ALTERNATIVES CONSIDERED AND WITHDRAWN

The following discussion summarizes the alternatives which were previously considered and withdrawn because they are (1) not practical or (2) they would result in substantial environmental impacts that would preclude their consideration as a viable alternative.

North Crossover

The North Crossover Alternative proposed that the southbound to eastbound (south-to-east) connector cross the freeway approximately 1,970 feet (600 meters) south of Del Mar Heights Road from the west side of I-5 and then run parallel to the east side of I-5. The proposed south-to-east connector would run at-grade and parallel to the proposed northbound bypass lanes before re-elevating to cross the proposed westbound to northbound (west-to-north) connector and tying into eastbound SR-56.

This south-to-east connector elevated further north than in the Direct Connector Alternatives and was similar in height to the "standard" direct connector. While the North Crossover Alternative had minimal right of way impacts to parcels near the intersection of Portofino Drive and Portofino Circle, it had right of way impacts to parcels at the northern end of Portofino Drive. In addition, this alternative had impacts to existing commercial buildings, a parking structure and parking lots along the east side of I-5. Furthermore, in order to cross the I-5 mainline from the west side and run parallel to the east side of I-5, this alternative required the construction of a unique and costly long spanned bridge structure. (*See Exhibit 5*)

South Crossover (Horseshoe)

The South Crossover Alternative proposed that the south-to-east connector exit from I-5 approximately 820 feet (250 meters) north of Carmel Valley Road, extending south of SR-56 where it made a "U" turn over I-5 and tied into eastbound SR-56.

This south-to-east connector would have elevated further south than in the Direct Connector Alternatives but was similar in height to the "standard" direct connector. The South Crossover Alternative had right of way impacts to parcels along Portofino Drive that were similar in magnitude to those associated with the Direct Connectors Alternative. While the location of the south-to-east connector exit ramp minimized impacts to Portofino Circle, it resulted in the need to remove and replace nearly 1,150 feet (350 meters) of the existing southbound bypass structure. In addition, the sharp 360 feet (110 meter) radius that curved over the I-5 mainline had a design speed of about 35 to 40 mph, which did not meet the advisory design speed recommended in the Highway Design Manual (HDM). The HDM is the manual used for highway design in California.

Several "U" turns were studied for this alternative, which ranged in radius from 360 feet to the standard 720 feet (110 to 220 meters). In addition, several crossover locations were studied, which ranged from 330 to 3,610 feet (100 to 1100 meters) south of Carmel

Valley Road. The overall trend for these variations was that a larger turning radius and more southerly crossover location increased the impact to the Los Penasquitos Lagoon Furthermore, in order to achieve an adequate turning radius, the south-to-east connector would have impacted the Carmel Valley Restoration and Enhancement Program (CVREP) on the east side of I-5. As a result, biological impacts were proposed to the environmentally sensitive area. (*See Exhibits 6 & 7*)

Loop Over I-5

The Loop Over I-5 Alternative proposed that the south-to-east connector exit from I-5 approximately 820 feet (250 meters) north of Carmel Valley Road, over Carmel Valley Road and then over the southbound bypass lanes. The connector then looped and ran parallel to Carmel Valley Road while crossing over the southbound bypass, its own alignment, I-5 and the existing north to east and west to south connector structures.

As in the South Crossover Alternative, the proposed south-to-east connector had to cross over the existing westbound to southbound (west-to-south) and northbound to eastbound (north-to-east) connectors, where its height would be similar to the "standard" direct connector. This alternative had right of way impacts to parcels along Portofino Drive that were similar in magnitude to those associated with the Direct Connectors Alternative. While the location of the south-to-east connector exit ramp minimized impacts to Portofino Circle, it resulted in the need to remove and replace nearly 1,150 feet (350 meters) of the existing southbound bypass structure. In addition, an extra 1,640 to 3,940 feet (500 to 1200 meters) of structure was required for the south-to-east connector.

Several loops were studied for this alternative, ranging in radius from 165 feet to the standard 720 feet (50 to 220 meters). The smallest feasible loop radius facilitated keeping the footprint within the existing disturbed area; however, this radius did not meet mandatory design speeds recommended in the HDM and was not safe. In addition, the larger loop radius resulted in encroachment of aerial structure over the Los Penasquitos Lagoon. This alternative resulted in adverse impacts to the wetland habitat.
(*See Exhibits 8 & 9*)

Loop Under I-5

The Loop Under I-5 Alternative was similar to the Loop Over I-5 Alternative as described above, except that the loop had a steep slope downwards to go under Sorrento Valley Road, the southbound Carmel Valley Road entrance ramp, the northbound Carmel Valley exit ramp and I-5 parallel to Carmel Valley Road. In order to avoid impacting the column foundations for the existing west-to-south and north-to-east connector, the alignment for the proposed south-to-east connector ran through the CVREP area. In addition to this increase in the potential environmental impacts associated with the Loop Over I-5 Alternative, the Loop Under I-5 Alternative posed new challenges. This alternative required the construction of four new undercrossings at each of the previously listed locations in order to bypass the signalized intersections. The construction of a new undercrossing beneath the I-5 freeway was very costly and was not practical. In addition,

the Loop Under required extensive tunneling operations (The potential issues associated with tunneling are explained in detail in the Tunnel Option section).

