

6.1 OVERVIEW

This section summarizes the five alternatives considered during preparation of the proposed 2009 CTP. Key features of each alternative are presented, and potential impacts are discussed and compared to the proposed 2009 CTP.

State CEQA Guidelines require EIRs to consider a reasonable range of alternatives to a proposed project or program. The range of alternatives shall include those that “would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines, Section 15126.6(a)). “Feasible” means that the alternatives “are capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors” (CEQA Guidelines, Section 15364). The alternatives may result in new impacts that do not result from the proposed project. The EIR need not analyze these alternatives at the same level of detail that it analyzes the project itself. The CEQA Guidelines require only that the EIR analyze the comparative merits of the alternatives. Also, the Guidelines permit analysis of alternatives at a less detailed level for program EIRs, compared to project EIRs. Quantified information on the alternatives is presented where available; however, in some cases only partial quantification can be provided because of data or analytical limitations.

Finally, the CEQA Guidelines require that the EIR assess the identified alternatives and determine which is the environmentally superior alternative (including the project as proposed). One of the alternatives assessed is the “No Project/No Action” alternative. If the No Project alternative is the environmentally superior alternative, then another of the alternatives shall be identified as the environmentally superior alternative from the remaining alternatives.

Given these requirements, this EIR assesses the following five alternatives at a programmatic level:

1. No Project/No Action
2. CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario
3. VMT Reduction – Transit Expansion/Smart Growth Focused Scenario
4. VMT Reduction – Pricing Policy Focused Scenario
5. Comprehensive – “Do Everything” Scenario

6.2 SUMMARY OF ALTERNATIVES

Because the final content of the 2009 CTP will not be known until the SCTA Board of Directors receives and considers public input on the draft Plan, this EIR considers five alternatives to the project that are intended to bracket policies and impacts associated with the proposed 2009 CTP.

As with the proposed 2009 CTP, ABAG’s *Projections 2007* serves as the underlying demographic and land use assumptions for the EIR analysis of alternatives, with specific exceptions noted. The descriptions of the alternatives are provided below, followed by an analysis that compares the environmental impacts of each alternative to the proposed Project. A complete listing of projects by alternative is provided in Appendix F of the 2008 CTP.

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Alternative 1: No Project/No Action Alternative

The No Project/No Action alternative addresses the effect of not implementing the 2009 CTP. This includes a set of transportation projects and programs that are in advanced planning stages and assumes that all reasonably foreseeable projects and programs (i.e., projects that are fully funded, programmed and/or have cleared the environmental phase) from the adopted 2004 CTP and 2009 Regional Transportation Improvement Program are implemented, but that all other projects and programs do not proceed forward. Therefore, the No Project alternative is not synonymous with existing conditions. These projects are: 1) identified in the federally required Fiscal Year 2009 Transportation Improvement Program, a four-year funding program of Bay Area projects and programs, 2) not yet in the TIP but are fully funded sales tax projects authorized by voters in Sonoma County, or 3) not yet in the TIP but fully funded through other committed funds as defined by statute or MTC policy. This alternative does not include transportation projects and programs funded by uncommitted discretionary funds. Details regarding the included improvements, programs, and other assumptions are provided below.

If the 2009 CTP is not approved, SCTA would continue to rely on the existing CTP until such time as a revised CTP were adopted. The existing 2004 CTP contains most of the same proposed large projects that are included in the current Draft CTP, including:

- U.S. 101: Wilfred - Rohnert Park Expressway to Santa Rosa Avenue – Add one HOV lane in each direction; add a two-lane connector road between Wilfred Avenue and Santa Rosa Avenue; add auxiliary lanes between Rohnert Park Expressway overcrossing and Wilfred Avenue/Golf Course Drive interchange; add auxiliary lane between Wilfred Avenue and Santa Rosa Avenue overcrossing; and realign surrounding roadways.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase A) – Add one HOV lane in each direction.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase A) – Add one HOV lane in each direction between Pepper Road and Rohnert Park Expressway; add northbound climbing lane from one mile north of Old Redwood Highway to West Sierra Avenue; add auxiliary lanes between Pepper Road and Rohnert Park Expressway.
- U.S. 101: Marin-Sonoma Narrows (Phase 1) – Upgrade Petaluma Boulevard South interchange and frontage roads; close expressway access.

Other than these improvements to U.S. 101 that are already included in the adopted CTP, no other local road improvements are identified and transit frequencies/headways are the same. The one additional improvement not previously analyzed in the 2004 CTP is the 2008 Countywide Bicycle and Pedestrian Master Plan. The No Project alternative assumes on-going, financially constrained regional operations programmed administered by MTC including; TransLink tickets, 511 information, Regional Rideshare Program, Freeway Call Boxes, Transit Connectivity, and Local Street/Road Improvements per the Pavement Condition Index (PCI).

The responsibility for implementing specific projects rests with the local entities and their ability to obtain funding. The environmental impacts of future projects constructed per the existing adopted CTP would be basically the same as predicted for projects under the Draft CTP. This EIR recommends mitigation measures that provide greater protection than under the existing plan. As such, future project development under the Draft CTP would have fewer environmental impacts than if these same projects were constructed per the existing CTP.

Land Use and Pricing Assumptions

The socio-economic forecasts used in the CTP are based on the Association of Bay Area Governments' (ABAG) Projections 2005 with adjustments based on local forecasts and the release of ABAG's Projections 2007. ABAG population and employment forecasts were used as control totals for jurisdictions and county planning areas. Sub-allocation of control totals to traffic analysis zones within jurisdiction boundaries or county planning areas were based on direction from local planning agencies and SCTA staff.

Pricing is assumed to follow current trends (includes automobile operating costs, parking costs, tolls, congestion charges, etc). Increases in fuel costs are assumed to be offset by improvements in fuel economy. Tolls, transit fares, and parking costs are assumed to keep pace with inflation, and no congestion charges assumed to be in place. Specific pricing assumptions include:

- Future Fuel Costs: Assumes that gasoline costs will increase from the 2005 average of \$2.52 per gallon (2008 average of \$4.25 gallon) to \$7.47 per gallon in 2035 in today's dollars. This fuel price increase is expected to be generally offset by improvements in vehicle fuel economy.
- Tolls: Toll costs are assumed to keep pace with inflation (i.e., no increase or decrease in toll amounts).
- Parking: Parking costs are assumed to keep pace with inflation.
- Transit Fares: Transit fares are assumed to keep pace with inflation.
- Congestion Charges: no congestion charges are assumed to be in place.

Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario

This alternative assumes the entire list of potential CTP projects are added to the financially-constrained CTP's transportation system, regardless of financial constraints. This would add capital improvement projects such as Phase B of U.S. 101 North and Central projects and all future phases of the U.S. 101 Marin-Sonoma Narrows. In addition, many local road improvement projects would be included along with several highway interchanges projects. Non-motorized improvements, regional operations, as well as land use and pricing assumptions are the same as for the No Project alternative. While this alternative assumes many more financially unconstrained (currently not financed) projects, it also assumes the following transit improvements including construction of the SMART rail project and increased frequencies on the Santa Rosa CityBus routes as listed below.

Transit Improvements

- Transit improvements listed in Measure M Strategic Plan.
- Sonoma-Marin Area Rail Transit (SMART) passenger rail project (30 minute headways during peak periods, 60 minute headways off peak).
- Increased frequencies (decreased headways) on Santa Rosa CityBus Routes:
 - Route 1 – 30 to 15 minute headways.
 - Route 2 – 30 to 15 minute headways.

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- Route 3 – 30 to 15 minute headways
 - Route 4 – 60 to 15 minute headways.
 - Route 5 – 30 to 15 minute headways.
 - Route 6 – 30 to 15 minute headways.
 - Route 7 – 60 to 15 minute headways.
 - Route 8 – 30 to 15 minute headways.
 - Route 9 – 30 to 15 minute headways.
 - Route 10 – 30 to 15 minute headways.
 - Route 11 – 30 to 15 minute headways.
 - Route 12 – 30 to 15 minute headways.
 - Route 14 – 30 to 15 minute headways.
 - Route 15 – 30 to 15 minute headways.
 - Route 16 – 60 to 15 minute headways.
 - Route 17 – 30 to 15 minute headways.
 - Route 18 – 60 to 15 minute headways.
 - Route 19 – 30 to 15 minute headways.
 - Mendocino Avenue/Santa Rosa Avenue Rapid Bus – Ten minute headways; same stops as current routes.
 - Montgomery/Sonoma/West Santa Rosa Rapid Bus – Ten minutes headways; same stops as current routes.
- Increased frequencies (decreased headways) on Sonoma County Transit Routes:
 - Route 20 – 80 to 45 minute headways.
 - Route 26 – 160 to 90 minute headways.
 - Route 30 – 85 to 45 minute headways.
 - Route 40 – 95 to 90 minute headways.
 - Route 44/48 – 50 to 30 minute headways.
 - Route 60 – 50 to 30 minute headways.
 - Route 62 – 90 to 60 minute headways.
 - Port Sonoma – Includes basic ferry service operating.

Additional Improvements

- Measure M provides for a ¼ cent sales tax that is used to maintain local streets, fix potholes, accelerate widening U.S. 101, improve interchanges, restore and enhance transit, support development of passenger rail, and build safe bicycle and pedestrian routes.
- Smaller, more specialized programs are available to local jurisdictions for specific projects such as rail projects, traffic safety and safe routes for schools, local projects funded through developer-related Transit Impact Fees, right-of-way, and dedication improvements by developers.

Regional Operations Programs

The project assumes ongoing, financially constrained regional operations programmed administered by MTC, including:

- TransLink – A universal ticket valid on all transit modes.

- 511 Traveler Information – A free phone and Web service with up-to-the-minute information on traffic conditions, incidents and driving times, schedule, route and fare information for the Bay Area’s public transportation services, instant carpool and vanpool referrals, and bicycling information.
- Regional Rideshare Program – A comprehensive resource that provides carpool matching and employer assistance in planning and formulating commute programs.
- Freeway Service Patrol/Call Boxes – The Freeway Service Patrol (FSP) involves a fleet of tow truck drivers that patrol the region’s most congested freeways during the busiest times of the day to quickly clear accidents and other incidents, assist motorists in trouble, remove dangerous road debris, and otherwise help to make the region’s freeways safer and less congested. The call box program provides assistance to motorists in trouble, allowing them to report a road hazard, a flat tire, or a mechanical breakdown.
- Transit Connectivity – A comprehensive strategy for easing passengers’ movement from one transit system to another by providing more reliable connections, making it easier to pay fares, improving way-finding signage, and reducing overall travel times.
- Improve Local Streets/Roads Pavement Condition Index (PCI) – The continuing need to maintain the quality of local roadways to maximize operational capacity and minimize safety hazards to the public.

A complete listing of projects is provided in Appendix F of the 2008 CTP.

This list of projects included in this alternative include many safety improvements such as; traffic signals, wider ramps, shoulders, turn pockets, new bridges, road realignments, sidewalks, bike lanes, and road widenings. While generally widening roads encourages more traffic, there are cases where roads have reached capacity and require widening for safety purposes as well. Therefore, this alternative overall both could increase vehicle miles traveled by making car travel safer and reduce VMT by encouraging more public transit use and alternative modes of transportation.

Highway Capital Improvements

- U.S. 101: Wilfred - Rohnert Park Expressway to Santa Rosa Avenue – Add one HOV lane in each direction; add a two-lane connector road between Wilfred Avenue and Santa Rosa Avenue; add auxiliary lanes between Rohnert Park Expressway overcrossing and Wilfred Avenue/Golf Course Drive interchange; add auxiliary lane between Wilfred Avenue and Santa Rosa Avenue overcrossing; and realign surrounding roadways.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase A) – Add one HOV lane in each direction.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase A) – Add one HOV lane in each direction between Pepper Road and Rohnert Park Expressway; add northbound climbing lane from one mile north of Old Redwood Highway to West Sierra Avenue; add auxiliary lanes between Pepper Road and Rohnert Park Expressway.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase B) – Add one HOV lane in each direction between Pepper Road and Highway 116; add auxiliary lanes between Pepper Road and Highway 116.

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- U.S. 101: North - Windsor River Road to Steele Lane (Phase B) – Add southbound auxiliary lanes between Hopper Avenue and Mendocino Avenue on-ramps; extend auxiliary lanes from north of Steele Lane to Bicentennial Way; modify River Road southbound off-ramp; add collector road between southbound Airport Boulevard on-ramp and southbound Fulton Road off-ramp; modify Airport Boulevard ramps.
- U.S. 101: Marin-Sonoma Narrows (Future Phases) – Highway 37 to Old Redwood Highway – Add one HOV lane in each direction; add auxiliary lanes; upgrade interchanges; add frontage roads.
- U.S. 101 ramp metering and fiber optic cable.

Local Road Improvements

- Penngrove and Railroad Avenue Area Improvements – Modifications to improve circulation in this area.
- Airport Boulevard Interchange and Improvements – Widening Airport Boulevard on both sides of Aviation Boulevard and signaling the intersection at Aviation Boulevard; widening Brickway Boulevard and extending Laughlin Road; widening Airport Boulevard from U.S. 101 to Old Redwood Highway; widening Laughlin Road from River Road to Brickway Boulevard and signaling the intersection of River Road at Laughlin Road; and reconstructing the Airport Boulevard-U.S. 101 interchange.
- Highway 121-116 Intersection and Arnold Drive Improvements – Remove a right turn lane and install a traffic signal at the intersection of Highways 121 and 116; relocate the park-and-ride lot, replace the Yellow Creek bridge; widen the roadway to allow for turn lanes into and out of existing commercial uses; increase capacity of park-and-ride lot from 47 spaces to 94 spaces; Arnold Drive improvements include adding traffic signals and center turn lanes at various locations.
- Old Redwood Highway Interchange – Replace Old Redwood Highway-U.S. 101 interchange with wider ramps, wider over-crossing, and improved signalization.
- Hearn Avenue Interchange – Widen Hearn Avenue bridge; add turn lanes and widen Santa Rosa Avenue approaches to Hearn Avenue interchange and realign ramps on west side of the interchange.
- Farmers Lane Extension – Construct a new street from intersection of Bennett Valley Road and Farmers Lane to the intersection of Petaluma Hill Road and Yolanda Avenue.
- Mark West Springs Road – Add shoulders and turn pockets.
- River Road Improvements – Straighten a curve west of Mirabel Road; add shoulders and right turn pockets.
- Bodega Highway Improvements – Straighten curves near Occidental; add turn pockets where needed.
- Fulton Road Improvements and Fulton Road-Highway 12 Interchange – Add turn lanes; add one through lane in each direction on Fulton Road; construct interchange at Highway 12 and Fulton Road.

