected “Outward Growth Similar to Recent Decades;” Alternative Future B reflected “Infill and Redevelopment Focused around Transit;” and Alternative Future C reflected “New Job Centers on Major Corridors.” Hillsborough MPO assessed the public’s opinions on various details of each alternative at public visioning meetings, and the agency conducted a strengths/weaknesses/opportunities/threats (SWOT) analysis of each alternative.

In April 2013, Hillsborough MPO held a second Imagine 2040 Working Group Visioning Workshop, which focused on the question: *How and where will we move?* Through the public visioning workshops, Hillsborough MPO learned the most important concerns of its residents:

- Traffic delay
- Shorter commutes
- Available bus or rail service
- Access to jobs from under-employed communities
- Cost to expand infrastructure
- Job creation
- Impact on agriculture
- Impact on natural resources
- Efficient energy use
- Efficient water use
- Impact on water quality

Through public feedback, Hillsborough MPO was able to develop three alternative scenarios:

1. Suburban Dream: What can we expect if we continue to grow outward as we have over past decades?
2. Bustling Metro: What can we expect if we focus growth in our cities and towns and invest in transit?
3. New Corporate Centers: What can we expect if we focus on business growth along major highways with express toll lanes?

Hillsborough MPO developed a survey and solicited public feedback on these scenarios in a variety of ways, including establishing an interactive website and encouraging visitors to share the link to the survey; setting up feedback kiosks at in-person events such as recreation centers and town events; offering presentations on the scenarios to civic groups; and disseminating information about they scenarios and survey through a newspaper insert. In total, 3,529 survey responses were collected from August to November 2013. Residents identified the Busling Metro as the most appealing future scenario, but survey respondents identified appealing components of all three scenarios. Hillsborough MPO decided to move forward with a hybrid scenario that combined the best components of each one. The entire scenario planning process, including the land use scenario phase and a subsequent financial scenario planning phase, took approximately 1.5 to 2 years to complete.

To support its robust public engagement efforts, Hillsborough MPO devoted great time and energy to the look and feel of its marketing materials. An in-house public relations specialist gathered many of the images used on the public website using free clip art, local staff photography, and low-cost images purchased online. The 3D renderings that became the iconic images of the three scenario were produced by a consultant.

David Haynes

Long Range Planning Manager, Transportation Access and Mobility Division, Atlanta Regional Commission

Figure 3: ARC's LRTP, the Atlanta Region's Plan, serves as a comprehensive policy vision for the region's future.
Source: Atlanta Regional Commission

David Haynes began by providing an overview of the Atlanta region. Residents often live far outside the city center, and, as in many metropolitan areas, the rate of population growth is expected to outpace the rate of increase in employment opportunities in the next few decades. The population is also aging. The Atlanta Region's Plan was developed in 2015 and adopted in February 2016; it serves as ARC's LRTP and a comprehensive policy vision for the region's future and includes a multitude of components beyond transportation and land use planning, such as public safety, education, and arts and culture. Through the regional plan, ARC was able to synthesize the top transportation concerns of its residents:

1. We must invest more in our transportation system.
2. Congestion threatens the economic competitiveness of the Region, impacting quality of life and our national image.
3. Accessibility issues require more emphasis if we hope to attract and retain millennials and aging adults.
4. The Region must protect and improve the health and safety of all of our residents.
5. Cultivating prosperity in all communities must be a key consideration in designing and prioritizing transportation strategies.

The Atlanta Region's Plan Policy Framework of 2015 established three interrelated components of future success: (1) world class infrastructure, (2) healthy, livable communities, and (3) a competitive economy. Together, delivery of these three outcomes will enable the Atlanta Region to fulfill its vision of "Winning the future."

ARC has used scenario planning since 1991, and the agency has used a variety of different software tools to carry out its scenario planning efforts. In 2010, ARC launched a large needs assessment forecast to inform its 2040 LRTP, incorporating eight different land use scenarios and analyzing travel time to and from the city center and other major activity centers for each scenario.

In his presentation, Mr. Haynes described ARC's approach for looking toward the future, particularly with regard to emerging technologies that will affect the region's transportation system. ARC developed an online survey tool using the MetroQuest program to assess regional attitudes on a variety of topics, such as autonomous vehicles. The agency received 7,000 survey responses and learned that the public as well as other stakeholders were largely supportive of widespread deployment of autonomous vehicles. The agency then embarked upon modeling different scenarios of autonomous vehicle penetration. Mr. Haynes noted the inherent difficulty in predicting future outcomes and listed several specific limitations to travel demand models:

- Impacts of circulating vehicles waiting to pick up next traveler
- Reduction in vehicle ownership rates
- Increased trip-making by individuals unable to drive themselves

- Limitation of model in not addressing non-recurring congestion caused by incidents, which may be exacerbated by effects of autonomous vehicles

ARC has also used scenario planning to measure and predict air quality and greenhouse gas emissions as well as economic and transportation impacts of incremental financial investment. ARC has used the information derived through the scenario planning effort in combination with findings disseminated at the Paris Climate Agreement to develop climate forecasts for the region. Scenario planning has also helped ARC assess its resiliency in the face of flash flooding and other future symptoms of extreme weather events.

