

Table D.4-1 Comparison of Alternatives by Issue Area

Impact Description	Proposed Pipeline Route	Santa Fe Alternative	Cherry Alternative	Paramount Alternative	Alondra Alternative	Bellflower Rail Alternative	Artesia Alternative	Shoemaker Alternative	No Project Alternative
<b>AIR QUALITY</b>									
<b>Class I Impacts</b>									
Nitrogen dioxide (NOx) emissions from construction would exacerbate existing exceedances of ozone standard in SCAQMD	13 miles of pipeline construction; construction at Watson, Norwalk, Industry, and Colton Stations	0.6 miles for Alternative vs. 0.8 miles for proposed route segment	Proposed and alternative segments are equal lengths	Alternative segment is one mile longer than proposed segment.	Proposed and alternative segments are equal lengths	Alternative segment is 1.9 miles longer than proposed segment. Construction through rail ROW is faster than through streets	Proposed and alternative segments are equal lengths	Alternative segment is 0.9 miles longer than proposed segment.	None
Released hydrocarbons due to product spill or fire resulting from pipeline rupture	Spills could occur along ROW and at pump stations	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Greater chances of spills along transportation route from tanker trucks and existing pipelines
Long-term transportation emissions from tanker trucks	Proposed pipeline will probably reduce need for future trucking	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Same as proposed project	Greater operational emissions would occur along trucking routes
<b>Class II Impacts</b>									
Construction activities result in exceedance of significance thresholds for particulates (PM <sub>10</sub> )	13 miles of pipeline construction; construction at Watson, Norwalk, Industry, and Colton Stations	0.6 miles for Alternative vs. 0.8 miles for proposed route segment	Proposed and alternative segments are equal lengths	Alternative segment is one mile longer than proposed segment.	Proposed and alternative segments are equal lengths	Alternative segment is 1.9 miles longer than proposed segment. Construction through rail ROW is faster than through streets	Proposed and alternative segments are equal lengths	Alternative segment is 0.9 miles longer than proposed segment.	None
<b>Air Quality Conclusion:</b>	Proposed project preferred over No Project Alternative. Conclusions for alternative segments in following columns	Santa Fe Alternative preferred over proposed route segment	Proposed route preferred over Paramount Alternative	No difference	No difference	No difference	No difference	Proposed route preferred over Shoemaker Alternative	Proposed or alternative routes preferred over No Project Alternative
<b>BIOLOGICAL RESOURCES</b>									
<b>Class I Impacts</b>									
Potential pipeline spill impacts on sensitive habitats and species if spilled product reached waterways and the marine environment	Impacts could occur downstream of river crossings only	Same as proposed project	Does not apply	Does not apply	San Gabriel River crossing via Alondra Blvd bridge: same as proposed route (but 1 mile farther from ocean)	San Gabriel River crossing: bored crossing has less chance of spill within river than bridge crossing	Does not apply	Does not apply	Truck accidents resulting in spills and larger spills on existing pipelines could affect sensitive biological resources
<b>Class II Impacts</b>									
Construction and maintenance activities, or spill clean up activities, could cause erosion and sedimentation effects at Compton Creek	Compton Creek crossing (if trenched; not if bored)	Same as proposed project: Compton Creek crossing (if trenched)	Does not apply	Does not apply	Does not apply	Does not apply	Does not apply	Does not apply	None
<b>Biological Resources Conclusion:</b>	Proposed Project preferred over No Project Alternative	No difference	No difference	No difference	No difference	Bellflower Rail Alternative preferred over proposed route	No difference	No difference	No Project Alternative would result in more accidents with potential to damage biological resources

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<b>CULTURAL RESOURCES</b>									
<b>Class II Impacts</b>									
Construction in ROW could disturb LAN-389	Trenching along Rancho Way, Laurel Park, and Victoria could disturb portions of this site	Would avoid LAN-389	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Construction or spill cleanup could disturb unknown/unsurveyed cultural sites (direct and cumulative effects)	Potential for encountering unknown resources along entire pipeline route	Same as proposed segment	Same as proposed segment	Same as proposed segment	Same as proposed segment	Same as proposed segment	Same as proposed segment	Same as proposed segment	Spill cleanup could be required for truck accidents; slight potential to impact cultural resources
