

PLANNING FOR TRANSPORTATION DISRUPTION

Craig Raborn, Planning Manager
Regional Transportation Commission of Southern Nevada



WHO WE ARE



Transit



**Roadway
Planning &
Funding**



**Traffic
Management
Systems**



**Southern
Nevada
Strong**

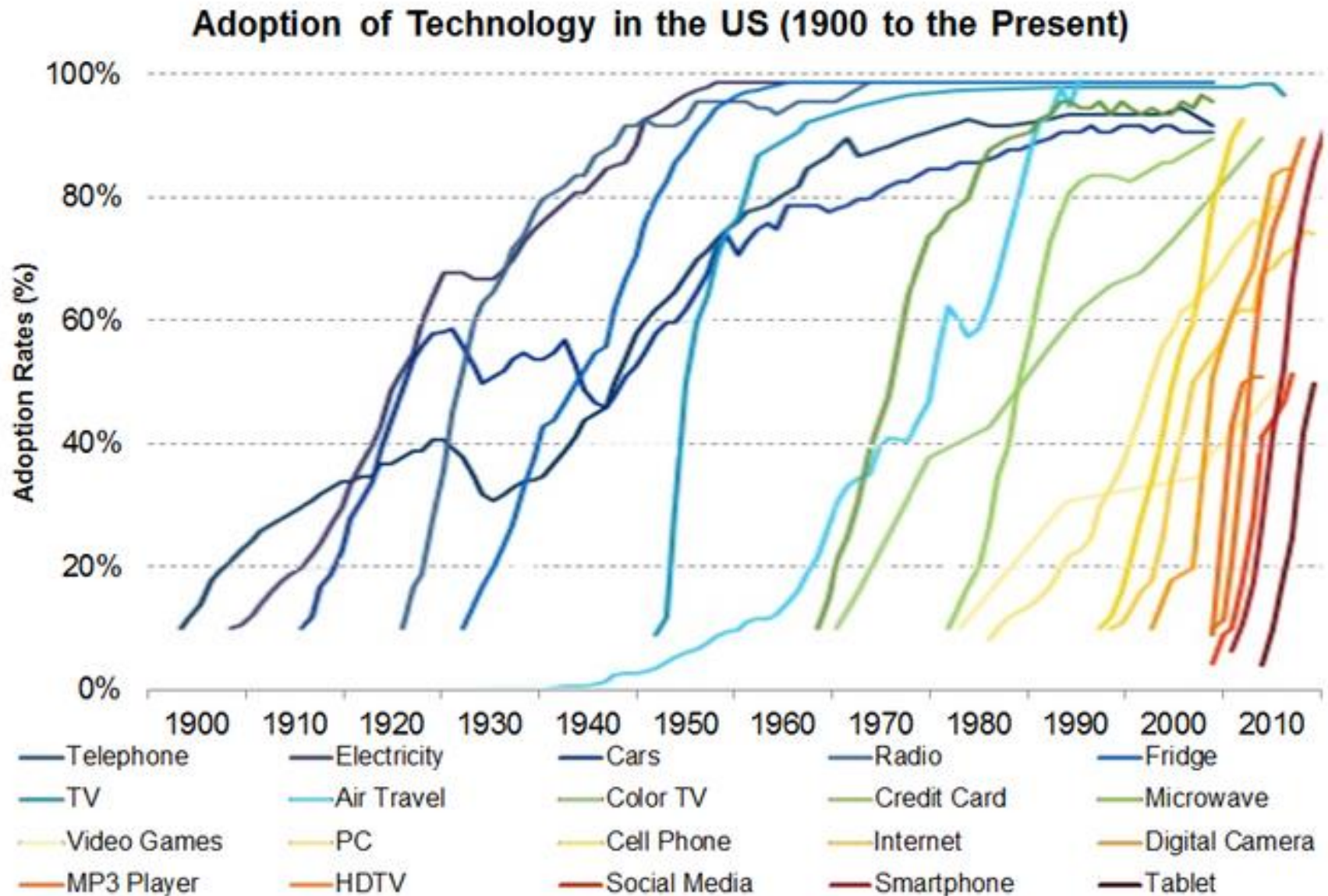
EMERGING TECHNOLOGIES QUESTIONS

- Old tech vs. New tech?
- How soon?
- Primary impacts on transportation?
- Secondary impacts?
- Impacts on consumers?
- Environmental justice?
- Government spending?
- Emergency responsiveness?
- Utopia or Dystopia?