- Highway 121 traffic signal system and channelization at 8th Street.
- Healdsburg Bridge – Replace existing two-lane bridge with a new bridge that would provide three lanes, including one travel lane in each direction and a center dual turning lane, as well as bike lanes and sidewalks on either side.
- Highway 116 (Stage Gulch Road) along Champlin Creek – Realign and widen remaining segments to accommodate pedestrians and bicyclists.
- Highway 116: Elphick Road to Redwood Drive – Rehabilitate and widen (involves realignment, new shoulders, and channelization improvements).
- Interchange improvements at:
 - U.S. 101 and Arata Lane – Add northbound on-ramp.
 - U.S. 101 and East Washington Street – Reconfigure and realign ramp; additional northbound on-ramp.
 - U.S. 101 and Mill Street – Add northbound off-ramp; add southbound on-ramp.
 - U.S. 101 and Shiloh Road – Signalize southbound off-ramp.
 - U.S. 101 and Dry Creek Road – Increase interchange capacity.
 - U.S. 101 and Bellevue Avenue – Add new diamond interchange.
 - U.S. 101 and River Road – Signalize southbound off-ramp.
 - U.S. 101 and Todd Road.
- Petaluma-Rainier Cross Town Connector/Interchange – Extend Rainier Avenue across U.S. 101 from McDowell to Petaluma Boulevard; add full interchange at U.S. 101 and Rainier Avenue.
- Convert bridges from one-lane to two-lane facilities.
- Old Redwood Highway Improvements: Petaluma to Cotati – Widen to four lanes.
- Adobe Road Reconstruction – Reconstruct portions of Adobe Road from Highway 116 to Penngrove; widen to three lanes from Casa Grande Road to old Redwood Highway.
- Snyder Lane – Widen to four lanes from Southwest Boulevard to Keiser Lane.
- Petaluma Hill Road – Widen and reconstruct from Adobe Road to Kawana Springs Road; add center turn lane.
- Cloverdale Boulevard/South Interchange Improvement near U.S. 101.
- East Cotati Avenue: Highway 101 to Snyder Lane – Implement arterial management.
- Bennett Valley Road: Santa Rosa to Grange Road – Reconstruct and widen.
- South Healdsburg Avenue/Mill Street Improvements.
- Old Redwood Highway: Hembree Lane to Shiloh Road – Widen to four lanes.
- Shiloh Road: Hembree Lane to Old Redwood Highway – Widen to four lanes.
- Windsor River Road – Widen and reconstruct from Windsor Road to Starr Road.

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- Railroad Avenue Improvements: U.S. 101 to Petaluma Hill Road – Widen to three lanes.
- Southern Crossing of the Petaluma River: Copeland Mountain to Caulfield across Petaluma River.
- Starr Road/Northwest Pacific Railroad (NWPRR) – Rebuild grade crossing.
- Dry Creek Road – Safety improvements.
- First Street Improvement – Widen from Crocker Road to Asti Road and install sidewalk.
- Bellevue Avenue Extension – Extend Bellevue to Petaluma Hill Road.
- Todd Road – Reconstruct from Stony Point Road to Llano Road; extend east to Petaluma Hill Road.
- West Sierra Arterial Improvements: Old Redwood Highway to Stony Point Road – Signalize; add bike lanes.
- Davis Street and 6th Street Traffic Signal Installation – Davis Street and 6th Street traffic signal installation; 6th Street undercrossing.
- New Citywide Traffic Signals: Santa Rosa – Implement ITS corridors (Mendocino Avenue, Guerneville Road/Steele Lane, Farmers Lane).
- Dutton Meadows – Widen and reconstruct from Hearn Avenue to Bellevue Avenue.
- West Avenue – Reconstruct and widen from Sebastopol Road to South Avenue.
- Old Redwood Highway – Widen to four lanes from Arata Lane to north town limits.
- Old Redwood Highway – Widen to four lanes from Windsor Road to Windsor River Road.
- Shiloh Road – Widen to four lanes from U.S. 101 to Skylane Boulevard.
- Petaluma Boulevard North-U.S. 101 to city limits (approximately 300 feet north of Gossage Avenue).
- Alexander Valley Road – Shoulder widening for bikes and sight distance; eliminate safety issues.
- Calistoga Road: Montecito Boulevard to Highway 12 – Traffic calming.
- Lakeville Road – Widen to four lanes from Highway 37 to Highway 116.
- Arnold Drive – Construct center turn lane from Country Club Drive to Madrone Road.
- Highway 12 – Widen to three lanes from Los Alamos Road to Pythian Road.
- Arnold Drive – Widen to three lanes from Verano Avenue to Petaluma Street.
- 8th Street East/Highway 121 – Increase intersection capacity.

- Farmers/4th Street – Intersection improvements.
- 8th Street East – Widening from Napa Road to Napa Street.
- Intersection control on Highway 116 at four locations in Sebastopol.
- River Road/Mark West Springs Road – Construct two additional lanes from Brickway Extension to Old Redwood Highway.
- Bellevue Avenue/Ludwig Avenue Connector – Realign Bellevue Avenue from Ludwig Avenue to Stony Point Road.
- Highway 12 – Widen to four lanes from Llano Road to South Wright Road.
- Todd Road – Widen from Stony Point Road to Llano Road; extend east to Petaluma Hill Road.
- West College Avenue: Fulton Road to Stony Point Road – Widen to four lanes and reconstruct (includes storm drain).
- Bodega Avenue: Golden Ridge Avenue to Pleasant Hill Road – Improve curb, gutter and sidewalk.
- Highway 116/Healdsburg Avenue: Live Oak Avenue to Hurlbut Avenue – Improve curb, gutter, and sidewalk.
- Stony Point Road (Phase 1) – Widen to six lanes and reconstruct from Highway 12 to approximately 800 feet south of Sebastopol Road.
- Stony Point Road (Phase 2) – Widen to four lanes and reconstruct south of Sebastopol Road to Hearn Avenue.
- Hearn Avenue Realignment (Phase 1) – Add turn lanes and widen to four lanes the Santa Rosa Avenue approaches to the Hearn Avenue interchange; include ITS.
- Hearn Avenue Realignment (Phase 2) – Widen Hearn Avenue to four lanes from the U.S. 101 overcrossing to Dutton Avenue; improve Hearn Avenue and Corby Avenue intersection.
- Hearn Avenue Realignment (Phase 3) – Complete widening of Hearn Avenue overcrossing of U.S. 101 and reconfigure southbound U.S. 101 ramps.
- Sebastopol Road: Olive Street to Dutton Avenue – Upgrade and reconstruct.
- West 9th Street: Dutton Avenue to Morgan Avenue – Widen to four lanes and reconstruct.
- Old Redwood Highway: La Plaza North to Highway 116/Gravenstein Highway – Rehabilitate roadway.
- Healdsburg Five Way Intersection Improvements - Healdsburg, Mill, and Westside Roads
- Rohnert Park Neighborhood Traffic Calming Program (\$60,000 per year).

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- Wilfred Avenue – Widen to four lanes.
- Rohnert Park Expressway – Widen to six lanes.
- Dowdell Avenue – Reconstruct and extend.
- Bodway Parkway Extension.
- State Farm Drive Corridor Improvements – Widen to four lanes.
- Commerce Drive Corridor Improvements – Widen to four lanes through Rohnert Park.
- City Center Drive Plaza and Pedestrian Improvements.
- Davis Street and 6th Street Traffic Signal.
- College Avenue Improvements: Cleveland Avenue to Morgan Street – Widen to four lanes.
- Highway 12 – Right-of-way for three lanes.
- Highway 12 at 4th Street.
- Gravenstein Highway/Highway 116: Spooner Park to U.S. 101 – Widen to three lanes.
- Highway 116: Elphick Road to Redwood Drive – Rehabilitate and widen (involves realignment, new shoulders and channelization improvements).
- U.S. 101 and Railroad Avenue Interchange – Add southbound ramps.
- U.S. 101 and Mendocino Avenue/ Hopper Avenue Interchange.
- Traffic Calming on County Rights-of-Way.
- Old Redwood Highway – Widen to four lanes from Shiloh Road to Santa Rosa city limits.
- Old Redwood Highway – Widen to four lanes from Railroad Avenue to Petaluma city limits.
- Fulton Road – Widen to four lanes from Old Redwood Highway to Piner Road.
- Highway 12 – Widen to three lanes from Llano Road to Highway 116.
- Bodega Highway – Widen to three lanes from Sebastopol city limits to Jonive Road.
- Stony Point Road – Widen to four lanes from Santa Rosa city limits to Petaluma city limits.
- Santa Rosa Avenue – Widen to four lanes from Todd Road to U.S. 101.
- Ely Road – Add center turn lane from Old Redwood Highway to Petaluma city limits.
- Corona Road – Add center turn lane from Adobe Road to Ely Road.

- Lakeville Highway – Widen to four lanes from U.S. 101 to Highway 37.
- Highway 37 – Widen to four lanes.
- Stage Gulch Road – Add center turn lane from Adobe Road to Arnold Drive.
- Highway 12 – Add center turn lane from Santa Rosa to Sonoma.
- Arnold Drive – Add center turn lane from Madrone Road to Petaluma Avenue.
- Madrone Road – Add center turn lane from Arnold Road to Highway 12.
- Aqua Caliente Road – Add center turn lane from Arnold Road to Highway 12.
- Verano Avenue – Add center turn lane from Arnold Road to Highway 12.
- Petaluma Avenue – Add center turn lane from Arnold Road to Highway 12.
- Northpoint Parkway – Extend as two-lane facility from Fresno Avenue to South Wright Road.
- Northpoint Parkway – Widen to four lanes from Stony Point Road to Fresno Avenue.
- Fresno Avenue – Extend as two-lane facility from Northpoint Parkway to Finley Avenue.
- Corporate Center Parkway – Widen to four lanes from Northpoint Parkway to Sebastopol Road.
- Stony Point Road – Widen to four lanes from Hearn Avenue to Santa Rosa city limits.
- Maureen Drive: Dutton Avenue to Dutton Meadow – Realign and widen to four lanes.
- Dutton Avenue – Extend to as four-lane facility to existing Dutton Avenue at Hearn Avenue.
- Hearn Avenue – Realign as four-lane facility from Burbank Avenue to Northpoint Parkway.
- Sebastopol Road – Four-lane facility from Dutton Avenue to Stony Point Road.
- Corby Avenue – Widen to four lanes from Baker Avenue to Hearn Avenue.
- Baker Overcrossing of U.S. 101 – Widen to four lanes.
- Santa Rosa Avenue – Add one southbound lane from Baker Avenue to Colgan Avenue.
- Petaluma Hill Road – Widen to four lanes from Aston Way to Santa Rosa city limits.
- Kawana Springs Road – Widen to add one westbound lane from Santa Rosa Avenue to Petaluma Hill Road.
- Stony Point Road – Widen to six lanes from 3rd Street to Highway 12.

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- West 3rd Street – Widen to four lanes from Senna Drive to Fulton Road.
- West 9th Street – Widen to four lanes from Dutton Avenue to Link Lane.
- Cleveland Avenue – Widen to four-lane facility from College Avenue to West 9th Street.
- Range Avenue – Widen to four lanes from Steele Lane to Russell Avenue.
- Piner Road – Widen to four lanes from Marlow Road to Fulton Road.
- Hopper Avenue – Widen to four lanes from Cleveland Avenue to Coffey Lane.
- Courthouse Square Closure – Close Mendocino Avenue; convert 3rd Street to one-way facility south of Courthouse Square.
- 3rd Street – Widen to six lanes from Morgan Street to B Street.
- Morgan Street – Widen to six lanes from 3rd Street to 5th Street.
- North Street – Widen to four lanes from Carr Avenue to College Avenue.
- Franklin Avenue – Widen to four lanes from Lewis Road to North Street.
- Chanate Road – Widen to four lanes from Humboldt Street to Mendocino Avenue.

Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario

This alternative assumes that future transportation policy and improvements are focused on land use change and accompanying transit expansion to reduce vehicle miles traveled (VMT). While this alternative includes the same highway capital improvements and local road improvements as the proposed project (constrained 2009 CTP), local road improvements include Transit Priority Measures, which represent roadway infrastructure that protects the speed and on-time reliability of bus transit. Non-motorized improvements and regional transportation operations are the same as Alternative 1. In addition to all transit improvements in the proposed project, this alternative includes reduced headways for SMART rail and Sonoma County Transit bus service.

Land Use and Pricing Assumptions

Future land use is assumed to be focused around county PDAs and other smart growth areas designated by local governments, rail/transit stations, and locally designated pedestrian or special development districts. Projected population and job growth numbers are constant across all alternatives, including this one; growth is shifted to higher densities in designated smart growth zones. A higher percentage of future development has been allocated at higher densities. Pricing assumptions for this alternative are the same as Alternative 1. Additional improvements included in this alternative are the same as Alternative 2.

Transit Improvements

This alternative assumed all transit frequencies are improved. Transit improvements include:

- Transit improvements listed in Measure M Strategic Plan.

- SMART passenger rail frequencies of 15 minute headways during peak periods, 30 minute headways off peak; and SMART shuttle service added to the transportation system.
- Increased frequencies (decreased headways) on Santa Rosa CityBus Routes:
 - Route 1 – 30 to 15 minute headways.
 - Route 2 – 30 to 15 minute headways.
 - Route 3 – 30 to 15 minute headways
 - Route 4 – 60 to 15 minute headways.
 - Route 5 – 30 to 15 minute headways.
 - Route 6 – 30 to 15 minute headways.
 - Route 7 – 60 to 15 minute headways.
 - Route 8 – 30 to 15 minute headways.
 - Route 9 – 30 to 15 minute headways.
 - Route 10 – 30 to 15 minute headways.
 - Route 11 – 30 to 15 minute headways.
 - Route 12 – 30 to 15 minute headways.
 - Route 14 – 30 to 15 minute headways.
 - Route 15 – 30 to 15 minute headways.
 - Route 16 – 60 to 15 minute headways.
 - Route 17 – 30 to 15 minute headways.
 - Route 18 – 60 to 15 minute headways.
 - Route 19 – 30 to 15 minute headways.
 - Mendocino Avenue/Santa Rosa Avenue Rapid Bus – Ten minute headways; same stops as current routes.
 - Montgomery/Sonoma/West Santa Rosa Rapid Bus – Ten minutes headways; same stops as current routes.
- Increased frequencies (decreased headways) on Sonoma County Transit Routes:
 - Route 10 – 50 to 30 minute headways.
 - Route 12 – 50 to 30 minute headways.
 - Route 14 – 50 to 30 minute headways.
 - Route 20 – 80 to 45 minute headways.
 - Route 26 – 160 to 90 minute headways.
 - Route 28 – 80 to 50 minute headways.
 - Route 30 – 85 to 45 minute headways.
 - Route 32 – 50 to 40 minute headways.
 - Route 40 – 95 to 90 minute headways.
 - Route 42 – 75 to 60 minute headways.
 - Route 44/48 – 50 to 30 minute headways.
 - Route 60 – 50 to 30 minute headways.
 - Route 62 – 90 to 60 minute headways.
 - Route 64 – 90 to 60 minute headways.
- Port Sonoma – Includes ferry service operating, connecting with San Francisco.

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Additional Improvements

- Measure M provides for a ¼ cent sales tax that is used to maintain local streets, fix potholes, accelerate widening U.S. 101, improve interchanges, restore and enhance transit, support development of passenger rail, and build safe bicycle and pedestrian routes.
- Smaller, more specialized programs are available to local jurisdictions for specific projects such as rail projects, traffic safety and safe routes for schools, local projects funded through developer-related Transit Impact Fees, right-of-way, and dedication improvements by developers.

