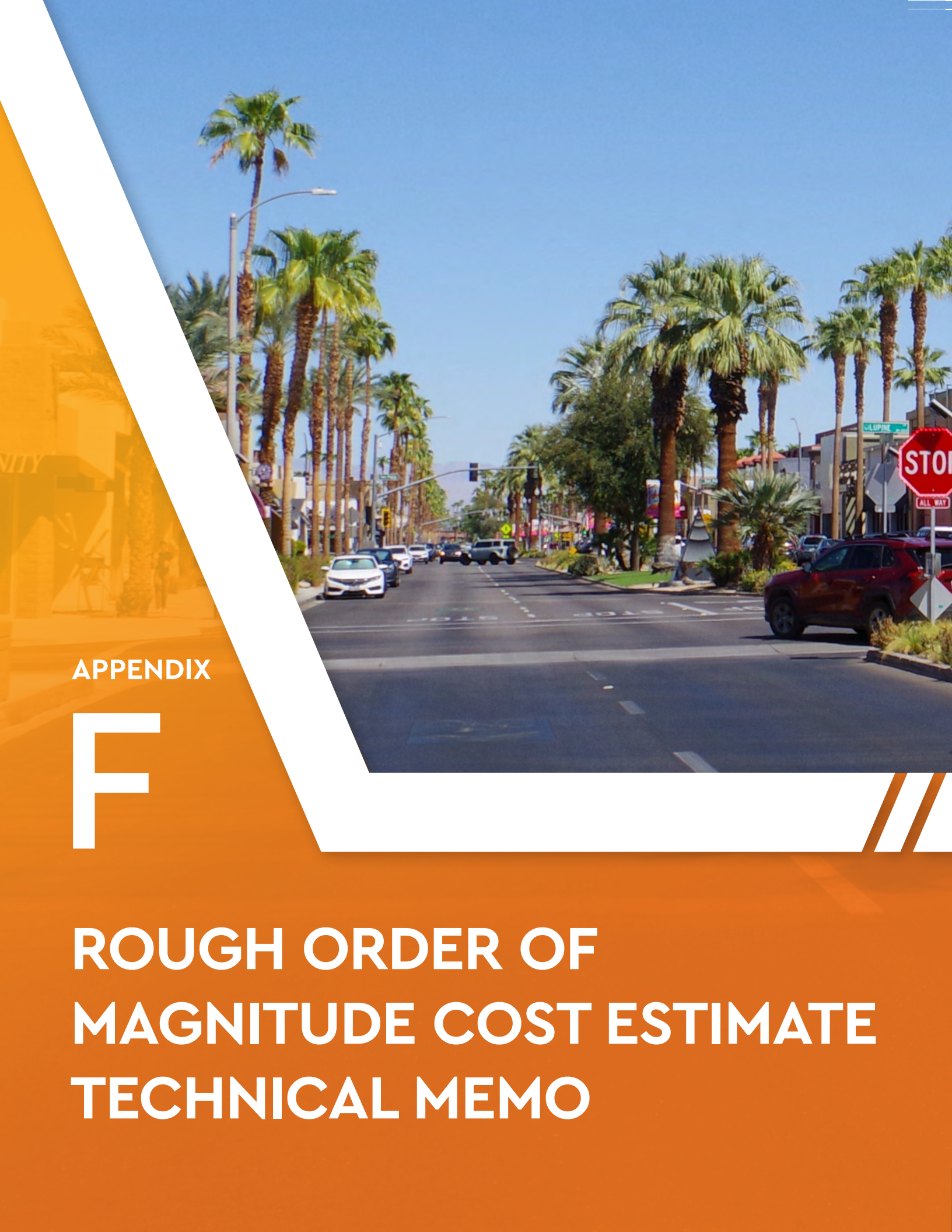




APPENDIX

F

ROUGH ORDER OF MAGNITUDE COST ESTIMATE TECHNICAL MEMO



TO: Peter Satin, Assistant Director of Conservation; CBAG
Randy Bowman, Assistant Director – Transportation; CVAG

FROM: Adam Chase, PE, TE; CR Associates

DATE: July 28, 2026

RE: Rough Order of Magnitude (ROM) Cost Estimate Technical Memo

This memo provides a comprehensive reference for how construction costs are classified as ATP-eligible (participating) or non-ATP-eligible (non-participating) across all four CVAG bicycle facility types: Class I (shared-use path), Class II (bike lane), Class III (bike route), and Class IV (separated bikeway), with a focus on full-depth pavement, grind-and-overlay, slurry seal, and pavement markings.

