Scenario Planning

- **Scenario planning** is a strategic planning approach to develop, compare, and test different scenarios.

- **Scenarios** represent alternative future conditions that could materialize in response to drivers such as **shifts in external forces**, or the **consequences of deliberate policy choices** played out over time.

- **Visioning** is one form of scenario planning that emphasizes desired end states and outcomes rather than external forces and uncertainty.

PLANRVA - Long Road to Scenario Planning

1. Hosted Scenario Planning Peer Exchange sponsored by FHWA in 2014.

2. Participated in Scenario Planning Peer Exchange sponsored by FHWA and hosted by Hampton Roads TPO in 2016.

3. Member of '*Consortium of Scenario Planning*' since 2018. Hosted Consortium sponsored Scenario Planning workshop in 2019.

4. Developed the initial scope of Scenario planning as a part of   in 2020.

5. Developed the comprehensive exploratory scenario planning process

23 CFR 450.324 (f)(4)(ii) recommends using Scenario Planning in Long-Range Planning Process

Connect-RVA 2045

Pathways to the Future

Richmond Regional Transportation Planning Organization
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# Applying Scenario Planning in the Richmond Region

Scenario Planning Advisory Committee (SPAC)

Roles/Responsibilities

1. Review Models / Data / Scenarios
2. Guide public & stakeholder engagement
3. Receive updates on progress to-date and provide input and direction on the process based on each locality/organization perspective

FIELD OF EXPERTISE	NAME	AFFILIATION(S)
Transportation	Joe Vidunas	RRTPO Technical Advisory Committee/Hanover County
	Chessa Walker	RRTPO Technical Advisory Committee/ Chesterfield County
	John Leonard	RRTPO Community Transportation Advisory Committee / Virginia Commonwealth University
	Tiffany Dubinsky	RRTPO Policy Board/ Virginia Department of Rail and Public Transportation
	Jeremy Raw	Federal Highway Administration
	John Miller	Virginia Transportation Research Council
	Peter Ohlms	
Land use/ Community Development	Seth Humphreys	Henrico County
	Nora Amos	RRTPO Technical Advisory Committee/ Town of Ashland
	Matthew Ebinger	City of Richmond
Environment	Jonah Fogel	Resilient Virginia/University of Virginia
	Kristin Owen	Henrico County
Emergency Management	Eric Seymour	National Weather Service
Housing	Jovan Burton	Partnership for Housing Affordability
Energy	Damian Pitt	Virginia Commonwealth University
Economic Development	Chuck Peterson	Greater Richmond Partnership
Community Health	Louise Lockett Gordon	Virginia Department of Health

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Project Schedule
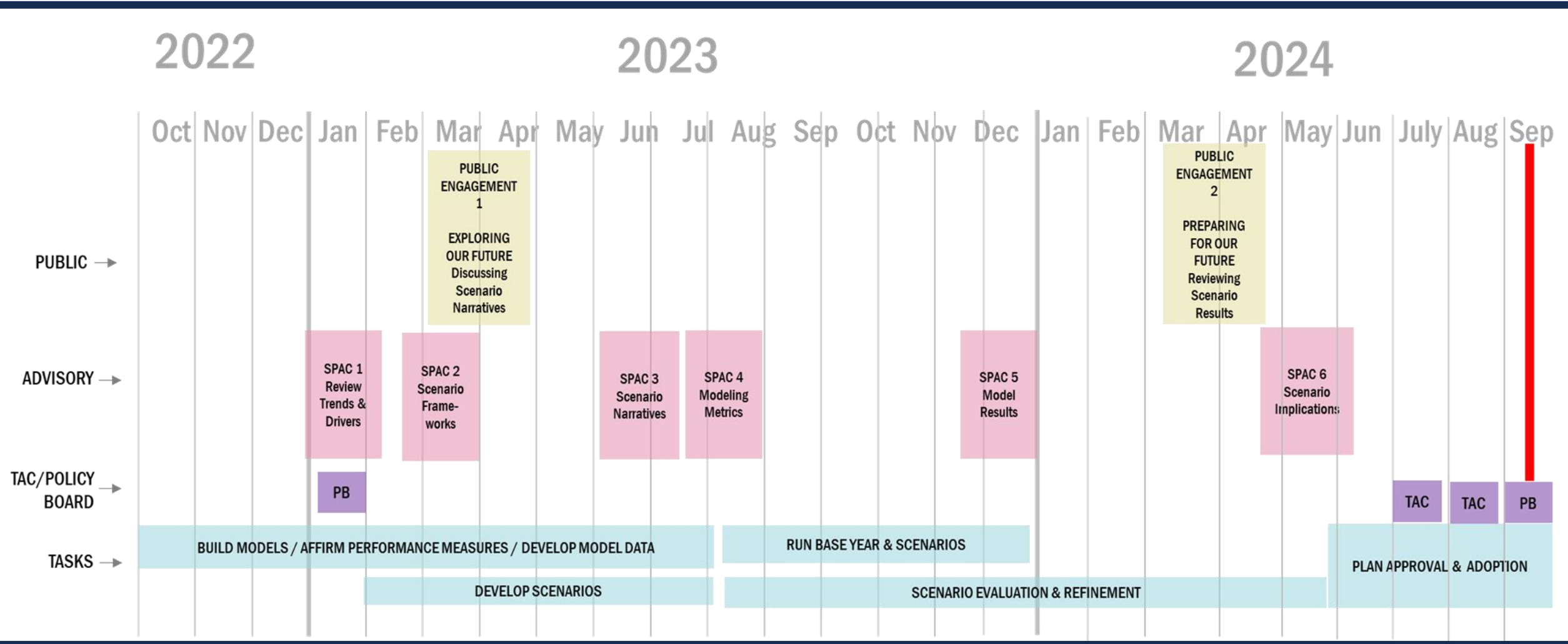
# Drivers /Disruptors /Forces of Future Change