Both loop alternatives were determined to be not feasible in the Value Analysis Report dated May 2002 because there were no cost savings potential, adverse environmental impacts, and constructability issues. (*See Exhibits 10 & 11*)

Grade Separated Intersections with Carmel Valley Road and El Camino Real

This concept was based on grade separating the SR-56 ramps at the intersections of El Camino Real to bypass the signals and provide direct access to Carmel Valley Road for both local and regional traffic. This alternative would have impacted all of the businesses located along Carmel Valley Road between El Camino Real and the I-5 ramps. This alternative also required the acquisition of the Shell gas station. Furthermore, the closure of local access to SR-56 from El Camino Real and the removal of the eastbound Carmel Valley Road to northbound I-5 movement would have limited the operational characteristics of this alternative. Due to operational and safety related issues, this alternative was withdrawn from further consideration.

This alternative was determined to be not feasible in the Value Analysis Report dated May 2002 because of operational and safety-related issues. (*See Exhibit 12*)

"Long Bridge" Alternative

The "Long Bridge" Alternative was a variation of the Direct Connector Alternative that attempted to utilize a pocket of right of way along southbound I-5 at the beginning of the connector. The design resulted in a 985 feet (300 meters) extension of the south-to-east connector with no reductions in right of way or retaining wall height. Due to increased structural costs and visual impacts, this alternative was withdrawn from consideration. (*See Exhibit 13*)

Direct Connector Tunnel Alternative

The Direct Connector Tunnel Alternative proposed that the south-to-east connector follow a tunnel alignment below I-5. The tunnel portals were located south of Del Mar Heights Road along the west side of I-5 and south of Carmel Valley Road west of El Camino Real. Preliminary tunnel sections and geotechnical borings in the vicinity have been reviewed. The construction would be performed in difficult and unstable ground consisting of sands and gravels under high groundwater heads. It is known that large excavations like these constructed in soft ground with high groundwater heads can result in high settlements, on the order of inches to feet. High settlements can also occur if groundwater flow is not controlled during construction. An extensive grouting program would likely be required and the tunnel would need to be constructed with special tunneling equipment. The risk of settlements and sinkholes impacting I-5 are a concern and it is uncertain whether these risks could be fully mitigated. The cost of such mitigation was likely substantial. In addition, several segments of the existing west-to-

south and north-to-east connectors required significant retrofit and/or reconstruction. Notwithstanding the above limitations, the risks and associated costs involving a tunnel under I-5 made this alternative impractical. (*See Exhibit 14*)

Direct Connector Alternative with Eastbound Access to Carmel Creek Road

This alternative attempted to maintain the existing exit ramp from the northbound to eastbound connector to Carmel Creek Road. To allow access to Carmel Creek Road from the existing connector, the profile elevation of the proposed connector maintained the necessary clearance for the exit ramp to pass underneath. The proposed two lane connector then entered the existing SR-56 mainline on grade. The realigned exit ramp paralleled the proposed connector, as the El Camino Real on-ramp merged and the Carmel Creek Road off-ramp diverged from the ramp, which provided approximately 1,150 feet (350 meters) of weaving distance. The ramp then merged back into the mainline SR-56 downstream of the connector, which allowed vehicles from El Camino Real to enter eastbound SR-56.

This alternative was withdrawn for the following reasons:

- *Failing weaving segment* – The volume of vehicles attempting to weave from SR-56 to Carmel Creek Road and El Camino Real to SR-56 approaches 4,000 vehicles per hour in the peak hour. This volume resulted in a Level of Service F for the weaving section, which indicated poor operating conditions. The failing weave had the potential of impacting the operations along the mainline, creating hazardous conditions on the existing connector.
- *Impacts to the Carmel Valley Restoration and Enhancement Project (CVREP)* – The required lane configuration to accommodate the entering and exiting vehicles expanded the freeway beyond the boundaries of the CVREP. This alternative required impacts to an existing mitigation site, which required much higher habitat/species replacement ratios.
- *Non-Standard weave length* – According to the HDM, the minimum weave length shall be 1,640 feet (500 meters). The proposed alternative provided only 1,150 feet (350 meters).

Due to safety, geometric, and operational deficiencies, this alternative was withdrawn from further consideration. *(See Exhibit 15)*