1. Regulatory and Guidance Basis

The eligibility determinations in this memo are drawn from the following sources:

- CVAG Active Transportation Design Guidelines, 2021
- CVAG Active Transportation Plan, 2016
- California Transportation Commission, Active Transportation Program Guidelines (current cycle, as amended)
- Caltrans Active Transportation Program: Eligible Infrastructure Costs Guidance (effective Dec. 18, 2023)
- Caltrans Design Information Bulletin 89-02: Class IV Bikeway Guidance
- Caltrans Information Bulletin - 94 Complete Streets: Contextual Design Guidance
- Caltrans Local Assistance Procedures Manual (LAPM), Chapter 25
- Caltrans Highway Design Manual (HDM), Chapter 1000
- California Manual on Uniform Traffic Control Devices (CA MUTCD) (2026)
- California Vehicle Code § 21202 - Bicyclist Position on Roadway
- California Vehicle Code (CVC) §22500(n) – Daylighting

2. Bikeway Classification Overview

CGAG Active Transportation Design Guidelines and the Caltrans HDM Chapter 1000 define four bikeway classifications, each distinguished by its physical relationship to the adjacent motor vehicle travel way. This physical relationship forms the basis for ATP eligibility determinations, as the extent of eligible improvements depends on how each bikeway classification is integrated with or separated from the roadway. Class I and Class IV facilities occupy a distinct, dedicated footprint, allowing associated improvements to be clearly attributed to the bikeway. In contrast, Class II facilities are integrated within the roadway cross section, requiring a determination of whether improvements primarily benefit the bikeway or the general vehicular roadway. Class III facilities, which consist only of pavement markings and signing without a dedicated bikeway footprint, provide the narrowest basis for attributing roadway improvements to the active transportation facility.

Class	Definition (Caltrans HDM Ch. 1000)	Governing Standards	Typical Physical Elements
I	Shared-use path / bike path in its own right-of-way, physically separated from the roadway; exclusive or preferential use by bicyclists and pedestrians.	HDM Topic 1003; DIB 82 (ADA on trails); AASHTO Bike Guide	Full-width paved trail prism physically separated from the roadway, trail striping/centerline, trail lighting, drainage, fencing/railing, signage, trailhead amenities

Class	Definition (Caltrans HDM Ch. 1000)	Governing Standards	Typical Physical Elements
II	Bike lane — an exclusive dedicated roadway space for cyclists using a striped, signed lane on the roadway for one-way bicycle travel, may include a painted or delineated buffer.	HDM Topic 1003; CA MUTCD Section 9C.04	Bike lane striping, buffer striping/hatch, green conflict paint, bike-lane pavement, curb ramps within the facility limits
III	Bike route — shared travel with motor vehicles, designated only by signage and/or shared-lane (“sharrow”) markings; no dedicated bikeway width. Sharrows are limited to roadways with speed limits of 30 mph or less.	HDM Topic 1003; CA MUTCD Sections 9B/9C; Streets & Highways Code §891.9 (sharrow speed-limit restriction)	Bike route (D11-1) signage, wayfinding signage, shared-lane markings (where posted speed ≤ 30 mph), traffic-calming devices
IV	Separated bikeway / cycle track — a bike lane physically separated from vehicle travel lanes by a vertical barrier, raised landscaped median, or grade separation.	HDM Topic 1003; DIB 89 (Class IV guidance); created by AB 1193 (2014)	Bikeway pavement, physical barrier (curb, PCC barrier, bollards, planters), buffer/landscape strip, bike signals, pavement markings