Regional Operations Programs

The project assumes ongoing, financially constrained regional operations programmed administered by MTC, including:

- TransLink – A universal ticket valid on all transit modes.
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- Regional Rideshare Program – A comprehensive resource that provides carpool matching and employer assistance in planning and formulating commute programs.
- Freeway Service Patrol/Call Boxes – The Freeway Service Patrol (FSP) involves a fleet of tow truck drivers that patrol the region’s most congested freeways during the busiest times of the day to quickly clear accidents and other incidents, assist motorists in trouble, remove dangerous road debris, and otherwise help to make the region’s freeways safer and less congested. The call box program provides assistance to motorists in trouble, allowing them to report a road hazard, a flat tire, or a mechanical breakdown.
- Transit Connectivity – A comprehensive strategy for easing passengers’ movement from one transit system to another by providing more reliable connections, making it easier to pay fares, improving way-finding signage, and reducing overall travel times.
- Improve Local Streets/Roads Pavement Condition Index (PCI) – The continuing need to maintain the quality of local roadways to maximize operational capacity and minimize safety hazards to the public.

Highway Capital Improvements

- U.S. 101: Wilfred - Rohnert Park Expressway to Santa Rosa Avenue – Add one HOV lane in each direction; add a two-lane connector road between Wilfred Avenue and Santa Rosa Avenue; add auxiliary lanes between Rohnert Park Expressway overcrossing and Wilfred Avenue/Golf Course Drive interchange; add auxiliary lane between Wilfred Avenue and Santa Rosa Avenue overcrossing; and realign surrounding roadways.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase A) – Add one HOV lane in each direction.

- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase A) – Add one HOV lane in each direction between Pepper Road and Rohnert Park Expressway; add northbound climbing lane from one mile north of Old Redwood Highway to West Sierra Avenue; add auxiliary lanes between Pepper Road and Rohnert Park Expressway.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase B) – Add one HOV lane in each direction between Pepper Road and Highway 116; add auxiliary lanes between Pepper Road and Highway 116.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase B) – Add southbound auxiliary lanes between Hopper Avenue and Mendocino Avenue on-ramps; extend auxiliary lanes from north of Steele Lane to Bicentennial Way; modify River Road southbound off-ramp; add collector road between southbound Airport Boulevard on-ramp and southbound Fulton Road off-ramp; modify Airport Boulevard ramps.
- U.S. 101: Marin-Sonoma Narrows (Future Phases) – Highway 37 to Old Redwood Highway – Add one HOV lane in each direction; add auxiliary lanes; upgrade interchanges; add frontage roads.
- U.S. 101 ramp metering and fiber optic cable.

Local Road Improvements

- Penngrove and Railroad Avenue Area Improvements – Modifications to improve circulation in this area.
- Airport Boulevard Interchange and Improvements – Widening Airport Boulevard on both sides of Aviation Boulevard and signaling the intersection at Aviation Boulevard; widening Brickway Boulevard and extending Laughlin Road; widening Airport Boulevard from U.S. 101 to Old Redwood Highway; widening Laughlin Road from River Road to Brickway Boulevard and signaling the intersection of River Road at Laughlin Road; and reconstructing the Airport Boulevard-U.S. 101 interchange.
- Highway 121-116 Intersection and Arnold Drive Improvements – Remove a right turn lane and install a traffic signal at the intersection of Highways 121 and 116; relocate the park-and-ride lot, replace the Yellow Creek bridge; widen the roadway to allow for turn lanes into and out of existing commercial uses; increase capacity of park-and-ride lot from 47 spaces to 94 spaces; Arnold Drive improvements include adding traffic signals and center turn lanes at various locations.
- Old Redwood Highway Interchange – Replace Old Redwood Highway-U.S. 101 interchange with wider ramps, wider over-crossing, and improved signalization.
- Hearn Avenue Interchange – Widen Hearn Avenue bridge; add turn lanes and widen Santa Rosa Avenue approaches to Hearn Avenue interchange and realign ramps on west side of the interchange.
- Farmers Lane Extension – Construct a new street from intersection of Bennett Valley Road and Farmers Lane to the intersection of Petaluma Hill Road and Yolanda Avenue.
- Mark West Springs Road – Add shoulders and turn pockets.

6.0 PROJECT ALTERNATIVES

- River Road Improvements – Straighten a curve west of Mirabel Road; add shoulders and right turn pockets.
- Bodega Highway Improvements – Straighten curves near Occidental; add turn pockets where needed.
- Fulton Road Improvements and Fulton Road-Highway 12 Interchange – Add turn lanes; add one through lane in each direction on Fulton Road; construct interchange at Highway 12 and Fulton Road.
- Highway 121 traffic signal system and channelization at 8th Street.
- Healdsburg Bridge – Replace existing two-lane bridge with a new bridge that would provide three lanes, including one travel lane in each direction and a center dual turning lane, as well as bike lanes and sidewalks on either side.
- Highway 116 (Stage Gulch Road) along Champlin Creek – Realign and widen remaining segments to accommodate pedestrians and bicyclists.
- Highway 116: Elphick Road to Redwood Drive – Rehabilitate and widen (involves realignment, new shoulders, and channelization improvements).
- Interchange improvements at:
 - U.S. 101 and Arata Lane – Add northbound on-ramp.
 - U.S. 101 and East Washington Street – Reconfigure and realign ramp; additional northbound on-ramp.
 - U.S. 101 and Mill Street – Add northbound off-ramp; add southbound on-ramp.
 - U.S. 101 and Shiloh Road – Signalize southbound off-ramp.
 - U.S. 101 and Dry Creek Road – Increase interchange capacity.
 - U.S. 101 and Bellevue Avenue – Add new diamond interchange.
 - U.S. 101 and River Road – Signalize southbound off-ramp.
 - U.S. 101 and Todd Road.
- Petaluma-Rainier Cross Town Connector/Interchange – Extend Rainier Avenue across U.S. 101 from McDowell to Petaluma Boulevard; add full interchange at U.S. 101 and Rainier Avenue.
- Convert bridges from one-lane to two-lane facilities.
- Transit Priority Measures (TPM) – TPM represents roadway infrastructure that protects the speed and on-time reliability of bus transit. Examples include signal prioritization, dedicated bus/HOV lanes, queue jumpers, left turn bays, etc.

Alternative 4: VMT Reduction – Pricing Policy Focused Scenario

This alternative focuses on using pricing measures and policy as a means of reducing travel demand and trip reduction. Highway capital improvements and additional improvements included in this alternative are the same as the proposed project except that U.S. 101 HOV lanes are assumed to be converted to high occupancy toll (HOT) lanes. Local road improvements included in this alternative are the same as Alternative 3 except this alternative does not include the Transit Priority Measures. Non-motorized transportation improvements and Regional Operations Programs are the same as the proposed project.

To represent the carbon tax or VMT tax, gas prices are assumed to increase 45 percent from a 2008 average of \$4.25 to \$7.47 in 2035 (in 2008 dollars). In addition, a \$5.50 per trip congestion charge would be applied in 2035. Overall, the total auto operating cost per mile would increase by 500 percent, from \$0.23 to \$1.27 per mile when the congestion charge is factored in. For the congestion fee, a charge of 25 cents per mile on congested freeways is added to freeway segments where the volume-to-capacity (v/c) ratio exceeds 0.90 (very congested facilities). This impacts both work and non-work trips, and has a higher impact on short trips than long trips due to the increase in parking charges. Increases in parking costs (\$1 for all downtown and large commercial areas unless current rates are higher) would increase use of non-motorized modes (bicycling and walking). The aggregate effect of these pricing strategies is a substantial increase in auto operating cost. This alternative aims to encourage more people to bike, walk and take transit, drive less, and produce less transportation-related greenhouse gas emissions by making it very expensive to drive.

Land Use and Pricing Assumptions

Land use assumptions for this alternative are the same as the proposed project. Pricing assumptions include:

- Future Fuel Costs: Assumes that gasoline costs will increase from the 2005 average of \$2.52 per gallon (current [2008] average of \$4.25 gallon) to \$7.47 per gallon plus \$5.50 per mile congestion charge in 2035 in today's dollars. This equates to a per mile cost (operating costs including gas, maintenance and tires, but not including ownership costs such as insurance, depreciation, taxes, etc.) increasing from \$0.23 per mile in 2008 to \$1.27 per mile in 2035.
- Tolls: Toll costs are assumed to keep pace with inflation (i.e., no increase or decrease in toll amounts).
- Parking: Parking costs for all downtown and large commercial areas is assumed to be set at \$1.00 per hour or at current rates if higher (for peak and off-peak periods).
- Transit Fares: Transit fares are assumed to keep pace with inflation.
- Congestion Charges: a \$0.25 per mile congestion fee/gas tax is assumed to be in place on congested roadways during peak hours.

Transit Improvements

- Transit improvements listed in Measure M Strategic Plan.
- Sonoma-Marín Area Rail Transit (SMART) passenger rail project (30 minute headways during peak periods, 60 minute headways off peak).
- Increased frequencies (decreased headways) on Santa Rosa CityBus Routes:
 - Route 4 – 60 to 15 minute headways.
 - Route 5 – 30 to 15 minute headways.
 - Route 7 – 60 to 15 minute headways.
 - Route 9 – 30 to 15 minute headways.
 - Route 14 – 30 to 15 minute headways.
 - Route 19 – 30 to 15 minute headways.

6.0 PROJECT ALTERNATIVES

- Mendocino Avenue/Santa Rosa Avenue Rapid Bus – Ten minute headways; same stops as current routes.
- Montgomery/Sonoma/West Santa Rosa Rapid Bus – Ten minutes headways; same stops as current routes.
- No ferry service operating out of Port Sonoma.

Additional Improvements

- Measure M provides for a ¼ cent sales tax that is used to maintain local streets, fix potholes, accelerate widening U.S. 101, improve interchanges, restore and enhance transit, support development of passenger rail, and build safe bicycle and pedestrian routes.
- Smaller, more specialized programs are available to local jurisdictions for specific projects such as rail projects, traffic safety and safe routes for schools, local projects funded through developer-related Transit Impact Fees, right-of-way, and dedication improvements by developers.

Regional Operations Programs

The project assumes ongoing, financially constrained regional operations programmed administered by MTC, including:

- TransLink – A universal ticket valid on all transit modes.
- 511 Traveler Information – A free phone and Web service with up-to-the-minute information on traffic conditions, incidents and driving times, schedule, route and fare information for the Bay Area’s public transportation services, instant carpool and vanpool referrals, and bicycling information.
- Regional Rideshare Program – A comprehensive resource that provides carpool matching and employer assistance in planning and formulating commute programs.
- Freeway Service Patrol/Call Boxes – The Freeway Service Patrol (FSP) involves a fleet of tow truck drivers that patrol the region’s most congested freeways during the busiest times of the day to quickly clear accidents and other incidents, assist motorists in trouble, remove dangerous road debris, and otherwise help to make the region’s freeways safer and less congested. The call box program provides assistance to motorists in trouble, allowing them to report a road hazard, a flat tire, or a mechanical breakdown.
- Transit Connectivity – A comprehensive strategy for easing passengers’ movement from one transit system to another by providing more reliable connections, making it easier to pay fares, improving way-finding signage, and reducing overall travel times.
- Improve Local Streets/Roads Pavement Condition Index (PCI) – The continuing need to maintain the quality of local roadways to maximize operational capacity and minimize safety hazards to the public.

Highway Capital Improvements

- U.S. 101: Wilfred - Rohnert Park Expressway to Santa Rosa Avenue – Add one HOT lane in each direction; add a two-lane connector road between Wilfred Avenue and Santa Rosa Avenue; add auxiliary lanes between Rohnert Park Expressway overcrossing and Wilfred Avenue/Golf Course Drive interchange; add auxiliary lane between Wilfred Avenue and Santa Rosa Avenue overcrossing; and realign surrounding roadways.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase A) – Add one HOT lane in each direction.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase A) – Add one HOT lane in each direction between Pepper Road and Rohnert Park Expressway; add northbound climbing lane from one mile north of Old Redwood Highway to West Sierra Avenue; add auxiliary lanes between Pepper Road and Rohnert Park Expressway.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase B) – Add one HOT lane in each direction between Pepper Road and Highway 116; add auxiliary lanes between Pepper Road and Highway 116.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase B) – Add southbound auxiliary lanes between Hopper Avenue and Mendocino Avenue on-ramps; extend auxiliary lanes from north of Steele Lane to Bicentennial Way; modify River Road southbound off-ramp; add collector road between southbound Airport Boulevard on-ramp and southbound Fulton Road off-ramp; modify Airport Boulevard ramps.
- U.S. 101: Marin-Sonoma Narrows (Future Phases) – Highway 37 to Old Redwood Highway – Add one HOT lane in each direction; add auxiliary lanes; upgrade interchanges; add frontage roads.
- U.S. 101 ramp metering and fiber optic cable.

Local Road Improvements

- Penngrove and Railroad Avenue Area Improvements – Modifications to improve circulation in this area.
- Airport Boulevard Interchange and Improvements – Widening Airport Boulevard on both sides of Aviation Boulevard and signaling the intersection at Aviation Boulevard; widening Brickway Boulevard and extending Laughlin Road; widening Airport Boulevard from U.S. 101 to Old Redwood Highway; widening Laughlin Road from River Road to Brickway Boulevard and signaling the intersection of River Road at Laughlin Road; and reconstructing the Airport Boulevard-U.S. 101 interchange.
- Highway 121-116 Intersection and Arnold Drive Improvements – Remove a right turn lane and install a traffic signal at the intersection of Highways 121 and 116; relocate the park-and-ride lot, replace the Yellow Creek bridge; widen the roadway to allow for turn lanes into and out of existing commercial uses; increase capacity of park-and-ride lot from 47 spaces to 94 spaces; Arnold Drive improvements include adding traffic signals and center turn lanes at various locations.

6.0 PROJECT ALTERNATIVES

- Old Redwood Highway Interchange – Replace Old Redwood Highway-U.S. 101 interchange with wider ramps, wider over-crossing, and improved signalization.
- Hearn Avenue Interchange – Widen Hearn Avenue bridge; add turn lanes and widen Santa Rosa Avenue approaches to Hearn Avenue interchange and realign ramps on west side of the interchange.
- Farmers Lane Extension – Construct a new street from intersection of Bennett Valley Road and Farmers Lane to the intersection of Petaluma Hill Road and Yolanda Avenue.
- Mark West Springs Road – Add shoulders and turn pockets.
- River Road Improvements – Straighten a curve west of Mirabel Road; add shoulders and right turn pockets.
- Bodega Highway Improvements – Straighten curves near Occidental; add turn pockets where needed.
- Fulton Road Improvements and Fulton Road-Highway 12 Interchange – Add turn lanes; add one through lane in each direction on Fulton Road; construct interchange at Highway 12 and Fulton Road.
- Highway 121 traffic signal system and channelization at 8th Street.
- Healdsburg Bridge – Replace existing two-lane bridge with a new bridge that would provide three lanes, including one travel lane in each direction and a center dual turning lane, as well as bike lanes and sidewalks on either side.
- Highway 116 (Stage Gulch Road) along Champlin Creek – Realign and widen remaining segments to accommodate pedestrians and bicyclists.
- Highway 116: Elphick Road to Redwood Drive – Rehabilitate and widen (involves realignment, new shoulders, and channelization improvements).
- Interchange improvements at:
 - U.S. 101 and Arata Lane – Add northbound on-ramp.
 - U.S. 101 and East Washington Street – Reconfigure and realign ramp; additional northbound on-ramp.
 - U.S. 101 and Mill Street – Add northbound off-ramp; add southbound on-ramp.
 - U.S. 101 and Shiloh Road – Signalize southbound off-ramp.
 - U.S. 101 and Dry Creek Road – Increase interchange capacity.
 - U.S. 101 and Bellevue Avenue – Add new diamond interchange.
 - U.S. 101 and River Road – Signalize southbound off-ramp.
 - U.S. 101 and Todd Road.
- Petaluma-Rainier Cross Town Connector/Interchange – Extend Rainier Avenue across U.S. 101 from McDowell to Petaluma Boulevard; add full interchange at U.S. 101 and Rainier Avenue.
- Convert bridges from one-lane to two-lane facilities.

