Appendix J

Final 404 Alternatives Analysis

Final 404 Alternatives Analysis Identifying the NEPA Preferred/404 Least Environmentally Damaging Practicable Alternative

Because Route 905's impacts to aquatic resources exceed the 0.2 ha (0.5 ac) threshold, the project will require an Individual Section 404 Permit. A final 404 Alternatives Analysis which identifies the Least Environmentally Damaging Practicable Alternative (LEDPA) was prepared and is included below.

In this type of analysis, the project proponent should clearly demonstrate that alternatives that would avoid aquatic resources to a greater extent than the preferred alternative are not practicable. To successfully utilize the dichotomy, one must first identify (divorced from the 404 process), the NEPA Preferred Alternative (the alternative which has the least impact to the environment and best balances the project's purpose and need). The LEDPA analysis follows the discussion of the Preferred Alternative.

I. Preferred Alternative Discussion

Rationale for Identifying the Tollway Alignment Alternatives as Non-Preferred Alternatives

When compared to the three Route 905 Freeway alternatives, the three Tollway alternatives impose greater environmental impacts as the toll facilities would have:

- required more ROW, and thus removed a greater amount of land that would have been available for other land uses, including approximately 0.3 ha (0.8 ac) in the Multi-Habitat Planning Area (MHPA);
- required the acquisition of more residences;
- had greater biological resource impacts;
- had an increased visual impact due to the presence of the toll facilities; and
- impacted the Mesa Business Park and the Otay Heights Business Park.

Moreover, the SANDAG 2030 Regional Transportation Plan (RTP) represents the comprehensive transportation plan for the San Diego region and it does not mention consideration of a tollway; it includes Route 905 as a six-lane freeway.

For these reasons, none of the Tollway Alignment Alternatives were identified as preferred options.

Rationale for Identification of the Freeway-Central Alignment Alternative as the Preferred Alternative

Without consideration of natural resources, the Route 905 Freeway alternatives have comparable environmental impacts. The socioeconomic and auditory impacts and the impacts to farmland and water quality are similar while the impacts to hazardous waste, air quality, cultural resources, and visual resources within the project area are essentially

identical. In terms of the NEPA/404 analysis, none of these aforementioned impacts are overriding; their level of impact to the environment is equal irrespective of alternative. One must turn to the impacts on the biological and wetland resources in order to identify the alternative that clearly has the least amount of impact on the environment.

Comments Received on the DEIS/DEIR

Several agencies, including the City of San Diego, in their comments to the DEIS/DEIR, expressed their desire for the Department to identify the Freeway-Central Alignment Alternative as the Preferred Alternative. The Environmental Protection Agency (EPA) noted that they believed that the Central Alignment would be environmentally preferable because it would have fewer impacts to both vernal pools and other endangered species habitats. The U.S. Department of the Interior, Office of Environmental Policy and Compliance, noted that they supported the adoption of the Central Alignment given that it would impact the smallest acreage of vernal pools. The City of San Diego's Multiple Species Conservation Program (MSCP) staff recommended the approval of this alignment because it would have the least impact to vernal pools and other sensitive habitats. However, it must be noted that these opinions were all based upon the Department spanning Spring Canyon with a bridge. A bridge is now proposed, and the following impact discussion includes the latest design with a bridge, along with other design changes made (since the circulation of the DEIS/DEIR) to minimize impacts.

Wetlands/Waters Under the Jurisdiction of the U.S. Army Corps of Engineers (ACOE) and/or California Department of Fish and Game (CDFG)

All the alignments would result in the displacement of jurisdictional areas overseen by the ACOE and CDFG. Current calculations indicate that the magnitude of impacts would be 3.43 ha (8.49 ac) (ACOE) and 4.85 ha (11.98 ac) (CDFG) for the North Alignment Alternative, 3.10 ha (7.68 ac) (ACOE), and 4.37 ha (10.82 ac) (CDFG) for the Central Alignment Alternative, and 3.09 ha (7.66 ac) (ACOE), and 4.65 ha (11.51 ac) (CDFG) for the South Alignment Alternative for those areas regulated by the two resource agencies.

Biology

A review of the proposed alignment alternatives and of the results of the field surveys for the project yielded the following analysis:

Listed Species and Critical Habitat - Based on survey results from 2002 and 2003, it is anticipated that nine federally/State-listed species would be directly or indirectly affected by the extension of Route 905; including five plant, three invertebrate, and one avian species.

