



Smart Cities Mobility Plan Project Update

8 July 2021

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Smart
Cities
Mobility
Plan –
Why?

To build on the previous ITS Master Plan

Advance their use of existing and emerging technologies

Unlock benefits through smart cities applications to enhance mobility

Develop a clear 5-year Smart Cities vision and supporting road map

Support achievement of the 2045 Long Range Transportation Plan



Smart Cities Mobility Plan - Scope Overview

- Development of a clear 5-year Smart Cities vision and supporting road map for deployment of the technologies in alignment with 2045 LRTP program categories.
- 2 Phases:
 1. Discovery and Analysis
 2. Roadmap



Good Repair and Resilience

pavement, bridge, stormwater, transit maintenance



Vision Zero

"complete streets" treatments and other safety enhancements



Smart Cities

intersection operation fixes and advanced traffic management systems



Real choices when not driving

expansion of bus services and trails/paths separated from roadways



Major investments for economic growth

rapid transit in a dedicated ROW, interchanges, and additional through lanes on major roadways



Smart Cities Mobility Plan - Phase 1

1. Discovery Phase:

- a. **Horizon scanning and an industry literature review:** *to identify the current Smart Cities practices and associated technologies - mapped against the program categories.*
- b. **State of the Practice:** *A baseline of the current situation for technology deployment will be developed through engaging with local stakeholders.*

Existing technology solutions we have	Existing technology solutions we do not have	New and emerging technology solutions
<ul style="list-style-type: none"> • vehicle detection and tracking • active traffic management • integrated Corridor management • incident management • journey planning • performance management • big data • traffic signal prioritization • fiber communications • parking technologies 	<ul style="list-style-type: none"> • connected vehicles • autonomous vehicles • flood detection • virtual kerb-side management • micro-mobility • mobility as a service 	<ul style="list-style-type: none"> • predictive analytics • blockchain • 5G communications

Through both parts of the Discovery Process a, toolkit of technologies will be considered. Initial list is in the table opposite.



Smart Cities Mobility Plan - Phase 1

2. Analysis Phase:

- a. **GIS Mapping:** *The current & planned technology deployments will be mapped in the MPO's GIS*
- b. **Workshops:** *with MPO staff and key staff from partner agencies to review the outputs from the Discovery process and identify poor performing facilities.
Also, to identify technology solutions that are not currently utilized, and the new and emerging technology solutions could be considered to improve performance.*
- a. **Project Prioritization Matrix:** *The potential projects identified above will then be assigned a score using the prioritization matrix to help support the development of the roadmap as part of Phase 2.*