ALTERNATIVE CONSIDERED & WITHDRAWN: NORTH CROSSOVER

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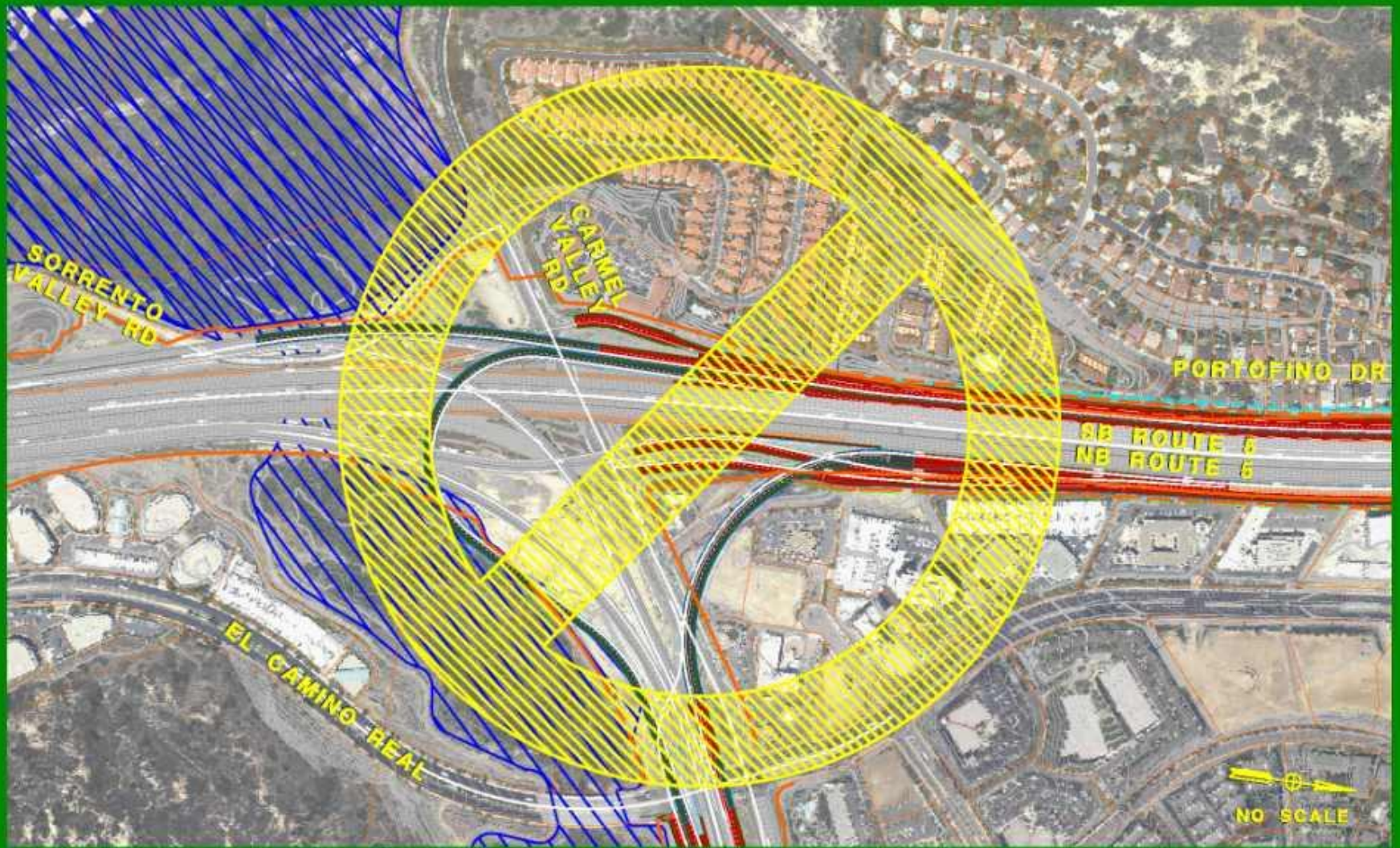
EXHIBIT 5

ALTERNATIVE CONSIDERED & WITHDRAWN: 110m SOUTH CROSSOVER (HORSESHOE)



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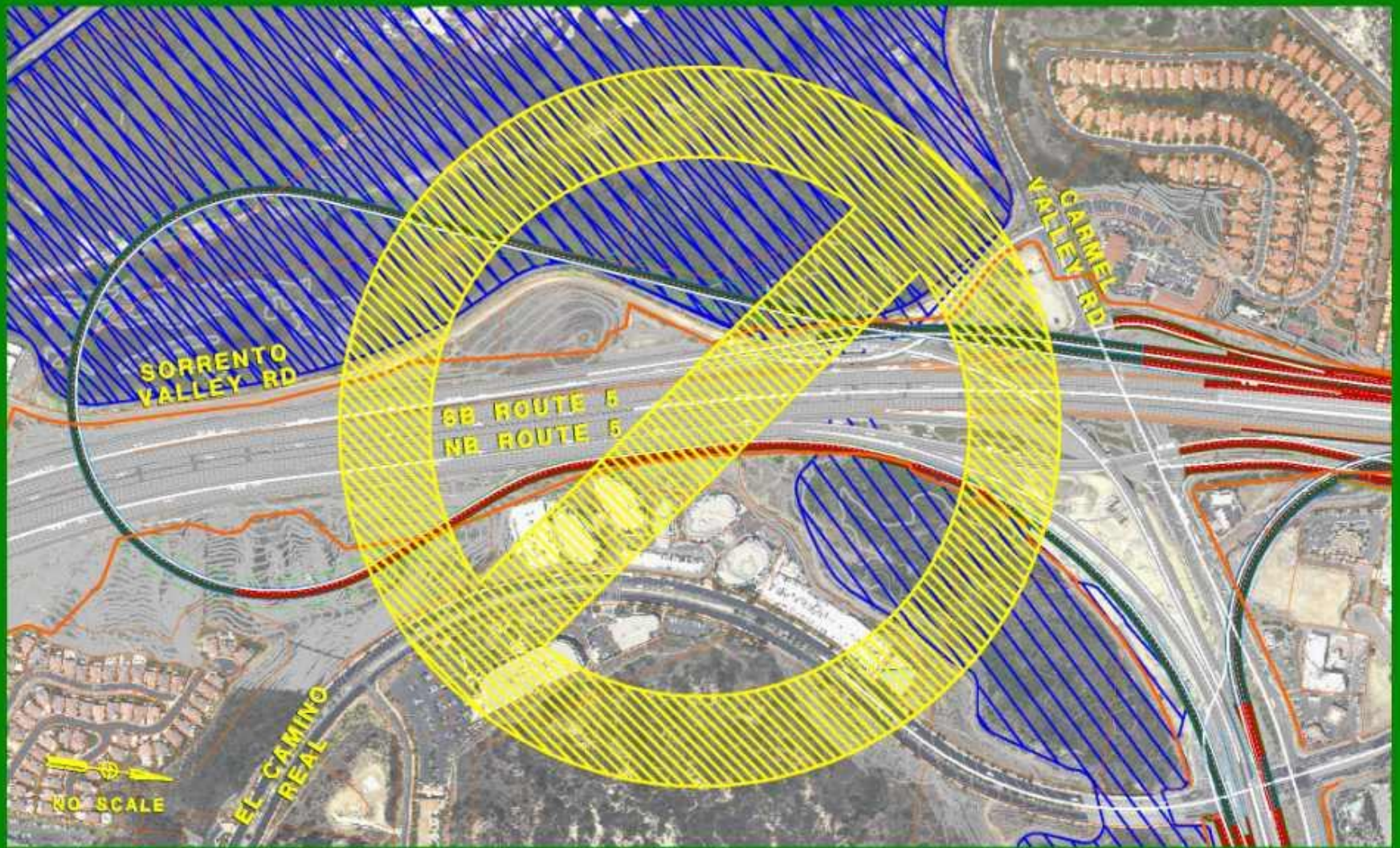
June 2008