Plants - Disturbance to four listed plant species within the Otay Corporate Center South (OCCS) would result with implementation of the North Alignment Alternative. An unknown number of San Diego button celery (*Eryngium aristulatum* var. *parishii* – three

locations), spreading navarretia (*Navarretia fossalis* – two locations), Otay Mesa mint (*Pogogyne nudiuscula* – three locations), and California Orcutt grass (*Orcuttia californica* – one location) would be directly and permanently removed by the roadway. The Central Alignment Alternative would have fewer overall impacts, but would contribute to the displacement of approximately 15 button-celery located in a vernal pool south of the OCCS preserve. The South Alignment Alternative, although not affecting the San Diego button-celery, would indirectly impact 5,140 Otay tarplant, 40 spreading navarretia, and 7 Otay Mesa mint due to encroachment into a vernal pool watershed (Group J-14). Nine other plant species, designated as sensitive by the resource agencies or the California Native Plant Society, would be permanently disturbed by the proposed Route 905 project, including: San Diego County needle grass (*Achnatherum diegoense*), San Diego bur-sage (*Ambrosia chenopodiifolia*), seaside calandrinia (*Calandrinia maritima*), western dichondra (*Dichondra occidentalis*), variegated dudleya (*Dudleya variegata*), cliff spurge (*Euphorbia misera*), San Diego barrel cactus (*Ferocactus viridescens*), and San Diego County sunflower (*Viguiera laciniata*). Although each alignment would impact all these species, the number of plants displaced would differ between the three designs. Moreover, the North and Central Alignment Alternatives would indirectly affect 286 and six individuals, respectively, of the little mousetail (*Myosurus minimus* ssp. *apus*), which lie beyond the footprint of the South Alignment.

Invertebrates - Both the Riverside fairy shrimp (*Streptocephalus woottoni*) and the San Diego fairy shrimp (*Branchinecta sandiegonensis*) would be affected, to varying degrees, by the three alignment alternatives. For the North Alignment Alternative, impacts would be largely occurring within the OCCS preserve and generate the greatest overall disturbance. As estimated, a total of seven complexes supporting the Riverside fairy shrimp and nine pools containing the San Diego fairy shrimp would be directly displaced by this roadway design. Project activities, associated with both the Central and South Alignment Alternatives, would be less in magnitude than the North alignment, but would still cause removal of one Riverside and four San Diego fairy shrimp populations. All three alignments would indirectly affect one vernal pool occupied by the San Diego fairy shrimp through partial removal of the pool's associated watershed. Additionally, the South alignment would indirectly disturb Riverside fairy shrimp within vernal pool 63, and populations of both species within pool 72.

In 2001, a female Quino checkerspot butterfly (*Euphydryas editha quino*) was anecdotally observed within the OCCS preserve. During that year, appropriate host plants and nectar sources existed along the rims of Spring Canyon. Given the location of the sighting, the North Alignment Alternative would cause a direct impact upon the species. However, as all three alignments would disturb habitat capable of supporting the Quino checkerspot butterfly (e.g., Diegan coastal sage scrub, maritime succulent scrub), each alignment alternative would have some effect upon the species.

Birds - Implementation of the North, Central, or South Alignment alternatives would result in indirect impacts to a pair of coastal California gnatcatchers (*Polioptila californica californica*) found within the West Segment of the project footprints. Other gnatcatchers, documented in the sage scrub extending between Old OMR (OMR) and

Heritage Road, could be affected by loss of breeding/foraging habitat or proximity to the planned construction and future roadway. Overall, the Central Alignment Alternative could indirectlydisturb another gnatcatcher pair, the South Alignment Alternative could affect up to four additional gnatcatchers (one pair directly, one pair indirectly), and the North Alignment Alternative would have no other impacts upon the species.

Critical Habitat - Critical habitat for the San Diego fairy shrimp, the Riverside fairy shrimp, and Quino checkerspot butterfly exists in proximity to the project site, but none is located within the footprint of the three proposed alignments. Overall, no direct/indirect destruction or adverse modification of designated critical habitat would be anticipated with implementation of the proposed project.

