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Think Forward

Prioritization Process and Measures

presented to

Transit Service Delivery Advisory Committee (TSDAC)

presented by

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HB 1359 - Transit Capital Prioritization

- Project-specific prioritization for both state-of-good repair and expansion transit asset needs based on an objective and quantifiable analysis
- For new or expansion transit projects, the following factors should be considered relative to the cost of the project:
  - congestion mitigation
  - economic development
  - accessibility
  - safety
  - environmental quality
  - land use

Project Type Categories

State of Good Repair

- Rehabilitation and replacement projects such as purchase of replacement vehicles, facilities, shelters, fare payment, etc.

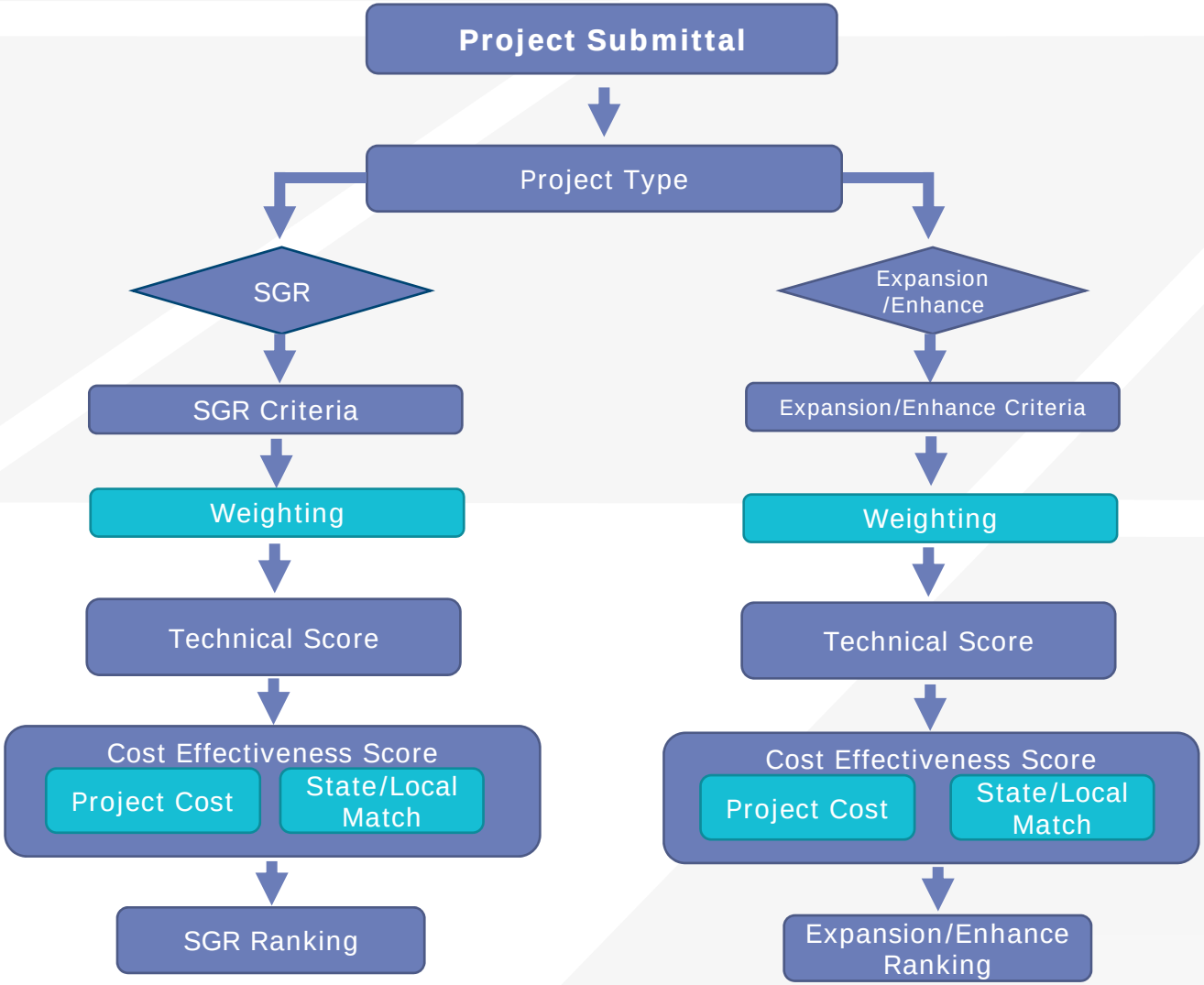
Capacity Expansion/ Enhancement

- Expansion vehicles (bus, vans, and service vehicles)
- Significant new facilities and upgrades such as construction of second elevators, station entrances, and parking garages

System Expansion/ Extension

- Examples: Virginia Beach Light Rail Transit (LRT) Extension; Richmond Bus Rapid Transit (BRT); Norfolk Naval Station Transit Extension; Route 1 BRT in Fairfax County; and Bus Construction Admin/Maintenance Facility in Lynchburg