EXHIBIT 8

ALTERNATIVE CONSIDERED & WITHDRAWN: 220m SOUTH CROSSOVER (HORSESHOE)



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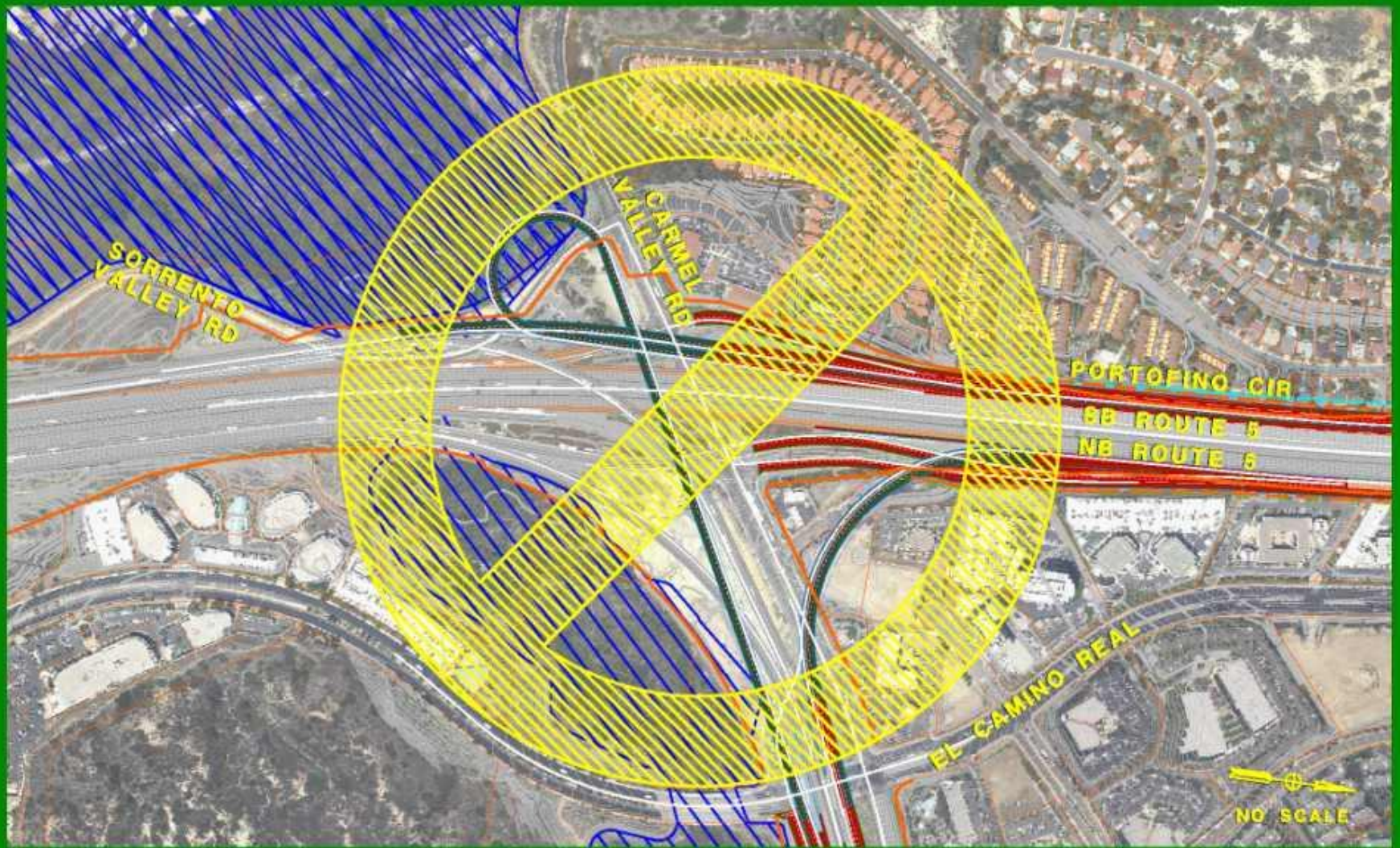
June 2008