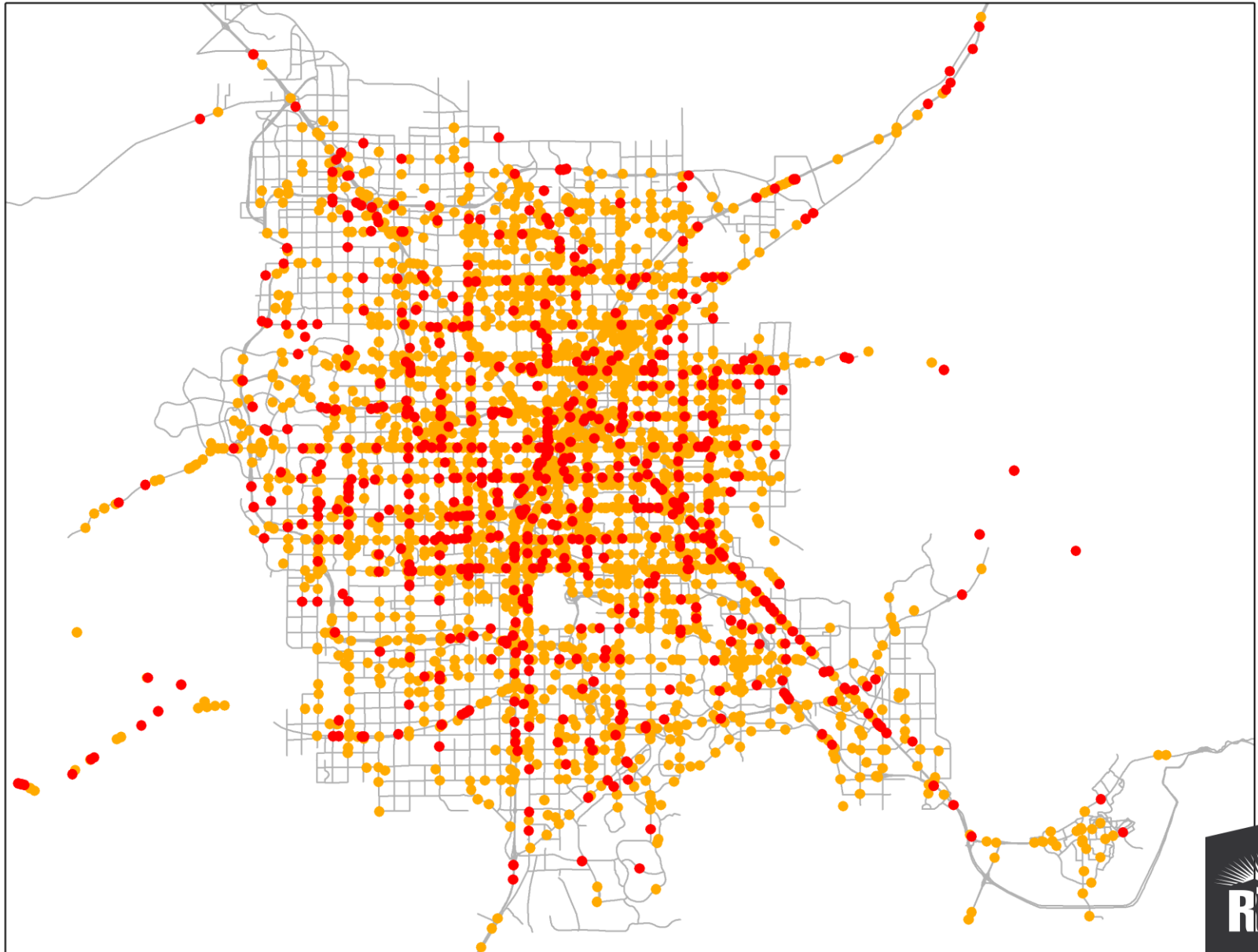
**Reasonable and knowledgeable people
reach different conclusions about impacts**