3. General ATP Eligibility Framework

Regardless of bikeway classification, Caltrans guidance applies a consistent approach: costs are ATP-eligible when they support or encourage active transportation, and non-eligible when the work is attributed to the general vehicular traveled way rather than the bicycle/pedestrian facility. The guidance specifically identifies as non-eligible:

- Roadway and highway traveled ways outside of the proposed bike and pedestrian traveled way widths.
- Roadway repaving not attributed to non-motorized facilities.
 - If resurfacing of the adjacent travel lane is not required to accommodate the bicycle facility (e.g., no lane shift, lane narrowing, or grade adjustment within the bike lane or buffer), the associated paving costs are considered non-ATP eligible.
- Roadway widening beyond what is required to construct the bike/pedestrian facility.
- Vehicular portions of new bridge construction or bridge rehabilitation, traffic signals, lighting, or architectural treatments not attributed to non-motorized facilities.
- Drainage facilities beyond the bike/pedestrian facility’s needs.

Conversely, Caltrans recognizes that construction activities required to implement an eligible active transportation facility are themselves ATP-eligible. These incidental costs may include pavement rehabilitation, environmental mitigation, lighting, drainage improvements, utility relocations, and other measures that are necessary to construct and support the active transportation facility. For additional information on ATP-eligible infrastructure costs, refer to the Caltrans *Active Transportation Program Eligible Infrastructure Costs Guidance*: <https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/atp/general-and-technical-info/final-eligible-infrastructure-costs-guidance20231220.pdf>

4. Classification-Specific Eligibility Guidance

4.1 Class I — Shared-Use Path

Because a Class I Shared-Use Path is constructed within its own right-of-way or a dedicated, physically separated trail corridor, the entire facility is directly attributable to non-motorized travel. Accordingly, the full constructed width of the facility, including subgrade, base, pavement, shoulders, striping, lighting, drainage, fencing or railings, and signage are ATP eligible. Unlike on-street bikeways, a Class I facility does not share the vehicular traveled way; therefore, there are no adjacent roadway paving or vehicular infrastructure that must be excluded as ineligible costs.

Infrastructure improvements required to construct or extend a Class I Shared-Use Path are ATP eligible when they are directly attributable to the non-motorized facility. These improvements may include right-of-way acquisition, construction easements, bridge widening or new trail structures, retaining walls, utility relocations, and other infrastructure necessary to implement the facility. Conversely, project elements that are not integral to the Class I facility, such as vehicular access improvements unrelated to trail maintenance or operations, are not ATP eligible. Maintenance agreements and construction easements required to construct the shared-use path may also be included as eligible project costs when necessary for project implementation.

Within Coachella Valley, many of the proposed Class I facilities currently function as non-standard shared-use paths with widths of approximately 6 to 8 feet. Where projects propose widening these facilities to meet current design guidance (e.g., a minimum 10-foot paved shared-use path with 2-foot shoulders), the widening is directly attributable to the active transportation facility and is therefore ATP eligible.

At roadway crossings and intersections, ATP-eligible improvements include traffic signal modifications and pedestrian/bicycle accessibility improvements that support the Class I facility, such as curb ramps, accessible pedestrian push buttons, bicycle detection, bicycle signal heads (where warranted), signing, pavement markings, and related intersection improvements necessary to provide a continuous and accessible shared-use path.

4.2 Class II – Bike Lane (Buffered)

A Class II facility shares the roadway cross-section with motor vehicles, so eligibility is limited to the bike lane and buffer footprint from the outside edge of the buffer through the curb return. Full-depth pavement reconstruction, asphalt overlay, and slurry seal are ATP-eligible only to the extent necessary within the Class II bikeway footprint. The same treatments applied to the remaining travel lanes are non-eligible and must be identified as non-participating.