Sensitive Vegetation Communities - In addition to the jurisdictional habitat types, four other sensitive vegetation communities (i.e., vernal pools, maritime succulent scrub, coastal sage scrub, and nonnative grasslands) occur within the boundaries of the proposed alignments. Generally, impacts to maritime succulent scrub would be greatest for the North Alignment Alternative (1.9 ha [4.6 ac]), with the roadway also generating the most disturbance to vernal pools (0.15 ha [0.37 ac]). The Central Alignment Alternative would displace the least amount of vernal pools (0.06 ha [0.14 ac]) and maritime succulent scrub (1.3 ha [3.2 ac]), but have the largest impact to nonnative grasslands (54.3 ha [134.1 ac]). In comparison, construction of the South Alignment Alternative would result in impacts to coastal sage scrub (7.6 ha [18.7 ac]), which exceed that of either the North or Central Alignment alternatives, and affect the vernal pool complex (Group J-14) supporting the only natural occurrence of Otay Mesa mint along the western mesa. Besides the sensitive vegetation communities, a unique soil series (i.e., Linne clay soils) supporting desert-dwelling plants exists within the proposed project area. As estimated, a total of 3.6 ha [8.8 ac] would be displaced by each of the alternatives within the West Segment (which is common to all alignment alternatives) of the roadway footprint.

MHPA and the OCCS Preserve - The MHPA delineates areas with biological resources and wildlife corridors that have been deemed critical for purposes of long-term conservation. Overall, each of the three alignment alternatives would cause permanent loss of MHPA lands, but the South Alignment Alternative would disturb the most acreage (13.3 ha [32.9 ac]) and the North Alignment Alternative would have the least impact on the conservation area (6.2 ha [15.2 ac]). With respect to the OCCS preserve, only the North Alignment Alternative would contribute to the disturbance of the site, which supports a number of vernal pool complexes and several listed species including, the San Diego fairy shrimp, Riverside fairy shrimp, San Diego button-celery, spreading navarretia, California Orcutt grass, and Otay Mesa mint.

Collectively, the data would indicate that all three alignment alternatives impact sensitive resources, to some extent. However, the North Alignment Alternative generates comparatively higher levels of disturbance to ACOE/CDFG jurisdictional areas, vernal/road pools, and the OCCS preserve (with its associated listed species) than either the Central or South Alignment alternatives. In contrast, the South Alignment Alternative would affect a unique vernal pool complex (Group J-14) supporting the Otay

tarplant, spreading navarretia, Otay Mesa mint, and little mousetail, result in the largest loss of coastal sage scrub and MHPA lands, and potentially affect the greatest number of gnatcatchers relative to the other alternatives. Lastly, the Central Alignment Alternative would contribute most to the displacement of nonnative grasslands, but would completely avoid the OCCS preserve and the Group J-14 pool; the two most sensitive landscape features within the project area.

Consequently, the results demonstrate that in a comparison between the three alignment alternatives, the Central Alignment Alternative would have the least impacts on listed/sensitive biological resources and, as such, would be the biologically preferred alternative for the proposed project.

Design Considerations

The Department's Route 905 Design Team supports the identification of the Freeway-Central Alignment Alternative as the Preferred Alternative because it meets the minimum design requirements and it fulfills the project's purpose and need.

Conclusion

Based upon the rationale outlined above, the California Department of Transportation (District 11) Route 905 Project Team identified the Freeway-Central Alignment Alternative as the Route 905 NEPA Preferred Alternative.

II: Identification of the 404 Least Environmentally Damaging Practicable Alternative

As the NEPA/404 guidance indicates, the lead federal agency should identify and implement a practicable alternative that completely avoids aquatic resources, unless it has other significant adverse environmental consequences. A search for a wetlands avoidance alternative was conducted and the analysis showed that within the defined Wetlands Avoidance Alternative Analysis Area, one did not exist. This analysis appears below. As a result, there is only one alternative that avoids aquatic resources: the No Build Alternative. However, an examination of the No Build Alternative indicates that it is not practicable in meeting the purpose and need of the project.

Wetlands Avoidance Alternative Analysis

Constraints to the Project

The proposed Route 905 project is subject to several constraints which dictate the general placement of viable alignment alternatives (those which would meet the project's purpose and need). These constraints include: the project's beginning and end points, State Route 125 (under construction), the International Border with Mexico, Brown Field Airport, and the Otay River Valley. These features constitute the geographical limits within which the proposed project could be constructed and still function as desired. Basing the wetlands

avoidance analysis on this geographical area, the analysis concluded that regardless of which course the project would take as it traversed the landscape, wetlands would be impacted: With the exception of the No Build Alternative (which is not practicable given that it does not meet the project's purpose and need), there are no total wetlands avoidance alternatives.