EXHIBIT 7

ALTERNATIVE CONSIDERED & WITHDRAWN:
70m LOOP OVER I-5



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June 2006

EXHIBIT 8

ALTERNATIVE CONSIDERED & WITHDRAWN:
220m LOOP OVER I-5

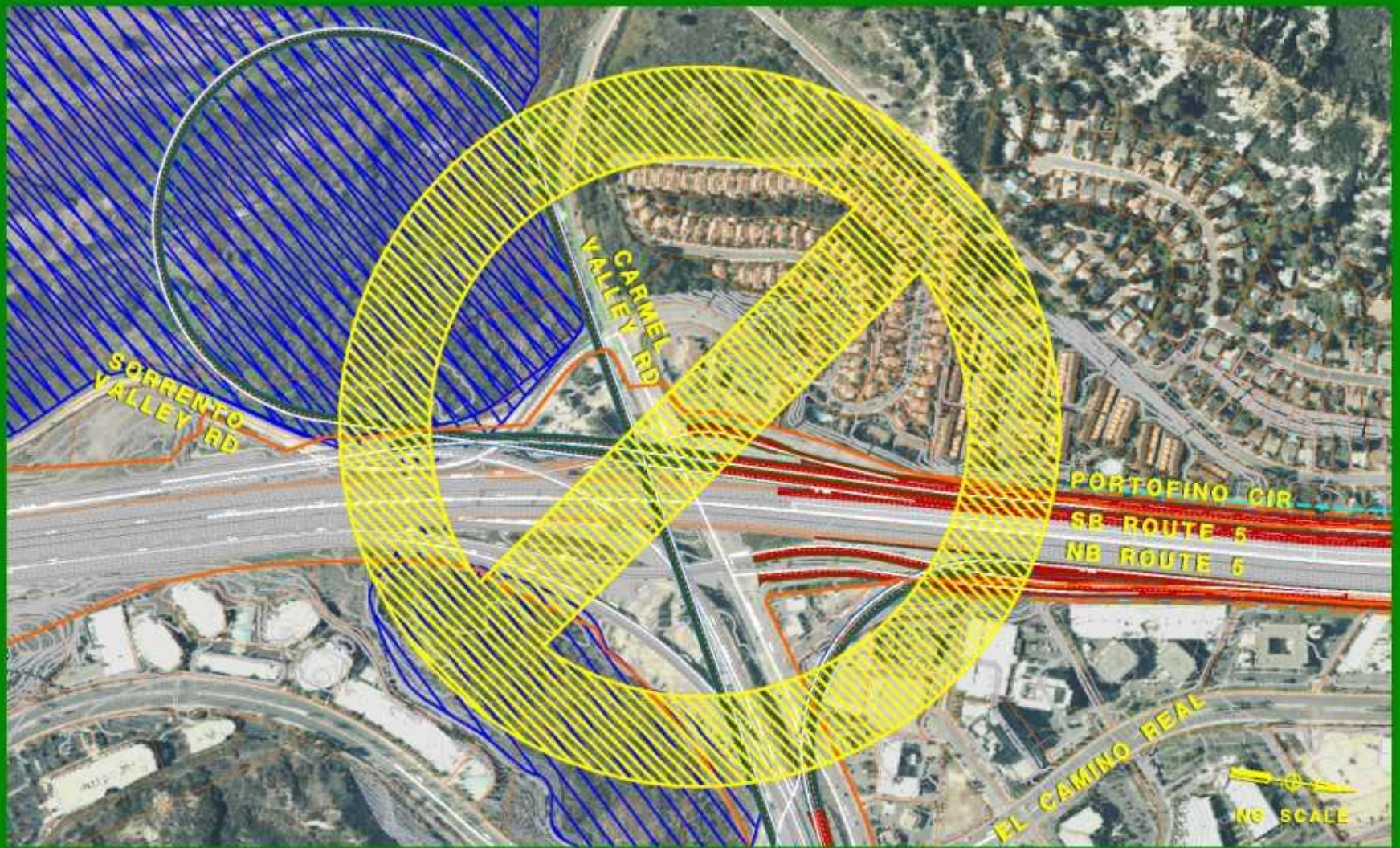