ARC spent several months meeting with regional and State economists to solicit input on determining the economic benefits of the 2010 Transportation Investment Act Referendum, which was authorized in 2010 and occurred in August 2012. Mr. Haynes indicated that perception of ARC's potential biases was one of many factors which likely influenced the public's perception of the Referendum. ARC found that it was challenging to walk the line between education and advocacy, because communications that resemble advocacy can lead to charges of bias. The agency also learned that providing too much information can sometimes backfire; ARC found that inability to explain a transportation plan or policy decision in laymen's terms can lead to challenges in communicating the reasons behind certain decisions to the public.

Peer Panel 2: Key Themes, Considerations, and Methods for Scenario Development and Implementation

Beth Alden, Hillsborough MPO

For the afternoon session, Ms. Alden delivered a presentation on the sketch-planning methods that Hillsborough MPO used to carry out the second phase of its scenario planning process, creating financial scenarios for the 2040 LRTP.

The MPO had conducted a statistically significant phone survey in 2012 to learn about citizens' top transportation priorities. The survey showed strong consensus for public investment in maintenance, safety, intersection operations, and bus service, while the LRTP has in the past focused on major capacity projects such as road widening and fixed-guideway transit. Because these types of projects are underfunded locally, and are essential to a "Bustling Metro" preferred scenario, the MPO developed an interactive, investment prioritization game. The MPO began by developing a variety of performance measures to quantify the benefits of investing in these types of projects. Then, participating members of the public were given $5.5 million in hypothetical funds to invest in four transportation programs with different emphases: (1) preserve the system, (2) reduce crashes and vulnerability, (3) minimize traffic for drivers and shippers, and (4) real choices when not driving. An interactive website that hosted the exercise was live for eight weeks, and Hillsborough MPO conducted on-the-spot polling via text messaging and paper surveys at local civic group meetings and events.

Figure 4: Hillsborough MPO devoted substantial time and effort to developing the marketing materials for its visioning campaign.
Source: Hillsborough MPO

Hillsborough MPO used the software tool MetroQuest[3] to host and conduct the public surveys for both phase 1 and phase 2 on its website, www.Imagine2040.org. Ms. Alden noted that MetroQuest has a variety of webpage formats to choose from but there are some limits on how much those can be customized. Because only so much can fit on a screen at one time, the survey questions and images must be very targeted, concise, and in plain English. In Part 2 of the Imagine 2040 outreach effort, 2,442 survey responses were collected, and the visioning activity was mentioned over 500,000 times in social media outlets such as Twitter and Facebook. Eighty-two percent of respondents were in favor of exceeding current spending to improve the transportation system.

Resiliency to climate change and severe weather was of particular interest to Hillsborough MPO and its residents. Hillsborough MPO was selected to take part in a 2013-2015 Vulnerability Assessment Framework pilot sponsored by FHWA, Florida DOT, and Federal land management agencies to (1) pilot approaches to conducting climate change and extreme weather vulnerability assessments of transportation infrastructure; and (2) analyze options for adapting and improving resiliency. Hillsborough MPO staff met with a local interagency mitigation strategy working group to prioritize assets in risk scenarios for different extreme weather events, and created an inventory of transportation assets vulnerable to Category 3 storm surge profiles. The MPO also developed typical per-mile costs for protecting and hardening these assets, considering three potential investment levels, low, medium, and high. The MPO developed similar interactive decision structures for its other transportation programs, such as minimizing traffic for drivers and shippers.

Hillsborough MPO's scenario planning process led to unexpected discoveries. For example, the process allowed the agency to identify a stretch of road that is an evacuation route for St. Petersburg, Florida, that is only 8.5 feet above sea level, and therefore would not stay above water in a Category 3 storm. Now, Hillsborough MPO is facilitating interdisciplinary conversations between environmental, maintenance, and planning experts that often take place in silos in order to address the issue and integrate hardening treatments into an adjacent road capacity project. Ms. Alden emphasized the importance of working well with partner agencies, because it is much more challenging to come to workable decisions without building trust through strong relationships.

