

Emerging Transportation Technology Strategic Plan for the St. Louis Region

■ Project Summary

■ June 28, 2017



Prepared for:
East West Gateway
Council of Governments

Background

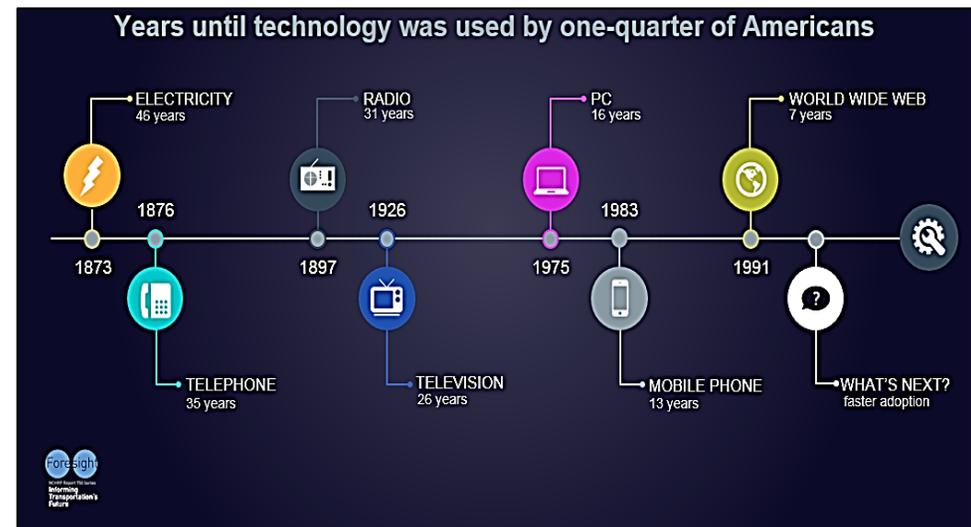
Motivation

Process to Create the Strategic Plan

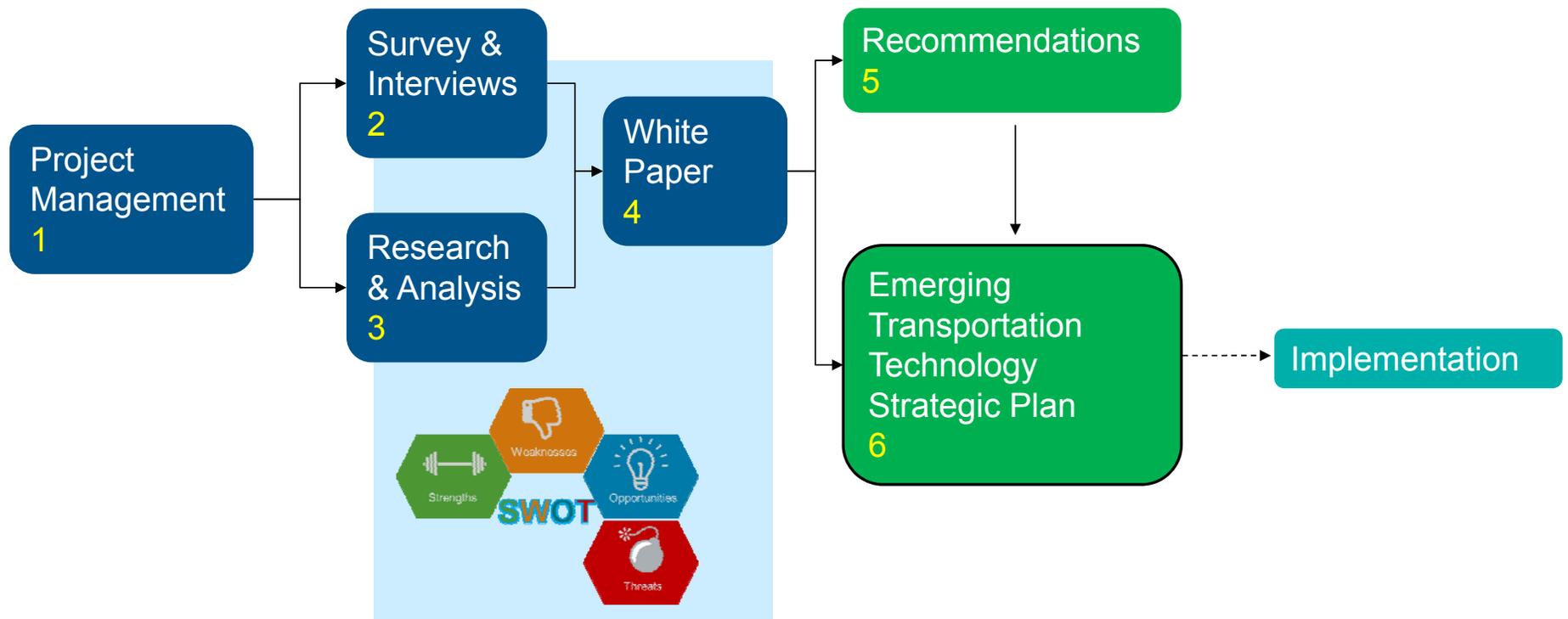


Motivation

- New technologies may fundamentally alter the way people travel in the future, with potentially dramatic impacts on safety, mobility, and system performance over the next 20-30 years.
 - The pace of technology adoption is quickening.
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- The St. Louis Region needs to better prepare for the future in its regional transportation planning and investment decision-making.