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EXHIBIT 8

ALTERNATIVE CONSIDERED & WITHDRAWN:
70m LOOP UNDER I-5

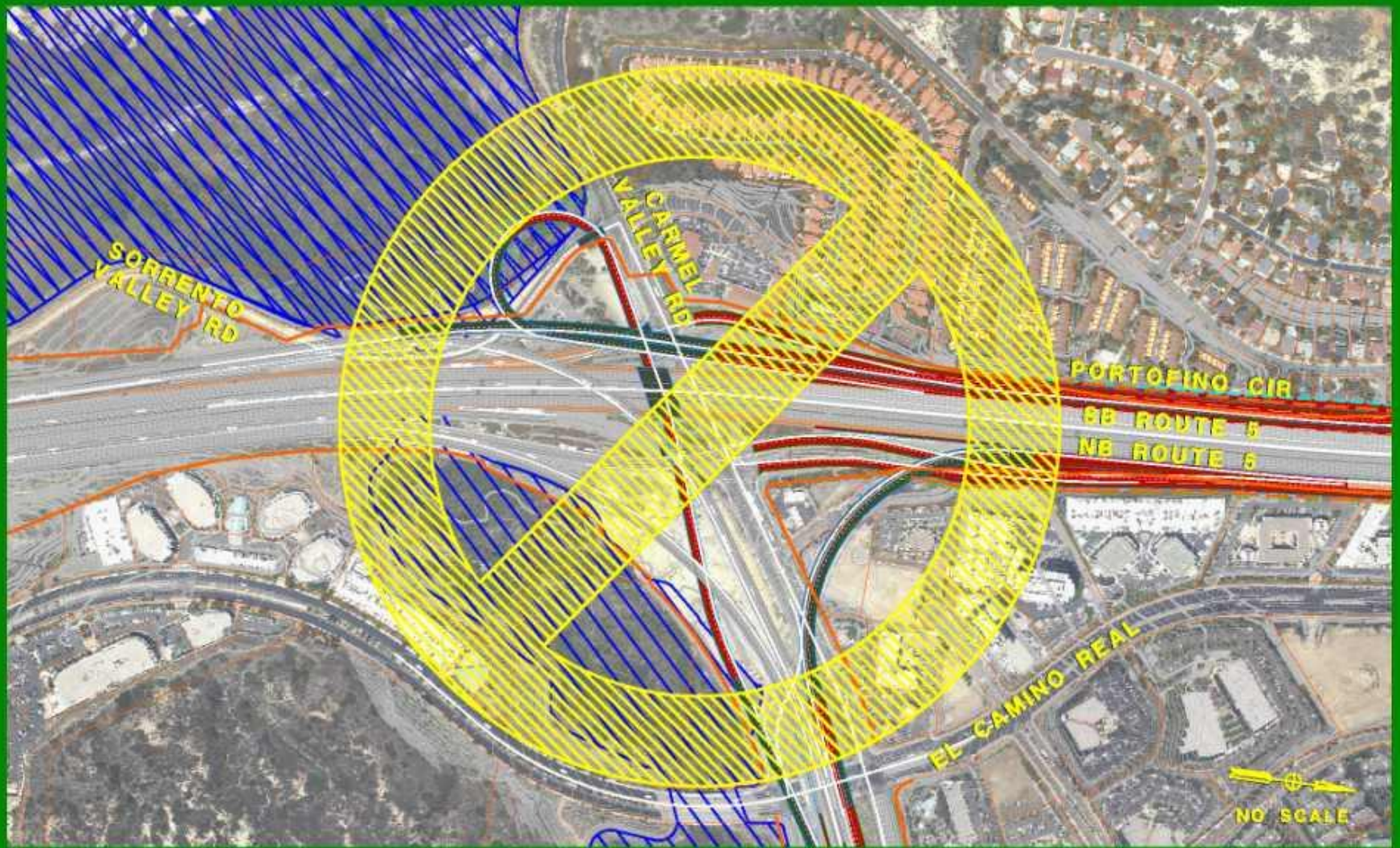

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EXHIBIT 10

ALTERNATIVE CONSIDERED & WITHDRAWN: 220m LOOP UNDER I-5