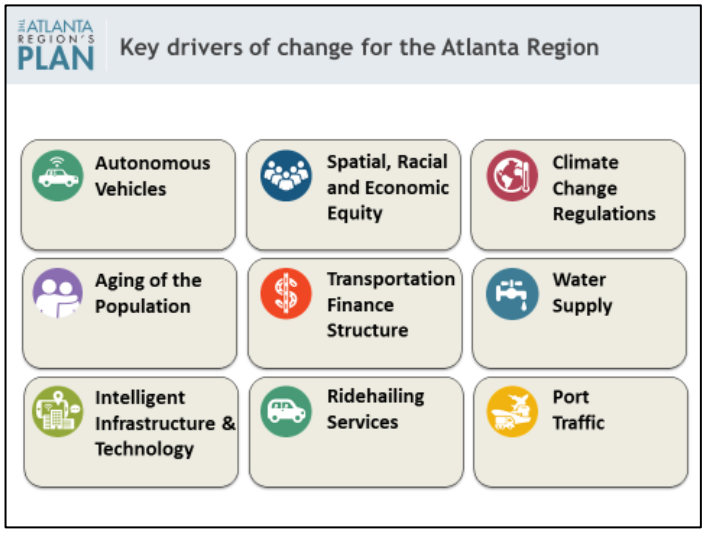

Figure 5: David Haynes, ARC's Long Range Planning Manager, described how the agency identified key drivers of change.
Source: Atlanta Regional Commission

David Haynes, ARC

During the afternoon session, Mr. Haynes began by describing the way in which ARC embarked upon a normative scenario development process he introduced earlier. This process included development of alternative scenarios guided by ARC's agency-wide goals. He explained that the Atlanta region was one of five regions analyzed by TRB's National Cooperative Highway Research Program (NCHRP) Report 750 Series: *Strategic Issues Facing Transportation*, which examined global and domestic long-range, strategic issues and their implications for departments of transportation. Though ARC was not directly involved in the TRB report, the results of the analysis led to ARC's launch into a more exploratory scenario planning effort, noting that implementing an exploratory approach allows ARC to look at current and projected issues from multiple perspectives and therefore leads to more dynamic and resilient plans.

[3] Reference to this scenario planning tool does not represent endorsement. FHWA recognizes that many tools are available and encourages agencies to use the tools that work best for them.

ARC consulted its stakeholder advisory committee on emerging trends and key drivers of change in transportation. Key takeaways from that discussion included: (1) Mobility options are changing/expanding with the advent of autonomous vehicles and ride-hailing services; (2) New business models are disrupting transportation logistics; and (3) Migration patterns are increasingly more complicated and impactful. Mr. Haynes described the way in which ARC attempted to categorize and draw connections between the nine key drivers of change in the Atlanta region, as identified by a national panel of experts, the stakeholder advisory committee and surveys.

Mr. Haynes emphasized the importance of accurately framing "plausibility" in assessing future scenarios. In order to engage its stakeholder advisory committee, ARC designed the exercise of developing plausible alternate futures as a game at a stakeholder advisory committee meeting. The results were positive—advisory committee members not only engaged in developing future scenarios, but had fun playing the game. This exercise informed four plausible alternate futures for the region:

1. EcoTopia (renamed "Green Growth" in November 2016)
2. Fierce Headwinds
3. Full Steam Ahead
4. Technology Reigns

Mr. Haynes emphasized that telling a compelling story for each plausible alternate future was essential to gaining buy-in from stakeholders and the public. ARC used mock-ups to engage its stakeholders in assessing the four alternative futures and receive feedback on an online alternative future exploration tool. The tool was not only fun for users, but also allowed ARC to share results in real time via social media platforms. When ARC officially launches the tool in 2017, the tool will provide the capability for users to share results via social media.

In 2015, ARC obtained a funding assistance award through FWHA's Strategic Highway Research Program (SHRP2), a series of solutions derived from over 100 research projects designed to address critical State and local transportation challenges. ARC's next steps include implementing the SHRP2 funding assistance and preparing for the next LRTP update, which should take place by 2020.

Scenario Planning for the Future: Highlighting Connections to New Technologies

During the afternoon of Day 1, two local experts delivered a joint presentation on connections between scenario planning and new technologies. Catherine C. McGhee, Director for the Virginia Transportation Research Council, and Michael Mollenhauer, Director of the Center for Technology Implementation at the Virginia Tech Transportation Institute, delivered a presentation that focused on the role that connected and autonomous vehicle (C/AV) technology might potentially play in the future transportation network and how this role may affect long-range transportation planning.