<b>Cultural Resources Conclusion:</b>	No Project Alternative preferred over proposed or alternative routes	Santa Fe Alternative preferred	No difference	No difference	No difference	No difference	No difference	No difference	No Project Alternative slightly preferred over proposed project
<b>ENVIRONMENTAL CONTAMINATION</b>									
<b>Class II Impacts</b>									
Potential Contamination from High and Medium Impact Potential Sites	8 sites with high impact potential; 25 medium impact potential sites along proposed route	Alternative segment: 3 medium potential sites; no high sites. Proposed segment: no high or medium sites	Alternative segment: 2 high potential sites and 6 medium sites. Proposed segment: 6 high sites and 12 medium sites.	Alternative segment: 8 medium sites and no high sites. Proposed segment: 5 medium sites and no high sites.	Alternative segment: 2 high sites and 6 medium sites. Proposed segment: no high sites and 6 medium sites.	Alternative segment: 1 medium sites and no high sites. Proposed segment: 6 medium sites and no high sites.	Alternative segment: 2 high sites and 3 medium sites. Proposed segment: 2 medium sites and no high sites.	Alternative segment: 2 medium sites; 1 high sites. Proposed segment: includes only 1 large sites with high impact potential - the Norwalk Station.	None
Potential Contamination from Unknown Sources	Contamination from unknown sources may occur	Same as proposed route	Same as proposed route	Same as proposed route	Same as proposed route	Same as proposed route	Same as proposed route	Same as proposed route	None
Potential Contamination from/or interference with Abandoned Oil Wells	Proximity to Dominguez and Long Beach oil fields	Same as proposed route: proximity to Dominguez and Long Beach oil fields	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	None
<b>Environmental Contamination Conclusion:</b>	Proposed route preferred over No Project Alternative because cleanup of existing sites would result from construction (a beneficial impact)	Proposed route preferred over Santa Fe Alternative Segment	Cherry Alternative Segment preferred over proposed route	Proposed route segment preferred over Paramount Alternative Segment	Proposed route preferred over Alondra Alternative Segment	Bellflower Rail Alternative Segment preferred over proposed route segment	Proposed route slightly preferred over Artesia Alternative Segment	Shoemaker Alternative Segment preferred over proposed route segment	No Project Alternative would not result in any site cleanup; proposed route preferred
<b>GEOLOGY &amp; SOILS</b>									
<b>Class I Impacts</b>									
Fault Rupture Hazard: Earthquake causing fault movement could cause pipeline rupture and spill where pipeline crosses active Newport-Inglewood fault	Crosses the unmapped trace of the Newport-Inglewood fault	Crosses unmapped trace of Newport-Inglewood fault	No active fault crossings	No active fault crossings	No active fault crossings	No active fault crossings	No active fault crossings	No active fault crossings	None
<b>Class II Impacts</b>									
Liquefaction: An earthquake could cause liquefiable soils to lose strength, causing pipeline rupture or damage to above-ground structures	May encounter potentially liquefiable soils at: Watson Station and along Del Amo Blvd, along Artesia Blvd between Garfield and Lakewood, and everything east of Woodruff	No potentially liquefiable soils on proposed or alternative segment	Potentially liquefiable soils on Artesia (Cherry Alternative segment) but not on comparable proposed segment	Potentially liquefiable soils on proposed route segment but not along Paramount alternative segment	Potentially liquefiable soils along both proposed and alternative segments	Potentially liquefiable soils along both proposed and alternative segments	Potentially liquefiable soils along both proposed and alternative segments	Potentially liquefiable soils along both proposed and alternative segments	None
Corrosive soils could lead to pipeline leaks	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	Corrosive soils are present along entire pipeline route	None