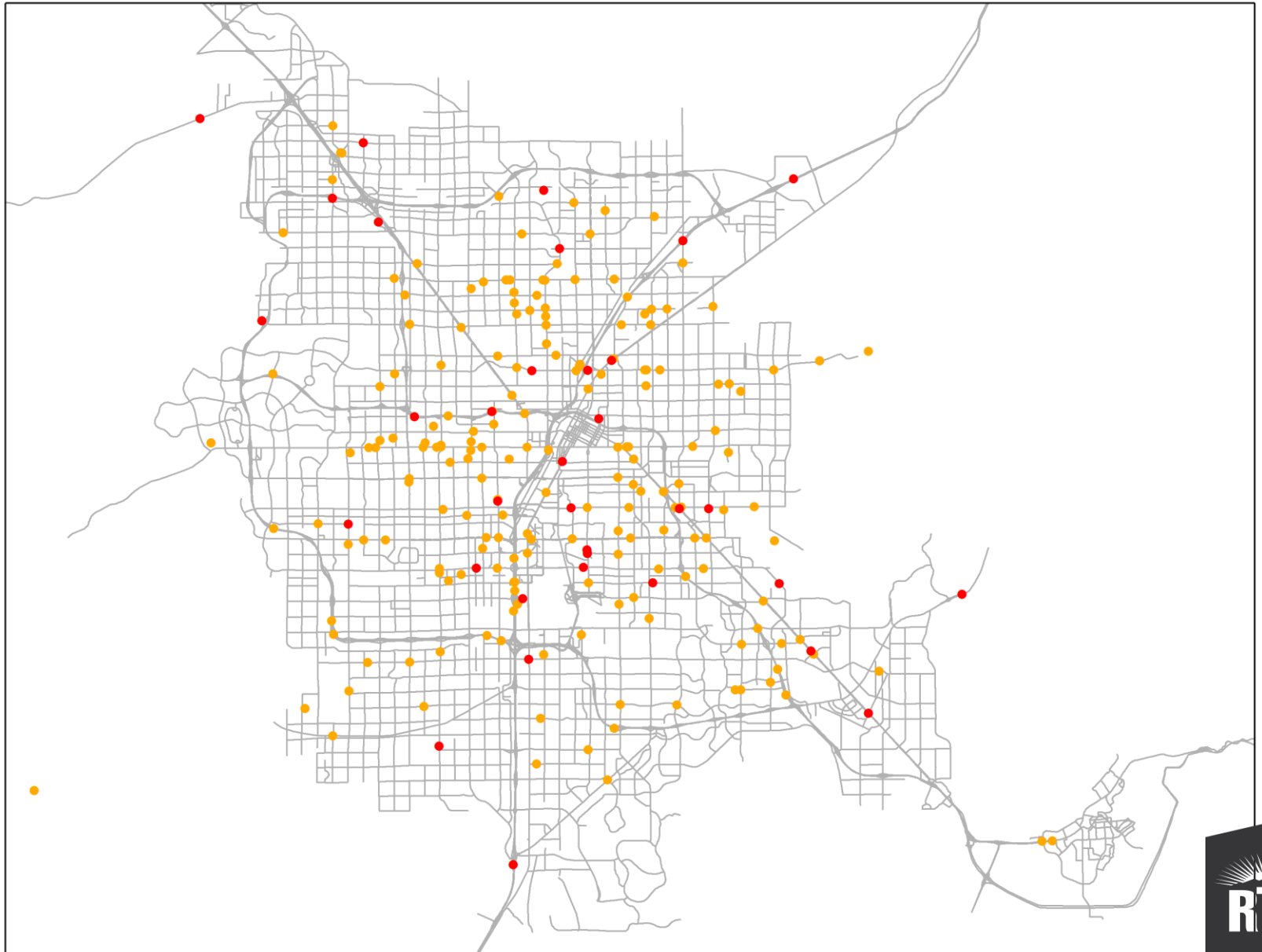
ACCELERATION OF TECHNOLOGY ADOPTION



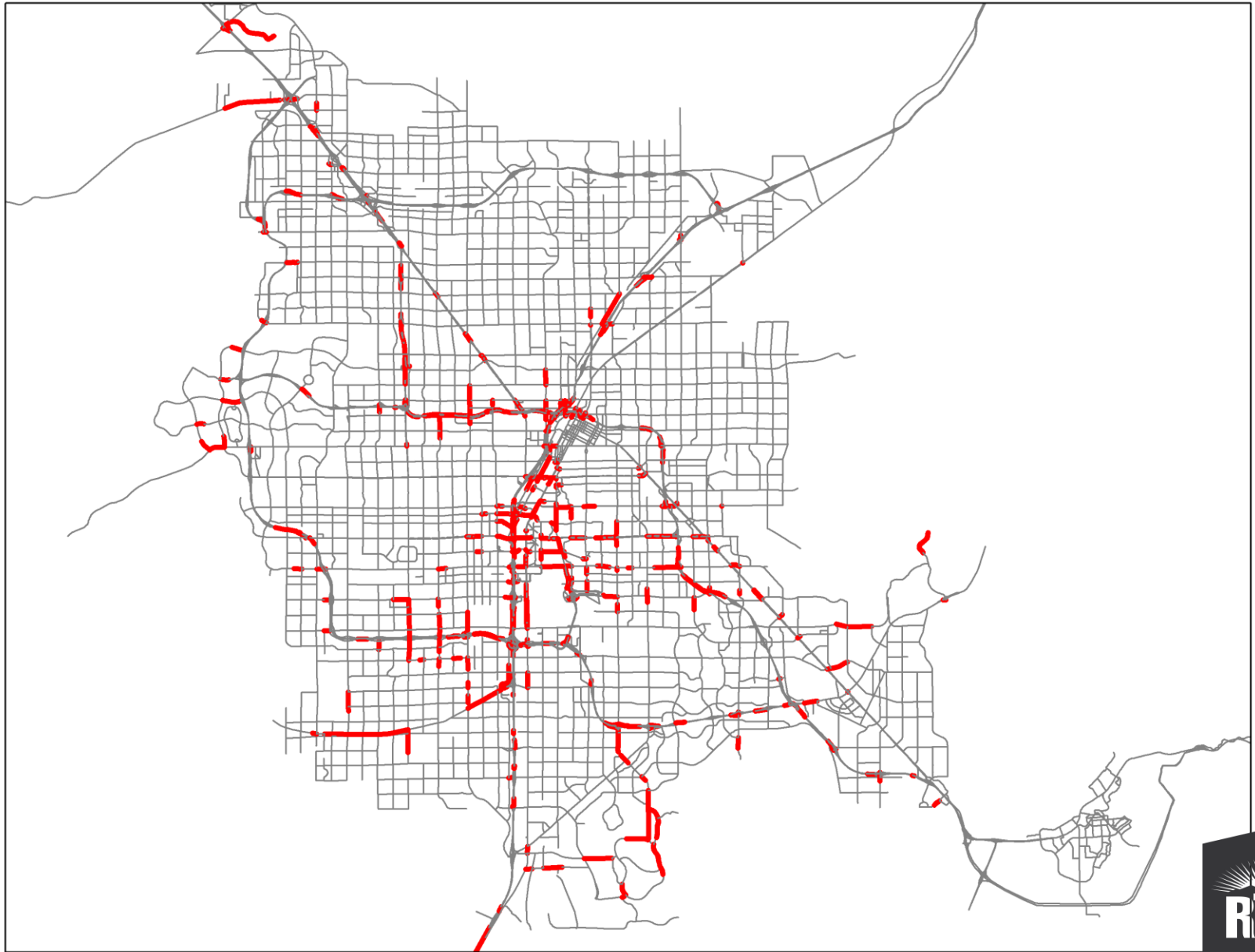
5-YEAR CRASHES *WITHOUT* SMART MOBILITY



5-YEAR CRASHES *WITH* SMART MOBILITY



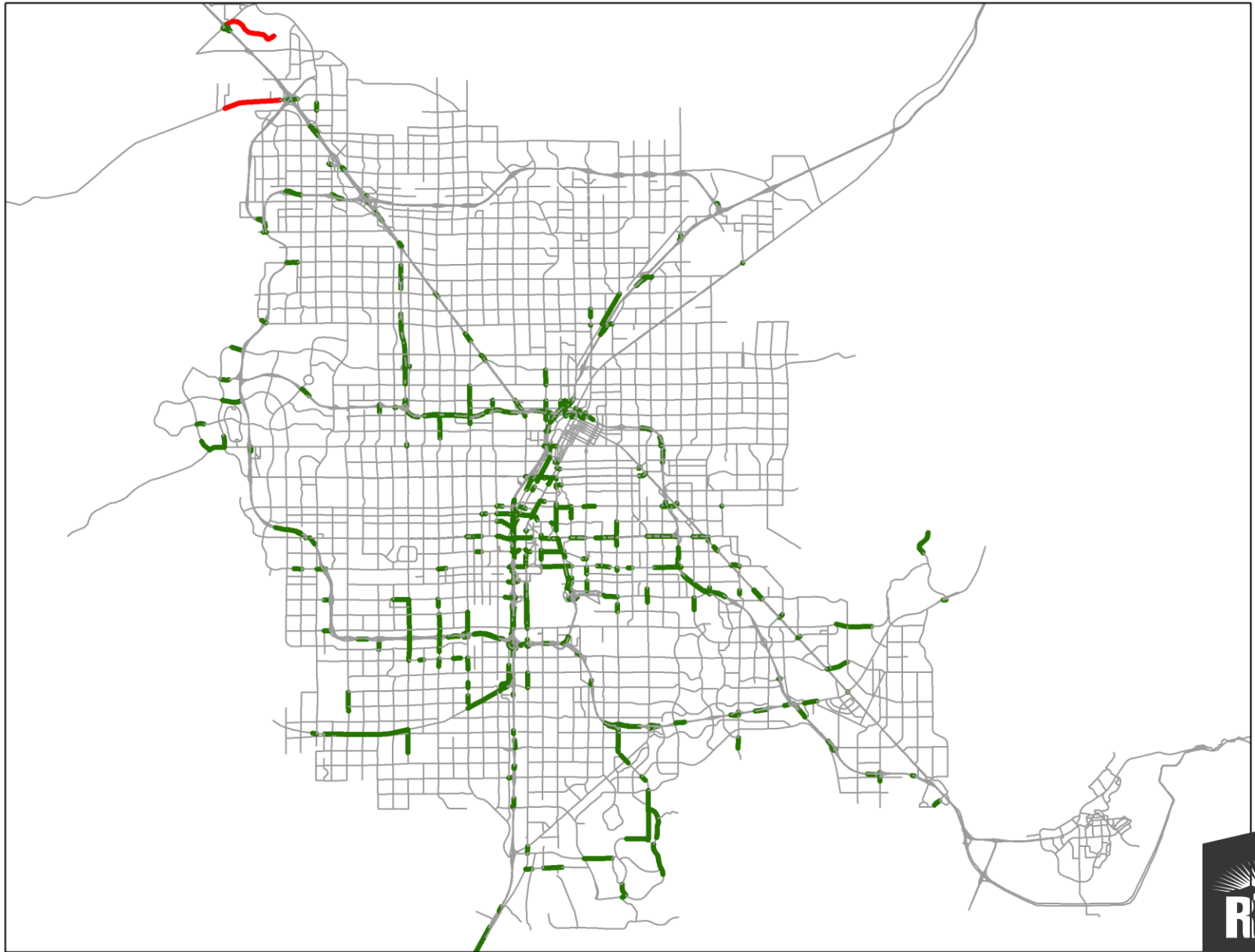
2040 CONGESTION *WITHOUT* SMART MOBILITY