Smart Cities Mobility Plan - Discovery Phase Findings

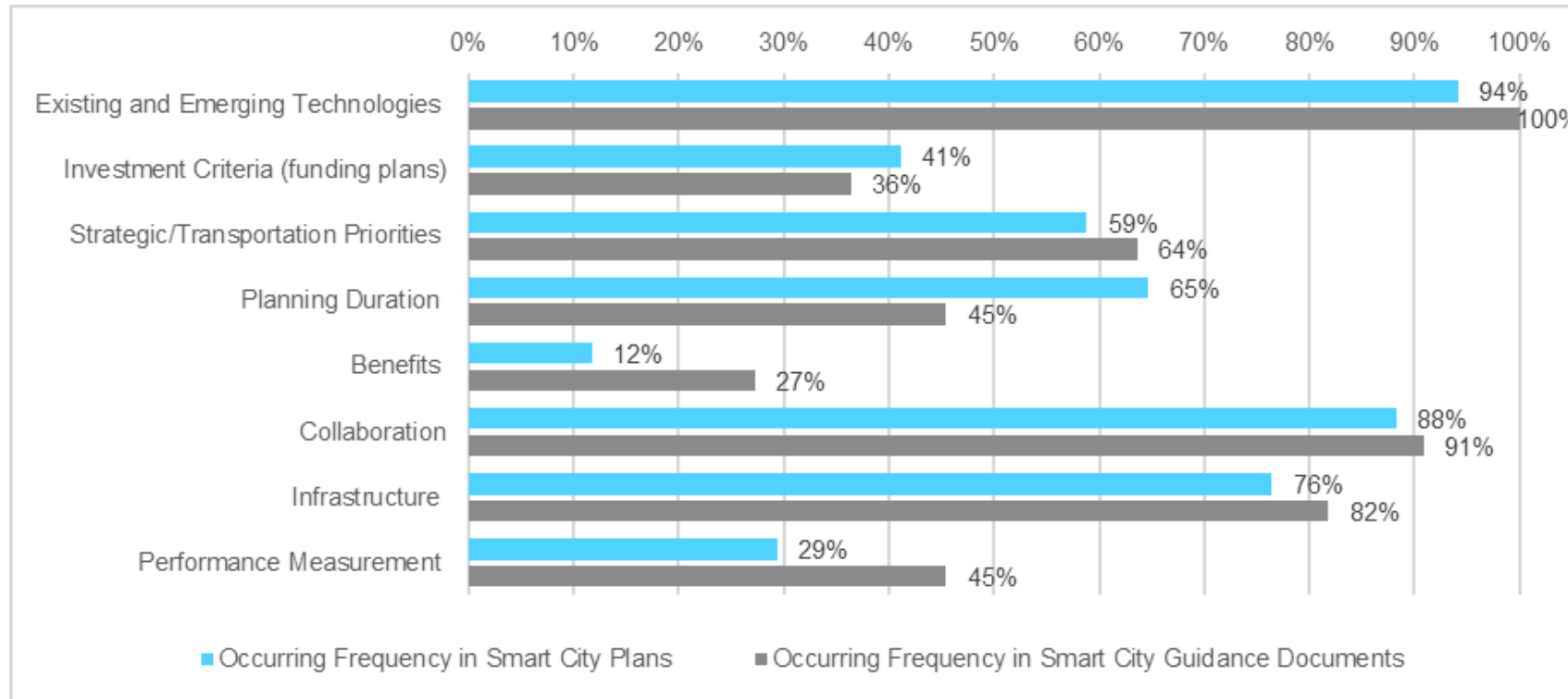
A comprehensive review of Smart City plans, programs and guidance documents was conducted to determine the state of the practice with regard to Smart City planning and deployment efforts nationwide and globally.

The sources include not only the available documents and materials, but also Smart Cities and vendors website, as well as stakeholders' feedback. Using these means of study, over 100 cities, and 30 plans and programs were reviewed.