COMMUNITY

POPULATION DYNAMICS
Overall Growth, Age, HH Size, HH Composition, Eucation, Migration & Inmigration, Climate Migration

SETTLEMENT DEMAND DYNAMICS
Locational Preferences, Housing Preferences, School Preferences

SETTLEMENT SUPPLY DYNAMICS
Housing Stock

POLITICAL DYNAMICS
State/Federal Economic Directives, Interest Rates, Environmental Mandates, Local Land Use Policy

TECHNOLOGY
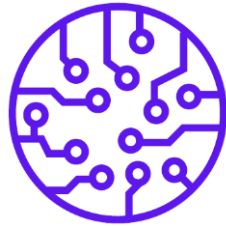
TRANSPORTATION TECHNOLOGY DYNAMICS
CAV, E-Vehicles, MAAS, Automated Freight, Parking Managment Tech

TRANSPORTATION MODE SHIFT DYNAMICS
Micro Mobility, High Speed Rail, Active Transportation

OTHER TECHNOLOGY DYNAMICS
Broadband, Solar farms, Automtion, Robotics, 3D Printing, Artificial Intelligence, ChatGPT

ECONOMY

GLOBAL/NATIONAL ECONOMY DYNAMICS
Economic Growth/Decline, Sector Growth, Retail & Freight Dynamics, Govt. Investment, Material Costs, Interest Rate

REGIONAL ECONOMY DYNAMICS
Economic Growth/Decline, Sector Growth, Retail Dynamics, Tourism

