Scenario Planning Advisory Committee Meeting #1

January 18, 2023
Meeting Agenda

1. Participant Introductions – Chet Parsons
2. Project Introduction – Chet Parsons
   A. Discussion on Trends/Drivers and Scenario Narratives
   B. Overview of Modeling Process
   C. Discussion of Outcomes and Applications
4. Example – Hampton Roads Scenarios – Vlad Gavrilovic
5. Exercise on Driving Forces of Change – Lorna & Vlad
6. Public Engagement – Lorna & Vlad
7. Next Steps – Chet Parsons
# Scenario Planning Advisory Committee

<table>
<thead>
<tr>
<th>Field of Expertise</th>
<th>Name</th>
<th>Affiliation(s)</th>
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<tr>
<td>Transportation</td>
<td>Joe Vidunas</td>
<td>RARPO Technical Advisory Committee/Hanover County</td>
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<td></td>
<td>Chessa Walker</td>
<td>RARPO Technical Advisory Committee/Coatesfield County</td>
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<td>John Leonard</td>
<td>RARPO Community Transportation Advisory Committee/VCU</td>
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<td>Tiffany Dubinsky</td>
<td>RARPO Policy Board/DRPT</td>
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<td></td>
<td>Jeremy Raw</td>
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<td>John Miller</td>
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<td>Peter Ohms (Alternate)</td>
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<td>Land use/Community Development</td>
<td>Seth Humphreys</td>
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<td>Nora Amos</td>
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<td>Matthew Ebinger</td>
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<td>Jonah Fogel</td>
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<td>Partnership for Housing Affordability</td>
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<td>Community Health</td>
<td>Louise Lockett Gordon</td>
<td>Virginia Department of Health</td>
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# Study Team

PlanRVA Core Team:
- Chet Parsons – Director of Transportation & Project Manager
- Sulabh Aryal – Transportation Planner
- Sarah Stewart – Environment Planner
- Nicole Keller – Resiliency Planner

### Consultant Team:

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<tr>
<th>ROLE</th>
<th>FIRM</th>
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<tr>
<td>Overall Project Management</td>
<td>The Corradino Group</td>
<td>Ken Kaltenbach</td>
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<td>Srinivas Varanasi</td>
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<td>Parag Gupta</td>
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<td>Land Use Model</td>
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<td>Josh Mallow</td>
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<td>Alan Cunningham</td>
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<td>Travel Demand Model</td>
<td>Michael Baker International</td>
<td>Vlad Gavrilovic</td>
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<td>Matthew Rehnborg</td>
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<td>Naomi Stein</td>
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<td>Adam Blair</td>
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Project Introduction

The Region Today → Forces of Future Change → 2050 Scenarios → Modeled Futures → Informed Decisions for Tomorrow
Project Introduction

2022

PUBLIC

2023

EXPLORING OUR FUTURE
Discussing Scenario Narratives

2024

PREPARING FOR OUR FUTURE
Reviewing Scenario Results

POLICY BOARD

PB

ADVISORY

SPAC 1
Review Trends & Drivers

PB

SPAC 2
Scenario Frameworks

TASKS

BUILD MODELS / AFFIRM PERFORMANCE MEASURES / DEVELOP MODEL DATA

PB

SPAC 3
Scenario Narratives

RUN BASE YEAR & SCENARIOS

PB

SPAC 4
Initial Modeling Results

DEVOLVE SCENARIOS

PB

SPAC 5
Refined Model Results

SCENARIO EVALUATION & REFINEMENT

PB

SPAC 6
Scenario Implications

PLAN APPROVAL & ADOPTION
Project Introduction

Two Phases of Public Engagement
1. Scenario planning buy-in and visioning
2. Review scenario results and process implications

Scenario Planning Advisory Committee (SPAC)
• Develop buy-in and guide the process
• 6 meetings

Each PUBLIC ENGAGEMENT phase would include:
1. Public Forum – In person charrette – invited stakeholders (Consultants + PlanRVA Staff)
2. Online Survey – to supplement in person input (Consultants)
3. Stakeholder meetings to solicit additional input (PlanRVA Staff)

Each SPAC MEETING will address:
1. Review Models / Data / Scenarios
2. Directing public & stakeholder engagement
3. Update progress to date & advise on the next steps
PlanRVA Scenario Planning Process Overview
Long Range Planning, by design, looks out far enough to capture substantive regional change in land use, economics, and other regional dynamics. This allows regional leaders to anticipate threshold-level changes that must be planned for as well as to consider how to avoid undesirable outcomes with enough time to manage the ripple effects of near-term decisions.
Scenario Planning

Long Range Planning benefits from examining a range of plausible futures through scenario planning. The futures vary based on key regional drivers of change including community factors (land use, housing), economics, and other factors such as climate resiliency and technology.
Predicting the Future from the Past

Long Range Planning traditionally depends on data from the past to identify correlations that become the basis for predicting the future.
What if Trends are Uncertain?