Early alignment alternative analysis conducted by the Department and in coordination with the ACOE, USFWS, and CDFG identified, and ultimately excluded alignments that would have had severe impacts to other sensitive environmental resources that exist within the analysis area. These alternatives and their impacts are identified and discussed below. In addition, the analysis identified those alternatives that should be carried through the project development phase.

Because the proposed action would construct Route 905 from Interstate 805 (I-805) to the Otay Mesa Port of Entry (POE), to the west, the project must begin at the existing Route 905 and I-805 intersection. This is the project's western constraint given that moving the starting point north or south along I-805 would be unfeasible since one of the main objectives of the project is to complete the existing Route 905 and connect it to the POE. Modifying the current placement of Route 905 in the I-805 vicinity would be impossible, the impacts to the dense residential development that borders the existing 905 west of I-805 would be immense.

To the east, the project must connect to the POE. The POE serves non-commercial and commercial truck traffic, however, after entering the United States, the latter must drive approximately 0.8 km (0.5 mi) east to the Commercial Vehicle Enforcement Facility before continuing on into the United States. In order to effectively tie this commercial traffic into the proposed facility and remove the impact of the heavy truck traffic from the local streets, which these trucks currently employ, a Local Access Ramp (LAR) was needed as an integral aspect of the Route 905 project. Because commercial traffic must be inspected at the enforcement facility, and due to the fact that Route 905 must tie into State Route 125, yet another eastern, physical constraint is formed.

The LAR alignment was identified in the Department's June 1996 *Final Value Analysis Study Report*. This report documented the difficulties in siting a major freeway to freeway interchange (the Route 125/Route 905 interchange). Many alternatives were reviewed in the report and their impacts were thoroughly discussed. After much deliberation, the proposed LAR and Route 905/State Route 125 interchange design was selected by the participants, including representatives from the City and the County of San Diego, the local community, and engineering professionals. According to the study, the "LAR" provides an *"[e]xcellent connection that serves development and truck traffic needs...[g]reatly reduces truck impacts to City streets [and]...[reduces] truck traffic volumes at the Otay Mesa & Siempre Viva Interchanges."* The LAR is part of the Otay Mesa Community Plan Circulation Element, which was adopted on November 23, 1999, and it is shown on the Circulation Plan of the East Otay Mesa Specific Plan.

With respect to environmental considerations, the LAR alignment was chosen to minimize the enormous costs and impacts that would accrue if the alignment were to pass through the major industrial and business structures already developed on either side of the proposed alignment. In addition to the ramp's design taking into account the surrounding development, it was designed around community planning factors considered to be important by the local community groups. Department right-of-way specialists concluded that the LAR would necessitate only partial takes; none of the buildings housing the Sanyo Corporation, Casio Manufacturing, or Sherwood Medical would be displaced by the proposed project.

Approximately 2.4 km (1.5 mi) south of the Route 905/I-805 interchange and OMR is the International Boundary between the United States and Mexico, a constraint that prohibits any potential placement south of the this border. Between the border and OMR is an area of land that was the subject of a detailed alignments alternatives analysis (discussed below). This analysis showed that irrespective of which path the project could have taken as it traversed the landscape, wetlands would be impacted. Therefore, the alignments that were advanced for study were the ones that best balanced the need to minimize impacts to wetlands and avoid other sensitive resources.

Immediately north of and adjacent to OMR is Brown Field, an airport that can not be impacted by the project. The presence of Brown Field, and the industrial and commercial development in place around it, ultimately negated any potential expansion of the existing OMR due to the impacts the project would have on the airport and the businesses in its vicinity. Given the placement of Brown Field, any alignments north of OMR would have to go northward, around Brown Field. For reasons discussed below, none of these are practicable.

Less than 0.8 (0.5 mi) north of Brown Field is the Otay River; which is within a dedicated open space MHPA corridor that connects the Otay Mesa Ranch Open Space area (northeast of the Route 905 project) and the San Diego Bay. This important corridor forms the northern constraint as it is a large wetland resource that parallels OMR for the project's entire length; any proposed crossing of it would result in a wetland impact.

These natural and nonnatural landscape features constitute the area within which the Route 905 project could potentially traverse.