Alternative 5: Comprehensive/"Do Everything" Scenario

This scenario includes the entire list of possible CTP projects, regardless of financial constraints and all previously identified measures to reduce VMT (Smart Growth-related land use changes and pricing measures). Transit improvements included in this alternative are the cumulative improvements identified in all other alternatives. Local road improvements included in this alternative are the cumulative improvements identified in all other alternatives. While funding is not secured for all highway capital and local road improvements, the general result of this alternative would be to make all safety improvements and road widenings that would accommodate capacity to 2035 based land use that promotes smart growth.

Transit Improvements

- Transit improvements listed in Measure M Strategic Plan.
- SMART passenger rail frequencies of 15 minute headways during peak periods, 30 minute headways off peak; and SMART shuttle service added to the transportation system.
- Increased frequencies (decreased headways) on Santa Rosa CityBus Routes:
 - Route 1 – 30 to 15 minute headways.
 - Route 2 – 30 to 15 minute headways.
 - Route 3 – 30 to 15 minute headways
 - Route 4 – 60 to 15 minute headways.
 - Route 5 – 30 to 15 minute headways.
 - Route 6 – 30 to 15 minute headways.
 - Route 7 – 60 to 15 minute headways.
 - Route 8 – 30 to 15 minute headways.
 - Route 9 – 30 to 15 minute headways.
 - Route 10 – 30 to 15 minute headways.
 - Route 11 – 30 to 15 minute headways.
 - Route 12 – 30 to 15 minute headways.
 - Route 14 – 30 to 15 minute headways.
 - Route 15 – 30 to 15 minute headways.
 - Route 16 – 60 to 15 minute headways.
 - Route 17 – 30 to 15 minute headways.
 - Route 18 – 60 to 15 minute headways.
 - Route 19 – 30 to 15 minute headways.
 - Mendocino Avenue/Santa Rosa Avenue Rapid Bus – Ten minute headways; same stops as current routes.
 - Montgomery/Sonoma/West Santa Rosa Rapid Bus – Ten minutes headways; same stops as current routes.
- Increased frequencies (decreased headways) on Sonoma County Transit Routes:
 - Route 10 – 50 to 30 minute headways.
 - Route 12 – 50 to 30 minute headways.
 - Route 14 – 50 to 30 minute headways.
 - Route 20 – 80 to 45 minute headways.
 - Route 26 – 160 to 90 minute headways.
 - Route 28 – 80 to 50 minute headways.
 - Route 30 – 85 to 45 minute headways.

6.0 PROJECT ALTERNATIVES

- Route 32 – 50 to 40 minute headways.
 - Route 40 – 95 to 90 minute headways.
 - Route 42 – 75 to 60 minute headways.
 - Route 44/48 – 50 to 30 minute headways.
 - Route 60 – 50 to 30 minute headways.
 - Route 62 – 90 to 60 minute headways.
 - Route 64 – 90 to 60 minute headways.
- Port Sonoma – Includes ferry service operating, connecting with San Francisco.

Additional Improvements

- Measure M provides for a ¼ cent sales tax that is used to maintain local streets, fix potholes, accelerate widening U.S. 101, improve interchanges, restore and enhance transit, support development of passenger rail, and build safe bicycle and pedestrian routes.
- Smaller, more specialized programs are available to local jurisdictions for specific projects such as rail projects, traffic safety and safe routes for schools, local projects funded through developer-related Transit Impact Fees, right-of-way, and dedication improvements by developers.

Regional Operations Programs

The project assumes ongoing, financially constrained regional operations programmed administered by MTC, including:

- TransLink – A universal ticket valid on all transit modes.
- 511 Traveler Information – A free phone and Web service with up-to-the-minute information on traffic conditions, incidents and driving times, schedule, route and fare information for the Bay Area’s public transportation services, instant carpool and vanpool referrals, and bicycling information.
- Regional Rideshare Program – A comprehensive resource that provides carpool matching and employer assistance in planning and formulating commute programs.
- Freeway Service Patrol/Call Boxes – The Freeway Service Patrol (FSP) involves a fleet of tow truck drivers that patrol the region’s most congested freeways during the busiest times of the day to quickly clear accidents and other incidents, assist motorists in trouble, remove dangerous road debris, and otherwise help to make the region’s freeways safer and less congested. The call box program provides assistance to motorists in trouble, allowing them to report a road hazard, a flat tire, or a mechanical breakdown.
- Transit Connectivity – A comprehensive strategy for easing passengers’ movement from one transit system to another by providing more reliable connections, making it easier to pay fares, improving way-finding signage, and reducing overall travel times.
- Improve Local Streets/Roads Pavement Condition Index (PCI) – The continuing need to maintain the quality of local roadways to maximize operational capacity and minimize safety hazards to the public.

Highway Capital Improvements

- U.S. 101: Wilfred - Rohnert Park Expressway to Santa Rosa Avenue – Add one HOT lane in each direction; add a two-lane connector road between Wilfred Avenue and Santa Rosa Avenue; add auxiliary lanes between Rohnert Park Expressway overcrossing and Wilfred Avenue/Golf Course Drive interchange; add auxiliary lane between Wilfred Avenue and Santa Rosa Avenue overcrossing; and realign surrounding roadways.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase A) – Add one HOT lane in each direction.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase A) – Add one HOT lane in each direction between Pepper Road and Rohnert Park Expressway; add northbound climbing lane from one mile north of Old Redwood Highway to West Sierra Avenue; add auxiliary lanes between Pepper Road and Rohnert Park Expressway.
- U.S. 101: Central - Rohnert Park Expressway to Old Redwood Highway (Phase B) – Add one HOT lane in each direction between Pepper Road and Highway 116; add auxiliary lanes between Pepper Road and Highway 116.
- U.S. 101: North - Windsor River Road to Steele Lane (Phase B) – Add southbound auxiliary lanes between Hopper Avenue and Mendocino Avenue on-ramps; extend auxiliary lanes from north of Steele Lane to Bicentennial Way; modify River Road southbound off-ramp; add collector road between southbound Airport Boulevard on-ramp and southbound Fulton Road off-ramp; modify Airport Boulevard ramps.
- U.S. 101: Marin-Sonoma Narrows (Future Phases) – Highway 37 to Old Redwood Highway – Add one HOT lane in each direction; add auxiliary lanes; upgrade interchanges; add frontage roads.
- U.S. 101 ramp metering and fiber optic cable.

Local Road Improvements

- Penngrove and Railroad Avenue Area Improvements – Modifications to improve circulation in this area.
- Airport Boulevard Interchange and Improvements – Widening Airport Boulevard on both sides of Aviation Boulevard and signaling the intersection at Aviation Boulevard; widening Brickway Boulevard and extending Laughlin Road; widening Airport Boulevard from U.S. 101 to Old Redwood Highway; widening Laughlin Road from River Road to Brickway Boulevard and signaling the intersection of River Road at Laughlin Road; and reconstructing the Airport Boulevard-U.S. 101 interchange.
- Highway 121-116 Intersection and Arnold Drive Improvements – Remove a right turn lane and install a traffic signal at the intersection of Highways 121 and 116; relocate the park-and-ride lot, replace the Yellow Creek bridge; widen the roadway to allow for turn lanes into and out of existing commercial uses; increase capacity of park-and-ride lot from 47 spaces to 94 spaces; Arnold Drive improvements include adding traffic signals and center turn lanes at various locations.

6.0 PROJECT ALTERNATIVES

- Old Redwood Highway Interchange – Replace Old Redwood Highway-U.S. 101 interchange with wider ramps, wider over-crossing, and improved signalization.
- Hearn Avenue Interchange – Widen Hearn Avenue bridge; add turn lanes and widen Santa Rosa Avenue approaches to Hearn Avenue interchange and realign ramps on west side of the interchange.
- Farmers Lane Extension – Construct a new street from intersection of Bennett Valley Road and Farmers Lane to the intersection of Petaluma Hill Road and Yolanda Avenue.
- Mark West Springs Road – Add shoulders and turn pockets.
- River Road Improvements – Straighten a curve west of Mirabel Road; add shoulders and right turn pockets.
- Bodega Highway Improvements – Straighten curves near Occidental; add turn pockets where needed.
- Fulton Road Improvements and Fulton Road-Highway 12 Interchange – Add turn lanes; add one through lane in each direction on Fulton Road; construct interchange at Highway 12 and Fulton Road.
- Highway 121 traffic signal system and channelization at 8th Street.
- Healdsburg Bridge – Replace existing two-lane bridge with a new bridge that would provide three lanes, including one travel lane in each direction and a center dual turning lane, as well as bike lanes and sidewalks on either side.
- Highway 116 (Stage Gulch Road) along Champlin Creek – Realign and widen remaining segments to accommodate pedestrians and bicyclists.
- Highway 116: Elphick Road to Redwood Drive – Rehabilitate and widen (involves realignment, new shoulders, and channelization improvements).
- Interchange improvements at:
 - U.S. 101 and Arata Lane – Add northbound on-ramp.
 - U.S. 101 and East Washington Street – Reconfigure and realign ramp; additional northbound on-ramp.
 - U.S. 101 and Mill Street – Add northbound off-ramp; add southbound on-ramp.
 - U.S. 101 and Shiloh Road – Signalize southbound off-ramp.
 - U.S. 101 and Dry Creek Road – Increase interchange capacity.
 - U.S. 101 and Bellevue Avenue – Add new diamond interchange.
 - U.S. 101 and River Road – Signalize southbound off-ramp.
 - U.S. 101 and Todd Road.
- Petaluma-Rainier Cross Town Connector/Interchange – Extend Rainier Avenue across U.S. 101 from McDowell to Petaluma Boulevard; add full interchange at U.S. 101 and Rainier Avenue.
- Convert bridges from one-lane to two-lane facilities.
- Old Redwood Highway Improvements: Petaluma to Cotati – Widen to four lanes.

- Adobe Road Reconstruction – Reconstruct portions of Adobe Road from Highway 116 to Penngrove; widen to three lanes from Casa Grande Road to old Redwood Highway.
- Snyder Lane – Widen to four lanes from Southwest Boulevard to Keiser Lane.
- Petaluma Hill Road – Widen and reconstruct from Adobe Road to Kawana Springs Road; add center turn lane.
- Cloverdale Boulevard/South Interchange Improvement near U.S. 101.
- East Cotati Avenue: Highway 101 to Snyder Lane – Implement arterial management.
- Bennett Valley Road: Santa Rosa to Grange Road – Reconstruct and widen.
- South Healdsburg Avenue/Mill Street Improvements.
- Old Redwood Highway: Hembree Lane to Shiloh Road – Widen to four lanes.
- Shiloh Road: Hembree Lane to Old Redwood Highway – Widen to four lanes.
- Windsor River Road – Widen and reconstruct from Windsor Road to Starr Road.
- Railroad Avenue Improvements: U.S. 101 to Petaluma Hill Road – Widen to three lanes.
- Southern Crossing of the Petaluma River: Copeland Mountain to Caulfield across Petaluma River.
- Starr Road/Northwest Pacific Railroad (NWPRR) – Rebuild grade crossing.
- Dry Creek Road – Safety improvements.
- First Street Improvement – Widen from Crocker Road to Asti Road and install sidewalk.
- Bellevue Avenue Extension – Extend Bellevue to Petaluma Hill Road.
- Todd Road – Reconstruct from Stony Point Road to Llano Road; extend east to Petaluma Hill Road.
- West Sierra Arterial Improvements: Old Redwood Highway to Stony Point Road – Signalize; add bike lanes.
- Davis Street and 6th Street Traffic Signal Installation – Davis Street and 6th Street traffic signal installation; 6th Street undercrossing.
- New Citywide Traffic Signals: Santa Rosa – Implement ITS corridors (Mendocino Avenue, Guerneville Road/Steele Lane, Farmers Lane).
- Dutton Meadows – Widen and reconstruct from Hearn Avenue to Bellevue Avenue.
- West Avenue – Reconstruct and widen from Sebastopol Road to South Avenue.
- Old Redwood Highway – Widen to four lanes from Arata Lane to north town limits.

6.0 PROJECT ALTERNATIVES

- Old Redwood Highway – Widen to four lanes from Windsor Road to Windsor River Road.
- Shiloh Road – Widen to four lanes from U.S. 101 to Skylane Boulevard.
- Petaluma Boulevard North-U.S. 101 to city limits (approximately 300 feet north of Gossage Avenue).
- Alexander Valley Road – Shoulder widening for bikes and sight distance; eliminate safety issues.
- Calistoga Road: Montecito Boulevard to Highway 12 – Traffic calming.
- Lakeville Road – Widen to four lanes from Highway 37 to Highway 116.
- Arnold Drive – Construct center turn lane from Country Club Drive to Madrone Road.
- Highway 12 – Widen to three lanes from Los Alamos Road to Pythian Road.
- Arnold Drive – Widen to three lanes from Verano Avenue to Petaluma Street.
- 8th Street East/Highway 121 – Increase intersection capacity.
- Farmers/4th Street – Intersection improvements.
- 8th Street East – Widening from Napa Road to Napa Street.
- Intersection control on Highway 116 at four locations in Sebastopol.
- River Road/Mark West Springs Road – Construct two additional lanes from Brickway Extension to Old Redwood Highway.
- Bellevue Avenue/Ludwig Avenue Connector – Realign Bellevue Avenue from Ludwig Avenue to Stony Point Road.
- Highway 12 – Widen to four lanes from Llano Road to South Wright Road.
- Todd Road – Widen from Stony Point Road to Llano Road; extend east to Petaluma Hill Road.
- West College Avenue: Fulton Road to Stony Point Road – Widen to four lanes and reconstruct (includes storm drain).
- Bodega Avenue: Golden Ridge Avenue to Pleasant Hill Road – Improve curb, gutter and sidewalk.
- Highway 116/Healdsburg Avenue: Live Oak Avenue to Hurlbut Avenue – Improve curb, gutter, and sidewalk.
- Stony Point Road (Phase 1) – Widen to six lanes and reconstruct from Highway 12 to approximately 800 feet south of Sebastopol Road.
- Stony Point Road (Phase 2) – Widen to four lanes and reconstruct south of Sebastopol Road to Hearn Avenue.