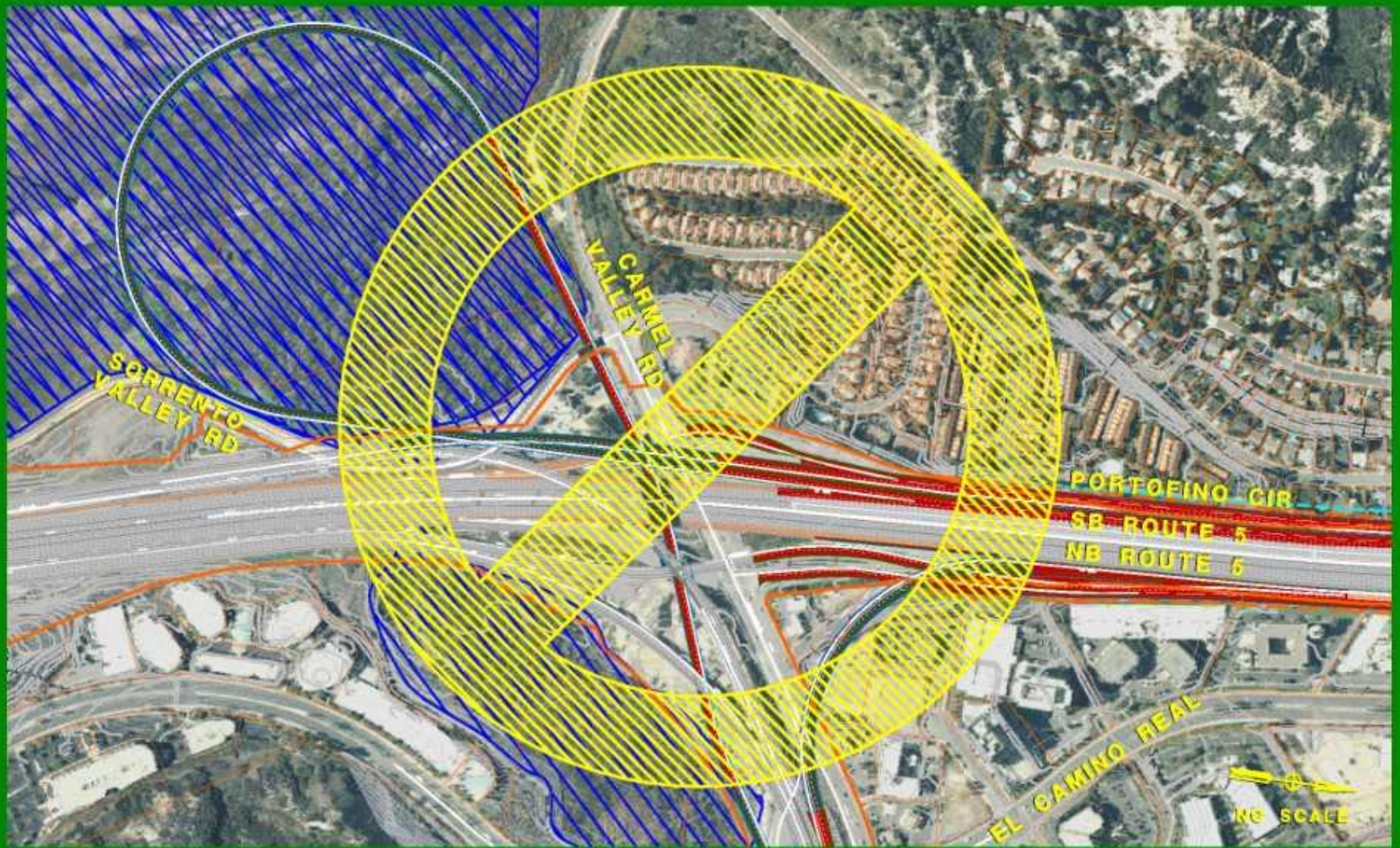

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EXHIBIT 11

ALTERNATIVE CONSIDERED & WITHDRAWN: GRADE SEPARATED INTERSECTIONS WITH CARMEL VALLEY RD & EL CAMINO REAL

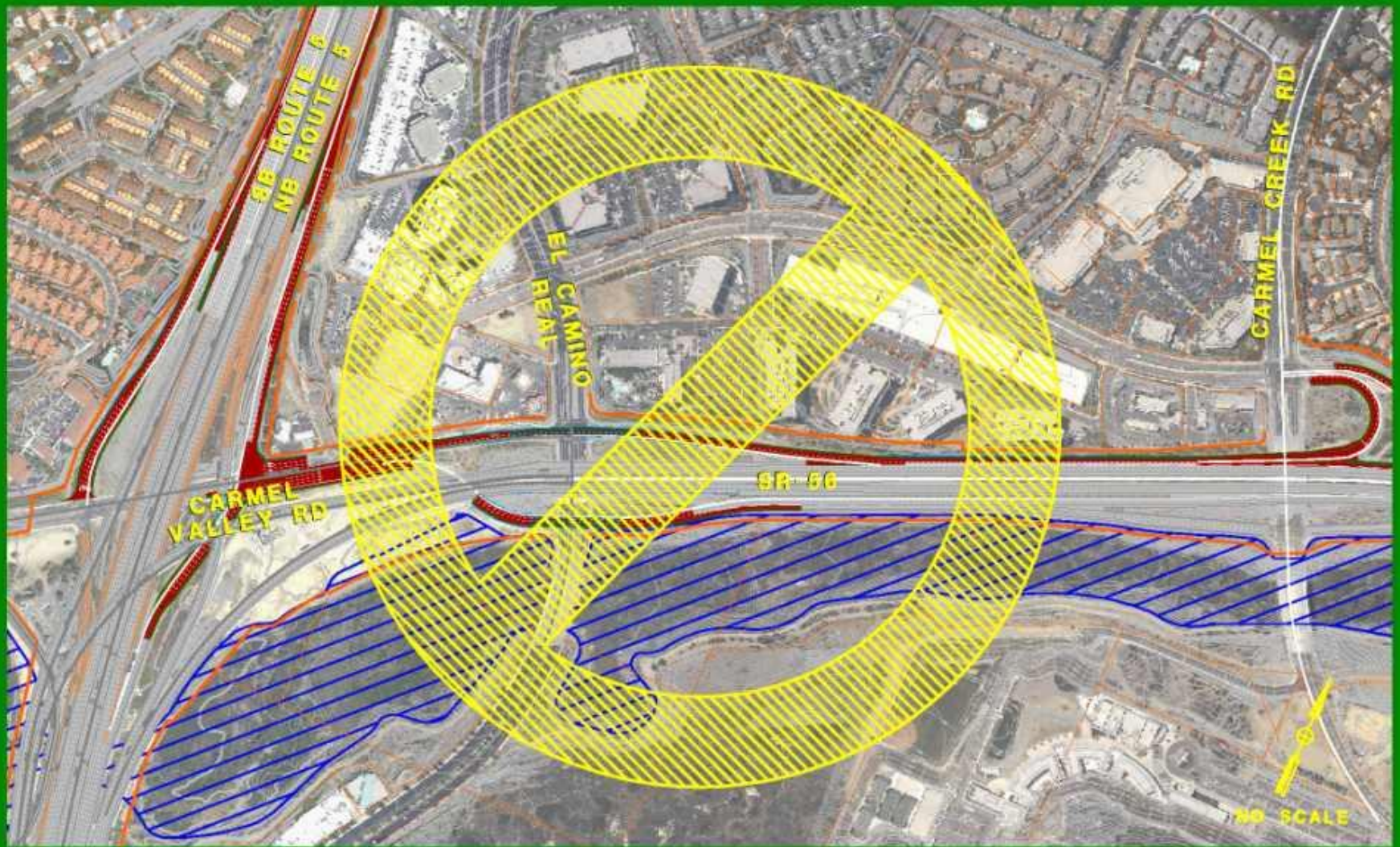