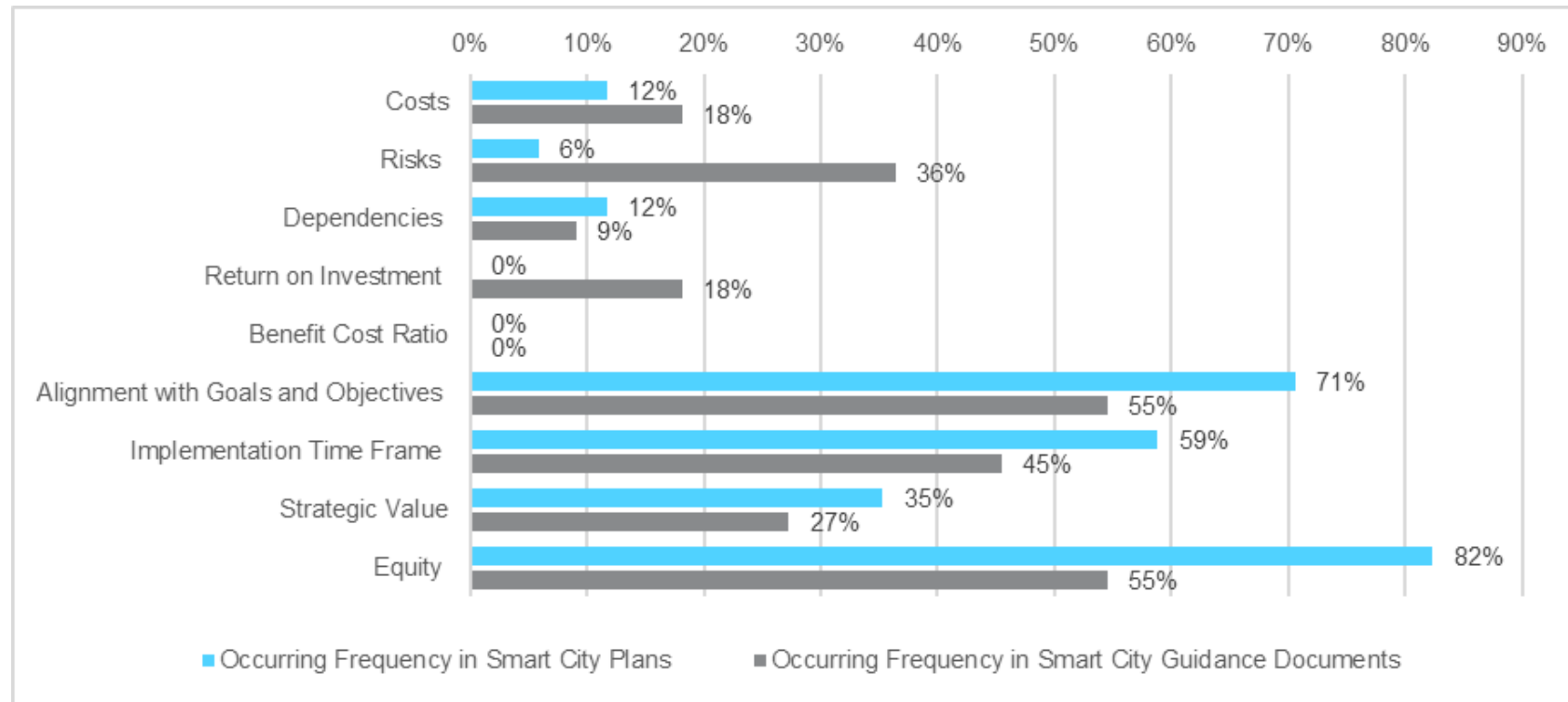
Smart Cities Mobility Plan - Discovery Findings - Global