- Hearn Avenue Realignment (Phase 1) – Add turn lanes and widen to four lanes the Santa Rosa Avenue approaches to the Hearn Avenue interchange; include ITS.
- Hearn Avenue Realignment (Phase 2) – Widen Hearn Avenue to four lanes from the U.S. 101 overcrossing to Dutton Avenue; improve Hearn Avenue and Corby Avenue intersection.
- Hearn Avenue Realignment (Phase 3) – Complete widening of Hearn Avenue overcrossing of U.S. 101 and reconfigure southbound U.S. 101 ramps.
- Sebastopol Road: Olive Street to Dutton Avenue – Upgrade and reconstruct.
- West 9th Street: Dutton Avenue to Morgan Avenue – Widen to four lanes and reconstruct.
- Old Redwood Highway: La Plaza North to Highway 116/Gravenstein Highway – Rehabilitate roadway.
- Healdsburg Five Way Intersection Improvements - Healdsburg, Mill, and Westside Roads
- Rohnert Park Neighborhood Traffic Calming Program (\$60,000 per year).
- Wilfred Avenue – Widen to four lanes.
- Rohnert Park Expressway – Widen to six lanes.
- Dowdell Avenue – Reconstruct and extend.
- Bodway Parkway Extension.
- State Farm Drive Corridor Improvements – Widen to four lanes.
- Commerce Drive Corridor Improvements – Widen to four lanes through Rohnert Park.
- City Center Drive Plaza and Pedestrian Improvements.
- Davis Street and 6th Street Traffic Signal.
- College Avenue Improvements: Cleveland Avenue to Morgan Street – Widen to four lanes.
- Highway 12 – Right-of-way for three lanes.
- Highway 12 at 4th Street.
- Gravenstein Highway/Highway 116: Spooner Park to U.S. 101 – Widen to three lanes.
- Highway 116: Elphick Road to Redwood Drive – Rehabilitate and widen (involves realignment, new shoulders and channelization improvements).
- U.S. 101 and Railroad Avenue Interchange – Add southbound ramps.
- U.S. 101 and Mendocino Avenue/ Hopper Avenue Interchange.

6.0 PROJECT ALTERNATIVES

- Traffic Calming on County Rights-of-Way.
- Old Redwood Highway – Widen to four lanes from Shiloh Road to Santa Rosa city limits.
- Old Redwood Highway – Widen to four lanes from Railroad Avenue to Petaluma city limits.
- Fulton Road – Widen to four lanes from Old Redwood Highway to Piner Road.
- Highway 12 – Widen to three lanes from Llano Road to Highway 116.
- Bodega Highway – Widen to three lanes from Sebastopol city limits to Jonive Road.
- Stony Point Road – Widen to four lanes from Santa Rosa city limits to Petaluma city limits.
- Santa Rosa Avenue – Widen to four lanes from Todd Road to U.S. 101.
- Ely Road – Add center turn lane from Old Redwood Highway to Petaluma city limits.
- Corona Road – Add center turn lane from Adobe Road to Ely Road.
- Lakeville Highway – Widen to four lanes from U.S. 101 to Highway 37.
- Highway 37 – Widen to four lanes.
- Stage Gulch Road – Add center turn lane from Adobe Road to Arnold Drive.
- Highway 12 – Add center turn lane from Santa Rosa to Sonoma.
- Arnold Drive – Add center turn lane from Madrone Road to Petaluma Avenue.
- Madrone Road – Add center turn lane from Arnold Road to Highway 12.
- Aqua Caliente Road – Add center turn lane from Arnold Road to Highway 12.
- Verano Avenue – Add center turn lane from Arnold Road to Highway 12.
- Petaluma Avenue – Add center turn lane from Arnold Road to Highway 12.
- Northpoint Parkway – Extend as two-lane facility from Fresno Avenue to South Wright Road.
- Northpoint Parkway – Widen to four lanes from Stony Point Road to Fresno Avenue.
- Fresno Avenue – Extend as two-lane facility from Northpoint Parkway to Finley Avenue.
- Corporate Center Parkway – Widen to four lanes from Northpoint Parkway to Sebastopol Road.
- Stony Point Road – Widen to four lanes from Hearn Avenue to Santa Rosa city limits.
- Maureen Drive: Dutton Avenue to Dutton Meadow – Realign and widen to four lanes.

- Dutton Avenue – Extend to as four-lane facility to existing Dutton Avenue at Hearn Avenue.
- Hearn Avenue – Realign as four-lane facility from Burbank Avenue to Northpoint Parkway.
- Sebastopol Road – Four-lane facility from Dutton Avenue to Stony Point Road.
- Corby Avenue – Widen to four lanes from Baker Avenue to Hearn Avenue.
- Baker Overcrossing of U.S. 101 – Widen to four lanes.
- Santa Rosa Avenue – Add one southbound lane from Baker Avenue to Colgan Avenue.
- Petaluma Hill Road – Widen to four lanes from Aston Way to Santa Rosa city limits.
- Kawana Springs Road – Widen to add one westbound lane from Santa Rosa Avenue to Petaluma Hill Road.
- Stony Point Road – Widen to six lanes from 3rd Street to Highway 12.
- West 3rd Street – Widen to four lanes from Senna Drive to Fulton Road.
- West 9th Street – Widen to four lanes from Dutton Avenue to Link Lane.
- Cleveland Avenue – Widen to four-lane facility from College Avenue to West 9th Street.
- Range Avenue – Widen to four lanes from Steele Lane to Russell Avenue.
- Piner Road – Widen to four lanes from Marlow Road to Fulton Road.
- Hopper Avenue – Widen to four lanes from Cleveland Avenue to Coffey Lane.
- Courthouse Square Closure – Close Mendocino Avenue; convert 3rd Street to one-way facility south of Courthouse Square.
- 3rd Street – Widen to six lanes from Morgan Street to B Street.
- Morgan Street – Widen to six lanes from 3rd Street to 5th Street.
- North Street – Widen to four lanes from Carr Avenue to College Avenue.
- Franklin Avenue – Widen to four lanes from Lewis Road to North Street.
- Chanate Road – Widen to four lanes from Humboldt Street to Mendocino Avenue.
- Transit Priority Measures (TPM) – TPM represents roadway infrastructure that protects the speed and on-time reliability of bus transit. Examples include signal prioritization, dedicated bus/HOV lanes, queue jumpers, left turn bays, etc.

6.0 PROJECT ALTERNATIVES

6.3 COMPARATIVE ANALYSIS OF ALTERNATIVES' IMPACTS

The following analysis compares the relative environmental impacts of the five EIR alternatives against the proposed project, prior to recommended mitigation. In this way, decision-makers and the public are able to compare the relative strengths and weaknesses of the alternatives and how they impact the environment.

While all five EIR alternatives respond to the same overall growth forecast for future population, housing, and jobs in Sonoma County, the comparative analysis of their impacts recognizes how each differs in how it can:

1. Impact the physical environment through construction of capital improvements, and
2. Reduce motor vehicle activity through capital improvements, changes in growth patterns, market-based pricing policies, or other strategies that affect how a growing county travels in the future.

Indeed, each alternative can result in fewer adverse environmental impacts in some areas, and more adverse impacts in other areas. For example, an alternative that includes more transportation capital projects can result in more physical impacts on the environment (e.g., more impacts on sensitive biological resources) yet have more beneficial air quality impacts in the long-term from improved operation of the roadway system.

Alternative 1: No Project/No Action Alternative

Because the No Project alternative assumes no implementation of the 2009 CTP, only reasonably foreseeable projects and programs (i.e., projects that are fully funded, programmed and/or have cleared the environmental phase) from the adopted 2004 CTP and 2009 Regional Transportation Improvement Program are implemented. While most U.S. 101 carpool lane projects would continue forward, some highway and all arterial roadway improvements would not proceed. As a result, the alternative would have less impact on many elements of the physical environment due to fewer capital improvements. On the other hand, the inability to implement projects that address current and future mobility issues will result in more adverse impacts on traffic-related issues, such as transportation, long-term air quality, and long-term noise.

Aesthetics

By eliminating all proposed roadway projects, this alternative would introduce fewer potentially incongruous visual elements, glare, lighting, or blockage of scenic vistas. As a result, this alternative would have less adverse impacts on visual resources in Sonoma County than the proposed constrained CTP.

Air Quality

This alternative would not implement many of the Transportation Control Measures included in the MTC's transportation plans and programs and the BAAQMD's ozone attainment plan. As such, it would not be consistent with regional air quality plans. Further, average speeds would drop from 25 mph in the proposed CTP to 24 mph countywide. As a result, this alternative would result in increased emissions of criteria pollutants when compared to the constrained CTP (see **Table 6.0-1**). Construction impacts would be lower than the proposed CTP, as fewer

transportation capital projects on local roadways would require construction that would produce engine combustion and PM₁₀ emissions from construction equipment.

**TABLE 6.0-1
COMPARISON OF CRITERIA POLLUTANT EMISSIONS: ALTERNATIVE 1 TO PROPOSED PROJECT
(TONS/DAY)**

Alternative	ROG	NOx	CO	SOx	PM ₁₀	PM _{2.5}
Proposed Project (2009 CTP)	0.76	2.24	14.74	0.08	0.70	0.46
Alternative 1: No Project/No Action	0.77	2.27	15.09	0.08	0.73	0.47
Difference	+0.01	+0.03	+0.36	+0.00	+0.03	+0.02

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008 and California Air Resources Board EMFAC model. Any discrepancies are due to rounding of values.

Climate Change

The proposed project is not expected to have significant impacts on climate change, nor is it expected to significantly expose people or transportation projects to risk from the effects of climate change. This alternative would have the same types of less than significant impacts on climate change, given that much of the reductions of GHG from the motor vehicle inventory are anticipated to come from improved fuel economy standards, low-carbon fuel standards, and other technological reforms.

Traffic and Circulation

This alternative would not implement dozens of local roadway widening, signalization, transit projects, and other improvements that would help accommodate local and regional travel. This could bring the CTP in conflict with local General Plan Circulation Elements and ordinances that call for specified improvements to local transportation systems. The long-term impacts on vehicle miles traveled (VMT), vehicle hours traveled (VHT), and average travel speeds would be more adverse than the proposed constrained CTP (see **Table 6.0-2** through **Table 6.0-4**). As a result, this alternative would have more adverse impacts on traffic and circulation than the proposed 2009 CTP. The following tables compare future VMT, VHT, and countywide travel speeds by roadway facility type.

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**TABLE 6.0-2
COMPARISON OF COUNTYWIDE VMT: ALTERNATIVE 1 TO PROPOSED PROJECT**

Daily Vehicle Miles of Travel	Estimated	2009 CTP	Alternative 1	Difference
Facility Type	2008	2035	2035	2035
Freeway	3,946,149	5,374,193	5,211,757	-162,436
Highway/Expressway	680,777	937,347	910,051	-27,297
Arterial	4,839,837	5,797,499	6,276,871	479,372
Collector	1,048,674	1,255,234	1,293,610	38,376
Freeway Ramps	206,400	250,057	255,602	5,546
Local	719,974	803,625	820,520	16,895
TOTAL	11,441,811	14,417,956	14,768,411	352,490

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

**TABLE 6.0-3
COMPARISON OF COUNTYWIDE VHT: ALTERNATIVE 1 TO PROPOSED PROJECT**

Daily Vehicle Hours of Travel	Estimated	2009 CTP	Alternative 1	Difference
Facility Type	2008	2035	2035	2035
Freeway	70,963	96,920	102,508	5,588
Highway/Expressway	16,442	23,221	22,839	-381
Arterial	162,756	358,264	399,365	41,101
Collector	34,896	43,451	45,778	2,327
Freeway Ramps	5,100	6,327	6,757	431
Local	36,183	41,030	41,894	864
TOTAL	326,339	569,213	619,142	51,964

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

**TABLE 6.0-4
COMPARISON OF COUNTYWIDE AVERAGE TRAVEL SPEEDS: ALTERNATIVE 1 TO PROPOSED PROJECT**

Average Daily Vehicle Speed	Estimated	2009 CTP	Alternative 1	Difference
Facility Type	2008	2035	2035	2035
Freeway	55.9	55.4	50.8	-4.6
Highway/Expressway	41.5	40.4	39.8	-0.5
Arterial	32.4	16.2	15.7	-0.5
Collector	30.1	28.9	28.3	-0.6
Freeway Ramps	40.6	39.5	37.8	-1.7
Local	19.9	19.6	19.6	0.0
TOTAL	36.3	25.3	23.9	-1.5

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

Biological Resources

By eliminating all proposed roadway projects, this alternative would involve less construction of capital improvements that could cause physical barriers to sensitive biological resources. The potential to impact or bisect critical habitats, sensitive areas, and wildlife corridors would be less than the proposed 2009 CTP.

Cultural Resources

This alternative would involve less construction of capital improvements that could unearth artifacts of historic, prehistoric, archeological, or otherwise significant cultural resources. This alternative eliminates all proposed roadway projects, where the likelihood of such discoveries could be greater than along the U.S. 101 corridor, where the extent of urbanization has already disturbed many areas. As a result, this alternative's potential to impact cultural resources would be less than the proposed 2009 CTP.

Geology and Soils

Since this alternative eliminates all proposed roadway projects, the potential to increase soil erosion, slope instability, or expose persons to potentially damaging geologic forces would be less than the proposed 2009 CTP.

Hazards and Hazardous Materials

The proposed project would not substantially differ from the proposed project in its potential to transport hazardous materials or create significant hazards to the public. In fact, much of the safety programs intended to improve the maintenance of streets within the range of 70-80 Pavement Condition Index would likely still proceed, reducing the potential for hazards from the transport of hazardous materials. This alternative's impact on hazards and hazardous wastes is similar to that of the proposed 2009 CTP.

Hydrology and Water Quality

This alternative would involve less construction of impermeable roadway surfaces that could degrade water quality via surface run-off or interfere with groundwater recharge. Similarly, the potential to place structures in flood hazard areas or expose people to flooding is reduced with this alternative. Generally, this alternative would have fewer impacts than the proposed 2009 CTP.

Land Use

While the proposed project would not implement major initiatives such as the network of roadway improvements in the 2009 CTP, it would not substantially differ in its impacts on land use and agricultural resources. This reduced scope alternative would not differ from the CTP in its consistency with adopted land use policies, its potential to conflict with conservation plans, disrupt land uses, or impact farmland resources.

Noise

When compared to the proposed project, this alternative would have comparable impacts on noise levels throughout the county. On one hand, the deferral of local roadway improvements would reduce traffic volumes on dozens of arterials, collectors, and local highways throughout

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the county. This could produce fewer impacts on ambient noise levels near these roadways in the future. . The lack of local road improvements would alter circulation patterns in the future that would add 352,490 more VMT daily, which would generally result in more noise impacts cumulatively. As a result, this alternative presents a different range of noise impacts that, when taken as a whole, would be comparable to the proposed 2009 CTP.

Population and Housing

The No Project alternative would not displace residences or businesses or induce substantial population growth in the county. As such, this alternative would not differ from the proposed 2009 CTP in its impacts on population and housing.

Public Services

The No Project alternative would not create a need for additional public facilities or impact landfills with insufficient capacity. However, it could increase emergency response times, as local roads would become more congested over time without the CTP's capital investments in road widening and signalization projects. Indeed, transportation models show reductions in average travel speeds on arterials and collectors declining by about 0.5 miles per hour, when compared to the proposed project. On the other hand, because this alternative does not assume implementation of SMART commuter rail service, potential impacts to emergency response times associated with train crossing would be lesser under this alternative. Overall, the impact of this alternative is comparable to the proposed 2009 CTP.