Similarly, bicycle lane striping, buffer markings, green conflict zone pavement markings, and other pavement markings specific to the bikeway are ATP-eligible. General roadway striping, including lane lines, turn-lane arrows, and centerlines is generally not ATP-eligible. However, restriping of adjacent travel lanes that is directly required to reconfigure the roadway cross section (e.g., shifting lane lines to accommodate a new bicycle lane or buffer) may be considered ATP-eligible, as it is incidental work necessary to implement the active transportation facility rather than routine roadway maintenance.

4.3 Class III – Bike Route

A Class III facility has no dedicated bikeway width. Bicyclists share the general travel lane with motor vehicles, and the facility is defined entirely by signage and shared-lane markings. As a result, full-depth pavement of the roadway are generally treated as non-ATP-eligible on a Class III route because there is no dedicated bikeway footprint to which the paving improvements can be attributed. Accordingly, the work is considered “roadway repaving not attributable to non-motorized facilities.”

However, the clearest documented exception is Caltrans' eligible project type for the elimination of hazardous conditions on existing bikeways. Where pavement deterioration presents a documented safety hazard to bicyclists, targeted grind-and-overlay may be considered ATP eligible if the work is limited to the extent necessary to eliminate the hazardous condition rather than serving as general roadway resurfacing. In such cases, it is recommended to document the existing pavement distress with photographs, pavement condition assessments, and narrative justification demonstrating that the improvement directly addresses a specific safety deficiency for bicyclists. Spot repairs addressing discrete hazards may likewise be eligible when similarly documented. Bike route signage, wayfinding signage, and shared-lane markings remain ATP eligible regardless.

4.4 Class IV – Separated Bikeway

A Class IV facility is treated the same as Class II for the footprint-based test and eligibility runs from the outside edge of the buffer/barrier through the curb return but also includes the physical separation element itself (PCC barrier, raised curb, bollards, or planters) as an eligible, class-specific cost. As with Class II, pavement work in the remaining vehicular travel lanes outside that footprint is non-eligible unless it qualifies as incidental construction directly required to install the facility (e.g., an overlay strip needed to tie a new raised grade into the adjacent lane or shifting lanes lines to accommodate the new bike facility).

Traffic signal modifications required to accommodate a Class IV facility are also ATP eligible when they are directly attributable to the bikeway. Eligible improvements may include bicycle signal heads, bicycle detection, modified

signal phasing or timing, controller and cabinet upgrades, accessible pedestrian signal (APS) push buttons, curb ramps, signing, pavement markings, and other traffic signal equipment necessary to safely integrate the separated bikeway through intersections. Conversely, traffic signal improvements undertaken solely to increase vehicular capacity or operations, and not required to implement the Class IV facility, are considered non-ATP eligible.

5. Cost-Category Eligibility Matrix

The matrix below summarizes eligibility treatment by cost item and bikeway classification. “Conditional” items require case-by-case justification in the bid item’s eligible/ineligible cost documentation; asterisked items require hazard-specific documentation (see Section 5.3).

Cost Item	Class I	Class II	Class III	Class IV
Full-Depth AC/PCC Pavement	Eligible	Eligible (footprint only)	Non-Eligible*	Eligible (footprint only)
Grind & Overlay	Eligible	Eligible (footprint only)	Conditional*	Eligible (footprint only)
Slurry Seal	Eligible	Eligible (footprint only)	Eligible	Eligible (footprint only)
Sidewalk Conversion	Eligible	Non-Eligible	Non-Eligible	Non-Eligible
Bike-Specific Markings (lane, buffer, green paint, sharrows, signal)	Eligible	Eligible	Eligible	Eligible
General Travel-Lane Markings (centerline, turn arrows, lane lines)	N/A	Conditional	Non-Eligible	Conditional
Curb & Gutter / Curb Ramps	Eligible	Eligible (footprint only)	Conditional	Eligible (footprint only)
Bike Route / Wayfinding / Regulatory Signage	Eligible	Eligible	Eligible	Eligible
Lighting	Eligible	Conditional	Non-Eligible	Eligible
Landscaping / Buffer Planting	Eligible	Eligible (footprint only)	N/A	Eligible (footprint only)
Drainage	Eligible	Conditional	Conditional	Eligible
ROW Acquisition	Conditional	Conditional	Conditional	Conditional
Bridge / Structural Widening	Conditional	Conditional	Conditional	Conditional

* Class III pavement work is eligible only when documented as hazard-elimination repair, not as general resurfacing.