Process to Create the Strategic Plan



Components of the Strategic Plan

Transportation Technology Trends

Strategic Plan Goals

Strengths-Weaknesses-Opportunities-Threats Analysis

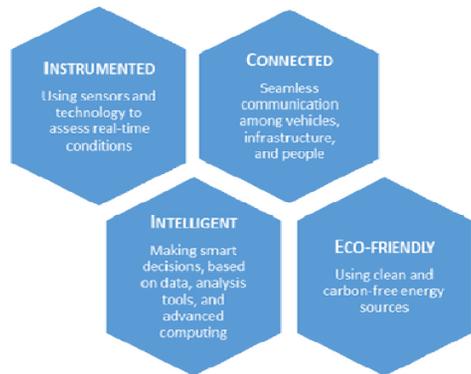
Policy Areas of Focus

Recommendations: Integration in EWG's Planning Activities

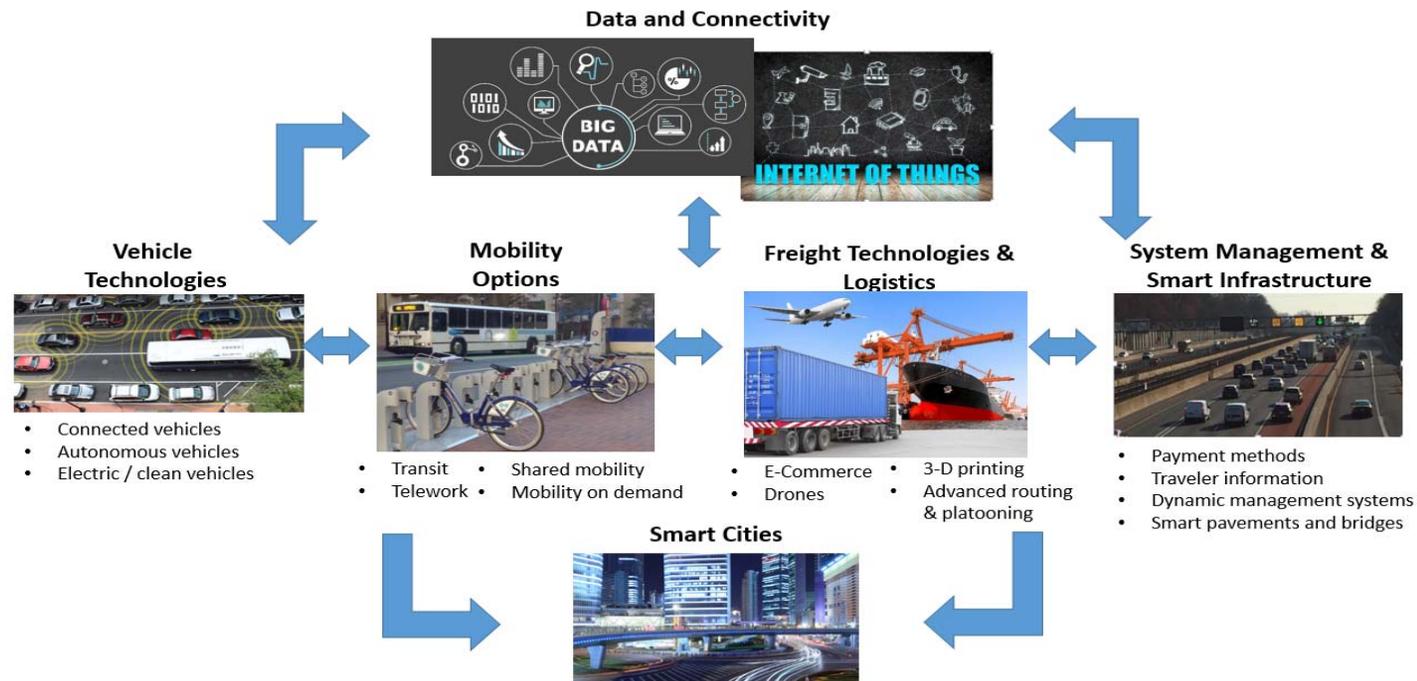


Emerging Transportation Technology Trends

Technology trends span several major areas, and overlap and synergize in powerful ways.



Synergies across technology trends



Strategic Goals

Emerging technologies

Realization of the region's vision

Strategic Plan Goals

1. Harness positive impacts from technology
2. Allay potential negative impacts from technology
3. Support the region to be a laboratory for innovation



Recommendations

- Policy Areas of Focus
- Implementation Strategies
 - Regional Capacity Building
 - Integration in the Planning Process
 - Prepare for federal grants and develop pilot concepts

EWG-COG's Ten Guiding Principles



Implications of Emerging Transportation Technologies

The expected impacts of emerging technologies on the Ten Guiding Principles are mixed. Many are positive, but several have high levels of uncertainty. Policy decisions may influence many of these impacts.



Strengths-Weaknesses-Opportunities-Threats (SWOT) Analysis

	To Leverage	To Overcome
Internal	<p>Strengths</p> <ul style="list-style-type: none"> • Multi-modal transportation system • Major freight hub • Mid-size region, potentially well geared toward pilot testing • Intelligent transportation systems (ITS) infrastructure • Interest from stakeholders 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Fragmented and complex government