Ms. McGhee and Dr. Mollenhauer first differentiated between different kinds of connected vehicles and then discussed the potential safety applications associated with each type. They also discussed the benefits and detriments of various means of actually connecting vehicles to each other as well as the surrounding roadway, such as dedicated short range communications and cellular coverage. Ms. McGhee and Dr. Mollenhauer discussed various implications of widespread connected vehicle deployment, such as:

- Safety
- Mobility
- Environmental concerns
- Access to multimodal travel options
- Increased capacity
- Potential to reduce or eliminate infrastructure
- Increased needs for monitoring and contingency planning

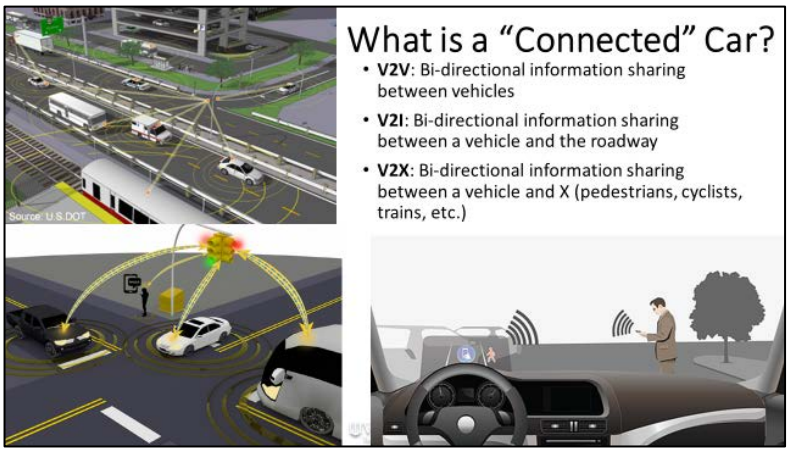

Figure 6: Catherine McGhee and Michael Mollenhauer kicked off the discussion on new technologies with a distinction between different "connected" car definitions.
Source: VTRC and VTTI

The presenters provided a brief description of Virginia Department of Transportation (VDOT)'s draft Connected Vehicle Program Plan. They also discussed the ways in which public perceptions of automation can affect deployment. For example, the high profile fatality that occurred in a Tesla autonomous vehicle pilot can have disproportionate negative effects when incidents occur during the early stages of emerging technology deployment.

Ms. McGhee and Dr. Mollenhauer explained how different industries are taking different approaches to C/AV deployment—automobile manufacturers are favoring an incremental, evolutionary approach, whereas non-traditional companies such as tech and rideshare companies are favoring a more revolutionary approach. For example, Uber has deployed a pilot program of autonomous vehicles in Pittsburgh, PA.

Workshop participants inquired about the plausibility of rapid deployment of autonomous vehicles and the necessary driver education that would need to take place as a result. Dr. Mollenhauer noted that it may be a number of decades before autonomous vehicles lead to a complete switch in roadway design and infrastructure, because it will take time for market penetration to reach the point in which roadway infrastructure will be designed specifically for these types of vehicles. He hypothesized that dedicated lanes to serve advanced vehicles will likely appear first. Ms. McGhee added that advanced vehicle technology may lead to a reduction in traffic infrastructure in the long term, but in order to remove necessary infrastructure like stop signs and traffic lights, the 100% market penetration of such vehicles would need to take place. Because roadway design may need to be enhanced to allow for connected and autonomous vehicles to operate safely, widespread deployment may take place more slowly in rural areas than in urban areas.

Ms. McGhee and Dr. Mollenhauer spoke to additional challenges presented by widespread C/AV deployment, such as the risk of pedestrian injury and fatality via jaywalking. They also noted the increased risk of cybersecurity breaches. Finally, they spoke to concerns about driver attention in that C/AV may incentivize drivers to be distracted in the car, so increased safety risks may be a large concern depending on how this technology is deployed.

Interactive Group Exercises

Throughout the workshop, participants engaged in discussions to share questions and ideas on scenario planning. Full- and break-out group discussions on Day One focused on opportunities for using scenario planning in the Hampton Roads region. Roundtable discussions on Day Two specifically addressed: 1) scenario planning tools and implementation; and 2) moving forward with scenario planning implementation. The following reflects the themes heard during the group and roundtable discussions.

Full Group Discussion: Applying Scenario Planning to the Hampton Roads Context – Themes

During the full group discussion on the morning of Day One, participants discussed opportunities and challenges in implementing scenario planning in the Hampton Roads region. Ideas shared included:

- **Emerging technologies.** Some entities project that autonomous vehicles may be available as luxury items as early as 2026 and ubiquitous on roadways by the early 2030s. Workshop participants discussed the plausibility of this timeline and its potential impacts on many aspects of transportation planning, such as roadway design and safety.
- **Accurate representation of demographics in survey responses/statistical validation.** Ms. Alden noted that the Hillsborough MPO asked demographic questions in its surveys and conducted Geographic Information Systems (GIS) mapping to see how well its survey pool represented its service area. She noted that the MPO also hired a pollster to conduct a public opinion poll and learned that survey results must be taken with a grain of salt. Workshop participants also discussed what constitutes a "statistically valid" survey and how to communicate results to the public in the event that they are not considered statistically significant.
- **Importance of public outreach.** The Hillsborough MPO chose to prioritize public engagement in using the MetroQuest platform. The agency began this effort using a GIS-based environmental justice demographic analysis. They then worked with community groups to identify those that might be actively engaged in the planning process and reached out to those groups to share information. Workshop participants discussed the importance of asking for frequent feedback.
- **Vendors.** Both peers used MetroQuest in their scenario planning efforts, so workshop participants began discussing potential vendors to carry out this type of analysis. Hillsborough MPO noted that most of its public engagement was carried out using staff resources; its marketing materials for Imagine2040 were developed in-house.