6. Special Conditions

- Incidental construction: work outside the strict bikeway footprint may still be eligible if it is a direct, incidental consequence of installing the facility (e.g., an overlay tie-in strip for grade transition, restriping triggered by a road-diet lane reconfiguration, utility relocation required to fit the facility).
- Betterments: any element included beyond current safety or design standards must be justified in the application’s cost documentation based on community feedback, a documented safety hazard, or a requirement to conform to current design standards (e.g., CA MUTCD, ADA).
- ADA compliance: curb ramps and accessible elements tied to the facility are eligible; improvements that do not conform to ADA standards are not eligible regardless of classification.
- Drainage and utility relocation: eligible only to the extent necessary to serve the bike/pedestrian facility; capacity or scope beyond the facility’s needs is non-eligible.

- Vehicular bridge/structure portions: on any classification, only the bicycle/pedestrian portion of a widened or rehabilitated structure (deck width, barrier, railing) is eligible — the vehicular portion is not, even where the two are constructed under one contract.
- Recreational trail exception: certain otherwise-ineligible items (parking, restrooms, shelters) become reimbursable when the project is a recreational trail project with trailside/trailhead facilities directly related to a Class I trail.

6.1 Slurry Seal and Grind and Overlay Resurfacing

CVAG's own Active Transportation Design Guidelines (Chapter 11, Maintenance Best Practices) recommend installing bicycle facilities "in conjunction with resurfacing projects" because doing so ensures a high-quality pavement condition under the new striping, reduces pavement scarring from striping modifications, and achieves quantity-of-scale pricing on the overall resurfacing contract.

The narrow, defensible extension of this guidance is a documented pavement tie-in or transition strip: where a fresh bike lane surface meets older adjacent pavement, slurry seal or overlay beyond the bike lane edge may be justified as incidental construction under the eligible-cost guidance, because it protects the durability and legibility of the eligible striping itself and an unaddressed seam at the edge of new striping can undermine it. This should be documented with a cross-section showing the tie-in width and a short engineering justification.

What the guidance does not support is treating corridor-length, full-width slurry seal as ATP-eligible on the general "improves striping visibility" rationale. That argument applies to every line on the roadway (turn arrows, centerlines, travel-lane edge lines), not just bike-specific markings, and Caltrans' named exclusion for "roadway repaving not attributable to non-motorized facilities" exists specifically to prevent a general-benefit rationale from converting ordinary resurfacing into a participating cost. The cost estimates allocate slurry seal and grind-and-overlay quantities between ATP-eligible and non-ATP-eligible work on a segment-by-segment basis, rather than attributing the full quantities to ATP.

7. Alternative Interpretation: A Defensible Argument for Broader Class III Eligibility

7.1 The Case for Inclusion

- "Improvements to existing bikeways and walkways" is one of Caltrans' named eligible project types, stated without a minimum-width or dedicated-footprint qualifier. A Class III route is an existing bikeway by definition; a textual reading of this project type does not on its face exclude pavement condition improvements to it.
- CVAG's own Active Transportation Design Guidelines (Ch. 11) describe pavement cracks, bumps, and potholes as a documented cause of "flat tires, expensive wheel damage, and bicycle crashes," and note that poor pavement "will encourage cyclists to move away from or completely off the facility." If pavement condition is a recognized safety hazard to cyclists in CVAG's own design literature, resurfacing a Class III route can be framed as "elimination of hazardous conditions on existing bikeways" as opposed to general paving.
- On a Class III route equal to or less than 30 mph, cyclists are legally entitled to operate in the general travel lane (CVC § 21202); there is no separate, narrower "bike traveled way" to net out the way there is on Class II/IV. The ineligibility provision for roadway improvements "outside of the proposed bicycle and pedestrian traveled way widths" is arguably inapplicable to Class III bikeways because the bicycle facility does not occupy a separate traveled way; rather, it shares the same pavement as the vehicular travel lane.
- The ATP's goal of increasing biking trips and increasing safety and mobility for nonmotorized users are directly served by smoother, safer shared-lane pavement, which is the category of primary benefit the ATP is designed to fund.