When trends become unpredictable or ‘disruptors’ threaten to alter future trends, long range planning benefits from considering alternative futures through **Exploratory Scenario Planning**.
Exploratory Scenario Planning

Exploratory Scenario Planning is like a Defensive Playbook

The primary purpose is to be prepared.

The future is uncertain – like an opponent’s offense, we can think ahead to what may happen, and envision our actions in each scenario. Those insights will inform policy directions and investment strategies.
Exploratory Scenario Planning in The Region

In addition to the PlanRVA LRTP, the scenarios and especially the scenario planning tools can also be used in other regional planning activities:

• Inform Local Plans
• Further explore trends that are especially sensitive for an area or planning partner
• Test the impact of new policies or investment strategies
Focusing on What COULD Happen

Exploratory Scenario Planning looks at a range of possible futures to understand what could happen rather than focusing on one future vision.
Pathways to the Future Starts with Forces of Change

Scenario planning focuses on driving forces of change that are highly uncertain and highly impactful.
The Scenario Narratives are Crafted from the Drivers

To create a range of plausible scenarios, we apply different assumptions about the driving forces of change and organize them into scenario narratives.
The scenario narratives will have an overall organizing principle. The goal is to be **internally consistent** while presenting a **broad range** of plausible futures.
The Modeling Process

• The Land Use Model is the key to providing data to all the other models
• Each model will use the Land Use data from the Scenarios along with additional model-specific inputs

For example:

1. Land Use Model might project a greater concentration of population in urban areas
2. Transportation Model might project greater use of transit in urban areas
3. Results from both of these inputs might result in a lowering of vehicle miles traveled in the region.
Key Decision Points to Shape Scenario Planning

Decision points on the modeling:

Control totals:
• Assume same overall regional control total for all scenarios? (Growth varies by locality but maintains overall regional control total)
• Assume same locality control totals for all scenarios? (Growth varies by TAZ but maintains overall locality control totals)
• Vary the control totals by scenario

Other Factors:
• Use other non-land use factors as the basis for scenarios? (e.g. economic, environmental or technological forces)
• Use primarily land use factors as the basis for scenarios (e.g. growth in urban versus suburban areas)

* Note that decisions on the assumptions for the scenarios influence the data needed and model design.

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<td>Region Total</td>
<td>1,120,304</td>
<td>1,465,414</td>
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Hampton Roads Scenario Examples
The Regional Connectors Study (RCS) used scenario planning to test the need for and benefits of alternative transportation investments considering future trends.

The Scenario Planning process considered:

- A Baseline 2045 scenario and 3 “greater growth” 2045 scenarios
- Drivers for economy, demographics and technology
- Three integrated models to test the future outcomes
Scenario Narratives

**Hampton Roads Scenarios Example**

**GROWTH on the WATER**
- Growth in water-oriented activity
- Port of Virginia becomes even more competitive with freight/more multimodal
- More dispersed housing locations
- Moderate assumptions for CAV adoption & network adaptation

**GROWTH in URBAN CENTERS**
- Significant economic diversification
- Low space requirements per job
- Large role for “digital port”
- New professionals prefer to live/work in urban settings
- High level of CV adoption & low auto ownership/high TNC mode

**SUBURBAN/GREENFIELD GROWTH**
- Growth is suburban/exurban, but growth includes walkable mixed use centers
- Port of Virginia becomes even more competitive
- “Digital port” brings additional jobs
- Housing is more suburban
- High level of AV adoption & network adaptation

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**GREATER CROSS-HARBOR TRAVEL IN PARTICULAR**
- These will help us test

**MORE URBAN & MULTIMODAL TRAVEL PATTERNS**
- These will help us test

**MORE OVERALL REGIONAL TRAVEL**
- These will help us test

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**NOTE:** SEA LEVEL RISE ASSUMED AS 3 FT. IN ALL SCENARIOS
Hampton Roads Scenarios Example

Land Use Performance Measures

![Graphs showing land use and population trends](image-url)
Travel Model Technology Assumptions

**Hampton Roads Scenarios Example**

**VEHICLE TYPE (private)**
- People driving cars
- Driverless

**MOBILITY on DEMAND (AV)**
- People driving cars
- Driverless

**MOBILITY as a SERVICE (MaaS)**
- People owning & operating cars
- Shared mobility on demand

**EFFECTIVE ROADWAY CAPACITY**
- Decreased
- Increased

**REGIONAL CONNECTORS STUDY SCENARIOS**
- 2045 BASELINE
- GROWTH on the WATER
- SUBURBAN/GREENFIELD GROWTH
- GROWTH in URBAN CENTERS
Hampton Roads Scenarios Example

Transportation Performance Measures

- **VEHICLE MILES TRAVELED**
- **VEHICLE HOURS TRAVELED**
- **TOTAL DELAY (in hours)**

Legend:
- 2045 BASELINE
- GROWTH on the WATER
- SUBURBAN/GREENFIELD GROWTH
- GROWTH in URBAN CENTERS
Hampton Roads Scenarios Example