Occurring Frequency of Smart Cities Elements



Smart Cities Mobility Plan - Discovery Findings - Global

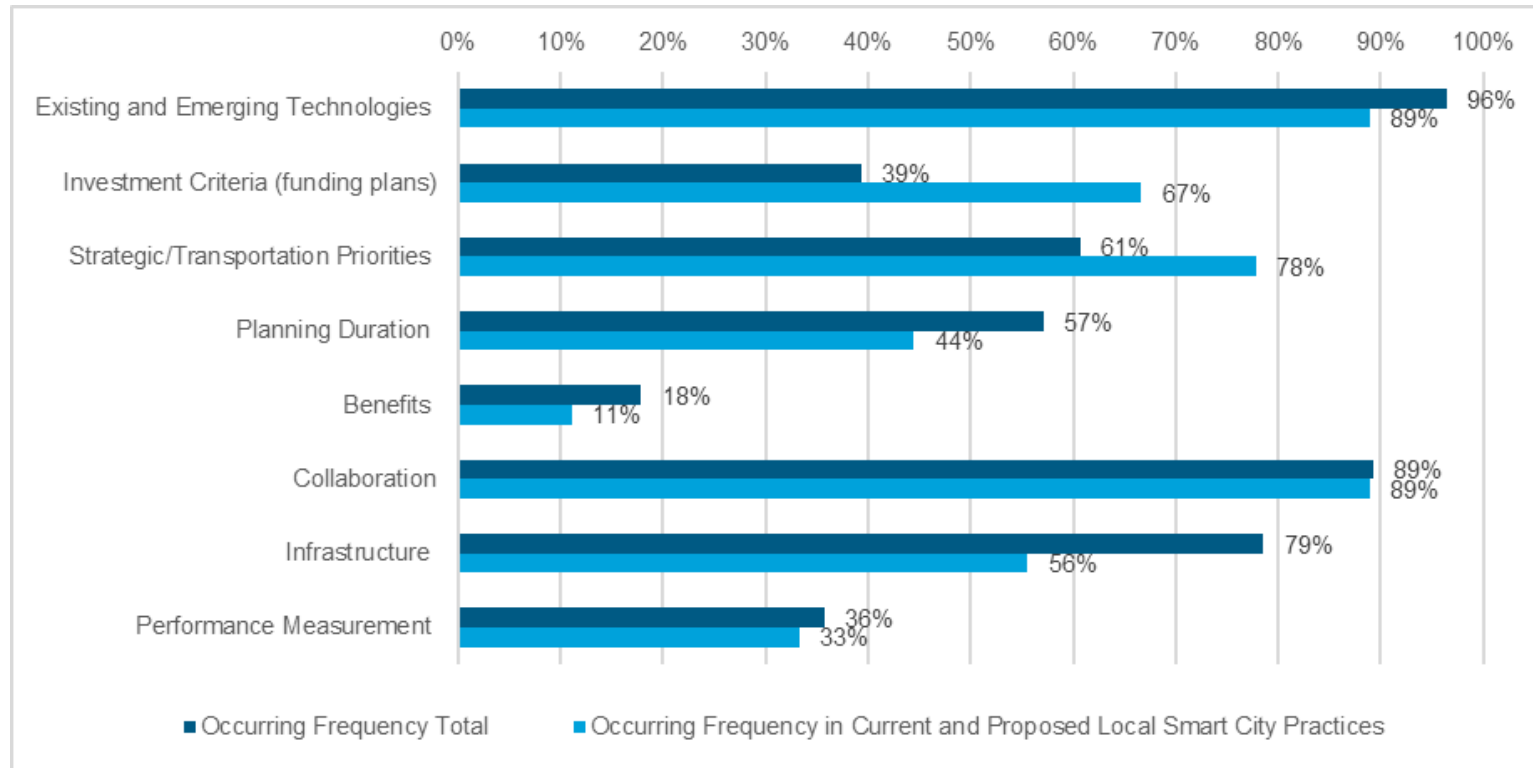
Occurring Frequency of Smart City Special Considerations