Break-out Group Discussion: Applying Scenario Planning to the Hampton Roads Context – Moving Toward Implementation

During the break-out group discussion, participants divided into six groups based on the tables at which they were sitting. Each group was tasked with identifying takeaways from the peer presentations that resonated with its members and discussing the following questions:

Tables 1 and 2: Identify three or more takeaways from peer presentations that resonate with your respective group.

- Statistically valid surveys can be more difficult than expected to develop.
- It is valuable to develop a wide range of scenarios so hybrid scenarios can be considered. Brian Betlyon, the workshop facilitator, added that developing three to four scenarios, including a "no-build" scenario, typically works well.
- Software tools can be instrumental in success. For example, TravelWorks, a suite of planning and modelling tools, may be particularly well suited for the Hampton Roads region.
- Clearly explaining the goals of each scenario and using laymen's language are key to effective public engagement.

Figure 7: Roundtable participants brainstormed ideas in break-out groups.
Source: USDOT Volpe Center

Tables 3 and 4: What did you take away about updating a long-range transportation plan?

- To effectively engage the public, try to understand how representative your sample size— i.e., the number of individuals participating in a survey or other public outreach effort—is of your region as a whole. Additionally, communicating to the public can be a challenging and iterative process.
- Identify driving forces of change as well as inevitable constraints, such as political challenges and funding constraints.
- Be flexible. Even if you start a normative scenario planning approach, that can spark a dialogue of exploratory approaches.

Tables 5 and 6: What are some of the driving forces for the HRTPO to consider in creating scenarios?

- *Region-specific solutions.* Three concerns of particular interest in the Hampton Roads region are ports, tourism, and military bases. HRTPO needs to both support its existing economy and explore the potential for future competitive advantages.
- *Emerging technologies.* Connected and autonomous vehicles may begin to appear on the market in the next few years, and additional funding would be necessary to support associated infrastructure improvements.
- *Demographic changes.* As Dr. Ravanbakht noted, 20% of Hampton Roads residents will be over 65 by 2020. These changing demographics will affect commute patterns, dependence on public transportation, and other transportation needs.
- *Climate change resiliency.* HRTPO needs to remain cognizant of the potential for sea level rise and other climate impacts in vulnerable regions, as well as changing environmental regulations.
- *Fiscal constraint.* Scenario planning must be conducted through the lens of available funding in order to be most valuable.

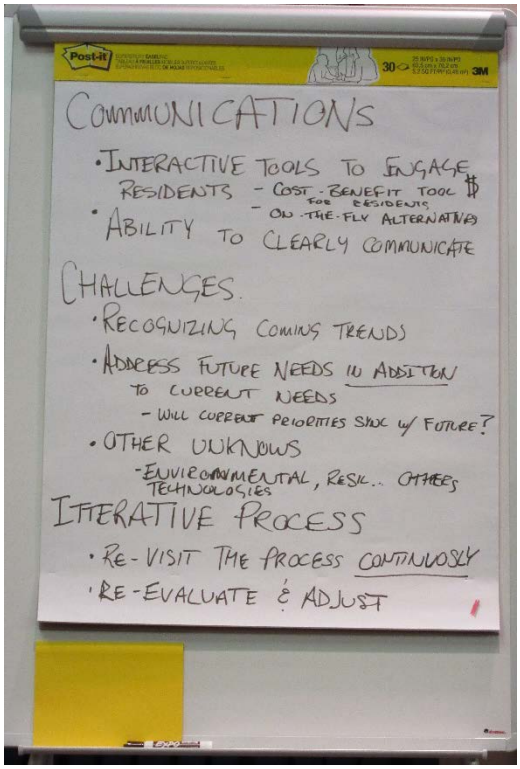

Figure 8: In break-out groups, workshop participants recorded ideas to share with the larger group during the group discussion.
Source: USDOT Volpe Center

Roundtable Discussions

During Day Two of the workshop, a smaller group of attendees—HRTPO staff, the peers, and FHWA representatives—participated in two roundtable discussions on the topics of scenario planning tools and implementation and scenario planning connections to PBPP. The following summarizes key takeaways from the discussions.

Scenario Planning Tools and Implementation

Mr. Betlyon opened the first roundtable discussion by providing a short presentation on the various scenario planning tools available today to transportation agencies. These tools include CommunityViz, Envision Tomorrow, INDEX, IPLACE3S, MetroQuest, RapidFire, TravelWorks' Rapid Policy Analysis Tool (RPAT), and UrbanFootprint, among others.[4]

[4] Reference to these scenario planning tools does not represent endorsement. FHWA recognizes that many tools are available and encourages agencies to use the tools that work best for them.