Drivers of Economic Results

REGIONAL CONNECTORS STUDY SCENARIOS

- **2045 BASELINE**
- **GROWTH on the WATER**
- **SUBURBAN/GREENFIELD GROWTH**
- **GROWTH in URBAN CENTERS**
Economic Results: Societal Costs of Travel in 2045

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<tr>
<th>Scenario</th>
<th>Emissions</th>
<th>Safety</th>
<th>Vehicle Operating Cost</th>
<th>Travel Time &amp; Reliability</th>
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<th>TOTAL COST</th>
<th>Change in Cost from 2045 Baseline</th>
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- Baseline cost
- Greater cost than baseline
- Lower cost than baseline
Hampton Roads Scenarios Example

Change in Daily Delay Due to Congestion

(Compared with 2045 Baseline)
Greater Growth on the Water
Greater Urban Growth
Greater Suburban/Greenfield Growth
Hampton Roads Scenarios Example

Scenario Planning Application in James City County

- Nature & Environment
- Community Character
- Scenario Growth Patterns
- Economic Development
- Fiscal Impact Results
- Quality of Life
- Affordable Housing
- Travel Demand Model Performance Indicators
Questions?
Exercise on Driving Forces of Change
“Drivers are external factors that could influence the future environment”

Key features:

• Generally external forces or trends, not internal policy responses (Climate Change vs. Climate Action)
• Broadly beyond our control (Housing Preferences vs. Housing Affordability)
• Things that drive model inputs rather than outputs (Flooding vs. Cost of Adaptation)

However – there is some fluidity in defining Drivers!
Exercise on Driving Forces of Change

What will be the driving forces of change for 2050?

Community: Growth

Technology: Industry

Economy: 

Resiliency: 

Images and icons representing growth, technology, economy, and resiliency.
Exercise on Driving Forces of Change

Your Turn!

- Review the list of Potential Driving Forces for this region for the year 2050
- Brainstorm any additional Driving Forces
- Remember that Drivers are broad outside forces beyond our control

### Community
- Overall Population Growth
- Aging Population
- Migration of Population
- Household Size/Dynamics
- Housing Type Preferences
- Locational Preferences (Density, walkability)
- Housing Stock (Supply, aging)

### Technology
- Connected & Automated Vehicles
- Electric Vehicles
- Automated Freight
- Mobility on Demand
- High Speed Rail
- Agricultural Technology

### Economy
- Overall Economic Growth or Decline
- Growth by Industry Sector
- Telework
- E-retail
- Freight Dynamics
- Gov’t Investment by Sector
- Workforce Dev’t/Labor Supply
- Tourism

### Resiliency
- Climate Change (Heat, Storm intensity)
- Land Cover Change (Tree cover, Agriculture)
- Local Flooding
- Sea Level Rise
- Land Conservation
- Clean Energy Growth
- Clean Transportation choices
Exercise on Driving Forces of Change

Follow Up

- We will send out a follow up survey based on the results of this exercise
- You will be asked to rank each Driver according to Importance and Uncertainty
- We will place them on a chart as shown based on your responses

How this can help:

We can use the results to select the Drivers that are both most uncertain and most important (upper right quadrant) to define the Scenarios
Public Engagement
Public Engagement – Round 1

**Goal:** Create a public understanding of what exploratory scenario planning is and why it is useful

**Objective:** Inform the framework for scenario narratives

- Charrette by invitation (April)
  - SWOT-like approach to assessing and organizing regional futures
    - Discuss region’s **strengths** and **weaknesses** in the four aspects of community, economy, technology and resiliency
    - Review/respond to the draft drivers of change synthesized from today’s meeting
    - Discuss the region’s **opportunities** and **threats** in light of the drivers of change

- Public survey via MetroQuest (March/April)
  - Similar in content to Charrette

- Stakeholder engagement (February/April)
  - PlanRVA staff to provide presentations to share scenario planning process, drivers of change, and encourage survey participation
Next Steps
Next Steps

**PUBLIC ENGAGEMENT**

- **EXPLORING OUR FUTURE**
  - Discussing Scenario Narratives

**PB**

**PUBLIC ADVISORY**

- **SPAC 1**
  - Review Trends & Drivers
- **SPAC 2**
  - Scenario Frameworks
- **SPAC 3**
  - Scenario Narratives
- **SPAC 4**
  - Initial Modeling Results
- **SPAC 5**
  - Refined Model Results
- **SPAC 6**
  - Scenario Implications

**POLICY BOARD**

- **PB**

**TASKS**

- **BUILD MODELS / AFFIRM PERFORMANCE MEASURES / DEVELOP MODEL DATA**
- **RUN BASE YEAR & SCENARIOS**
- **DEVELOP SCENARIOS**
- **SCENARIO EVALUATION & REFINEMENT**
- **PLAN APPROVAL & ADOPTION**
Next Steps – January - April

**Engagement** - Develop the framework for scenario narratives

- Charrette by invitation (April)
- Public survey via MetroQuest (March/April)
- Stakeholder engagement (February/April)

**Model Development**

- Develop component models (January/April)
  - Refine Methodologies
  - Prepare Baseline Data
  - Develop Scenario Inputs
Thank you!