EMPLOYMENT/ WORKFORCE DYNAMICS
Workforce Dev't./Supply, Telework, Corp. Culture

RESILIENCY

CLIMATE/PLANET DYNAMICS
Climate, Sea Level, Flooding, Pandemic

ENVIRONMENTAL POLICY DYNAMICS
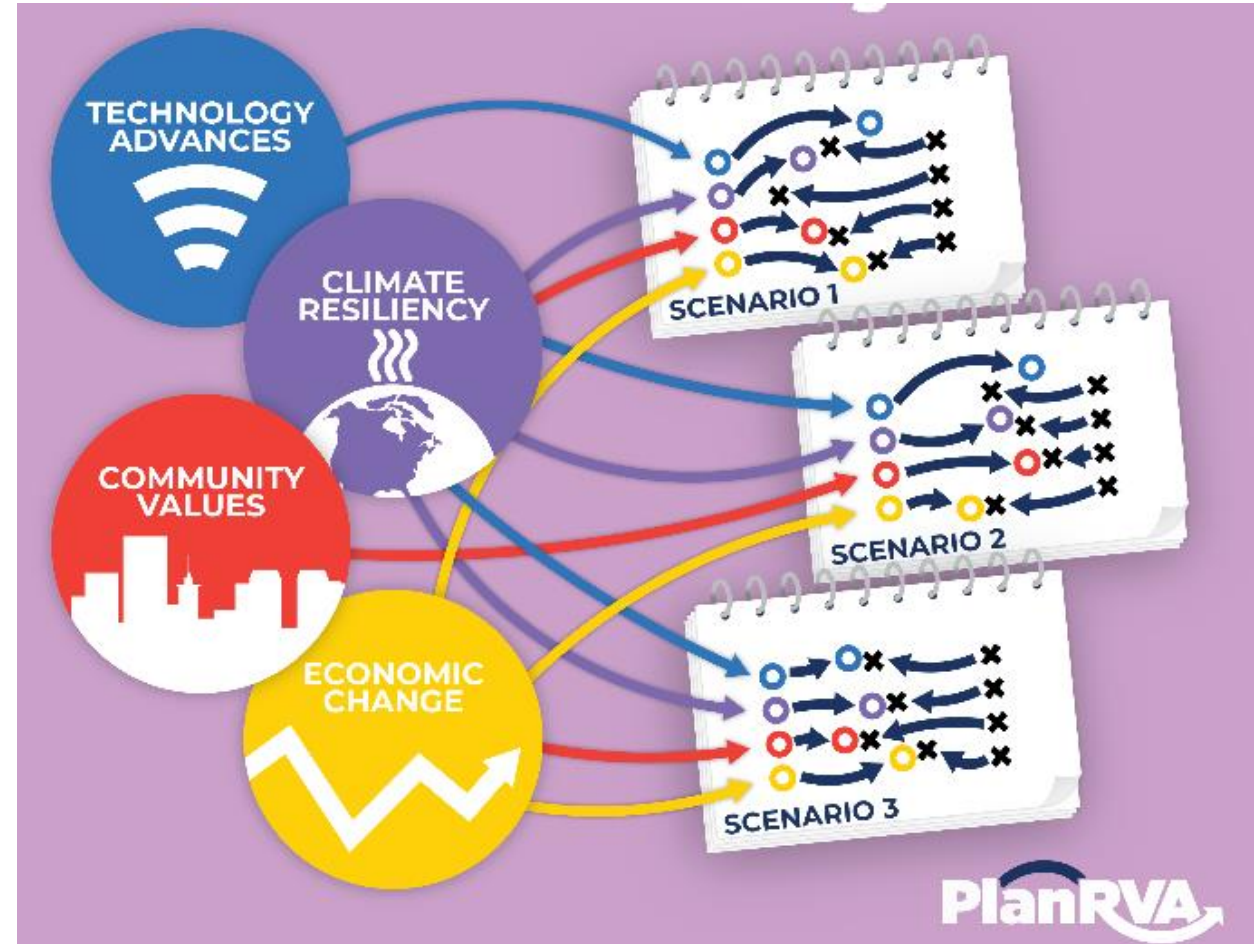Clean Energy, Clean Transportation, Utilities, Ag. Technology

LOCAL/INDIVIDUAL RESPONSE DYNAMICS
Local Food, Local Resilience, Recycling, Water Consumption

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Creating a Scenario Narrative
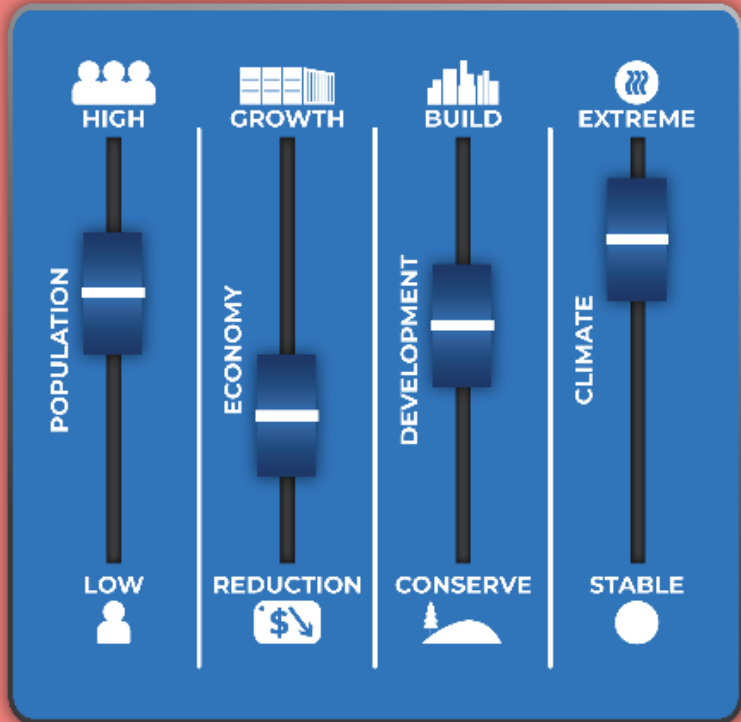
The Scenario Narratives were Crafted from the Drivers