2040 CONGESTION *WITH* SMART MOBILITY



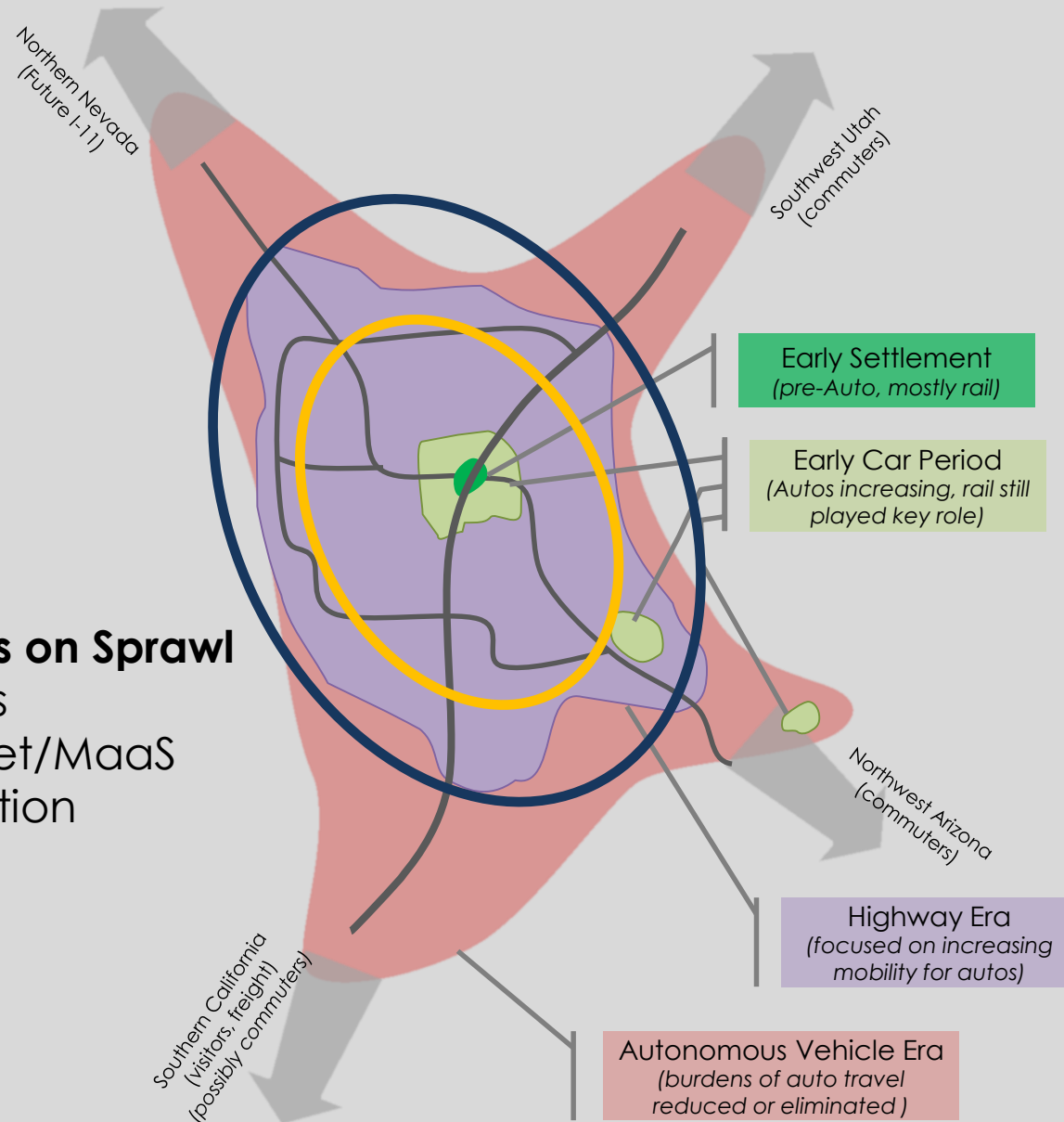
2040 CONGESTION *WITH* SMART MOBILITY



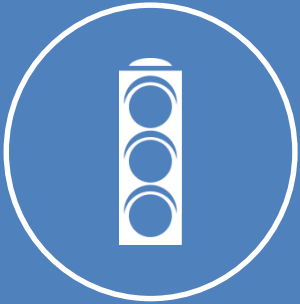
TECH-INDUCED IMPACTS ON GROWTH

Potential Limits on Sprawl

- Pricing Tiers
- Shared Fleet/MaaS
- True Disruption

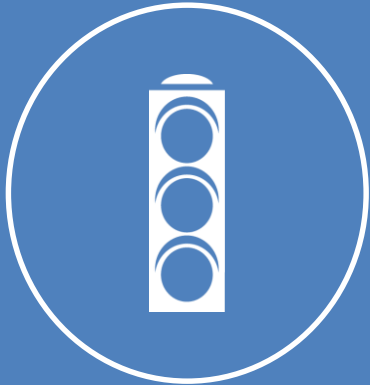


HOW TO ADDRESS EMERGING TECHNOLOGIES?