The roundtable peers also discussed the tools they have used in their scenario planning efforts. Ms. Alden noted that Hillsborough MPO has used TranSight, a Regional Economic Models, Inc. (REMI) product, and will soon embark upon implementing EconWorks, another FHWA SHRP2 product, in the next few months. In addition to many of the tools mentioned by Mr. Betlyon, Mr. Haynes stated that ARC has used REMI TranSight, Impacts 2050 of NCHRP Report 750, and the Regional Strategic Planning Model (RSPM).

Themes from the roundtable discussion on scenario planning tools and implementation included:

- *Selecting the "right" tool.*
    - Topics to consider when selecting a tool can include the number of users, interactivity level desired, data needs, maintenance requirements, and visualization capabilities.
    - Participants noted that the effectiveness of different tools is context specific. Mr. Haynes stated that IPLACE3S was very valuable to ARC on a local planning level, but he did not think it would provide the same value on a regional level.

- *Remembering the importance of plausibility in developing scenarios.*
    - There exists overlap between normative and exploratory scenario planning approaches. An agency may begin with a normative approach and then incorporate aspects that allow for an exploratory scenario planning angle as well.
    - Roundtable participants emphasized the importance of evaluating the plausibility of different scenarios in order to have the process be most effective. Additionally, participants discussed that while a "no-build" alternative may seem straightforward, such an approach often assumes a certain level of consistency in policies, external factors, etc., and these assumptions may not be accurate.

- *Leveraging scenario planning resources.*
    - There are many online resources for scenario planning, including the FHWA scenario planning website and the Lincoln Institute of Land Policy website.

Scenario Planning Reflections

During the Day Two roundtable discussion, the smaller group of participants discussed additional scenario planning reflections. Themes from this roundtable discussion are highlighted below.

- *Deeper dive into software platform implementation*
    - Hillsborough MPO and ARC both used MetroQuest for their most recent scenario planning efforts. Ms. Alden noted that Hillsborough MPO spent $8,000-$9,000 to acquire and customize the MetroQuest platform. Both peers noted that the platform can be used on any type of computer or mobile operating system. The platform is so established that both peers found it is not wholly-customizable; however, users can choose to prioritize different "buckets" of concerns. For example, Hillsborough MPO prioritized public engagement.
    - Hillsborough MPO drew on approximately 20 staff planners to implement the software platform and assigned an interagency team to provide oversight.

- *Approaches to public input data collection and statistical significance*
    - Participants raised the concern that if data collected through surveys or other means is not considered statistically significant, the public and other stakeholders could easily dismiss it as inaccurate.
    - Mr. Haynes noted that ARC collected approximately 5,400 survey responses for its fourth annual Atlanta Speaks survey in order to achieve statistical significance at the county level, and all of these responses were collected via cold calls (60% through land lines and 40% through cell phones).
    - Ms. Alden noted that there is a difference between public opinion research and public engagement, and understanding the distinction is crucial to effectively soliciting and incorporating public input. Ms. Alden added that, for example, Hillsborough MPO

conducted public opinion research to analyze the expected stances of its public on transportation investment decisions, but the results of this research did not perfectly mirror the information collected through public meetings and other public engagement strategies.
    - Mr. Haynes added that sharing the public's negative comments on different scenarios helped provide board members with valuable context, which drove effective decision-making.

- *Specific feedback for HRTPO*
    - Ms. Stith provided a brief presentation on HRTPO's planned approach for developing its 2045 LRTP using scenario planning. HRTPO received feedback from the peers that its timeline was logical. Both peers suggested keeping key drivers of change in mind while developing scenarios. Ms. Alden also suggested that HRTPO staff should develop a specific public engagement method to complement its scenario(s) in order to incorporate as much public feedback, as early as possible.

Conclusion and Next Steps

The FHWA scenario planning workshop, hosted by the HRTPO, brought together multiple MPOs in the Hampton Roads region as well as other local transportation agencies and partners to discuss opportunities for using scenario planning.

Presentations by CAMPO, GWRC, and RRTPO, the technical experts from the Virginia Transportation Research Council and the Center for Technology Implementation at Virginia Tech, as well as by the Hillsborough MPO and ARC peers, provided various perspectives on how scenario planning can help engage stakeholders in discussions about what they envision for their community's future and help inform LRTP updates and the transportation planning process as a whole.

Throughout the workshop, participants engaged in discussions to share their ideas, agencies' practices, and questions on scenario planning and how scenario planning might work in the Hampton Roads region.

Feedback provided by participants through evaluation forms submitted at the end of the workshop indicated that their level of scenario planning knowledge grew as a result of their participation and that they found value in the presentations, peer agency perspectives, and discussions held during the event. Overall, the workshop met its original goal in encouraging information-sharing and noteworthy practices on scenario planning for transportation agencies and partners in the Hampton Roads region.