Final Scenarios

Baseline
Medium Growth

There is significant regional growth in suburban areas, densifying urban cores and rural growth. Health care dominates employment sectors with strong professional growth as well. Clean energy and technology are adopted based on national trends and settlement is based on adopted comprehensive plans.

Back to the Future
High Growth

The region begins a return to earlier decades, with growth fueled primarily by suburban and rural areas, a more professional/service economy, single income families with larger car-centric households and reactive rather than proactive regional responses to the global winds of change.

Ecotopia
High Growth

The Richmond region attracts new residents including climate refugees and digital nomads in search of quality community that provides transportation choices, diversity of housing, a no/low carbon footprint lifestyle, in a technology based and entrepreneurial economy.

Meh and Safe
Medium Growth

Responses to change are hyperlocal, with some localities adopting proactive resilient strategies and some staying the course and reacting as needed. Growth is in line with the 2050 Baseline but transportation and housing choices, technology adoption and lifestyles vary widely and reflect each locality's preferred approach.
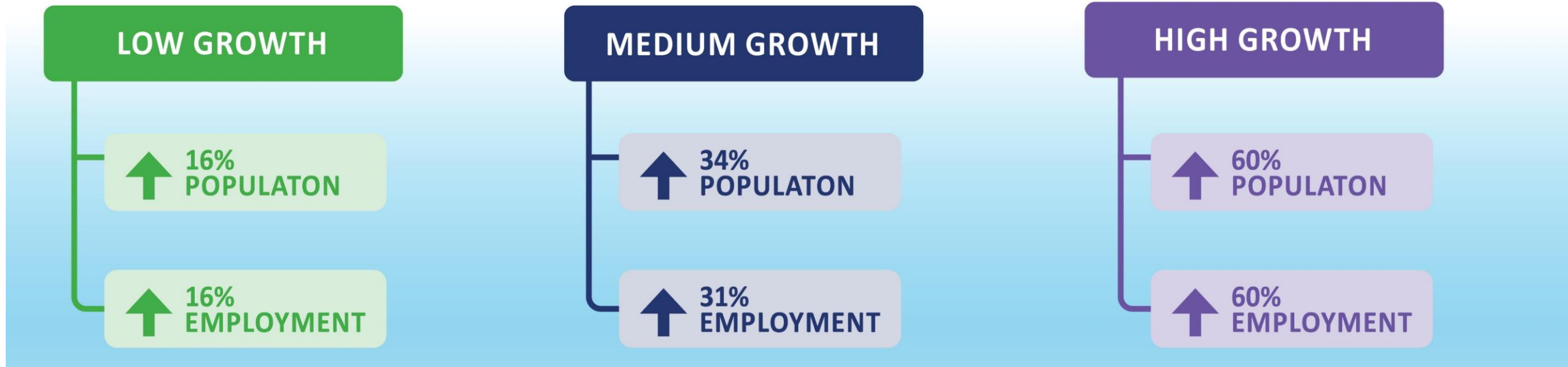
RVA Sinks
Low Growth

Through a consecutive series of man-made and natural disasters the region does not have time to recover fully, and due to a lack of affordable housing, safe areas and jobs, both residents and businesses begin to leave the region.