Energy

The No Project/No Build alternative would implement fewer transportation improvements that over time will increase congestion and fuel consumption. When compared to the proposed project, this alternative would result in 352,490 more VMT daily throughout Sonoma County. When combined with increased congestion and reduced speeds, fuel consumption from the motor vehicle fleet would be higher than the proposed project. On the other hand, this alternative would eliminate the potential use of diesel fuel for DMUs used to service the SMART commuter rail system. However, this alternative would overall result in higher consumption of energy than the proposed project.

Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario

This financially-unconstrained alternative assumes that all possible proposed CTP projects are added to the transportation system independent of financial constraints. As a result, the alternative would have a greater impact on many elements of the physical environment due to the increase in capital improvements. On the other hand, the increased ability to implement projects that address current and future mobility issues will improve mobility in the future, thereby reducing impacts on traffic-related issues, such as transportation, long-term air quality, and long-term noise.

Aesthetics

By increasing the number of roadway and transit projects implemented through the CTP, this alternative would introduce more potentially incongruous visual elements, glare, lighting, or blockage of scenic vistas. As a result, this alternative would have more adverse impacts on visual resources in Sonoma County than the proposed constrained CTP.

Air Quality

This alternative would implement all of the Transportation Control Measures included in the MTC’s transportation plans and programs and the BAAQMD’s ozone attainment plan. As such, it would be consistent with regional air quality plans. When compared to the proposed constrained CTP, average speeds would increase about 2.5 mph countywide. As a result, this alternative would result in lower emissions of criteria pollutants when compared to the constrained CTP (see **Table 6.0-5**). Construction impacts would be greater than the proposed CTP, as more transportation capital projects on local roadways would require construction that would produce engine combustion and PM₁₀ emissions from construction equipment.

**TABLE 6.0-5
COMPARISON OF CRITERIA POLLUTANT EMISSIONS: ALTERNATIVE 2 TO PROPOSED PROJECT
(TONS/DAY)**

Alternative	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Proposed Project (2009 CTP)	0.76	2.24	14.74	0.08	0.70	0.46
Alternative 2: CTP Vision, Financially Unconstrained Capital Improvement Scenario	0.71	2.19	14.41	0.08	0.66	0.42
Difference	-0.06	-0.05	-0.33	-0.00	-0.04	-0.04

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008 and California Air Resources Board EMFAC model. Any discrepancies are due to rounding of values.

Climate Change

The proposed project is not expected to have significant impacts on climate change, nor is it expected to significant expose people or transportation projects to risk from the effects of climate change. This alternative would have the same types of less than significant impacts on climate change, given that much of the reductions of GHG from the motor vehicle inventory are anticipated to come from improved fuel economy standards, low-carbon fuel standards, and other technological reforms.

Traffic and Circulation

This alternative would implement more roadway widening, signalization, and other improvements that would help accommodate local and regional travel. This could help ensure the CTP is consistent with local General Plan Circulation Elements and ordinances that call for specified improvements to local transportation systems. While this alternative would increase VMT countywide over the proposed CTP, VHT would reduce by over 48,000 hours daily and average travel speeds would improve by 2.5 mph countywide. As a result, this alternative would have more beneficial impacts on traffic and circulation than the proposed 2009 CTP (see **Table 6.0-6** through **Table 6.0-8**). The following tables compare future VMT, VHT, and countywide travel speeds by roadway facility type.

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**TABLE 6.0-6
COMPARISON OF COUNTYWIDE VMT: ALTERNATIVE 2 TO PROPOSED PROJECT**

Daily Vehicle Miles of Travel	Estimated	2009 CTP	Alternative 2	Difference
Facility Type	2008	2035	2035	2035
Freeway	3,946,149	5,374,193	5,303,803	-70,390
Highway/Expressway	680,777	937,347	1,018,581	81,234
Arterial	4,839,837	5,797,499	5,857,040	59,541
Collector	1,048,674	1,255,234	1,199,473	-55,761
Freeway Ramps	206,400	250,057	252,179	2,123
Local	719,974	803,625	804,647	1,022
TOTAL	11,441,811	14,417,956	14,435,724	19,803

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

**TABLE 6.0-7
COMPARISON OF COUNTYWIDE VHT: ALTERNATIVE 2 TO PROPOSED PROJECT**

Daily Vehicle Hours of Travel	Estimated	2009 CTP	Alternative 2	Difference
Facility Type	2008	2035	2035	2035
Freeway	70,963	96,920	94,717	-2,203
Highway/Expressway	16,442	23,221	25,103	1,882
Arterial	162,756	358,264	310,555	-47,709
Collector	34,896	43,451	40,976	-2,475
Freeway Ramps	5,100	6,327	6,354	28
Local	36,183	41,030	41,068	38
TOTAL	326,339	569,213	518,773	-48,405

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

**TABLE 6.0-8
COMPARISON OF COUNTYWIDE AVERAGE TRAVEL SPEEDS: ALTERNATIVE 2 TO PROPOSED PROJECT**

Average Daily Vehicle Speed	Estimated	2009 CTP	Alternative 2	Difference
Facility Type	2008	2035	2035	2035
Freeway	55.9	55.4	56.0	0.5
Highway/Expressway	41.5	40.4	40.6	0.2
Arterial	32.4	16.2	18.9	2.7
Collector	30.1	28.9	29.3	0.4
Freeway Ramps	40.6	39.5	39.7	0.2
Local	19.9	19.6	19.6	0.0
TOTAL	36.3	25.3	27.8	2.5

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

Biological Resources

By increasing the number of roadway and other capital improvement projects, this alternative would increase construction and operation of transportation projects that could cause physical barriers to sensitive biological resources. The potential to impact or bisect critical habitats, sensitive areas, and wildlife corridors would be more than the proposed 2009 CTP.

Cultural Resources

This alternative would involve more construction of capital improvements that could unearth artifacts of historic, prehistoric, archeological, or otherwise significant cultural resources. As a result, this alternative's potential to impact cultural resources would be more than the proposed 2009 CTP.

Geology and Soils

Since this alternative adds more roadway projects and other capital improvements than the proposed 2009 CTP, the potential to increase soil erosion, slope instability, or expose persons to potentially damaging geologic forces would be more than the proposed 2009 CTP.

Hazards and Hazardous Materials

The proposed project would not substantially differ from the proposed project in its potential to transport hazardous materials or create significant hazards to the public. The safety programs intended to improve the maintenance of streets within the range of 70-80 Pavement Condition Index would still proceed, reducing the potential for hazards from the transport of hazardous materials. This alternative's impact on hazards and hazardous wastes is similar to that of the proposed 2009 CTP.

Hydrology and Water Quality

This alternative would involve more construction of impermeable roadway surfaces that could degrade water quality via surface run-off or interfere with groundwater recharge. Similarly, the potential to place structures in flood hazard areas or expose people to flooding is increased with this alternative. Generally, this alternative would have greater adverse impacts than the proposed 2009 CTP.

Land Use

This unconstrained alternative could increase potential conflict with adopted land use policies, conservation plans, disrupt land uses, or impact farmland resources. Since the proposed project would implement more capital improvements than the 2009 CTP, it would potentially impact more land use and agricultural resources than the proposed project.

Noise

When compared to the proposed project, this alternative would have comparable impacts on noise levels throughout the county. This alternative would increase countywide VMT by 19,803 miles daily over the proposed project. This would generally result in more noise impacts cumulatively. However, average travel speeds would improve and delay would decrease. In addition, increased SMART rail service frequencies would increase localized noise impacts along

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the NCRA right-of-way from both rail operations and train horns. When taken as a whole, this alternative would have impacts on noise that are comparable to the proposed 2009 CTP.

Population and Housing

Because of its increased funding for capital improvements, this Vision alternative could displace residences or businesses countywide. However, such impacts would not be expected to be significant, given the limited nature of the unconstrained capital improvements to occupy substantial areas with existing development. As such, this alternative would not differ from the proposed 2009 CTP in its impacts on population and housing.

Public Services

The Vision alternative would not create a need for additional public facilities and would generally improve emergency response times over the proposed CTP, as average roadway speeds would increase about 2.5 mph in this scenario. However, the construction of more capital projects could impact local landfills and the increase in SMART commuter rail service could increase potential impacts to emergency response times associated with train crossing. Overall, the impact of this alternative is comparable to the proposed 2009 CTP.

Energy

The Vision alternative would implement more transportation improvements that would further reduce congestion and fuel consumption over the proposed CTP. When compared to the proposed project, this alternative would increase VMT countywide; however, VHT would reduce by over 48,000 hours daily and average travel speeds would improve by 2.5 mph countywide. Given the influence of slower speeds and idling on fuel consumption, this alternative would likely result in lower consumption of energy than the proposed project.

Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario

This alternative builds off the constrained 2009 CTP, but assumes that future transportation policy and improvements are focused on land use change and accompanying transit expansion to reduce VMT. It shifts the focus from roadway improvements toward additional transit expansion, such as reduced headway for SMART rail service and Sonoma County Transit bus service. This alternative also includes market-based incentives to promote growth in areas that have adequate transportation infrastructure in place. This includes increased density PDAs established by MTC around rail/transit stations, as well as locally designated pedestrian or special development districts.

By reducing the need for decentralized growth, this alternative would have a lesser impact on many elements of the physical environment. The focus on more sustainable growth would generally reduce impacts on traffic-related issues, such as transportation, long-term air quality, and long-term noise.

Aesthetics

This alternative would reduce the number of roadway projects, particularly those in areas with more scenic resources, while promoting more dense development in urbanized areas. As such, this alternative would introduce less incongruous visual elements, glare, lighting, to the region and would reduce the potential for the CTP to block scenic vistas. As a result, this alternative would have less adverse impacts on visual resources than the proposed constrained CTP.

Air Quality

This alternative would implement the Transportation Control Measures included in the MTC's transportation plans and programs and would be consistent with the BAAQMD's ozone attainment plan. When compared to the proposed constrained CTP, average speeds would increase about 2.4 mph countywide, largely due to a reduction in demand for vehicle travel due to improved transit service and more centralized growth. As a result, this alternative would result in lower emissions of criteria pollutants when compared to the constrained CTP (see **Table 6.0-9**). Construction impacts would be lesser than the proposed CTP, as fewer roadway capital projects would require construction that would produce engine combustion and PM₁₀ emissions from construction equipment.

**TABLE 6.0-9
COMPARISON OF CRITERIA POLLUTANT EMISSIONS: ALTERNATIVE 3 TO PROPOSED PROJECT
(TONS/DAY)**

Alternative	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Proposed Project (2009 CTP)	0.76	2.24	14.74	0.08	0.70	0.46
Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	0.68	2.05	13.44	0.07	0.63	0.40
Difference	-0.08	-0.19	-1.29	-0.01	-0.08	-0.06

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008 and California Air Resources Board EMFAC model. Any discrepancies are due to rounding of values.

Climate Change

The proposed project is not expected to have significant impacts on climate change, nor is it expected to significantly expose people or transportation projects to risk from the effects of climate change. This alternative would have the same types of less than significant impacts on climate change, given that much of the reductions of GHG from the motor vehicle inventory are anticipated to come from improved fuel economy standards, low-carbon fuel standards, and other technological reforms.

Traffic and Circulation

This alternative would be focused on implementing more transit improvements and increased land use densification, and other improvements that would help accommodate local and regional travel. This could help ensure the CTP is consistent with local General Plan Circulation Elements and ordinances that call for specified improvements to local transportation systems. This alternative would substantially decrease over 1 million VMT countywide over the proposed CTP, reduce VHT by over 85,000 hours daily, and improve average travel speeds by 2.4 mph. As a result, this alternative would have more beneficial impacts on traffic and circulation than the proposed 2009 CTP (see **Table 6.0-10** through **Table 6.0-12**). The following tables compare future VMT, VHT, and countywide travel speeds by roadway facility type.

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TABLE 6.0-10
COMPARISON OF COUNTYWIDE VMT: ALTERNATIVE 3 TO PROPOSED PROJECT

Daily Vehicle Miles of Travel	Estimated	2009 CTP	Alternative 3	Difference
Facility Type	2008	2035	2035	2035
Freeway	3,946,149	5,374,193	5,251,429	-122,764
Highway/Expressway	680,777	937,347	868,504	-68,843
Arterial	4,839,837	5,797,499	5,157,751	-639,748
Collector	1,048,674	1,255,234	1,138,099	-117,135
Freeway Ramps	206,400	250,057	236,080	-13,977
Local	719,974	803,625	697,660	-105,965
TOTAL	11,441,811	14,417,956	13,349,523	-1,066,397

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

TABLE 6.0-11
COMPARISON OF COUNTYWIDE VHT: ALTERNATIVE 3 TO PROPOSED PROJECT

Daily Vehicle Hours of Travel	Estimated	2009 CTP	Alternative 3	Difference
Facility Type	2008	2035	2035	2035
Freeway	70,963	96,920	92,058	-4,862
Highway/Expressway	16,442	23,221	20,761	-2,460
Arterial	162,756	358,264	288,811	-69,454
Collector	34,896	43,451	38,910	-4,541
Freeway Ramps	5,100	6,327	5,839	-487
Local	36,183	41,030	35,465	-5,565
TOTAL	326,339	569,213	481,844	-85,334

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

TABLE 6.0-12
COMPARISON OF COUNTYWIDE AVERAGE TRAVEL SPEEDS: ALTERNATIVE 3 TO PROPOSED PROJECT

Average Daily Vehicle Speed	Estimated	2009 CTP	Alternative 3	Difference
Facility Type	2008	2035	2035	2035
Freeway	55.9	55.4	57.0	1.6
Highway/Expressway	41.5	40.4	41.8	1.5
Arterial	32.4	16.2	17.9	1.7
Collector	30.1	28.9	29.2	0.4
Freeway Ramps	40.6	39.5	40.4	0.9
Local	19.9	19.6	19.7	0.1
TOTAL	36.3	25.3	27.7	2.4

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

Biological Resources

By reducing the number of roadway and other capital improvement projects, this alternative would decrease construction and operation of transportation projects that could cause physical barriers to sensitive biological resources. The potential to impact or bisect critical habitats, sensitive areas, and wildlife corridors would be less than the proposed 2009 CTP.

Cultural Resources

This alternative would involve less construction of roadway improvements that could unearth artifacts of historic, prehistoric, archeological, or otherwise significant cultural resources. As a result, this alternative's potential to impact cultural resources would be less than the proposed 2009 CTP.

Geology and Soils

Since this alternative adds fewer roadway projects than the proposed 2009 CTP, the potential to increase soil erosion, slope instability, or expose persons to potentially damaging geologic forces would be less than the proposed 2009 CTP.

Hazards and Hazardous Materials

The proposed project would not substantially differ from the proposed project in its potential to transport hazardous materials or create significant hazards to the public. The safety programs intended to improve the maintenance of streets within the range of 70-80 Pavement Condition Index would still proceed, reducing the potential for hazards from the transport of hazardous materials. This alternative's impact on hazards and hazardous wastes is similar to that of the proposed 2009 CTP.