Possible Wetland Avoidance Alternatives North of Otay Mesa Road

Any alternatives starting at the Route 905/I-805 interchange and traversing the landscape north of OMR would impact: Ocean View Hills (a large residential development); residential development slightly northeast of Ocean View Hills; the Otay Mesa Industrial Park, San Diego American Auto Wrecking, Auotmortriz Capistrano, and Baja Truck & Auto Dismantling (each of the auto companies was identified as a "Generator/User" of hazardous waste - these types of operations typically contain gas and diesel fuel contamination); Brown Field; Dennery Canyon (a regional wildlife corridor in the Public Domain); several established and functioning vernal pool mitigation sites; and,

irrespective of how one could traverse the landscape, the abundant finger canyons that run perpendicular to the Otay River. With respect to this analysis, each of the three latter resources either are, or contain, wetlands. Given their placement on the landscape, avoidance would be impossible regardless of the manner in which a feasible (from an engineering perspective) alignment alternative was to traverse this landscape. Moreover, even if the project could remove Brown Field and place an alignment in that area, Dennery Canyon runs in a north-south direction from OMR to the Otay River, and would be impacted, which, in turn, equals a wetland impact. As a result, there are no possible alignment alternatives that could be placed between OMR and the Otay River that would avoid wetlands.

As noted above, evaluations of project alignment alternatives have been ongoing since 1995, and, early in the process, the Department, ACOE, USFWS, CDFG, and the City of San Diego cumulatively agreed, based upon detailed resource constraint mapping, that some alternative alignments should not be evaluated in greater detail. Bolstering the analysis above, alternatives which would traverse areas north of OMR were considered and rejected because they would have severe impacts to the Brown Field airport, commercial development along OMR, and biological resources (coastal sage scrub, vernal pools, and sensitive wildlife habitats within the Otay River Valley).

Alternative Alignments South of the Current Alternatives

The landscape south of OMR, north of the International Border, east of I-805, and west of Cactus Road is a vast area that contains the largely north-south running Spring Canyon. Spring Canyon, because it encompasses this entire southwestern quadrant of the wetlands avoidance analysis area, simply cannot be avoided by any feasible (from an engineering perspective) alignment alternative. Again, early in the evaluation of project alignment alternatives, the Department, ACOE, USFWS, CDFG, and the City of San Diego cumulatively agreed, based upon detailed resource constraint mapping, that some alternative alignments should not be evaluated in greater detail. Alternatives to the south of OMR and south of the currently proposed alternatives were also considered and rejected based on impacts to high quality wildlife habitat within Spring Canyon and MSCP lands, and the higher cost of construction.

It is obvious that no matter which course the project would have taken as it moved east from the Route 905/I-805 interchange to the POE, wetlands would have been impacted. This fact was recognized by the alignment alternative development team in their May 11, 1995meeting. Because the project was constrained geographically, as wetlands would be impacted by which ever alignments were ultimately selected for advance study, the Department, ACOE, USFWS, CDFG, and the City of San Diego unanimously agreed that a wetlands avoidance alternative was not needed and that the alternative alignments developed south of OMR and north of Airway Road were the ones that should be advanced for further analysis. Spring Canyon was considered, from a resource perspective, the most critical area in which to minimize impact; the DEIS/DEIR alternatives achieved this goal.

Alternative Alignments within the Study Corridor

The alternative alignment meetings with the agencies provided early involvement and assisted in the development of the most prudent alternatives, which would minimize biological impacts. Once it was recognized that wetlands could not be avoided, four alternatives between OMR and Airway Road were created and color-coded (Brown, Green, Blue, and Pink). The team agreed that the Brown Alternative should be eliminated since it presented excessive disruption to existing development, buildings, and local streets along OMR. This alternative passed slightly north of OMR and, besides being disruptive to development, would have been too costly. Any alignment, which impacted OMR, would have required realignment of OMR as a frontage road in order to allow continued access to existing businesses. The meeting participants also agreed that neither the Blue nor Green alternatives would be biologically preferred, and that a new Hybrid alternative should be found between the two that would balance the effects to vernal pools and occupied coastal sage scrub. The resulting hybrid alternative was developed and proposed for further detailed technical study. This new alignment alternative improved on the previous Blue and Green alternatives by preserving some of the smaller vernal pools and by reducing impacts to the coastal sage within Spring Canyon. The Blue Alternative was retained for further study because it presented the vernal pool avoidance alternative. The Pink Alternative was retained for further study because it was the adopted route, an alignment alternative that the community and developers were aware of, and resulted in a corridor that would be reserved from development.