structure, across two states and multiple local governments • Population decline in urban core • Social barriers, including perceptions of inner-city crime • Sprawling region with low density and heavily car-centric travel patterns • Funding constraints 
External	<p>Opportunities</p> <ul style="list-style-type: none"> • Potential positive technology impacts: <ul style="list-style-type: none"> - Significant safety improvements from new vehicle technologies and automation - Reduced travel costs - Increased travel choices - Improved access, particularly for those currently with limited mobility and those without access to private vehicles - Improved system reliability - Possible transit service improvements and reduction in cost - Optimized supply chain, yielding economic benefits - Quality job development in emerging technology fields - Air pollutant and greenhouse gas reductions from green/low carbon technologies - Potential for clean energy generation • Federal grant programs • Private sector funding 	<p>Threats</p> <ul style="list-style-type: none"> • Potential adverse technology impacts: <ul style="list-style-type: none"> - Reduced funds from traditional transportation funding sources - Increases in vehicle travel and congestion - Increases in sprawl / decentralized development patterns - New options draw people off of public transit - Gaps in access by those who cannot afford - Cyber-security threats associated with new technology - Reduction in employment, as jobs related to driving could be displaced 

Impacts to Investment Needs and Priorities

Reduced needs for new highway infrastructure - More efficient use of existing infrastructure, boosting effective capacity