Hydrology and Water Quality

This alternative would involve less construction of impermeable roadway surfaces that could degrade water quality via surface run-off or interfere with groundwater recharge. Similarly, the potential to place structures in flood hazard areas or expose people to flooding is decreased with this alternative. Generally, this alternative would have less adverse impacts than the proposed 2009 CTP.

Land Use

This alternative could increase potential conflict with adopted land use policies from local governments that have not planned for increased growth around PDAs or transit nodes. However, potential growth strategies would need to be developed in concert with local governments to ensure that local growth priorities are honored. Because municipalities have ultimate authority over land use decisions, conflicts with adopted land use policies are not expected to be significant, by definition. On the other hand, its reduced footprint of capital improvements in outlying areas should result in fewer impacts on conservation plans and farmland resources. As a result, this alternative would have impacts on land use and agricultural resources that are comparable to the proposed project.

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Noise

When compared to the proposed project, this alternative would have comparable impacts on noise levels throughout the county. On one hand, this alternative would decrease over 1 million VMT countywide, reduce VHT by over 85,000 hours daily, and increase average travel speeds by 2.4 mph countywide. This would generally result in less noise impacts cumulatively throughout the county with one exception. Increased SMART rail service frequencies would increase localized noise impacts along the NCRA right-of-way from both rail operations and train horns. When taken as a whole, this alternative would have impacts on noise that are comparable to the proposed 2009 CTP.

Population and Housing

Because of its decreased emphasis on roadway improvements, this alternative would have less potential to displace residences or businesses. However, by definition, this would induce more growth in PDAs along the NCRA right-of-way and along bus transit lines with major bus stops or transit centers. Taken as a whole, this alternative would potentially have more impacts on population and housing than the proposed 2009 CTP, based largely on its potential to induce growth in the urbanized areas of the county.

Public Services

Alternative 3 would not create a need for additional public facilities and would generally improve emergency response times over the proposed CTP, as average roadway speeds would increase about 2.4 mph in this scenario and volumes on roadways would decrease substantially. However, because this alternative includes increased SMART commuter rail service, potential impacts to emergency response times associated with train crossing would be lesser under this alternative. The impact of this alternative would be less than the proposed 2009 CTP.

Energy

This alternative would promote land use strategies and transit alternatives to driving that would further reduce congestion and fuel consumption over the proposed CTP. When compared to the proposed project, this alternative would decrease over 1 million daily VMT countywide, reduce VHT, and improve travel speeds by 2.4 mph. While diesel fuel use by DMUs operating more frequent service on the SMART corridor would increase, it would presumably be more than offset with concomitant reductions in fuel use from passenger vehicles that are used less often for travel needs. As a result, this alternative would result in less consumption of energy than the proposed project.

Alternative 4: VMT Reduction – Pricing Policy Focused Scenario

This alternative is based on the constrained CTP that is the proposed project, but augments with market-based pricing concepts that have been shown to substantially reduce travel demand. This includes converting the U.S. 101 carpool lanes to high occupancy toll (HOT) lanes and the implementation of a carbon tax or VMT tax, which would increase the auto operating cost from \$0.23 to \$1.27 per mile. In addition, a congestion fee would charge \$0.25 per mile on congested freeways. In addition, parking costs are increased from current rates, including new charges for areas that currently offer free parking.

Since this alternative calls for the same scale of capital roadway and transit improvements, its impact on many elements of the physical environment (e.g., biological resources, water) should

be comparable to the proposed project. However, the focus on financial incentives to using transportation alternatives would reduce impacts on traffic-related issues, such as transportation, long-term air quality, and long-term noise.

Aesthetics

This alternative would result in the same scale of roadway and transit projects as the proposed project (constrained 2009 CTP). Therefore, it would not introduce more incongruous visual elements, glare, lighting, or blockage of scenic vistas than the proposed 2009 CTP. As a result, this alternative would have comparable impacts on visual resources as the proposed project.

Air Quality

This alternative would implement all of the Transportation Control Measures included in the MTC’s transportation plans and programs and be consistent with the BAAQMD’s ozone attainment plan. When compared to the proposed constrained CTP, average speeds would increase about 2.5 mph countywide. As a result, this alternative would result in lower emissions of criteria pollutants when compared to the constrained CTP (see **Table 6.0-13**). Construction impacts would be comparable to the proposed CTP, as more transportation capital projects on local roadways would require construction that would produce engine combustion and PM₁₀ emissions from construction equipment.

**TABLE 6.0-13
COMPARISON OF CRITERIA POLLUTANT EMISSIONS:
ALTERNATIVE 4 TO PROPOSED PROJECT (TONS/DAY)**

Alternative	ROG	NOx	CO	SOx	PM ₁₀	PM _{2.5}
Proposed Project (2009 CTP)	0.76	2.24	14.74	0.08	0.70	0.46
Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	0.70	2.03	13.27	0.07	0.62	0.40
Difference	-0.06	-0.21	-1.46	-0.01	-0.08	-0.05

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008 and California Air Resources Board EMFAC model. Any discrepancies are due to rounding of values.

Climate Change

The proposed project is not expected to have significant impacts on climate change, nor is it expected to significant expose people or transportation projects to risk from the effects of climate change. This alternative would have the same types of less than significant impacts on climate change, given that much of the reductions of GHG from the motor vehicle inventory are anticipated to come from improved fuel economy standards, low-carbon fuel standards, and other technological reforms.

Traffic and Circulation

This alternative would implement the same roadway widening, signalization, and transit improvements as the proposed project. This would help ensure the CTP is consistent with local General Plan Circulation Elements and ordinances that call for specified improvements to local transportation systems. However, pricing strategies such as HOT lanes for the U.S. 101 and roadway congestion fees would help reduce congestion more than the proposed project. Alternative 4 would reduce 1,626,905 more VMT daily than the proposed CTP, reduce 77,294

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more VHT, and improve average travel speeds by 0.8 mph countywide. As a result, this alternative would have more beneficial impacts on traffic and circulation than the proposed 2009 CTP (see **Table 6.0-14** through **Table 6.0-16**). The following tables compare future VMT, VHT, and countywide travel speeds by roadway facility type.

TABLE 6.0-14
COMPARISON OF COUNTYWIDE VMT: ALTERNATIVE 4 TO PROPOSED PROJECT

Daily Vehicle Miles of Travel	Estimated	2009 CTP	Alternative 4	Difference
Facility Type	2008	2035	2035	2035
Freeway	3,946,149	5,374,193	5,045,075	-329,118
Highway/Expressway	680,777	937,347	877,351	-59,996
Arterial	4,839,837	5,797,499	4,954,095	-843,404
Collector	1,048,674	1,255,234	1,056,051	-199,184
Freeway Ramps	206,400	250,057	224,339	-25,717
Local	719,974	803,625	632,104	-171,521
TOTAL	11,441,811	14,417,956	12,789,015	-1,626,905

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

TABLE 6.0-15
COMPARISON OF COUNTYWIDE VHT: ALTERNATIVE 4 TO PROPOSED PROJECT

Collector	Estimated	2009 CTP	Alternative 4	Difference
Facility Type	2008	2035	2035	2035
Freeway	70,963	96,920	86,690	-10,230
Highway/Expressway	16,442	23,221	21,032	-2,189
Arterial	162,756	358,264	309,134	-49,131
Collector	34,896	43,451	35,380	-8,071
Freeway Ramps	5,100	6,327	5,548	-779
Local	36,183	41,030	32,100	-8,929
TOTAL	326,339	569,213	489,885	-77,294

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

TABLE 6.0-16
COMPARISON OF COUNTYWIDE AVERAGE TRAVEL SPEEDS: ALTERNATIVE 4 TO PROPOSED PROJECT

Average Daily Vehicle Speed	Estimated	2009 CTP	Alternative 4	Difference
Facility Type	2008	2035	2035	2035
Freeway	55.9	55.4	58.2	2.7
Highway/Expressway	41.5	40.4	41.7	1.3
Arterial	32.4	16.2	16.0	-0.2
Collector	30.1	28.9	29.8	1.0
Freeway Ramps	40.6	39.5	40.4	0.9
Local	19.9	19.6	19.7	0.1
TOTAL	36.3	25.3	26.1	0.8

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

Biological Resources

Since Alternative 4 would include the same roadway and capital improvement projects, this alternative would be comparable to the proposed projects in its potential to create physical barriers to sensitive biological resources. The potential to impact or bisect critical habitats, sensitive areas, and wildlife corridors would be comparable to the proposed 2009 CTP.

Cultural Resources

Since this alternative would include the same roadway and capital improvement projects, the potential to unearth artifacts of historic, prehistoric, archeological, or otherwise significant cultural resources would be comparable to the proposed 2009 CTP.

Geology and Soils

Since this alternative would include the same roadway and capital improvement projects as the proposed 2009 CTP, the potential to increase soil erosion, slope instability, or expose persons to potentially damaging geologic forces would be comparable to the proposed 2009 CTP.

Hazards and Hazardous Materials

The proposed project would not differ from the proposed project in its potential to transport hazardous materials or create significant hazards to the public. The safety programs intended to improve the maintenance of streets within the range of 70-80 Pavement Condition Index would still proceed, reducing the potential for hazards from the transport of hazardous materials. This alternative's impact on hazards and hazardous wastes is similar to that of the proposed 2009 CTP.

Hydrology and Water Quality

This alternative would involve the same construction of impermeable roadway surfaces as the proposed project that could degrade water quality via surface run-off or interfere with groundwater recharge. Similarly, the potential to place structures in flood hazard areas or expose people to flooding is comparable with this alternative. Generally, this alternative would have comparable impacts on water and hydrology as the proposed 2009 CTP.

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Land Use

Like the proposed project, this alternative would not increase potential conflict with adopted land use policies, conservation plans, disrupt land uses, or impact farmland resources. Since this alternative would implement the same capital improvements as the 2009 CTP, it would have comparable land use and agricultural resource impacts as the proposed project.

Noise

When compared to the proposed project, this alternative would reduce 1,626,905 more VMT daily, reduce 77,294 more VHT, and improve average travel speeds by 0.8 mph countywide. This would generally result in less noise impacts throughout the county. As a result, this alternative would have less noise impacts than the proposed 2009 CTP.

Population and Housing

Since this alternative would mirror the proposed project's roadway and capital improvement projects, as well as potential growth patterns countywide, it would not displace residences or businesses countywide. As such, this alternative would be comparable to the proposed 2009 CTP in its impacts on population and housing.

Public Services

Like the proposed project, this alternative would not create a need for additional public facilities and would minimally improve emergency response times over the proposed CTP, as average roadway speeds would increase 0.8 mph in this scenario. Therefore, the impact of this alternative on public services is comparable to the proposed 2009 CTP.

Energy

Alternative 4 would reduce vehicle travel demand and as such, would further reduce fuel consumption over the proposed CTP. When compared to the proposed project, this alternative would reduce 1,626,905 more VMT daily, reduce 77,294 more VHT, and improve average travel speeds by 0.8 mph countywide. This alternative would have fewer impacts on energy consumption than the proposed project.

Alternative 5: Comprehensive/"Do Everything" Scenario

This alternative includes the entire list of proposed CTP projects independent of financial constraints and all previously identified measures to reduce VMT (Smart Growth-related land use changes and pricing measures). Because it encompasses more capital improvements than the proposed constrained CTP, this alternative would have a greater adverse impact on many elements of the physical environment. However, the increased transportation capacity and focus on demand management strategies such as more sustainable growth and roadway pricing mechanisms would substantially reduce impacts on traffic-related issues, such as transportation, long-term air quality, and long-term noise.

Aesthetics

By increasing the number of roadway and transit projects implemented through the CTP, this alternative would introduce more potentially incongruous visual elements, glare, lighting, or blockage of scenic vistas. As a result, this alternative would have more adverse impacts on visual resources in Sonoma County than the proposed constrained CTP.

Air Quality

This alternative would implement all of the Transportation Control Measures included in the MTC's transportation plans and programs and be consistent with BAAQMD's ozone attainment plan. When compared to the proposed constrained CTP, average speeds would increase about 6.1 mph countywide. As a result, this alternative would result in the lowest emissions of criteria pollutants of any CTP alternative, as well as the constrained CTP itself (see **Table 6.0-17**). Construction impacts would be greater than the proposed CTP, as more transportation capital projects on local roadways would require construction that would produce engine combustion and PM₁₀ emissions from construction equipment.

TABLE 6.0-17
COMPARISON OF CRITERIA POLLUTANT EMISSIONS:
ALTERNATIVE 2 TO PROPOSED PROJECT (TONS/DAY)

Alternative	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Proposed Project (2009 CTP)	0.76	2.24	14.74	0.08	0.70	0.46
Alternative 5: Comprehensive/"Do Everything"	0.59	1.81	11.76	0.06	0.52	0.32
Difference	-0.17	-0.43	-2.97	-0.02	-0.18	-0.13

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008 and California Air Resources Board EMFAC model. Any discrepancies are due to rounding of values.

Climate Change

The proposed project is not expected to have significant impacts on climate change, nor is it expected to significantly expose people or transportation projects to risk from the effects of climate change. This alternative would have the same types of less than significant impacts on climate change, given that much of the reductions of GHG from the motor vehicle inventory are anticipated to come from improved fuel economy standards, low-carbon fuel standards, and other technological reforms.

Traffic and Circulation

This alternative would implement more roadway widening, signalization, and other improvements that would help accommodate local and regional travel. This could help ensure the CTP is consistent with local General Plan Circulation Elements and ordinances that call for specified improvements to local transportation systems. Further, its enhanced demand management strategies would complement the physical improvements by reducing the demand for vehicle travel. The result is substantial reductions in congestion. When compared to the proposed CTP, this alternative would decrease over 2.6 million VMT countywide, reduce 191,727 VHT daily, and improve average travel speeds by 6.1 mph countywide. As a result, this alternative would have more beneficial impacts on traffic and circulation than the proposed 2009 CTP (see **Table 6.0-18** through **Table 6.0-20**). The following tables compare future VMT, VHT, and countywide travel speeds by roadway facility type.

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TABLE 6.0-18
COMPARISON OF COUNTYWIDE VMT: ALTERNATIVE 5 TO PROPOSED PROJECT

Daily Vehicle Miles of Travel	Estimated	2009 CTP	Alternative 5	Difference
Facility Type	2008	2035	2035	2035
Freeway	3,946,149	5,374,193	4,813,666	-560,527
Highway/Expressway	680,777	937,347	900,389	-36,958
Arterial	4,839,837	5,797,499	4,400,116	-1,397,384
Collector	1,048,674	1,255,234	916,325	-338,910
Freeway Ramps	206,400	250,057	212,332	-37,724
Local	719,974	803,625	554,944	-248,681
TOTAL	11,441,811	14,417,956	11,797,772	-2,618,149

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

TABLE 6.0-19
COMPARISON OF COUNTYWIDE VHT: ALTERNATIVE 5 TO PROPOSED PROJECT

Daily Vehicle Hours of Travel	Estimated	2009 CTP	Alternative 5	Difference
Facility Type	2008	2035	2035	2035
Freeway	70,963	96,920	80,931	-15,989
Highway/Expressway	16,442	23,221	20,946	-2,275
Arterial	162,756	358,264	210,273	-147,991
Collector	34,896	43,451	30,040	-13,411
Freeway Ramps	5,100	6,327	5,179	-1,148
Local	36,183	41,030	28,082	-12,948
TOTAL	326,339	569,213	375,451	-191,727

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

TABLE 6.0-20
COMPARISON OF COUNTYWIDE AVERAGE TRAVEL SPEEDS: ALTERNATIVE 5 TO PROPOSED PROJECT

Average Daily Vehicle Speed	Estimated	2009 CTP	Alternative 5	Difference
Facility Type	2008	2035	2035	2035
Freeway	55.9	55.4	59.5	4.0
Highway/Expressway	41.5	40.4	43.0	2.6
Arterial	32.4	16.2	20.9	4.7
Collector	30.1	28.9	30.5	1.6
Freeway Ramps	40.6	39.5	41.0	1.5
Local	19.9	19.6	19.8	0.2
TOTAL	36.3	25.3	31.4	6.1

Source: Sonoma County Transportation Authority, Sonoma County Travel Model, 2008. Any discrepancies are due to rounding of values.