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<b>Geology &amp; Soils Conclusion:</b>	No Project Alternative preferred over proposed project and alternative segments	No difference between proposed and alternative route segments	Proposed segment preferred over Cherry Alternative	Paramount Alternative preferred over proposed segment	No difference between proposed and alternative route segments	No difference between proposed and alternative route segments	No difference between proposed and alternative route segments	Proposed segment preferred over Shoemaker Alternative	No Project preferred over proposed or alternative segments

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<b>HYDROLOGY</b>									
<b>Class I Impacts</b>									
Contamination of ground and surface water from pipeline rupture	Crossings of Compton Creek, Los Angeles River, and San Gabriel River; potential for spill to flow	Crossing of Compton Creek: no difference in impact between proposed route and alternative segment	No waterway crossings	No waterway crossings	San Gabriel River crossing: no difference in impact between proposed route and alternative segment	San Gabriel River crossing: bored crossing of alternative segment preferred over bridge crossing of proposed route	No waterway crossings	No waterway crossings	Some increase over baseline risk for existing pipelines and increases in trucking accidents
Pipeline located near water wells resulting in potential for contamination	7 wells located within 660 feet of proposed route	No wells along alternative segment; 1 well along proposed segment	No wells along proposed or alternative segments	1 well along alternative segment; 3 wells on proposed route between Paramount and Lakewood	4 wells along alternative segment; 4 wells along proposed segment. Reservoir along proposed segment.	5 wells along alternative segment; 2 wells along proposed segment	2 wells along alternative segment; 1 well along proposed segment. Reservoir along proposed segment.	1 well is located near both segments	Increased throughput through pipelines and increased risk of trucking accident
<b>Class II Impacts</b>									
Potential for scour to expose and rupture pipe at open cut crossing of Compton Creek	Proposed open cut crossing of Compton Creek	Same as Proposed Project	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	None
Potential for pipeline rupture at bridge crossing of San Gabriel River	Proposed bridge crossing of San Gabriel River	Not applicable	Not applicable	Not applicable	Proposed bridge crossing: same as proposed route	Proposed bored crossing of San Gabriel River: better than proposed route	Not applicable	Not applicable	None
<b>Hydrology Conclusion:</b>	Proposed route preferred over No Project Alternative; see following columns for comparison of alternative segments	Santa Fe Alternative Segment preferred over proposed segment	No difference between proposed and alternative segments	Paramount Alternative segment is slightly preferred	Alondra Alternative segment preferred over proposed segment	Bellflower Rail Alternative segment is preferred	No significant difference: Proposed route has 1 fewer water well than alternative segment but alternative would avoid reservoir	No difference between proposed and alternative segments	Proposed route preferred over No Project Alternative
<b>LAND USE AND PUBLIC RECREATION</b>									
<b>Class I and II Impacts</b>									
Pipeline accidents could contaminate land/water and/or cause injuries or death to sensitive receptors and residential land uses (Class I). Short-term disturbance to sensitive land uses from pipeline construction (Class II).	Sensitive receptors located along all proposed and alternative routes	Santa Fe Alternative segment preferred: no sensitive receptors or residences (vs. mobile home parks and cultural resources near proposed route)	1 sensitive receptor on alternative segment; 2 on proposed segment; 160 residences on alternative vs. 130 on proposed segment	2 sensitive receptors on alternative segment; 3 on proposed segment. 150 residences on alternative segment; 500 on proposed segment	11 sensitive receptors on alternative segment; 13 on proposed segment. 270 residences on alternative segment; 630 on proposed segment	9 sensitive receptors on alternative segment; 7 on proposed segment. 170 residences on alternative segment; 300 on proposed segment	4 sensitive receptors on alternative segment; 6 on proposed segment. 80 residences on alternative segment; 260 on proposed segment	1 sensitive receptor on alternative segment; 3 on proposed segment. 90 residences on alternative segment; 110 on proposed segment	Larger pipeline spills from increased throughput; more truck accidents and impacts from traffic/noise. Could affect receptors along routes.