7.2 Why It Is Unlikely to Hold Up Without a Caltrans Determination

- The eligible-cost guidance places a specific, named exclusion — "roadway repaving, not attributable to non-motorized facilities" — directly alongside the general "improvements to existing bikeways" language. A specific exclusion ordinarily controls over a general inclusion; if general safety/comfort benefit were sufficient, the repaving exclusion would have no work left to do.
- The hazard-elimination project type is applied in practice to a discrete, documented defect (a failed trench, a lifted panel, a known collision-causing feature) — not to general pavement condition. Every roadway has some

wear; treating ordinary wear as a “hazard” would functionally eliminate the repaving exclusion for any street that happens to carry a Class III designation.

- This is a general-benefit rationale that, if accepted, would apply to essentially any resurfacing project on any street carrying a Class III designation — which would erase the participating/non-participating distinction the guidance exists to enforce. Reviewers at Caltrans Local Assistance and the CTC are trained to catch exactly this shape of argument.
- Costs later found ineligible on audit can be required to be repaid; there is downside risk to claiming full Class III repaving eligibility at application without a written Caltrans determination in hand.

7.3 Recommendation

If CVAG wants to pursue this argument for a specific Class III segment, request a project-specific eligibility determination from the Caltrans District 8 Local Assistance Engineer before the cost estimate is finalized, supported by documented pavement-condition data (not a general visual assessment) tying the resurfacing to a specific safety deficiency. Absent that determination, carry Class III pavement work as non-participating in the cost estimate, consistent with Section 5.3 and Section 6.

8. Sample Project Guidance

The ROM Master Cost Estimate Summaries prepared apply this memo’s footprint-based guidance, and is itself a form of backup documentation CVAG can point to as established methodology:

Bid Item	Unit	Treatment	Basis
Full-Depth AC Pavement	SF	Split by quantity	Quantity split ATP/Non-ATP by sub-segment footprint
2" Grind & Overlay	SF	Split by quantity	Quantity split ATP/Non-ATP by sub-segment footprint
Slurry Seal	SF	Split by quantity	Quantity split ATP/Non-ATP by sub-segment footprint
Class II Aggregate Base	CY	Split by quantity	Quantity split ATP/Non-ATP by sub-segment footprint
Full-Depth PCC Bike Barrier	LF	100% ATP	Class IV separation element
Sidewalk (SW)	SF	100% ATP	Bicycle-specific facility
Bike Ramp (BR)	EA	100% ATP	Bicycle-specific facility
Bollards	EA	100% ATP	Class IV separation element
Bus Island / Bus Stop Relocation	EA	Conditional	Vehicular transit infrastructure. Class I, IV supported
Median	SF	Conditional	Vehicular traveled-way element. Class IV lane reduction supported
TSM — Bike Signals	EA	100% ATP	Bicycle-specific facility
TSM — Video/Loop Detection, Signal Head Adjustment	EA	Conditional	ATP only where tied to bike detection/phasing; otherwise Non-ATP
Bicycle-specific Pavement Markings & Signage	EA	100% ATP	Bicycle-specific marking, categorized ATP regardless of quantity
Removals & Disposition, Mobilization, Traffic Control, Erosion Control, Surveying	%	Split by quantity	Carried at same ATP/Non-ATP ratio as underlying construction items
Soft Costs (Design, PM, CM&I, Admin @ 25%)	%	Split by quantity	Carried at same ATP/Non-ATP ratio as underlying construction items