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Scenario Control Totals

LOW GROWTH

⬆ 16% POPULATON

⬆ 16% EMPLOYMENT

MEDIUM GROWTH

⬆ 34% POPULATON

⬆ 31% EMPLOYMENT

HIGH GROWTH

⬆ 60% POPULATON

⬆ 60% EMPLOYMENT

RVA Sinks

Baseline

Meh and Safe

Back to the Future

Ecotopia

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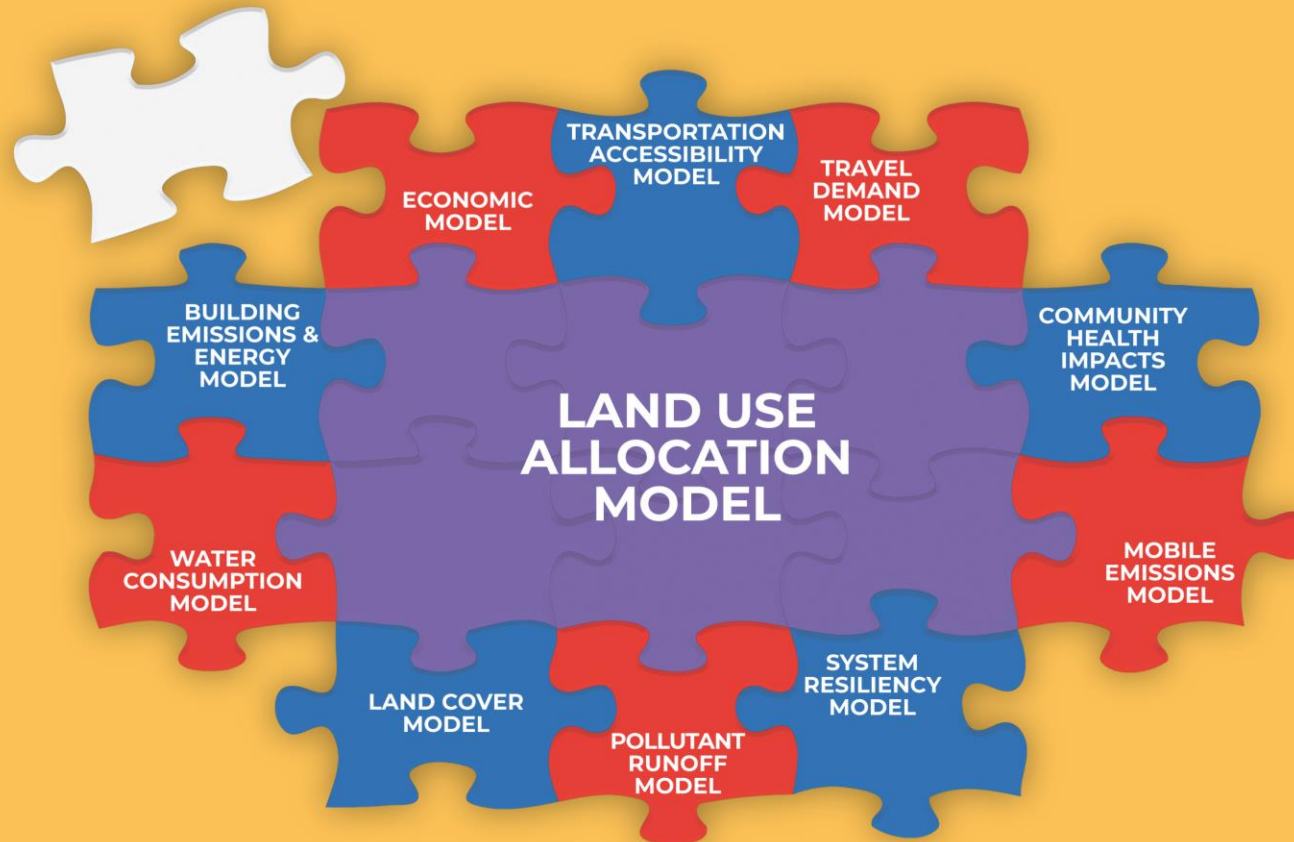
Scenario Evaluation - Indices

HEALTHY LIVING INDEX
Human health measures, food insecurity, transportation safety

SMART GROWTH INDEX
Total area (acres) in use for housing and jobs, households in high density land use

ENVIRONMENTAL PROTECTION INDEX
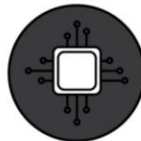Pollution measures, wildfire potential, water inundation potential

ACCESS TO MARKETS INDEX
Markets within 45 minutes away

BUSINESS IMPACTS INDEX
Regional productivity (Gross Regional Product)

TECHNOLOGY INDEX
Amount of vehicle miles traveled by CAV, changes in energy use and emissions