<b>Conclusion for Land Use and Recreation:</b>	Proposed project preferred over No Project Alternative. See following columns for alternative conclusions	Santa Fe Alternative segment preferred over proposed segment	Proposed segment preferred over Cherry Alternative	Paramount Alternative preferred over proposed segment	Alondra Alternative preferred over proposed segment	Bellflower Rail Alternative segment preferred over proposed segment	Artesia Alternative preferred over proposed route segment	Shoemaker Alternative segment preferred over proposed segment	Proposed/Alternative routes preferred over No Project
<b>NOISE</b>									
<b>Class II Impacts</b>									
Short-term construction noise could disturb adjacent residences and sensitive land uses	See land use analysis above for sensitive receptors and residences	See Land Use above	See Land Use above	See Land Use above	See Land Use above	See Land Use above	See Land Use above	See Land Use above	None
Short-term construction noise could disturb residences adjacent to Norwalk Station	Proposed route requires construction in Norwalk Station near adjacent residential properties	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	This alternative would avoid noise impacts to residences adjacent to Norwalk Station	None

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<b>Conclusion for Noise:</b>	No Project Alternative preferred over proposed project	Santa Fe Alternative segment preferred over proposed segment	Proposed segment preferred over Cherry Alternative	Paramount Alternative preferred over proposed segment	Alondra Alternative preferred over proposed segment	Bellflower Rail Alternative segment preferred over proposed segment	Artesia Alternative preferred over proposed route segment	Shoemaker Alternative segment preferred over proposed segment	Incremental increase in noise from more trucking through southern California, Nevada, Arizona
<b>SOCIOECONOMICS AND PUBLIC SERVICES</b>									
<b>Class I and II Impacts</b>									
Socioeconomic impacts of oil spill on local businesses and residential property values (Class I or II)	Numerous businesses are located along the proposed and alternative route segments. See following columns for comparison regarding impacts on major businesses.	Equivalent number of businesses affected by Santa Fe Alternative segment and proposed route segment	Equivalent number of businesses affected by Cherry Alternative segment and proposed route segment	Equivalent number of businesses affected by Paramount Alternative segment and proposed route segment	Equivalent number of businesses affected by Alondra Alternative segment and proposed route segment	Fewer businesses affected by Bellflower Rail Alternative segment than proposed route segment	More businesses affected by Artesia Alternative segment than proposed route segment (this portion of proposed route primarily in residential areas)	More businesses affected along Shoemaker Avenue than along proposed route segment (Norwalk Blvd).	Potential for larger spills along existing pipelines or accidents along trucking routes with significantly increased trucking would increase.
Air emissions, noise, and traffic impacts from construction could disrupt or impede access to businesses (Class II)									
Cumulative demand placed on public services as a result of co-located ruptures of other pipelines; impact of co-location accident on existing utilities (Class I)	Proposed route includes streets with many other pipelines; risk of co-location accident is significant	No difference	No difference	No difference	No difference	No other utilities along rail ROW: much less co-location risk	No difference	No difference	Preferred over proposed because no disruption to utilities and no construction impacts
<b>Socioeconomics, Public Services, Utilities Conclusions:</b>	No Project Alternative is preferred over proposed or alternative projects	No difference	No difference	No difference	No difference	Bellflower Rail Alternative preferred over proposed route segment	Proposed route preferred over Artesia Alternative Segment	Proposed route preferred over Shoemaker Alternative	No Project Alternative would eliminate construction and spill impacts on businesses, but tax revenue would also be lost
<b>SYSTEM SAFETY</b>									
<b>Class I Impacts</b>									
Potential for significant pipeline leak resulting in contamination of soils, groundwater, or waterways	Probability of leak over 13-mile pipeline is one leak every 60 years	Santa Fe Alternative is 75% of the length of proposed segment so probability of spill is reduced	Same as proposed route because mileage is the same	300% greater length for Paramount Alternative results in greater probability of a spill	Same as proposed route because mileage is the same	50% greater length for Bellflower Rail Alternative results in greater probability of spill; however no other utilities are in rail ROW so third-party and co-location accidents are less likely.	Same as proposed route because mileage is the same	300% greater length for Shoemaker Alternative results in greater probability of spill	Greater throughput through existing pipelines would lead to larger spills; significant increase in trucking (with highest accident rates) could result in environmental and property damage or injury/death.