9. Backup Documentation Requirements

To support the ATP/Non-ATP split shown in the grant application and to withstand audit during construction and invoicing, the following documentation should be assembled and retained for each segment:

1. Itemized cost estimate identifying every line item as “eligible (participating)” or “ineligible (non-participating),” consistent with the Project Estimate attachment format required in the ATP application.
2. Typical roadway cross-section exhibits for each segment, dimensioning the bike lane/buffer/barrier width against the full roadway width, with the bikeway footprint clearly delineated.
3. Plan-view exhibits with ATP-eligible / non-ATP-eligible hatching or shading applied directly to the pavement rehabilitation limits, keyed to a legend.
4. Engineer’s quantity take-off worksheets splitting each pavement, striping, and appurtenance quantity between ATP and Non-ATP by segment and improvement line item (as already maintained in the corridor’s ROM Cost Estimate).
5. Photographic and narrative documentation of any existing hazardous conditions relied upon to justify Class III pavement repairs as hazard elimination rather than general resurfacing.
6. Written justification for any betterment (element exceeding current design/safety standards), citing the specific community feedback, safety hazard, or design-standard requirement that supports it.
7. ADA compliance documentation (curb ramp details, accessible route exhibits) for facility elements claimed as eligible.
8. Structure exhibits isolating the bicycle/pedestrian portion of any bridge widening or barrier retrofit from the vehicular portion, for segments involving bridge work.
9. ROW exhibits and appraisal documentation demonstrating that any acquisition is limited to what is necessary to construct the bike/pedestrian facility.
10. A running eligible/ineligible cost log carried from the application estimate through design, construction change orders, and final invoicing, so eligible and ineligible costs remain separately identifiable at every phase, per Caltrans LAPM Chapter 25.
11. For any Class III segment relying on the broader hazard-elimination argument in Section 8, a written eligibility determination from the Caltrans District 8 Local Assistance Engineer, plus documented pavement-condition data tying the work to a specific safety deficiency rather than general resurfacing.
12. For any tie-in/transition strip claimed under the slurry-seal nuance in Section 7.1, a cross-section or detail showing the tie-in width and a brief engineering justification distinguishing it from general corridor resurfacing.

10. Escalation of 2026 Unit Costs to 2030 Planning-Year Costs

10.1 Purpose

This section documents the methodology used to project 2030 construction unit costs from 2026 planning-level unit costs for the CV Link Community Connectors Project. Monthly **Engineering News-Record (ENR) Construction Cost Index (CCI)** data for the Los Angeles region were reviewed for the period January 2021 through December 2025. The ENR 20-City Average was also reviewed as a comparison to confirm that the selected escalation rate is reasonable. Partial 2026 data were not used in the analysis.

10.2 Escalation Rate Selection

Construction costs experienced unusually high inflation during the 2021–2023 period due to supply chain disruptions, labor shortages, and material cost increases. Since then, construction cost escalation has moderated and returned to more typical levels. To establish a reasonable planning-level escalation rate, annual changes in the Los Angeles CCI were reviewed over the five-year period. While some years experienced above-average increases, the overall trend indicates that an annual escalation rate of 4.5 percent is appropriate for conceptual cost estimating and is consistent with recent ENR construction cost trends.

10.3 Application

Future construction costs were developed using annual compound escalation:

$$2030 \text{ Unit Cost} = 2026 \text{ Unit Cost} \times (1.045)^4 = 2026 \text{ Unit Cost} \times 1.1925$$

Accordingly, 2030 unit costs are approximately **19 percent** greater than corresponding 2026 unit costs. This adjustment reflects anticipated construction cost inflation only. It does not include contingency allowances for design development, quantity refinement, or project-specific risks.

The estimates should be updated before final design or future grant applications using the latest available ENR cost data.

10.4 References

- Engineering News-Record (ENR), *Construction Cost Index (CCI)*