Appendices

A. About the FHWA-FTA Scenario Planning Program

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) 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.

B. Key Contacts

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C. Event Participants

Name	Organization
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Sulabh Aryal	Richmond Regional Planning District Commission
Britta Ayers	City of Newport News, Department of Planning
Michael Barry	Federal Highway Administration
Sam Belfield	Hampton Roads Transportation Planning Organization
Brian Betlyon	Federal Highway Administration
Angela Biney	Virginia Department of Transportation
Mignon Burton	Hampton Roads Planning District Commission
Keith Cannady	City of Hampton
Rob Case	Hampton Roads Transportation Planning Organization
Philip Casteen	Virginia Department of Transportation
Will Cockrell	Thomas Jefferson Planning District Commission
Barbara Creel	Williamsburg Area Transit Authority
Queen Crittendon	Virginia Department of Transportation - Hampton Roads District Civil Rights Division
Timothy Cross	York County
Robert Crum	Hampton Roads Transportation Planning Organization / Hampton Roads Planning District Commission
Unwanna Dabney	WSP | Parsons Brinckerhoff
Mack Frost	Federal Highway Administration
Chris Gay	Parsons Brinckerhoff
Kathlene Grauberger	Hampton Roads Transportation Planning Organization
Robin Grier	Virginia Department of Transportation
Greg Grootendorst	Hampton Roads Planning District Commission
John Harbin	City of Chesapeake, Department of Planning
David Haynes	Atlanta Regional Commission
Paul Holt	James City County
George Homewood	City of Norfolk
Carl Jackson	Virginia Department of Transportation
Jamie Jackson	Hampton Roads Transit
Keith Jasper	Northern Virginia Transportation Authority
Theresa Jones	Hampton Roads Transportation Planning Organization
Whitney Katchmark	Hampton Roads Planning District Commission
Sara Kidd	Hampton Roads Planning District Commission
Mike Kimbrel	Hampton Roads Transportation Planning Organization
Michael King	Community Plans and Liaison Officer, U.S. Navy
Steven Lambert	City of Chesapeake
Beth Lewis	Franklin Southampton Community Development Department

Brian Lewis	Gloucester County
Jay Lindsey	Virginia Department Of Rail And Public Transportation
Jai McBride	Hampton Roads Planning District Commission
Ben McFarlane	Hampton Roads Planning District Commission
Catherine McGhee	Virginia Transportation Research Council
Karen McPherson	McPherson Consulting
John Mihaly	Hampton Roads Transportation Planning Organization
Michael Mollenhauer	Virginia Tech Transportation Institute
Rhonda Murray	Navy Region Mid-Atlantic
Keith Nichols	Hampton Roads Transportation Planning Organization
Jenna Overton	USDOT Volpe Center
Kevin Page	Hampton Roads Transportation Accountability Commission
Joe Paulus	Hampton Roads Transportation Planning Organization
Savannah Pietrowski	James City County
Leonardo Pineda	Hampton Roads Transportation Planning Organization
Jeffrey Raliski	Norfolk Department of City Planning
Camelia Ravanbakht	Hampton Roads Transportation Planning Organization
Rodney Rhodes	City of Williamsburg, Planning Department
Lloyd Robinson	Fredericksburg Area Metropolitan Planning Organization
Tammy Rosario	James City County
Stephen Rowan	Virginia Department of Transportation
Ivan Rucker	Federal Highway Administration
Richard Rudnicki	Isle of Wight County
Mark Shea	City of Virginia Beach Planning Department
Sam Sink	Hampton Roads Transit
Brian Solis	City of Virginia Beach
Dale Stith	Hampton Roads Transportation Planning Organization
Eric Stringfield	Virginia Department of Transportation
Jill Sunderland	Hampton Roads Planning District Commission
Brian Swets	City of Portsmouth
Ashwini Tamhane	Virginia Department of Rail & Public Transportation
Tara Walker	Hampton Roads Planning District Commission
Christopher Wichman	Richmond Regional Transportation Planning Organization / Richmond Regional Planning District Commission
Ben Woody	Currituck County
Cheng Yan	Federal Highway Administration
Jessie Yung	Federal Highway Administration

D. Workshop Agenda

Hampton Roads Transportation Planning Organization
Scenario Planning Workshop
Sponsored by the Federal Highway Administration (FHWA)
Chesapeake, VA

Dates: November 8-9, 2016

Host Agency: HRTPO

Facilitator: Brian Betlyon, FHWA Resource Center

Peers:

- Hillsborough MPO for Transportation
- Atlanta Regional Commission

Workshop Overview:
This one-day scenario planning workshop, hosted by HRTPO, will focus on the concept of scenario planning and provide examples of noteworthy practices and perspectives from peer agencies using the approach. In addition, the workshop will provide an opportunity to share information on HRTPO's current scenario planning activities and interest in incorporating scenario planning into its long-range transportation planning process, particularly for its 2045 LRTP update.