- Possible future impacts
- Technology adoption pathways
- Emerging technology unknowns
- Decisions RTC will need to make
- Informing/engaging the public
- Implementing Studies and Planning
 - Five main studies/projects

AGENCY-WIDE PLANNING FOR EMERGING TECH



Mobility Roadmap

~5 year planning horizon

Primary Topic: ITS

Secondary topics:

- Data management
- Industry partnerships

Internet of Things/Connectivity

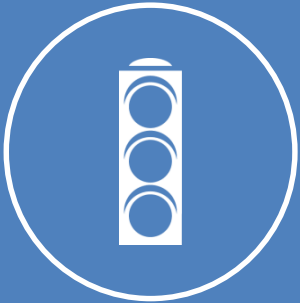
1-10 year planning horizon

Primary Topic: Architecture

Secondary topics:

- Technology deployment
- Data sharing

AGENCY-WIDE PLANNING FOR EMERGING TECH



Impacts of TNCs/Tech

~5 year planning horizon

Primary Topic: TNCs

Secondary topics:

- Operations impacts
- Demand & Fiscal impacts

On Board Transit Plan

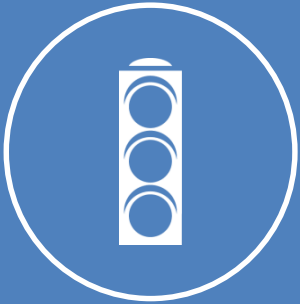
1-20 year planning horizon

Primary Topic: Transit Tech

Secondary topics:

- Opportunities & Threats
- Reassessment “triggers”

AGENCY-WIDE PLANNING FOR EMERGING TECH



Access2040 RTP

20 year planning horizon

Primary Topic: Infrastructure

Secondary topics:

- Established tech-related strategy
- Early action items

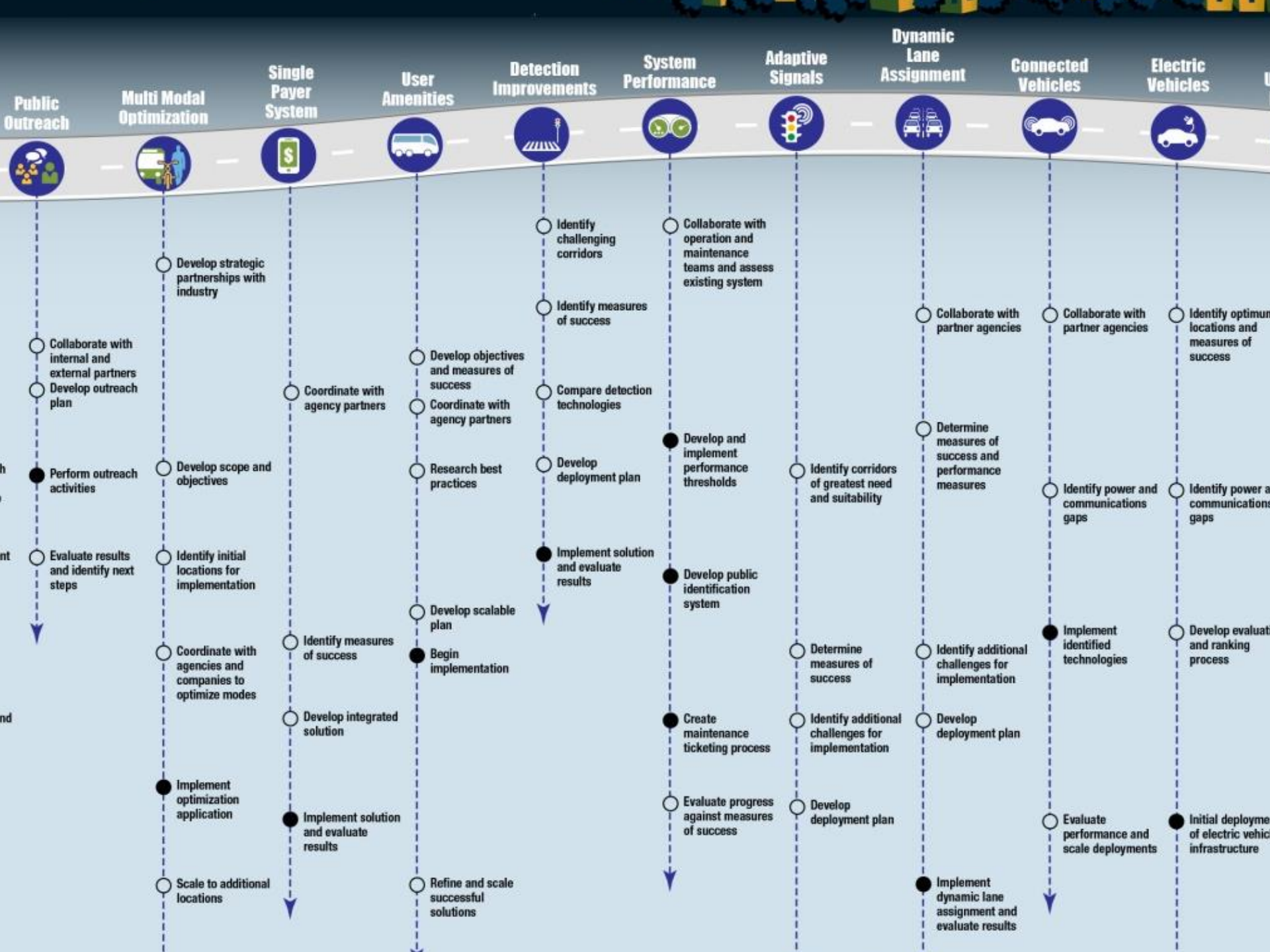
Emerging Technology Plan

25+ year planning horizon

Primary Topic: MPO Impacts

Secondary topics:

- Transitions & decision tree
- Scenarios
- Initial stakeholder decisions



ACCESS2040 RTP TECHNOLOGY STRATEGY

SECONDARY STRATEGY: Use Innovative Planning to Address Emerging Technologies & Trends

Emerging technologies and their growing use will disrupt traditional transportation planning practices. To respond proactively, the RTC will develop innovative planning approaches that change how priorities are identified and how decisions are made. These new planning methods – which may take years to identify – will allow the RTC to develop effective, predictive, and timely responses to these disruptions.

Potential impacts are numerous. Engineering research indicates that connected and autonomous vehicles could nearly double effective road capacity, virtually eliminating traffic congestion and challenging the need for more capacity. At a certain threshold across the entire fleet, self-driving cars are expected to substantially reduce overall transportation crashes and fatalities. Transportation Network Companies and autonomous vehicles could drive down public transit operating costs and lead to changes in how transit is provided. RTC analysis of available data already shows that TNC ridership as a share of passengers at McCarran International Airport has doubled over a 6-month period. New ways of travel and vehicle ownership could change land

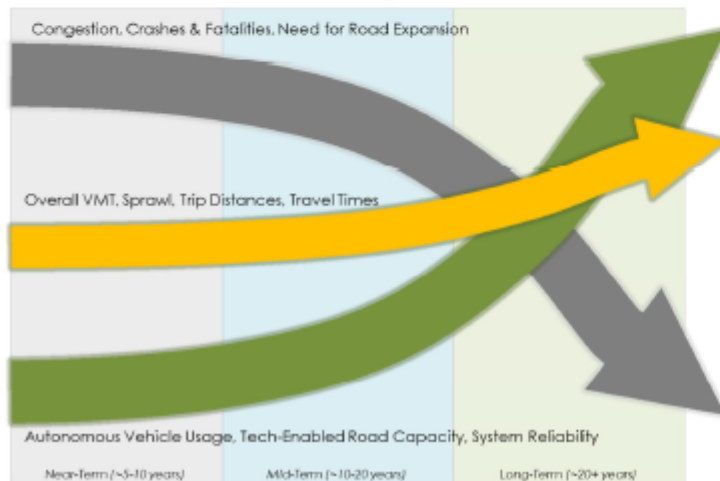
use patterns, transportation revenue, and public transit preferences. With the actual impacts still unknown, the appropriate actions by the RTC (to avoid inefficient uses of resources for projects that may become unnecessary, avoid putting drivers, pedestrians, and bicyclists at risk, and accommodate these new trends and technologies) are difficult to determine until these technologies are more extensively adopted. To make smart decisions, some emerging planning-related questions may become:

- What infrastructure changes may be needed?
- When (or if) it will be appropriate to start changing how what types of infrastructure or capacity are provided?
- How will these trends influence how and how much light and household goods

Issues!

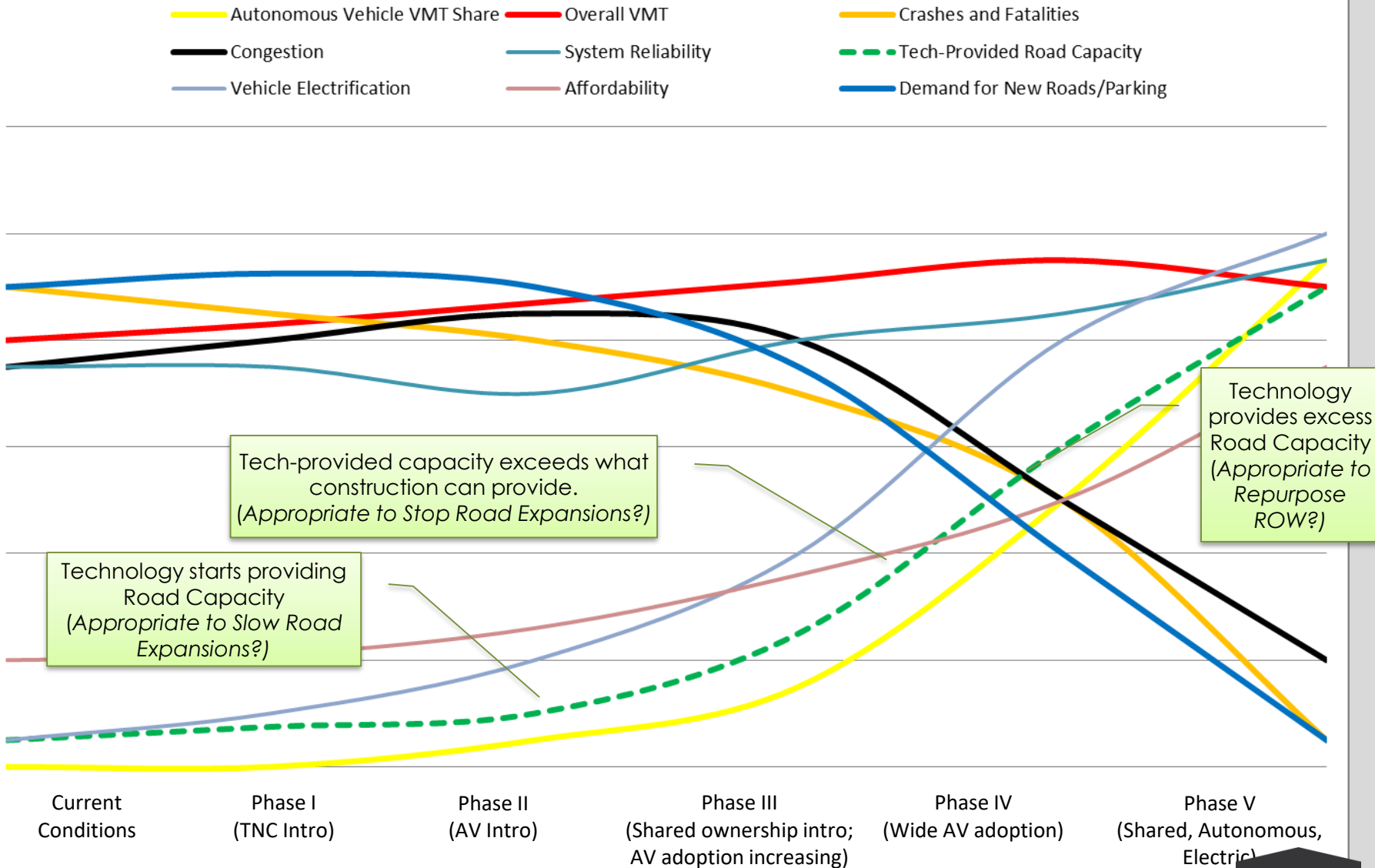
Actions!