COST OF LIVING INDEX
Household cost, travel cost

ACCESSIBILITY FOR EQUITY EMPHASIS AREAS INDEX
Access to key destinations, access to employment

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Scenario Evaluation - Results

	ECOTOPIA	BACK TO THE FUTURE	MEH & SAFE	RVA SINKS
Healthy Living	146	-44	64	-115
Smart Growth	21	16	10	-2
Equitable Access	17	-14	12	3
Environmental Protection	17	-10	9	-20
Cost of Living	25	-7	12	-15
Business Impacts	94	-68	160	15
Access to Markets	16	-3	2	-11
Technology	27	-9	10	-25

All numbers are expressed in the percent difference from the Baseline Scenario

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Public Engagement Phase -1

Goal: Creating a public understanding of what exploratory scenario planning is and why it is useful.

Charrette 1
- Richmond region's **strengths** and **weaknesses** in the four aspects of community, economy, technology and resiliency.
- Richmond region's **opportunities** and **threats** in light of the drivers of change.
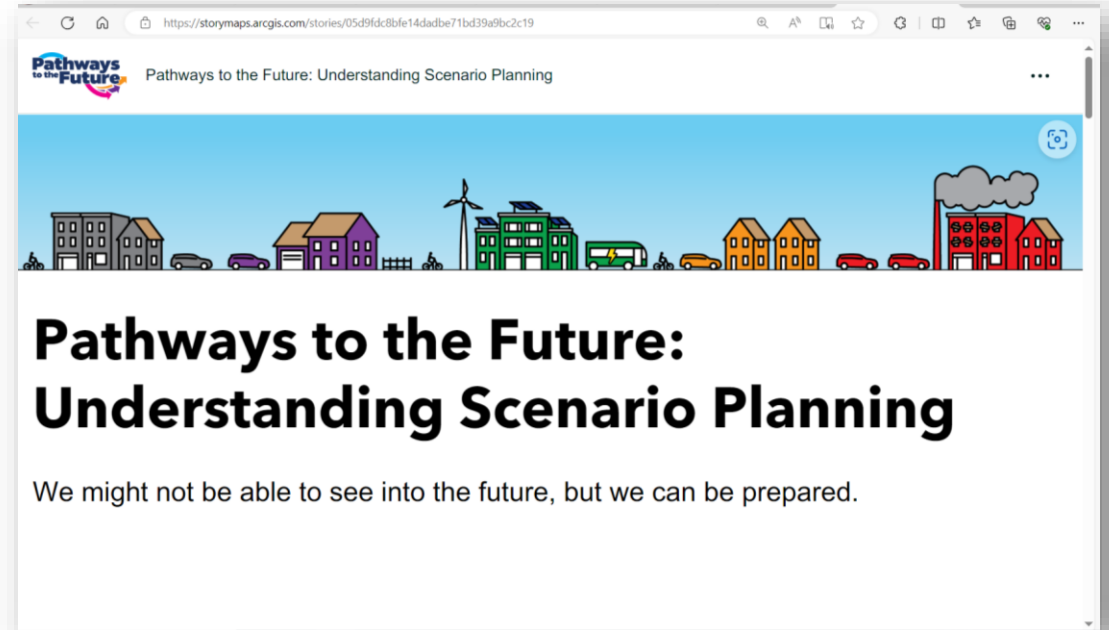- 50+ participants.
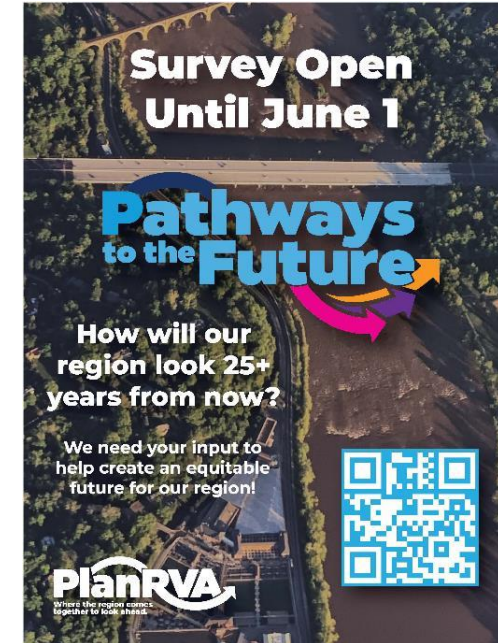
Public survey via MetroQuest
- Richmond region's future concerns and hopes
- 474 participants.