Biological Resources

By increasing the number of roadway and other capital improvement projects, this alternative would increase construction and operation of transportation projects that could cause physical barriers to sensitive biological resources. The potential to impact or bisect critical habitats, sensitive areas, and wildlife corridors would be more than the proposed 2009 CTP.

Cultural Resources

This alternative would involve more construction of capital improvements than the constrained CTP that could unearth artifacts of historic, prehistoric, archeological, or otherwise significant cultural resources. As a result, this alternative's potential to impact cultural resources would be more than the proposed 2009 CTP.

Geology and Soils

Since this alternative adds more roadway projects and other capital improvements than the proposed 2009 CTP, the potential to increase soil erosion, slope instability, or expose persons to potentially damaging geologic forces would be more than the proposed 2009 CTP.

Hazards and Hazardous Materials

The proposed project would not substantially differ from the proposed project in its potential to transport hazardous materials or create significant hazards to the public. The safety programs intended to improve the maintenance of streets within the range of 70-80 Pavement Condition Index would still proceed, reducing the potential for hazards from the transport of hazardous materials. This alternative's impact on hazards and hazardous wastes is similar to that of the proposed 2009 CTP.

Hydrology and Water Quality

This alternative would involve more construction of impermeable roadway surfaces that could degrade water quality via surface run-off or interfere with groundwater recharge. Similarly, the potential to place structures in flood hazard areas or expose people to flooding is increased with this alternative. Generally, this alternative would have greater adverse impacts than the proposed 2009 CTP.

Land Use

This unconstrained alternative includes more capital improvement than the constrained CTP and could thus increase potential conflict with adopted land use policies, conservation plans, disrupt land uses, or impact farmland resources. This alternative could also increase potential conflict with adopted land use policies from local governments that have not planned for increased growth around PDAs or transit nodes. However, since potential growth strategies would need to be developed in concert with local governments that have ultimate authority over land use decisions, these conflicts are likely to be resolved and are not expected to be significant. Nevertheless, since this alternative would implement more capital improvements than the 2009 CTP, it would potentially impact more land use and agricultural resources than the proposed project.

6.0 PROJECT ALTERNATIVES

Noise

When compared to the proposed project, this alternative would have comparable impacts on noise levels throughout the county. On one hand, it would reduce countywide over 2.6 million VMT over the proposed project. This would generally result in less noise impacts near freeways, highways, and arterials throughout the county. On the other hand, increased SMART rail service frequencies would increase localized noise impacts along the NCRA right-of-way from both rail operations and train horns. When taken as a whole, this alternative would have impacts on noise that are comparable to the proposed 2009 CTP.

Population and Housing

Because of its equal emphasis on roadway improvements, transit improvements, and smart growth strategies, this alternative would be comparable to the proposed project in its potential to displace residences or businesses. By definition, the smart growth strategies would induce more growth in PDAs along the NCRA right-of-way and along bus transit lines with major bus stops or transit centers. Taken as a whole, this alternative would potentially have more impacts on population and housing than the proposed 2009 CTP, based largely on its potential to induce growth in the urbanized areas of the county.

Public Services

Alternative 5 would not create a need for additional public facilities and would generally improve emergency response times over the proposed CTP, as average roadway speeds would increase by 6.1 mph in this scenario, with VHT decreasing by over 191,000 hours daily. However, the construction of more capital projects could impact local landfills and improved SMART commuter rail service could potentially increase emergency response times associated with train crossing. Overall, the impact of this alternative would be comparable to the proposed 2009 CTP.

Energy

This alternative would promote land use strategies and transit alternatives to driving that would further reduce congestion and fuel consumption over the proposed CTP. When compared to the proposed project, this alternative would decrease over 2.6 million daily VMT countywide, reduce VHT, and improve travel speeds by 6.1 mph. While diesel fuel use by DMUs operating more frequent service on the SMART corridor would increase, it would presumably be more than offset with reductions in fuel use from passenger vehicles that are used less often for travel needs. As a result, this alternative would result in less consumption of energy than the proposed project.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVES

CEQA Guidelines require that this EIR assess the alternatives and determine which is the environmentally superior alternative (including the proposed 2009 CTP). One of the alternatives assessed is the "No Project/No Action" alternative. If the No Project alternative is the environmentally superior alternative, then another of the alternatives must be identified as the environmentally superior alternative from the remaining alternatives.

The VMT Reduction-Transit Expansion/Smart Growth Focused scenario (Alternative 3) minimizes its impact on natural resources by centralizing growth in more urbanized areas near existing or planned transit. In doing so, impacts to biology, water, geology, and similar resources are lower

than the constrained CTP. In addition, this alternative provides mobility and energy benefits that are greater than the proposed project. This alternative would have more adverse impacts on noise because of increased headways for SMART commuter rail service and potential inducement of growth near transit areas that may not be currently zoned for such densities. As a result, Alternative 3 emerges as the environmentally superior alternative.

Table **6.0-21** summarizes the impacts of the proposed project (Draft 2009 CTP) on all resource areas deemed to be significant prior to mitigation. This table also summarizes the impact of each alternative on those resource areas, as compared to the proposed project. To that end, the following symbols are used to illustrate the comparative impact of each alternative to the proposed project:

- LTS Less Than Significant impact
- S= Significant impact, comparable to the proposed project
- S+ Significant impact, with more potential impacts than the proposed project
- S- Significant impact, with less potential impacts than the proposed project

6.0 PROJECT ALTERNATIVES

TABLE 6.0-21
SUMMARY OF ALTERNATIVES COMPARISON

Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
Aesthetics						
Impact 4.1-1 Construction and operation of CTP projects, particularly freeway interchanges, could temporarily and/or permanently block panoramic views.	Significant	S-	S+	S-	S=	S+
Impact 4.1-3 Implementation of the 2009 CTP may create significant contrasts or add an incongruous visual element by substantially degrading the existing visual character of the county.	Significant	S-	S+	S-	S=	S+
Traffic and Circulation						
Impact 4.3-1 Implementation of the 2009 CTP would not directly cause increases in traffic or Vehicle Miles Traveled. However, the 2009 CTP would support growth in Sonoma County that would substantially increase daily Vehicle Miles Traveled in 2035 by 2,976,144 over existing	Significant	S+	S+	S-	S-	S-

Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
conditions. traffic impacts associated with the anticipated growth within the County (through 2020) were identified as significant and unavoidable in the County's General Plan 2020 EIR.						
Impact 4.3-2 Implementation of the 2009 CTP would not directly cause increases in daily Vehicle Hours Traveled. However, the 2009 CTP would support growth in Sonoma County that would substantially increase daily Vehicle Miles Traveled in 2035 by 282,874 over existing conditions. The impacts associated with the anticipated growth within the County (through 2020) were identified as significant and unavoidable in the County's General Plan 2020 Draft EIR.	Significant	S+	S-	S-	S-	S-
Impact 4.3-3 Implementation of the 2009 CTP would not directly cause a reduction of average daily vehicle speeds. However, the 2009 CTP would support growth in Sonoma County that would substantially reduce average daily vehicle	Significant	S+	S-	S-	S-	S-

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Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
speeds in 2035 by 11 miles per hour over existing conditions. traffic impacts associated with the anticipated growth within the County (through 2020) were identified as significant and unavoidable in the County's General Plan 2020 Draft EIR.						
Impact 4.3-4 Implementation of the 2009 CTP would not directly increase PHD of PHT on the county's roadway system. However, the 2009 CTP would support growth in Sonoma County that would substantially increase daily PHD by 250,102 and PHT by 335,166 over existing conditions. traffic impacts associated with the anticipated growth within the County (through 2020) were identified as significant and unavoidable in the County's General Plan 2020 Draft EIR.	Significant	S+	S-	S-	S-	S-
Biological Resources						
Impact 4.4-1 Implementation of the proposed 2009 CTP may result in the loss of populations or essential	Significant	S-	S+	S-	S=	S+

Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
habitat for special-status plant and wildlife species.						
Impact 4.4-2 Implementation of the proposed 2009 CTP could result in the loss of populations or essential habitat for special-status avian species, including raptors.	Significant	S-	S+	S-	S=	S+
Impact 4.4-3 Implementation of the proposed 2009 CTP could result in the loss of populations or essential habitat for special-status bat species through tree removal or other construction activities.	Significant	S-	S+	S-	S=	S+
Impact 4.4-4 Implementation of the proposed 2009 CTP may result in disturbance, degradation, and/or removal of riparian habitat or other sensitive natural communities.	Significant	S-	S+	S-	S=	S+
Impact 4.4-5 Implementation of the proposed 2009 CTP may result in the loss of jurisdictional waters of the	Significant	S-	S+	S-	S=	S+

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Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
U.S, including wetlands.						
Impact 4.4-6 Implementation of the proposed 2009 CTP may interfere with the movement of native resident or migratory wildlife species.	Significant	S-	S+	S-	S=	S+
Cultural Resources						
Impact 4.5-1 Implementation of the proposed 2009 CTP could result in a substantial adverse change in the significance of historical resources. Construction projects could also unearth human remains that would require cessation of activities until further analysis, as required by State law, is conducted.	Significant	S-	S+	S-	S=	S+
Impact 4.5-2 Implementation of the proposed 2009 CTP could result in a substantial adverse change in the significance of a cultural resources, defined as physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings such that its significance would be materially	Significant	S-	S+	S-	S=	S+

Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
impaired. Construction projects could also unearth human remains that would require cessation of activities until further analysis, as required by State law, is conducted.						
Impact 4.5-3 Construction activities associated with implementation of the 2009 CTP could result in impacts to undiscovered paleontological resources.	Significant	S-	S+	S-	S=	S+
Geology and Soils						
Impact 4.6-1 The proposed Comprehensive Transportation Plan invests in new capital roadway and transit improvements that will increase the capacity of the county's transportation infrastructure to move people and goods. This would increase the risk of loss, injury, or death to travelers or structures due to earthquakes, landslides, ground failure, or liquefaction.	Significant	S-	S+	S-	S=	S+
Impact 4.6-2 Construction of capital improvements in the	Significant	S-	S+	S-	S=	S+

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Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
proposed 2009 CTP could require significant earthwork and road cuts, which could increase soil erosion and slope instability potential associated with soils.						
Impact 4.6-3 Construction and operation of proposed capital roadway and transit improvements on expansive soils or on weak, unconsolidated soils could damage and weaken these soils over time.	Significant	S-	S+	S-	S=	S+
Hazards and Hazardous Materials						
Impact 4.7-3 Construction of new or expanded transportation facilities can disturb contaminated properties, particularly those in brownfield areas near proposed U.S. 101 freeway improvements.	Significant	S-	S+	S=	S=	S=
Hydrology and Water Quality						
Impact 4.8-1 The construction and operation of transportation improvements in the 2009 CTP, particularly new and expanded roadways, could	Significant	S-	S+	S-	S=	S+

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degrade existing water quality or violate water quality standards or waste discharge requirements. Urban runoff could include discharge of sediments, non-sediment solids, nutrients, and other pollutant sources.						
<p>Impact 4.8-3</p> <p>The transportation improvements in the 2009 CTP could alter existing drainage patterns or substantially increase the rate or amount of surface runoff in a manner that would result in flooding. runoff could contribute runoff water that exceeds the capacity of existing or planned stormwater drainage systems.</p>	Significant	S-	S+	S-	S=	S+
Noise						
<p>Impact 4.10-1</p> <p>2009 CTP projects will generate short-term construction-generated noise that could result in a substantial temporary increase in ambient noise and groundborne vibration levels at nearby noise-sensitive land uses. This could result in the exposure of persons to or</p>	Significant	S-	S+	S=	S=	S+

6.0 PROJECT ALTERNATIVES

Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
generate noise levels in excess of standards established in the local General Plan or noise ordinance or applicable standards of other agencies.						
<p>Impact 4.10-2</p> <p>Proposed roadway improvements in the CTP, particularly new, realigned, or expanded roadways, could cause a substantial increase in ambient noise in residential areas that would exceed standards established in local General Plans or noise ordinances and increase local noise levels by three or more dBA.</p>	Significant	S+	S=	S-	S-	S-
<p>Impact 4.10-3</p> <p>The proposed SMART commuter rail service improvements would permanently increase ambient noise levels along the railroad right-of-way from periodic passing trains. When combined with potential resumption of freight service on this same right-of-way, noise impacts would exceed FTA's Severe Noise Impact Criteria and</p>	Significant	LTS	S+	S+	S=	S+

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local standards in General Plans or noise ordinances.						
Impact 4.10-4 Proposed SMART commuter rail service will require use of train horns that will produce substantial increases in ambient noise that would exceed applicable noise exposure standard of 60 dBA Ldn.	Significant	LTS	S+	S+	S=	S+
Population and Housing						
Impact 4.11-1 Implementation of the transportation improvements proposed in the 2009 CTP could potentially result in the displacement of existing residences or businesses and result in the need to construct additional housing units in the county over the planning horizon.	Significant	S-	S+	S+	S=	S+
Public Services						
Impact 4.12-3 Construction of capital improvements in the proposed 2009 CTP will produce solid waste that will not impact the existing Central Landfill operated by	Significant	S-	S+	S-	S=	S+

6.0 PROJECT ALTERNATIVES

Impact	2009 CTP ("the Project")	Alternative 1: No Project/No Action Alternative	Alternative 2: CTP Vision Scenario, Financially Unconstrained Capital Improvement Scenario	Alternative 3: VMT Reduction – Transit Expansion/Smart Growth Focused Scenario	Alternative 4: VMT Reduction – Pricing Policy Focused Scenario	Alternative 5: Comprehensive/"Do Everything" Scenario
Sonoma County. Construction debris would need to be transported to other facilities outside of Sonoma County.						
Energy						
<p>Impact 4.13-1</p> <p>Implementation of the 2009 CTP would not directly cause increases in energy consumption from the transportation sector. However, in addressing current and projected mobility challenges, the 2009 CTP would accommodate planned growth in Sonoma County that will substantially increase the consumption of non-renewable petroleum-based products like gasoline and diesel fuel by 2035. By 2035, motor vehicles would consume 159,000 more gallons of gasoline and 5,000 more gallons of diesel fuel per day than under existing conditions. This represents a 20 percent increase in gasoline consumption and 7 percent increase in diesel fuel. In addition, proposed commuter rail service and freight service on the SMART</p>	Significant	S+	S-	S-	S-	S-

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corridor will consume 916,000 gallons of diesel fuel daily starting in 2014.						