

Sustainable, Resilient Transportation

6th Annual Northern Virginia Transportation Roundtable



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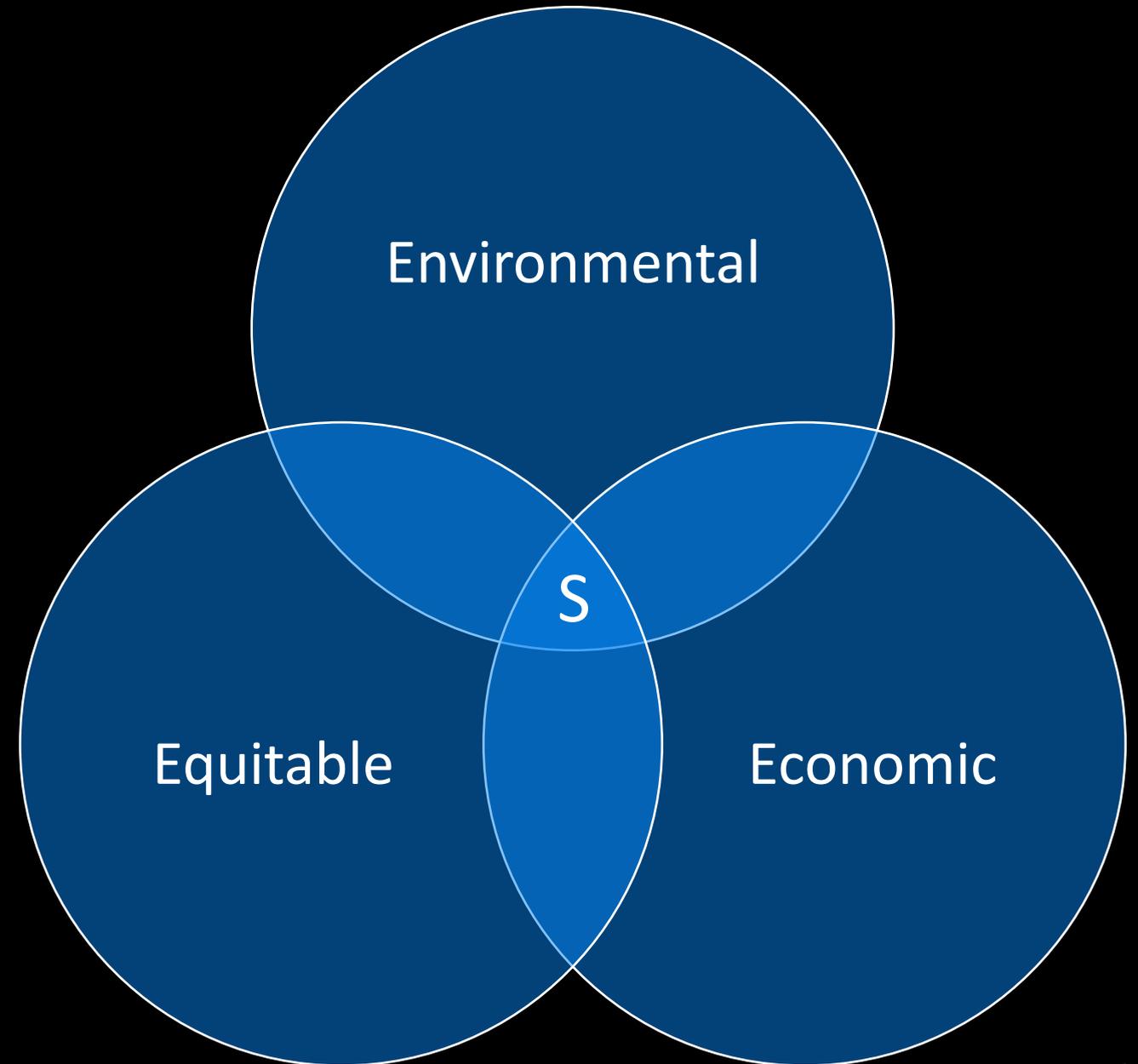
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What Is Sustainable Transportation?

Transportation that meets the needs of the *present* without compromising the needs of the *future*.