Public Engagement Phase -2

Goal: Understanding scenario results and implications

Pathways to the Future: Understanding Scenario Planning

We might not be able to see into the future, but we can be prepared.

Charette 2
- Discussed risks and opportunities of the scenarios.
- Discussed the use of scenario planning.
- 50+ participants.

Public Survey & Scenario Selector Exercise
- 569 site visitors.
- 392 reviewed scenario results.
- 126 completed scenario selector exercise.

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# Pathways to the Future Process – Purpose & Aspirations

- To stress test different futures (the different scenarios).

- To use the outcomes (scenario results, evaluation and implications) in ongoing planning for various strategic areas like transportation, community development or environment.

- To develop an analytical toolkit (the tools/models) which can be used in short-term and long-term predictive analysis at a small area (TAZ level), jurisdictional or regional level.
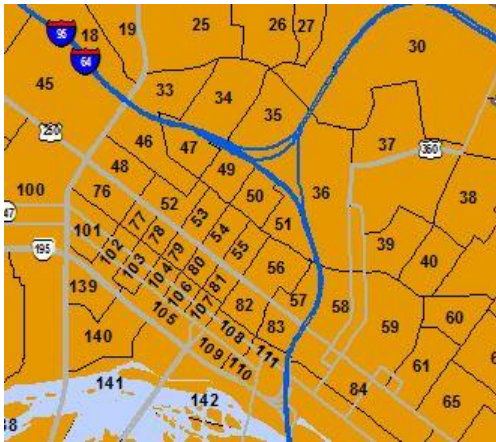
TAZ Level
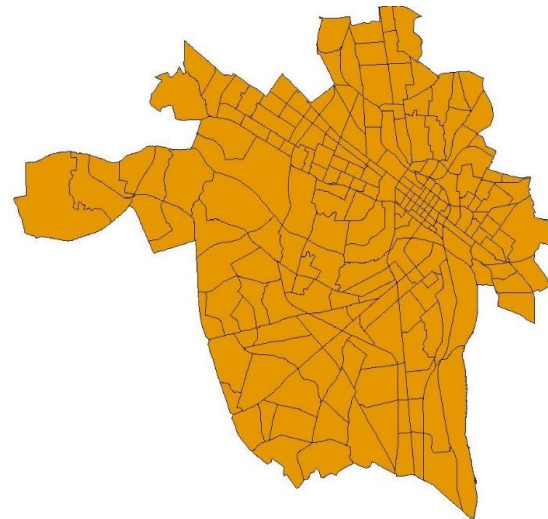
Jurisdictional Level
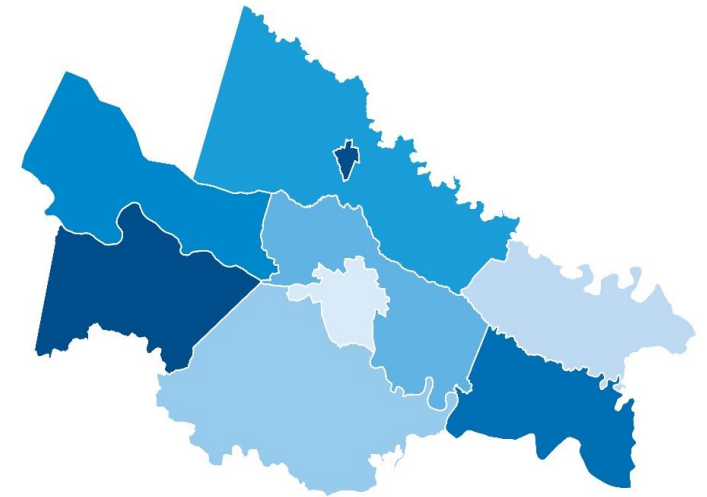
Regional Level

Action Requested

RESOLVED, that the Richmond Regional Transportation Planning Organization(RRTPO) Policy Board adopts ***Pathways to the Future*** – Scenario Planning Process, as presented.

FURTHER RESOLVED, that RRTPO Policy Board authorizes staff to use the tools and scenarios developed in the ***Pathways to the Future***, for any long-range regional transportation study/plan.

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Thank You!

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