Impacts on public transportation services - Opportunity to restructure public transportation services with automation, smaller vehicles running at higher frequencies

Impacts on ITS infrastructure - Shifts from radio advisories and dynamic message signs to direct dissemination of information to vehicles

Changing needs associated with law enforcement - Less need for enforcement of issues such as red light running, speeding, impaired or distracted driving

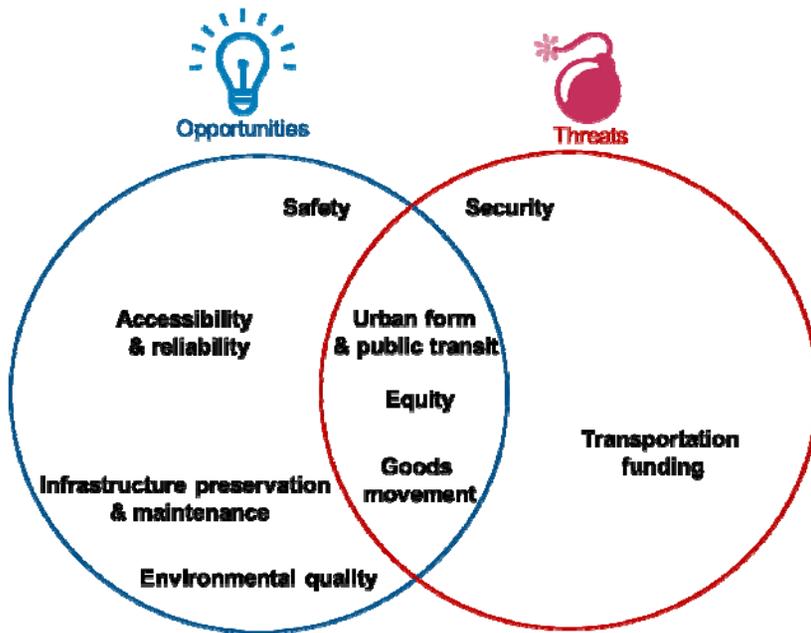
Reduced parking needs - Reduced needs for on-street and off-street parking

Workforce development needs – Potential reduction in jobs associated with driving; needs for more tech-savvy workforce or redeployment to customer service

Transportation funding – Reduced revenues through traditional transportation fuel taxes



Policy Areas of Focus in Regional Planning and Investment Decision Making



Safety – Advancing deployment of safety innovations

Security – Ensuring data privacy and cybersecurity

Urban Form and Public Transit – Fostering policies that address the threats of increased decentralization due to technology and harness the advantages to support a vibrant central core and the success of public transportation

Reliability – Using technology to improve access to real-time traveler information and optimize system reliability

Equity – Using technology to enhance connections for underserved communities and ensuring that technology-based services don't bypass disadvantaged communities

Freight and Logistics (Goods Movement) – Using technology to enhance efficient goods movement and spur economic development

Infrastructure Preservation and Maintenance – Applying technology to improve the monitoring of infrastructure conditions and strengthen transportation asset management

Transportation Funding – Addressing the challenge of technology exacerbating the problem of limited revenues for transportation investment and maintenance

Environmental Quality – Advancing the adoption of eco-friendly infrastructure and vehicles

Policy Areas of Focus: Examples of Strategies

Safety

- Invest in V2I communications infrastructure to support safety applications for drivers and pedestrians



Responsibilities

Illinois and Missouri DOTs, local governments

Urban Form and Public Transit

- Advance automation in public transportation and quality improvements (e.g., free Wi-Fi) through pilot programs



Metro

Equity

- Offer incentives for private services to provide services in marginalized areas, such as those with predominantly low-income populations



Metro and local governments

Infrastructure Preservation and Maintenance

- Evaluate use of advanced technologies to support monitoring conditions, including use of drones and vehicle-generated data



Illinois and Missouri DOTs, Metro, and local governments



Recommendations: Moving Forward from Strategy to Implementation