Potential for pipeline rupture, resulting in contamination of soil, groundwater, or waterways, as well as potential fire or explosion affecting structures and people along the pipeline ROW	Probability of rupture over 13-mile pipeline in 50 year project lifetime is 1 in 100 years.								
<b>TRANSPORTATION</b>									
<b>Class I and II Impacts</b>									
Construction would cause increased traffic congestion (Class II); restrict access to businesses and residences (Class II); disrupt pedestrian/bicycle traffic (Class II); restrict parking availability (Class II); or damage road surfaces (Class II).	Traffic volumes along proposed route vary from 2,500 vehicles per day (Victoria Street) to 27,000 (Norwalk Boulevard).	Traffic volume less on Santa Fe Avenue than Laurel Park (proposed route)	Comparable traffic volumes on proposed route and Cherry Alternative segment	Traffic volume on Paramount Alternative (Alondra Blvd) is 80% of that on Artesia Blvd (proposed route)	Traffic volumes on Alondra Blvd are twice those of Artesia in the eastern portion (east of 605 Freeway). Between Lakewood and the 605 Freeway, traffic volumes on Artesia and Alondra are comparable.	Construction of 1.8 miles on Lakewood Boulevard and 2.8 miles of rail ROW. Lakewood Blvd has higher traffic volumes than Artesia, but will be repaved by Caltrans/City of Bellflower after construction, so the alternative is preferred by the City.	Proposed route has 65% of traffic volume carried on Artesia Blvd (Artesia Alternative Segment).	Norwalk Blvd (proposed route) has daily traffic volume of 27,200; Shoemaker Alternative Segment has 20,000 (Alondra Blvd) and 9,700 (Shoemaker).  Shoemaker Alternative is nearly 1 mile longer than proposed segment, so impacts of alternative construction (while less severe) would last longer	Significant increase in trucking of products would cause major traffic impacts and increased accidents (Class I).

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Pipeline accident could impact transportation facilities and/or transit operations (Class II for proposed/alternative segments; Class I for No Project Alternative)									
<b>Transportation Conclusion:</b>	Proposed route or alternative segments preferred over No Project Alternative	Santa Fe Alternative preferred over proposed route	No difference	Paramount Alternative preferred over proposed route	Proposed route segment preferred over Alondra Alternative Segment	Bellflower Rail Alternative preferred over proposed route	Proposed route preferred over Artesia Alternative Segment	Trade offs in benefits result in no difference	Increase in truck traffic and accidents under No Project Alternative
<b>VISUAL RESOURCES</b>									
<b>Class II Impacts</b>									
Short-term light and glare from night-time construction	Night construction locations not yet known; residential areas to be avoided.	No difference from proposed route	No difference from proposed route	No difference from proposed route	No difference from proposed route	No difference from proposed route	No difference from proposed route	No difference from proposed route	None
<b>Visual Resources Conclusion:</b>	No Project Alternative slightly preferred over proposed and alternative routes	No difference	No difference	No difference	No difference	No difference	No difference	No difference	No Project Alternative is preferred because of visual impacts of construction activities