Workshop Goals:
Goals include: sharing scenario planning noteworthy practices; incorporating scenario planning into resiliency, military base, and transportation planning; connecting public engagement opportunities with scenario planning efforts; and identifying opportunities for integrating new technologies into the transportation planning process.

DAY ONE

Time	Session	Speaker(s)
8:30 - 9:00	**Registration and Check-in**	
9:00 - 9:15	**Welcome and Introduction**	• **Robert Crum** Executive Director, HRTPO • **Jessie Yung** Acting Division Administrator, FHWA Virginia Division • **Brian Betlyon** Metropolitan Planning Specialist, FHWA Resource Center; Workshop Facilitator
9:15 - 9:30	**Getting Started: An Overview of Scenario Planning**	• **Brian Betlyon** FHWA Resource Center; Workshop Facilitator
9:30 – 10:15	**Virginia Scenario Planning Perspectives**	• **Camelia Ravanbakht, PhD** Deputy Executive Director, HRTPO • **Will Cockrell** Director of Planning, Charlottesville MPO (Thomas Jefferson Planning District Commission)

		• **Chris Gay** Senior Supervising Planning with Parsons Brinckerhoff, on behalf of the Fredericksburg MPO (George Washington Regional Commission) • **Sulabh Aryal** Senior Planner, Richmond MPO (Richmond Regional Planning District Commission) • **Chris Wichman** Senior Planner, Richmond MPO (Richmond Regional Planning District Commission)
10:15 - 10:30	Break	
10:30 - 11:45	**Peer Presentation 1:** *Creating a Scenario Planning Process That Fits Your Needs*	• **Beth Alden** Executive Director, Hillsborough Metropolitan Planning Organization for Transportation • **David Haynes** Long Range Planning Manager, Transportation Access and Mobility Division, Atlanta Regional Commission
11:45 am - 12:15 pm	**Group Discussion:** *Scenario Planning in the Virginia Context – Potential Themes and Challenges*	Workshop Facilitator, Participants
12:15 - 1:15	Lunch	
1:15 - 2:30	**Peer Presentation 2:** *Key Themes, Considerations, and Methods for Scenario Development and Implementation*	• **Beth Alden** Executive Director, Hillsborough Metropolitan Planning Organization for Transportation • **David Haynes** Long Range Planning Manager, Transportation Division, Atlanta Regional Commission
2:30 – 2:45	Break	
2:45 - 3:30	**Scenario Planning for the Future:** *Highlighting Connections to New Technologies*	• **Catherine C. McGhee, P.E.** Director Virginia Transportation Research Council • **Michael Mollenhauer** Director, Center for Technology Implementation, Virginia Tech Transportation Institute
3:30 – 4:15	**Break-out Group Discussion:** *Scenario Planning in the Virginia*	Workshop Facilitator, Participants

	Context – Prioritizing Themes and Challenges	
4:15 - 4:45	**Full Group Discussion:** *Scenario Planning in the Virginia Context – Moving Towards Implementation*	Workshop Facilitator, Participants
4:45 - 5:00 pm	**Recap of Day/Next Steps**	HRTPO Staff

DAY TWO

Time	Topic	Speaker
8:15 - 8:30 am	Registration and Check-in	N/A
8:30 – 9:00	Review of Day One	Workshop Facilitator, Peers, HRTPO Staff
9:00 - 10:15	Round Table Discussion #1: *Scenario Planning Tools and Implementation*	Workshop Facilitator, Participants
10:15 - 10:30	Break	
10:30 - 11:45	Round Table Discussion #2: *Moving Forward with Scenario Planning Implementation*	Workshop Facilitator, Participants
11:45 am - 12:00 pm	Wrap-up and Conclusions	HRTPO Staff

F. Additional Resources

FHWA Scenario Planning Website
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/

G. Acronyms

ARC	Atlanta Regional Commission
CAMPO	Charlottesville-Albemarle MPO
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GWRC	George Washington Regional Commission
HRTPO	Hampton Roads Transportation Planning Organization
LRTP	Long-Range Transportation Plan
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
PBPP	Performance-Based Planning and Programming
RTP	Regional Transportation Plan
RRTPO	Richmond Regional Transportation Planning Organization
SHRP2	Second Strategic Highway Research Program
SWOT	Strengths, Weaknesses, Opportunities, Threats
TDM	Travel Demand Model
TIP	Transportation Improvement Program
TPCB	Transportation Planning Capacity Building
USDOT	U.S. Department of Transportation
VDOT	Virginia Department of Transportation
VTRC	Virginia Transportation Research Council
VTTI	Virginia Tech Transportation Institute