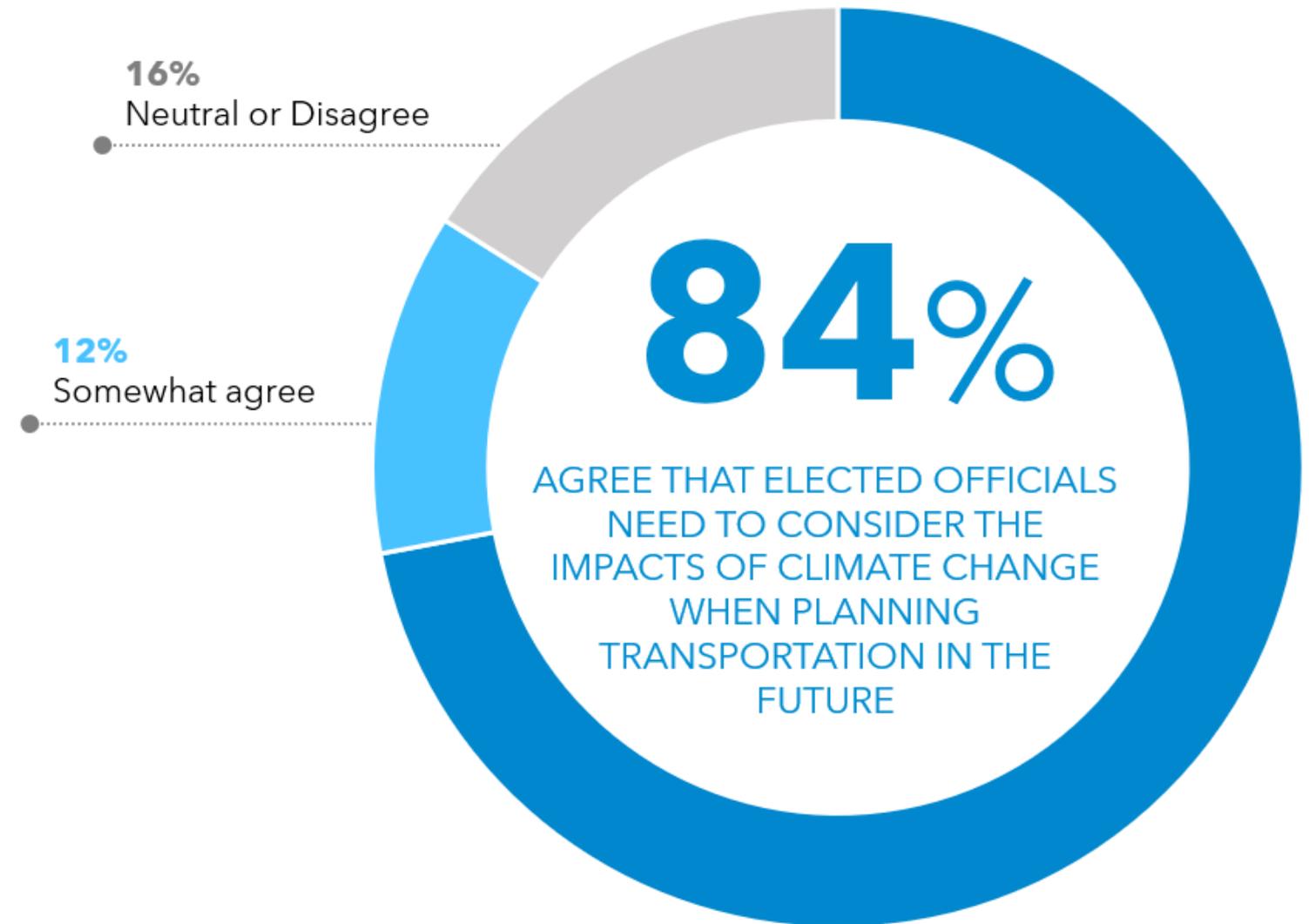
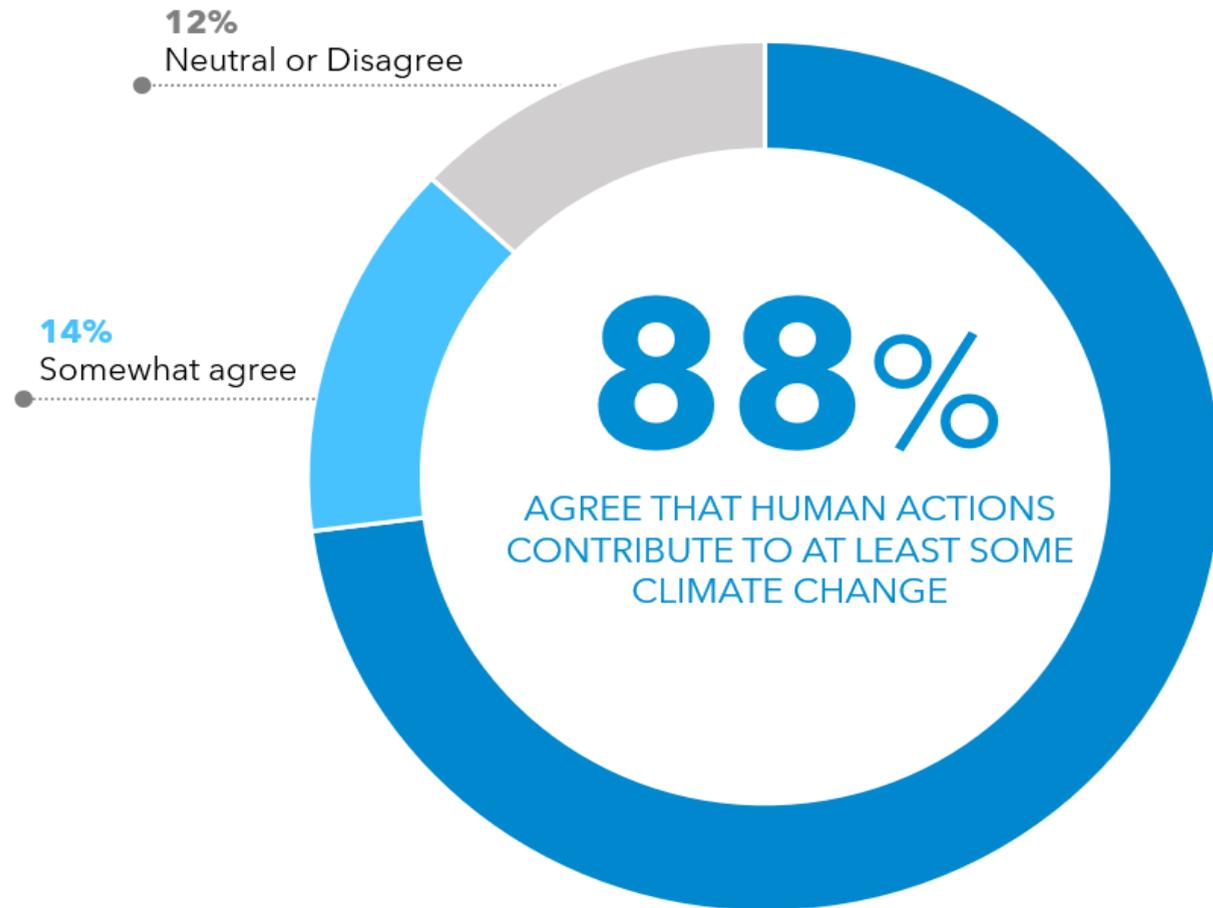