Resource Agency Meeting Decisions on Alternatives

A pre-application meeting for a Section 404 permit was held on June 15, 1995, with the ACOE, EPA, USFWS, DFG, and the County Department of Health Services. The three alignment alternatives selected (Hybrid, Blue, and Pink) were presented and proposed for further detailed study as part of the ultimate EIS/EIR. The resource agency representatives concurred that the three alignment alternatives proposed were sufficient for the EIS/EIR and could be carried forward for further detailed study. These alignment alternatives were also renamed as the North (Hybrid), Central (Blue), and South (Pink) alignments. No additional alternatives were suggested by the agencies.

No Build Alternative

There are several existing transportation needs in the Otay Mesa area of San Diego County. These have led to inadequate transportation service which will continue to deteriorate if the proposed project is not constructed. OMR was widened from a four-lane city street to a six-lane conventional highway to increase traffic capacity, however, it will reach its capacity by 2005. Therefore, Route 905 is needed to improve traffic capacity for growth beyond the year 2005, serve the POE, serve the extensive development on the Mesa, complete the regional highway system to cope with the increasing regional and international trips, and provide traffic congestion relief for OMR and an alternative commercial traffic access route to the POE.

Under the No Build Alternative, the proposed Route 905 would not be constructed and the existing Route 905/OMR/Interim Route 905 would continue to serve as the principal access between I-805 and the POE. Under the No Build scenario, the Route 905 Transportation Analysis Technical Report demonstrated that future traffic would utilize local streets to traverse the project area and access the POE and, as a result, 10 out of 16 segments on local streets would operate between Level of Service (LOS) "E" and LOS "F" (with substantial congestion and considerable delay), two at LOS "D," and the remaining four at LOS "C." This is compared to the future freeway that would handle more traffic on all segments of the new facility and allow all segments of the local street network between Caliente Avenue and Route 125 to operate at an excellent LOS (LOS "A" to LOS "C") with minimal traffic congestion and delay.

The transfer of trips from a city street to a regional highway is expected to reduce accidents on the city streets. Intersection locations have a higher potential for traffic conflict compared to other highway sections. At an intersection, continuity of traffic is interrupted, traffic patterns cross, and turning movements occur. The types of accidents noted above are typical of intersection accidents. The No Build Alternative would not remove the through traffic/intersection conflict along OMR since it would not construct the grade separations proposed under the Build Alternatives. As a result, traffic conflicts would not be reduced and safety would not be improved.

The 1996 Caltrans District 11 System Management Plan was developed to plan the implementation of the region's transportation system, which could best accommodate the region's growth in population and travel. The strategy developed includes the Inner Loop Element and the Outer Loop Element. Route 905 is part of the Outer Loop with Routes 8, 52, 54, 56, 67, and 125. The Outer Loop will allow traffic to bypass the metropolitan area and serve as an alternate for interregional traffic on existing Route 67, I-8, I-15, and I-805, which are functioning at or near capacity. The proposed project is a connecting link in the Outer Loop. Route 905, Traversable Route 905 (OMR), and Interim Route 905 form the principal east-west route serving traffic between the rapidly developing Otay Mesa community/POE area and destinations to the north via I-5 and I-805. The No Build Alternative would not complete the loop and it would not accommodate the region's growth in population and travel.

Because the No Build Alternative does not meet any of the project's needs, it is not practicable.

LEDPA Discussion

Since the aquatic resource avoidance alternatives are not practicable, and because all of the Route 905 Freeway Alignment Alternatives would result in some aquatic resource loss, the practicable alternative with the least damage to aquatic resources must be selected unless it has other significant adverse environmental consequences.

As noted above, the Freeway-South Alignment Alternative has the least damage to aquatic resources, 3.09 hectacres (7.66 acres) of impact as compared to 3.10 hectacres

(7.68 acres) for the Freeway-Central Alignment Alternative. This would mean that devoid of any over-riding circumstances, the Freeway-South Alignment Alternative would have to be identified as the LEDPA. However, and as indicated above, the Freeway-South Alignment Alternative impacts: (1) a unique vernal pool complex that supports Otay tarplant, spreading navarettia, and Otay Mesa mint (the Preferred Alternative does not impact these highly sensitive resources), (2) a larger amount of coastal sage scrub and MHPA land as compared to the Preferred Alternative, and (3) gnatcathers (the Preferred Alternative does not directly impact this sensitive animal species). A description of these resources is presented below, as is a quantitative comparison of each of the alternative's impacts on the resource. The conclusion reached is that the greater impacts of the Freeway-South Alignment Alternative on these resources qualify as "other significant adverse environmental consequences" and thus make the NEPA Preferred Alternative the 404 LEDPA alternative.