Process Framework



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Potential Measures

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Criteria Objectives

Asset Condition	• Maintain the state of good repair of transit assets
Service Quality/Reliability	• Improve transit system reliability and perceived quality of service by minimizing asset failures and delays, and maximizing asset availability and use
Congestion Mitigation	• Reduce delay, improve transportation system reliability, and encourage transit use
Economic Development	• Support existing economies and enhance opportunity for economic development
Accessibility	• Enhance worker and overall household access to jobs and other opportunities and provide multiple and connected modal choices
Safety	• Address multimodal safety concerns and improve transit safety and security
Environmental Quality	• Reduce emissions and energy consumption by providing modal choices, and minimize natural resource impacts
Land Use	• Improve consistency of the connection between local comprehensive plans and land use policies with transit investments

Criteria by Project Types

Criteria/Factor	SGR	Expansion/ Enhancement
Asset Condition	●	
Service Quality/ Reliability	●	
Congestion Mitigation		●
Economic Development		●
Accessibility		●
Safety	●	●
Environmental Quality		●
Land Use		●

Selecting Appropriate Measures

- Data availability
- Complexity
- Quantitative (vs. qualitative)
- Relevance to transit projects
- Consistency with FTA or Smart Scale evaluations
- Advantages
- Limitations

Asset Condition Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
Age*	H	L	Y	Y	FTA
Condition rating*	M	M	Y	Y	FTA
Asset availability	M	M	Y	Y	
Life cycle costs	L	H	Y	Y	

* indicates measures recommended for further consideration

FTA Transit Asset Management Requirements

Asset Class	Proposed TAM Performance Measures
Equipment- (non-revenue) service vehicles.	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their useful life benchmark (ULB). [§625.43 (a)]
Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their ULB. [§625.43 (b)]
Infrastructure-rail fixed-guideway track, signals, and systems	Percentage of track segments, signal, and systems with performance restrictions. [§625.43 (c)]
Facilities	Percentage of facilities within an asset class, rated below condition 3 on the TERM scale. [§625.43 (d)]

* indicates measures recommended for further consideration

Service Quality/Reliability Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
Missed trips due to mechanical failure	M	H	Y	Y	
Mean distance between failures*	H	M	Y	Y	
Minutes of delay	L	H	Y	Y	
Revenue hours per vehicle*	H	L	Y	Y	

* indicates measures recommended for further consideration

Congestion Mitigation Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
New Transit trips*	M	H	Y	Y	FTA
Capacity increase	H	M	Y	Y	
Person throughput	M	H	Y	Y	SS
Person hours of delay	M	H	Y	N	SS
Project support for ridership/usage*	H	L	N	Y	
Demand management	H	L	N	N	
Existing congestion in corridor	M	M	Y	Y	

* indicates measures recommended for further consideration

Economic Development Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
Potential impact of transit project on regional development	M	M	N	Y	FTA
Changes in regional workforce access to transit	H	M	Y	Y	FTA
Project support for economic development*	M	M	N	Y	SS
Jobs created (TREDIS estimate)	L	H	Y	N	
Benefit to economic/activity centers*	H	L	N	Y	

* indicates measures recommended for further consideration

Accessibility Measures

Measure	Data availability	Complexity	Quantitative?	Scale Relevance to transit	Consistency with FTA/Smart
Access to jobs (Smart Scale approach)	M	H	Y	Y	SS
Access to jobs of disadvantaged persons (Smart Scale approach)	M	H	Y	Y	SS
Access to jobs (simplified approach)*	H	M	Y	Y	
Access to job of disadvantaged persons (simplified approach)*	H	M	Y	Y	
Transit travel time improvements and/or increased service frequencies*	M	H	Y	Y	
Annual trips (with credit applied for transit dependent trips)	M	M	Y	Y	FTA
Access to multimodal choices	H	L	N	Y	SS

* indicates measures recommended for further consideration

Safety Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
Accident and fatality rates (FTA approach)	M	H	Y	N	FTA
Number of fatal and injury crashes	M	H	Y	N	SS
Rate of fatal and injury crashes	M	H	Y	N	SS
Potential safety impact*	H	L	N	Y	

* indicates measures recommended for further consideration

Environmental Quality Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
Air quality impacts	L	H	Y	Y	FTA
Greenhouse gas emission impacts	L	H	Y	Y	FTA
Energy use impacts	L	H	Y	Y	FTA
Air quality and energy environmental effect*	H	L	N	Y	SS
Impact to natural and cultural resources	M	M	N	Y	SS
Impact to natural and cultural resources (simplified)*	H	L	N	Y	

* indicates measures recommended for further consideration

Land Use Measures

Measure	Data availability	Complexity	Quantitative?	Relevance to transit	Consistency with FTA/Smart Scale
Land use policy consistency*	M	M	N	Y	SS
Transit oriented development in the corridor	M	L	N	Y	
Station area development (employment and population density)	H	M	Y	Y	FTA
Parking supply (costs and spaces/employee in CBD)	M	M	Y	Y	FTA
Affordable housing	M	H	Y	Y	FTA
Activity density	M	M	Y	Y	SS
Project connection to activity centers/UDAs	H	L	N	Y	
FTA criteria for economic development	M	M	N	Y	FTA

* indicates measures recommended for further consideration

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Prioritization - Next Steps

- September-November:
  - Finalize list of potential prioritization criteria and measures
  - Define evaluation methodology for measures
  - Develop methodology for weighting and scoring of measures
- December: Update to CTB on draft concepts
- January-March: Demonstrate application of criteria to example implementation scenarios