Potential Technology-Related Trends

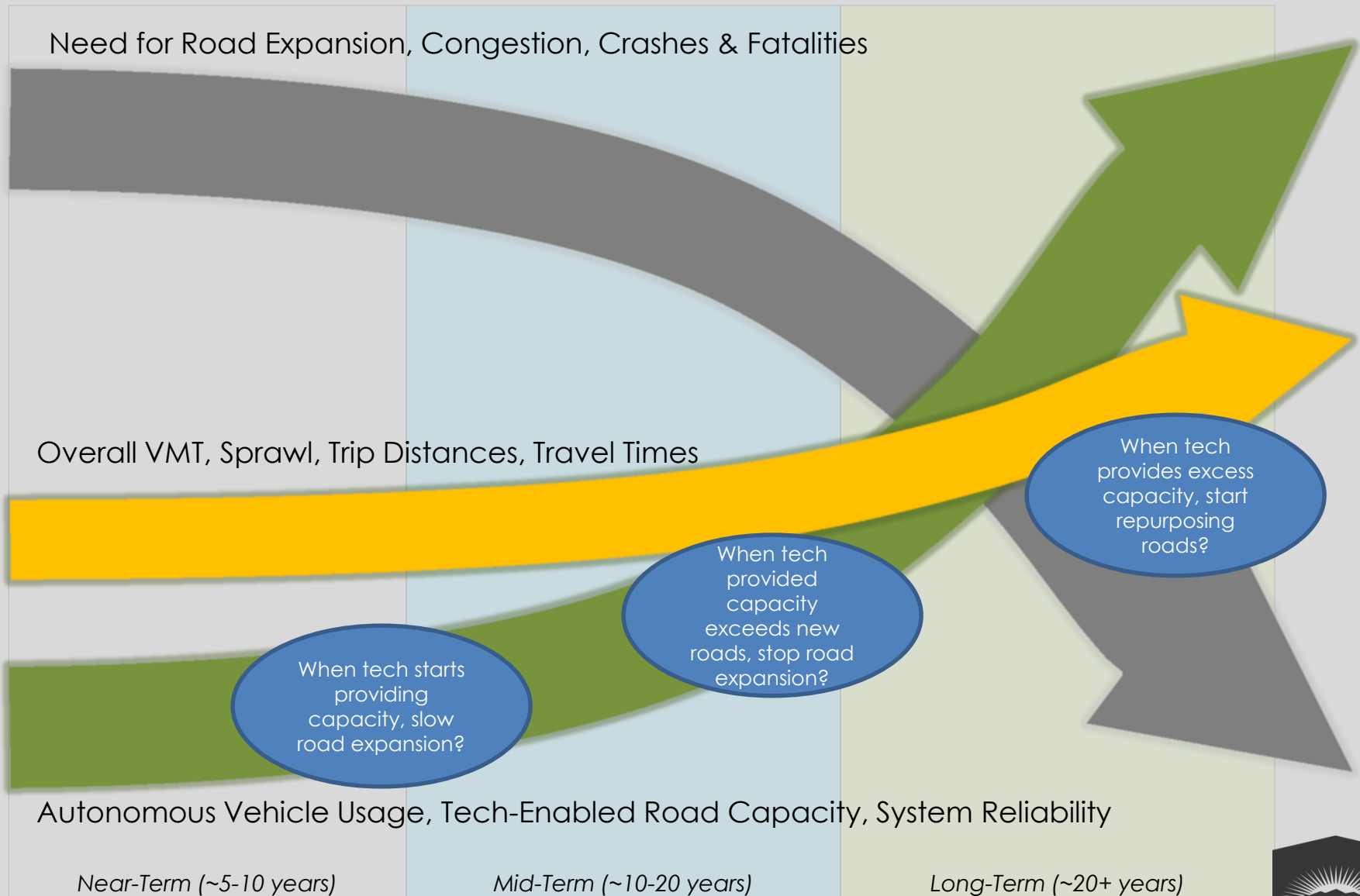


Technology-Related Planning Needs	RTC Action
Incorporate emerging technologies into goals	Included in Access 2040
Establish policies & plans with consideration for the future	Initiated in Access 2040
Develop scenario model with Emerging Technologies capabilities	Model development underway (2017)
Assess high-capacity transit impacts and requirements	High Capacity Transit Plan (2017-2018)
Evaluate road capacity needs	Emerging Technologies Planning Study (2017)
Forecast financial implications	Emerging Technologies Planning Study (2017)
Identify trigger points for longer-term actions	Emerging Technologies Planning Study (2017)
Evaluate and test use of AV paratransit vehicles	1-5 years
Update roadway policies and infrastructure to leverage the VMT impact	1-5 years
Develop new predictive models for pavement maintenance	1-5 years
Assess impacts on low-ridership transit routes	1-5 years
Provide analysis of transportation and land use impacts to support stakeholders	1-5 years

POTENTIAL MPO-RELATED IMPACTS



POTENTIAL TECHNOLOGY-RELATED TRENDS



CHANGES TO CURRENT PLANNING MEASURES?