Smart Cities Mobility Plan - Discovery Findings

Global vs Local

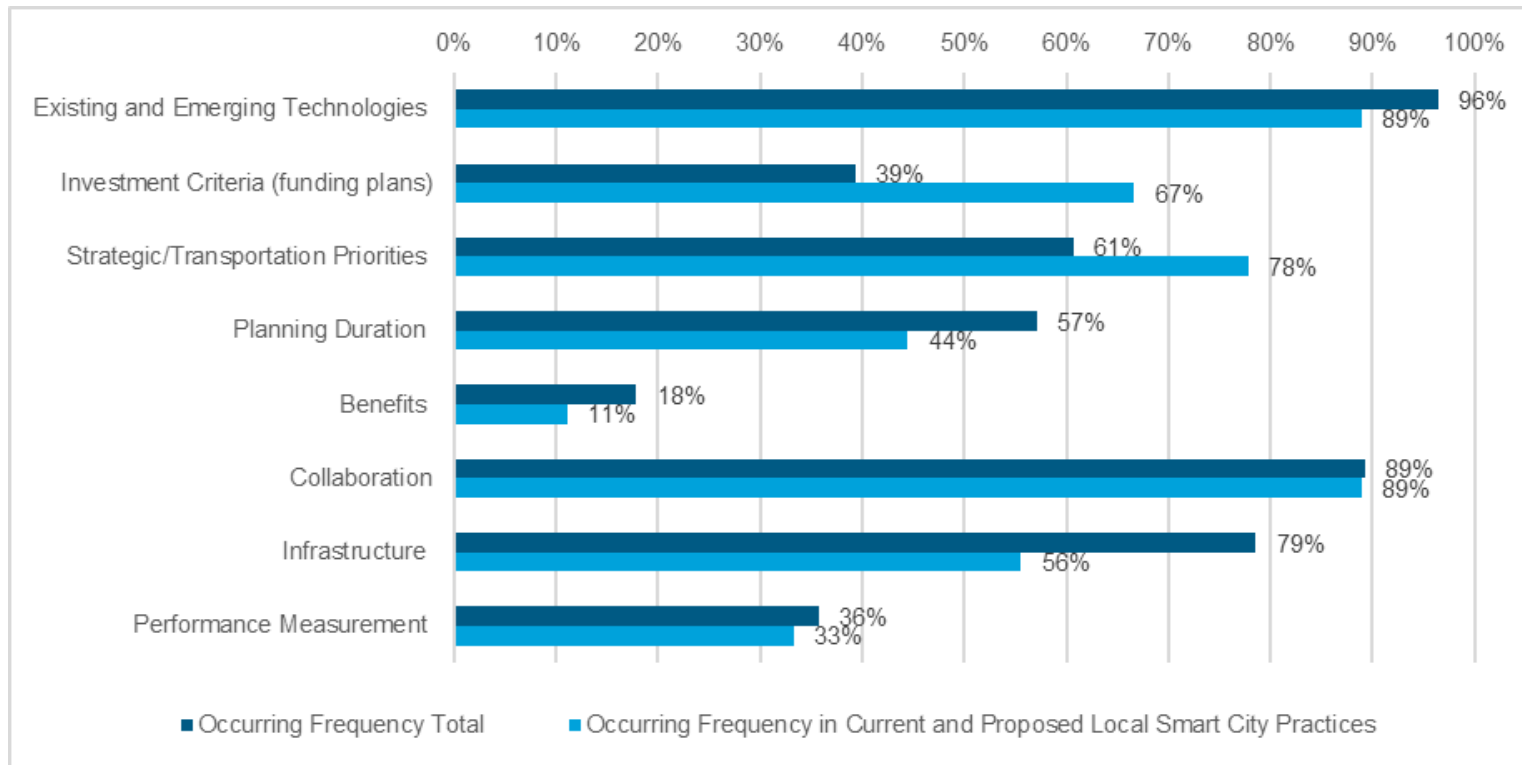
Occurring Frequency of Smart Cities Elements Total vs Local



Smart Cities Mobility Plan - Discovery Findings

Global vs Local

Occurring Frequency of Special Considerations Elements Total vs Local



Smart Cities Mobility Plan - Technology Mapping

Smart Cities Strategy and Technology Categories

Reviews and studies identified 14 general categories of Smart Cities strategies and technologies as shown below:

Smart Public Services and Infrastructure	Smart Lighting Solutions	Smart Public Safety	Communications and Connectivity
Stakeholder Partnership	Smart Public Transit	Smart Transportation	Smart Utilities
Smart Energy and Sustainability	Data Management	Information Communication Technology (ICT)	Citizens Engagement
	Smart City Maturity Model Framework/ Performance Measurement	Funding Programs	



Smart Cities Mobility Plan - Technology Mapping

Technology Map example:

List of Technologies / Strategies Areas	Technologies/ Strategies Examples (local and national)	Technology/ Strategies we have	Technologies/ Strategies we do not have	New & Emergent Technology/ Strategies	Benefits Assessment	
1	Smart Public Service and Infrastructure	Health city initiative		x		6
		Smart screens		x	x	8
		Building management and automation systems		x	x	9
		Smart irrigation systems		x	x	9
		Public restroom occupancy sensors		x	x	5
		Public free internet access		x		10
		Advanced water metering		x	x	7
		Smart bins and benches		x	x	7
		Reimagining Infrastructure		x		10



Project Ideas?