Impacted Sensitive Resources

Diegan Coastal Sage Scrub (including disturbed)

Diegan coastal sage scrub occurs in similar situations as maritime succulent scrub, but has subshrubs that are slightly less adapted to drought and generally has a more vigorous understory. This habitat type occurs along the coastal slope of San Diego and southern Orange counties and is a subset of the more widely distributed coastal sage scrub scrubtype. Diegan coastal sage scrub is located within Spring Canyon, as well as along existing Route 905 in the western portion of the study corridor. Dominant shrub species vary throughout this habitat's range, depending on slope, aspect, soil type, and coastal proximity. Diegan coastal sage scrub species found within the study corridor include California sagebrush, California buckwheat, lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), San Diego sunflower, San Diego barrel cactus, and bladderpod (*Isomeris arborea*). The open shrub structure of this vegetation type typically allows for a relatively abundant herbaceous layer.

The Freeway-South Alignment Alternative would directly impact 7.6 hectares (18.7 acres) of coastal sage scrub (including disturbed), compared to the Freeway-Central Alignment Alternative's impacts which total 5.0 hectares (12.3 acres).

Coastal California Gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is a federally threatened and California Special Concern Species. Found from southern Los Angeles, Orange, western Riverside, and San Diego counties south into Baja California, Mexico, their primary habitat is coastal sage scrub, in all of its southern California forms, with maritime succulent scrub, chaparral, or riparian areas serving as secondary habitat types.

Prior to 1999, five gnatcatcher pairs were recorded within or adjacent to the study corridor. Territories were mapped for four pairs in the 1994 breeding season and five

pairs in the non-breeding season. During the 2002 protocol surveys, a total of five gnatcatcher pairs and two individuals were found within the study corridor.

One pair of coastal California gnatcatchers was mapped within the South Alignment Alternative in a tributary to Spring Canyon. Additionally, both the Central and South alignments would indirectly affect two gnatcatcher pairs located adjacent to the proposed Route 905. However, only the South Alignment Alternative would directly impact this listed species.

Permanent impacts to Diegan coastal sage scrub and maritime succulent scrub, that could serve as habitat for the gnatcatcher, would total 6.3 ha (15.5 ac) and 9.0 ha (22.1 ac) for the Central and South alignments, respectively. In addition, indirect impacts to the two habitat types from project-related noise would be approximately 4.6 ha (11.3 ac) for the Central alignment and 6.9 ha (21.9 ac) for the South alignment. Therefore, the South Alignment Alternative would have a greater direct and indirect impact on the gnatcatcher and the species' associated habitat.

MHPA

In 1998, the City signed the Implementing Agreement for their MSCP Subarea Plan, a comprehensive conservation planning program for southwestern San Diego County. This approved Natural Communities Conservation Plan (NCCP) document addresses potential impacts to native species and habitats, while at the same time providing mitigation options that satisfy the Federal and State Endangered Species Acts (ESAs).

The primary objective of the MSCP is to identify and maintain a preserve system (MHPA), which allows for the sustained existence of animals and plants at both the local and regional levels. The MHPA is a network of large habitat blocks with interconnecting linkages. Otay Mesa is part of the Southern Area of the City's Subarea Plan, which includes a rather large vernal pool complex and associated watershed. The MHPA covers Spring and Dennery canyons and links the two canyons across Route 905. In addition, a portion of the Diegan coastal sage scrub south of existing Route 905 in the western segment of the study corridor is within the MHPA.

Two main issues arise in a comparative discussion of the alignments: impacts on the existing MHPA and the effectiveness of the wildlife corridor in Spring Canyon. The MHPA encompasses the majority of Spring Canyon, its tributaries, and most of the remaining vernal pool habitat west of Heritage Road.

The Freeway-South Alignment Alternative would have the greatest impact on MHPA lands 13.3 hectares (32.9 acres) while the Central Alignment would only impact 8.4 hectares (20.6 acres).

Effective wildlife movement would be directly related to the amount of proposed fill in Spring Canyon and the type of constructed crossing. Both alignments would span the

canyon, preserving the existing functionality of the MHPA corridor for all wildlife movement.