Current Planning Measure	New Planning Measures	Description
Vehicle Miles Traveled	Occupied Miles Traveled (OMT)	Miles traveled by vehicles that are occupied by people (current VMT description)
	Service Miles Traveled (SMT)	Miles traveled by unoccupied vehicles to conduct service tasks or errands not requiring a human passenger (will initially be very small proportion)
	Repositioning Miles Traveled (RMT)	Miles traveled by unoccupied vehicles to reposition a shared vehicle for another occupant, or to wait for the vehicle's owner to summon it (will initially grow as AVs are adopted, but decrease as shared ownership or MAAS increases)
	Total VMT = OMT + SMT + RMT	Total Vehicle Miles Traveled (TVMT) is the sum of occupied vehicle miles traveled, service vehicle miles traveled, and repositioning miles traveled.
Person Miles Traveled	Person Miles Traveled	Miles traveled by people (will initially correspond closely to total VMT, and will vary from OMT based on vehicle occupancy rates)

Other changes may include:

- Developing measures related to **time use** rather than trip distances
- New measures of **transportation productivity** incorporating commute time productivity
- Closer tracking of **transportation-related costs** (and how they influence people's travel activity and vehicle trips)
- Travel diary surveys replaced by **vehicle use inventories** and reports

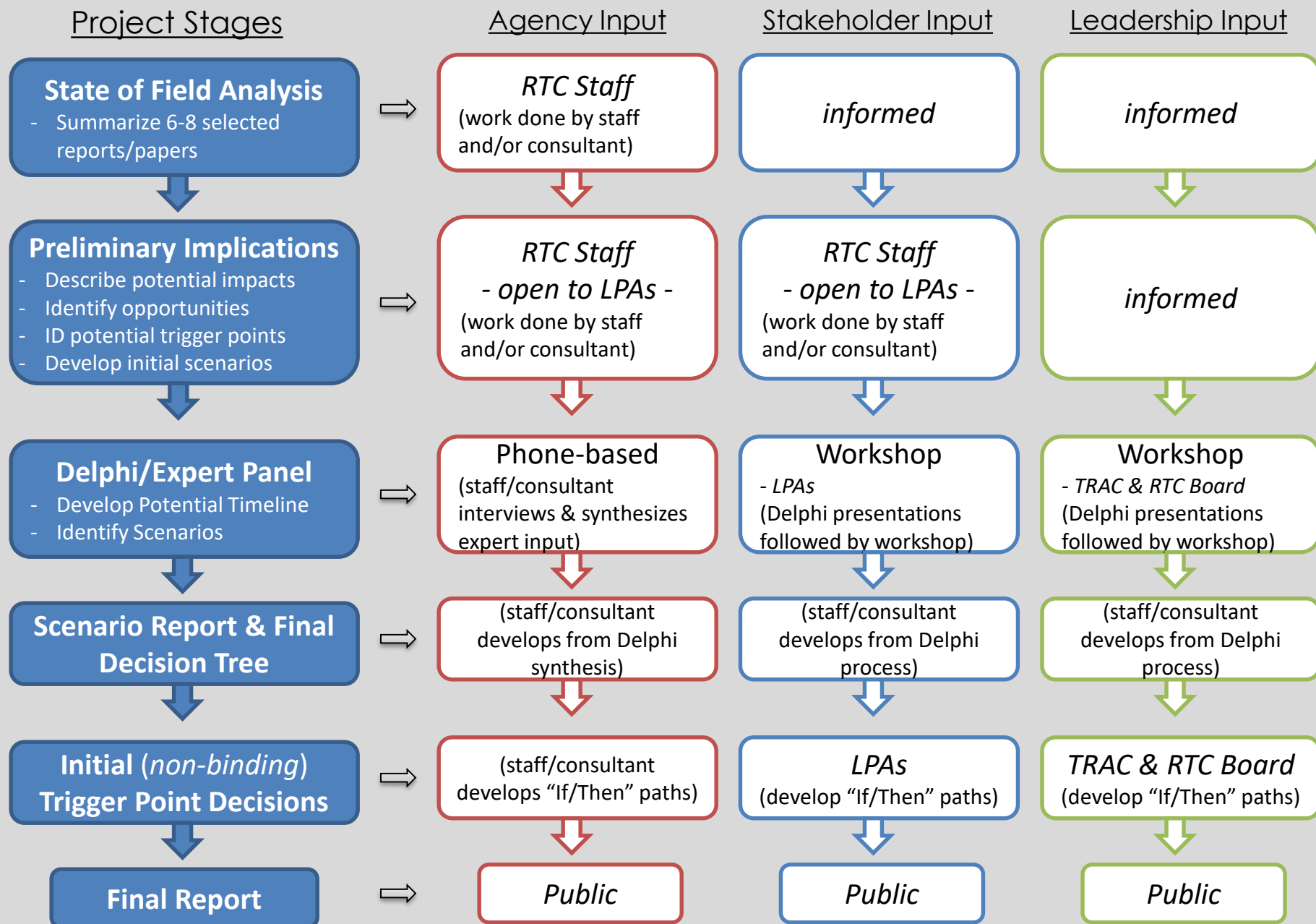
EMERGING TECHNOLOGIES DECISIONS

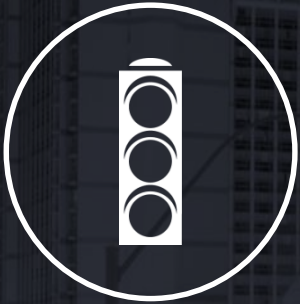
- Support a technology?
- When to make changes?
- Which – if any – downsides to accept?
- Should we engage to avoid negative impacts?
- Top priorities?
 - Congestion?
 - Environmental justice?
 - Taxes/Spending?
- What outcomes do we want?

Actively shape the future or respond to trends as they happen?



ESTABLISH A STRONG MANDATE





RTC

RTCSNV.COM

Craig Raborn
rabornc@rtcsonv.com
702/676-1715