

Table 5. Pavement Options Analysis

Category	Criteria	Pavement Options				
		Granite pavers with a mortar setting (full width of Mall)	Unit pavers with a sand setting (full width of Mall)	Precast concrete slabs w/pattern, color (transit); granite pavers (walks)	Cast-in-place concrete option A ^a , no pattern, color (transit); granite pavers (walks)	Cast-in-place concrete option B ^a , no pattern, color (transit); granite pavers (walks)
Economics and Approximate Cost						
Failing pavement system in constant need of repair	• Capital cost (millions)	\$114 (range based on market fluctuation: \$97 to \$137)	\$108 (range based on market fluctuation: \$92 to \$130)	\$98 (range based on market fluctuation: \$83 to \$118)	\$88 (range based on market fluctuation: \$75 to \$106)	\$92 (range based on market fluctuation: \$78 to \$110)
	• Annual transitway and sidewalk maintenance cost	\$309,000	\$309,000	\$106,000	\$85,000	\$196,000
	• Future transitway replacement cost (millions)	\$0	\$0	\$15.5	\$20.0	\$0
	• 40-year investment (millions)	\$126.4 (range based on market fluctuation: \$107 to \$152)	\$120.4 (range based on market fluctuation: \$102 to \$144)	\$117.8 (range based on market fluctuation: \$100 to \$141)	\$111.4 (range based on market fluctuation: \$95 to \$134)	\$99.8 (range based on market fluctuation: \$85 to \$120)
Safety and Security						
Poor delineation between undersized ^d pedestrian walks and transit causes near misses between pedestrians and transit vehicles	• Delineation between pedestrians and transit	Options for delineation between pedestrian and transit areas: Retain existing 4-inch curb; Install higher curb between walks and transit; Barrier or bollards between walks and transit; Shift pedestrian walks adjacent to storefronts; Install trees, lights, and other furnishings between walks and transit; Provide visual and/or tactile difference in materials between walks and transit; Use technology to delineate walks and transit, such as colored lights.	Same options for delineation between pedestrian and transit areas as Granite Pavers option.	Different materials visually delineate pedestrian and transit areas. Same options for delineation between pedestrian and transit areas as Granite Pavers option.	Different materials visually delineate pedestrian and transit areas. Same options for delineation between pedestrian and transit areas as Granite Pavers option.	Different materials visually delineate pedestrian and transit areas. Same options for delineation between pedestrian and transit areas as Granite Pavers option.
Slick pavement surface causes pedestrian slips and falls, and bus traction problems; this is compounded by snowy or icy conditions in winter	• Pavement surface reduces "slip, trip and fall" risks	The existing granite pavers have a Thermal finish. Other finishes have a greater coefficient of friction than the existing surface. In addition, grooves and additional texture can be added in key areas to increase traction for buses.	Multiple finishes and textures are available from concrete, clay, or stone pavers, all of which have a greater coefficient of friction than the existing surface. In addition, grooves and additional texture can be added in key areas to increase traction for buses.	In the transit lanes, multiple finishes and textures are available with precast concrete, that all have a greater coefficient of friction than the existing surface. In addition, grooves and additional texture can be added in key areas to increase traction for buses. Pavers in the pedestrian areas would use a finish with a	In the transit lanes, concrete finish has a greater coefficient of friction than the existing surface. In addition, grooves and additional texture can be added in key areas while finishing the concrete surface to increase traction for buses. Pavers in the pedestrian areas would use a finish with a	In the transit lanes, concrete finish has a greater coefficient of friction than the existing surface. In addition, grooves and additional texture can be added in key areas while finishing the concrete surface to increase traction for buses. Pavers in the pedestrian areas would use a finish with a

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				greater coefficient of friction than the existing surface.	greater coefficient of friction than the existing surface.	greater coefficient of friction than the existing surface.
Mobility						
Regional transit mobility and connectivity and efficient transit operations						
Frequent maintenance disrupts transit operations, and would be more disruptive as ridership increases	<ul style="list-style-type: none"> Maintenance effects on bus operations efficiency and requirements 	Frequency of pavement maintenance substantially reduced from current conditions. Portions of mortar in joints must be replaced as part of routine maintenance.	Frequency of pavement maintenance substantially reduced from current conditions. Small amounts of sand wash out of joints and require additional sand to be added as part of routine maintenance.	Frequency of pavement maintenance substantially reduced from current conditions. Routine maintenance includes repairing and sealing cracks and spalling. Periodic maintenance, for example, concrete panel replacement, required every 5 to 10 years would affect bus operations. Reconstruction of pavement system likely to occur once in 40-year lifespan, substantially disrupting bus operations during construction.	Frequency of pavement maintenance substantially reduced from current conditions. Routine maintenance includes repairing and sealing cracks and spalling. Reconstruction of pavement system likely to occur two times in 40-year lifespan, substantially disrupting bus operations during construction.	Frequency of pavement maintenance substantially reduced from current conditions. Routine maintenance includes repairing and sealing cracks and spalling. Periodic maintenance, for example, concrete removal and overlay, required every 5 to 10 years would affect bus operations. No future reconstruction needed.
During construction the efficiency of transit operations would be dramatically reduced	<ul style="list-style-type: none"> Minimum disruption during construction 	Longer construction disruption on 16th Street than concrete; similar construction duration to unit pavers.	Longer construction disruption on 16th Street than concrete; similar construction duration to granite pavers.	Shortest construction disruption on 16th Street, as concrete panels are poured and formed offsite.	Shorter construction disruption on 16th Street than pavers; slightly longer disruption than precast concrete.	Shorter construction disruption on 16th Street than pavers; slightly longer disruption than precast concrete.
Community and Environment						
Construction impacts	<ul style="list-style-type: none"> Construction impacts 	Longer construction disruption on 16th Street than concrete; similar construction duration to unit pavers.	Longer construction disruption on 16th Street than concrete; similar construction duration to granite pavers.	Shortest construction disruption on 16th Street, as concrete panels are poured and formed offsite.	Shorter construction disruption on 16th Street than pavers; slightly longer disruption than precast concrete.	Shorter construction disruption on 16th Street than pavers; slightly longer disruption than precast concrete.
Environmental impacts	<ul style="list-style-type: none"> Historic resources impacts 	Most consistent with existing design and pattern. Granite pavers can be installed with similar size, color and pattern, with changes to the finish to reduce slips and falls.	Smaller unit pavers can be similar color and overall pattern as existing. Smaller paver sizes would impact pattern of jointing.	Can be produced to match the overall pattern. May see slight color change and texture change with granite pavers at pedestrian areas.	Replicating pattern may be cost prohibitive and technically difficult. This would require multiple separate concrete pours and consistency of coloring that may be difficult. Precision of jointing pattern would be difficult to achieve.	Replicating pattern may be cost prohibitive and technically difficult. This would require multiple separate concrete pours and consistency of coloring that may be difficult. Precision of jointing pattern would be difficult to achieve.

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Public and agency support	<ul style="list-style-type: none"> Level of Agency Support 	Granite pavers for the surface treatment are supported to a much higher degree by CCD than concrete.	RTD does not support unit pavers in the transit lanes.	RTD supports concrete, especially for the transit guideway.	RTD supports concrete, especially for the transit guideway.	RTD supports concrete, especially for the transit guideway.

^a Cast-in-place Concrete Option A comprises standard concrete construction, with routine maintenance and two replacements during the 40-year lifespan. Cast-in-place Concrete Option B comprises a thicker concrete slab, and would not need replacement during the 40-year lifespan with routine maintenance.