Sustainability lies at the intersection of its three “E” pillars:



Major Sustainability Challenge: Climate Change

“The climate is changing, causing more extreme weather, such as extended periods of high heat or extreme cold, more frequent and more intense storms, hurricanes and flooding. How much do you agree or disagree with the following statements?”



Responding to Climate Challenge

Climate Change

Mitigation

Reduces future risk.

By reducing the amount and speed of climate change by limiting GHG emissions or removing them from atmosphere.

Adaptation

Reduces consequences.

By preparing for and adjusting to changing climate conditions.

Resiliency

Anticipate, prepare for, and adapt to changing conditions
and
withstand, respond to, and recover rapidly from disruptions.

Resilience & Adaptation Goals

Protect and Preserve:

- Transportation infrastructure
- Public investments
- Mobility
- Economy
- Regional prosperity
- Wellbeing, health, and safety
- Property



From Natural Hazards:

- **Stormwater**
 - Flash flooding
 - Riverine flooding
 - Tidal, coastal flooding
- Extreme heat
- Drought
- Lightning and windstorms
- Extreme winter weather

Resilience & Adaptation: All Hands on Deck

Policy

- Strategic direction
- Tree canopy and open space preservation policies
- Green streets policies
- Regulations and zoning

Planning

- Climate vulnerability and risk assessments
- Site selection
- Project screening and prioritization
- Community input

Coordination

- Joint funding of mutually beneficial strategies
- Peer-to-peer learning
- Coordinate with stormwater managers, land use agencies, and utilities

Design/Engineering

- Erosion control, site stabilization
- Stormwater management BMPs
- Green infrastructure and trees
- Elevate infrastructure
- Heat/cold tolerant design

Maintenance

- Retrofits to existing infrastructure
- Tree planting, GI maintenance
- Tracking of impact data
- Culvert cleaning

Operations

- Flood detection, early warning
- Real time messaging
- Emergency response, evacuations
- Backup power: batteries, solar
- Detours, contingency plans

Green Infrastructure & Ecosystem Services

Manage stormwater where it falls.

- Large scale: wetlands, open space, agricultural land, forests, etc.
- Systemic site-level: bioswales, rain gardens, permeable surfaces, rainwater harvesting
- Preserve and maintain mature trees
- Plant new trees
- Incentives and financing for GI on private land
- Green street policies and design

Co-Benefits of GI:

- Safety: traffic calming, pedestrian buffers, soil stabilization, erosion reduction
- Health: local air quality, reduces urban heat island, improves mental health
- Economic: Raises property values
- Ecological: Preserves habitat

Adaptation/Resiliency AND Mitigation



Thank you!

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