Vernal Pools

Vernal pools are ephemeral bodies of water that form from winter and spring rains. Within the study corridor, the pools are formed due to a claypan that inhibits the downward percolation of water on mesas with characteristic mounded topography. Vernal pool basins support vernal pool plant and/or animal species and typically occur in complexes (i.e., clusters of vernal pools that share a single watershed or adjoining watersheds). Today, most complexes in urbanized areas of San Diego County have been reduced or eliminated and now exist over a very small percentage of the area they once covered. Vernal pools are considered sensitive by the CDFG, the RWQCB, the City and the County of San Diego because they support sensitive species, are limited in distribution, and declining in extent.

Vernal pool habitat in San Diego County historically covered 11,572 hectares (28,595 acres), and that this acreage has been reduced by 93 percent. Between the summer of 1978 and the spring of 1986, 27 percent of the San Diego County vernal pools were lost to construction projects, leading agencies to consider vernal pools to be the most sensitive habitat resource in San Diego County.

The vernal pools of Otay Mesa historically supported a rich flora and covered much of the mesa in several complexes. Plant species observed in pools within the study corridor have included long-stalk water-starwort (*Callitriche marginata*), stonecrop (*Crassula aquatica*), spike-rush (*Eleocharis* sp.), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), toad rush (*Juncus bufonius*), flowering quillwort (*Lilaea scilloides*), grass poly (*Lythrum hyssopifolium*), pill-wort (*Pilularia americana*), dwarf woolly-heads (*Psilocarphus brevissimus*), Otay Mesa mint, Otay tarplant, little mousetail, and spreading navarretia.
Vernal pools also support a number of invertebrate species, including the federally endangered San Diego fairy shrimp and Riverside fairy shrimp. Within the Route 905 study corridor, vernal pools are concentrated on mesa tops near Spring Canyon and in the OCCS preserve. Isolated vernal pools also occur in other scattered locations.
The Freeway-South Alignment Alternative would disturb 0.07 ha (0.18 ac) of vernal pool habitat (17 pools), and also impact portions of three vernal pool watersheds. This alternative, as opposed to the Freeway-Central Alignment Alternative, impacts the J-14 vernal pool complex and the Otay Mesa Mint populations they support. Because this pool complex supports populations of Otay Mesa Mint, these pools have the highest conservation value of any of the pools within the project corridor. Otay Mesa Mint is endangered and exists in very few natural pools, a number that estimated to be lower than 20. The Freeway-South Alignment Alternative is the one alternative that would impact the only natural pool that supports Otay Mesa Mint on the western portion of the Mesa. The preservation of the J-14 complex is considered essential to the continued existence of this species.

The Freeway-South Alignment Alternative would directly impact one vernal pool supporting the San Diego and Riverside fairy shrimp, and three road pools occupied by the San Diego fairy shrimp. The three complexes whose watersheds would be partially affected by this alignment (pools 31-35, 43, and59-66; pool 56-57, and pools 72-73) support both San Diego and Riverside fairy shrimp. The complex containing pools 31-35, 43, and 59-66 (pool complex J-14 discussed above) also supports highly sensitive plants, including Otay Mesa mint, Otay tarplant, and spreading navarretia.

The Central Alignment would impact 0.04 ha (0.11 ac) of vernal pool habitat (10 pools). The Central Alignment would directly disturb one vernal pool supporting both the San Diego and Riverside fairy shrimp, and two pools and one road pool containing the San Diego fairy shrimp. The alignment would also displace the watershed for pools 56-57, which supports the San Diego fairy shrimp.

Conclusion

As stated above in the NEPA Preferred Alternative discussion, the South Alignment Alternative would 1) affect a unique vernal pool complex (Group J-14) that supports the Otay tarplant, spreading navarretia, and Otay Mesa mint, 2) result in the largest loss of coastal sage scrub and MHPA lands, and 3) potentially affect the greatest number of gnatcatchers relative to the other alternatives. Although the Freeway-Central Alignment Alternative would contribute most to the displacement of nonnative grasslands when compared to the Freeway-South Alignment Alternative, it would completely avoid the Group J-14 pool; the most sensitive landscape feature within the project area. Therefore, the conclusion would be that between these two alternatives, the Freeway- Central Alignment Alternative would have the least impacts on listed/sensitive biological resources and, as such, would be preferable from a biological standpoint. In terms of the 404 alternatives analysis, these additional impacts are significant adverse environmental consequences that should be avoided. Therefore, the Freeway-Central Alignment Alternative is identified as the Least Environmentally Damaging Practicable Alternative.