- If you had \$10m and you had to make improvements regionally but to **only the existing capabilities**, what would you do?
- If you had \$10m and you had to make improvements regionally and **but only new capabilities**, what would you do?

Project/Services/Activities
AV shuttle expansion
HART CAD AVL
Smart Lighting
Digital Inclusion Program
Smart Corridors
Ramp Metering
Regional Operating System
Mobility Assistance
EV Charging
EV Charging (in residential)
Car Sharing Platform
MaaS Expansion
HOV Lanes
Event Parking Management
Parental Trip Assistance
CV Operating System
Regional Work Zone Exchange
5g backbone
Bus Fleet Electrification
Marketing Plans
Waterborne Transport Plan
Digital Signage
Digital Twins
Free issue Sensors (SWZ)
Cyber Security Plans
Citizen Services Hub



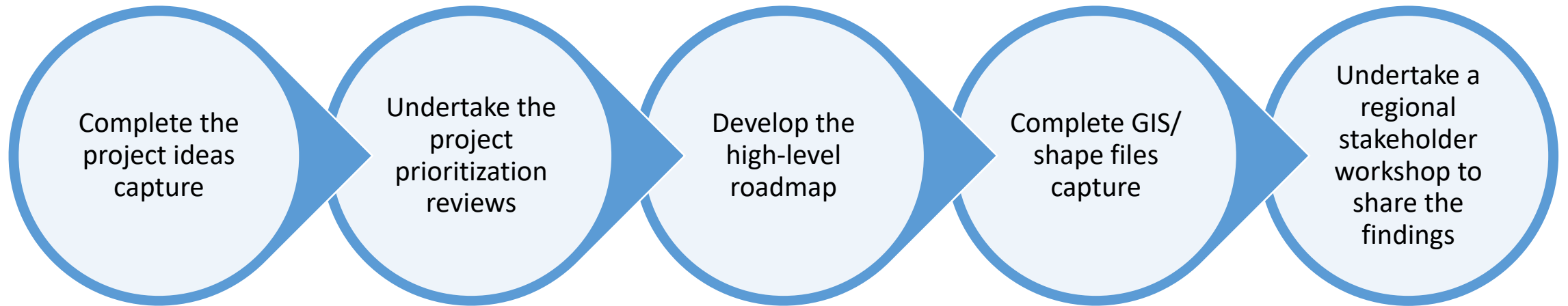
Project Prioritization Criteria

Alignment with 2045 L RTP Goals and Objectives (strategic)				
Good Repair and resilience	Vision Zero	Smart Cities	Real choices when not driving	Major investments for economic growth
Preserve Infrastructure/ Sustainability Yes = 1 Point No = 0 points	Safety Yes = 1 Point No = 0 Points	Innovation and Emerging Technology Yes = 1 Point No = 0 Points	Mobility and Mode Choice Yes = 1 Point No = 0 Points	Economic Growth Yes = 1 Point No = 0 Points

Cost	Implementation Timeframe	Equity	Dependencies, Business Risks, and Limitations	Risk Severity	Benefit/Cost Ratio	Strategic Value
\$0 - \$499,999= 4 Points \$500,000 - \$999,999 = 3 Points \$1 M - \$2.99 M = 2 Points \$3 M - \$5 M = 1 Point > \$5 M = 0 Points	Short term (0-5 yrs.) = 3 Points Mid term (5-10 yrs.) = 2 Points Long term (10+ yrs.) = 1 Point	High = 3 Points Medium = 2 Points Low = 1 Point	What is the level of risks and degree of impact? Examples: legal compliance, operational, stakeholders/public involvement, timing, data sources, technology, etc.	High = -2 Point Moderate = -1 Points Low = 0 Points Based on Dependencies, Business Risk, and Limitations	Low (0-4)= 0 Points Mid (5-8)= 1 Point High (9-12)= 2 Points	Is there a high demand or need for the implementation of this project or will this project improve upon an existing project?? (0-1 Points)



Next Steps



Thank You

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