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EXHIBIT 12

ALTERNATIVE CONSIDERED & WITHDRAWN: DIRECT CONNECTOR "LONG BRIDGE"

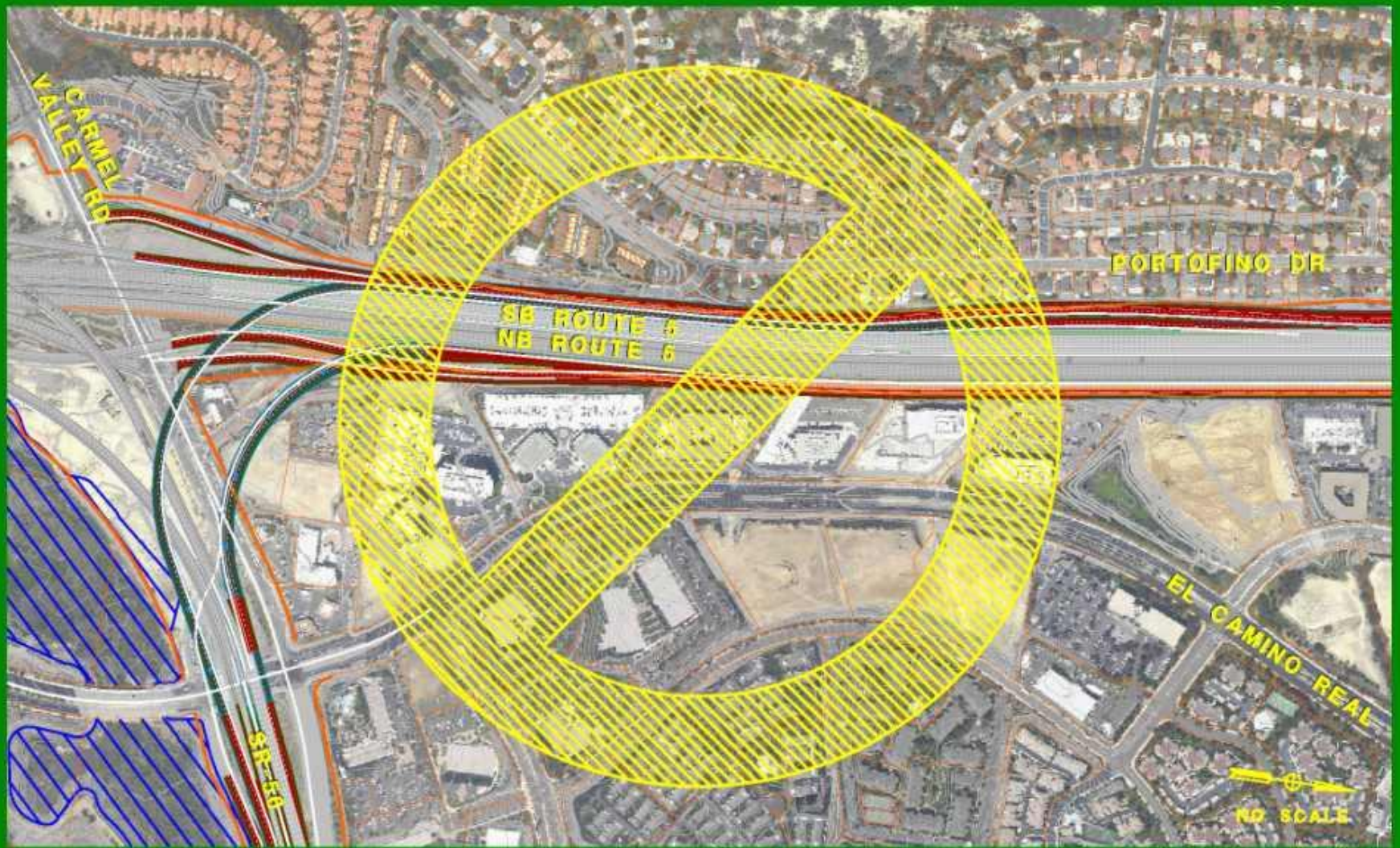

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EXHIBIT 13

ALTERNATIVE CONSIDERED & WITHDRAWN: DIRECT CONNECTOR TUNNEL

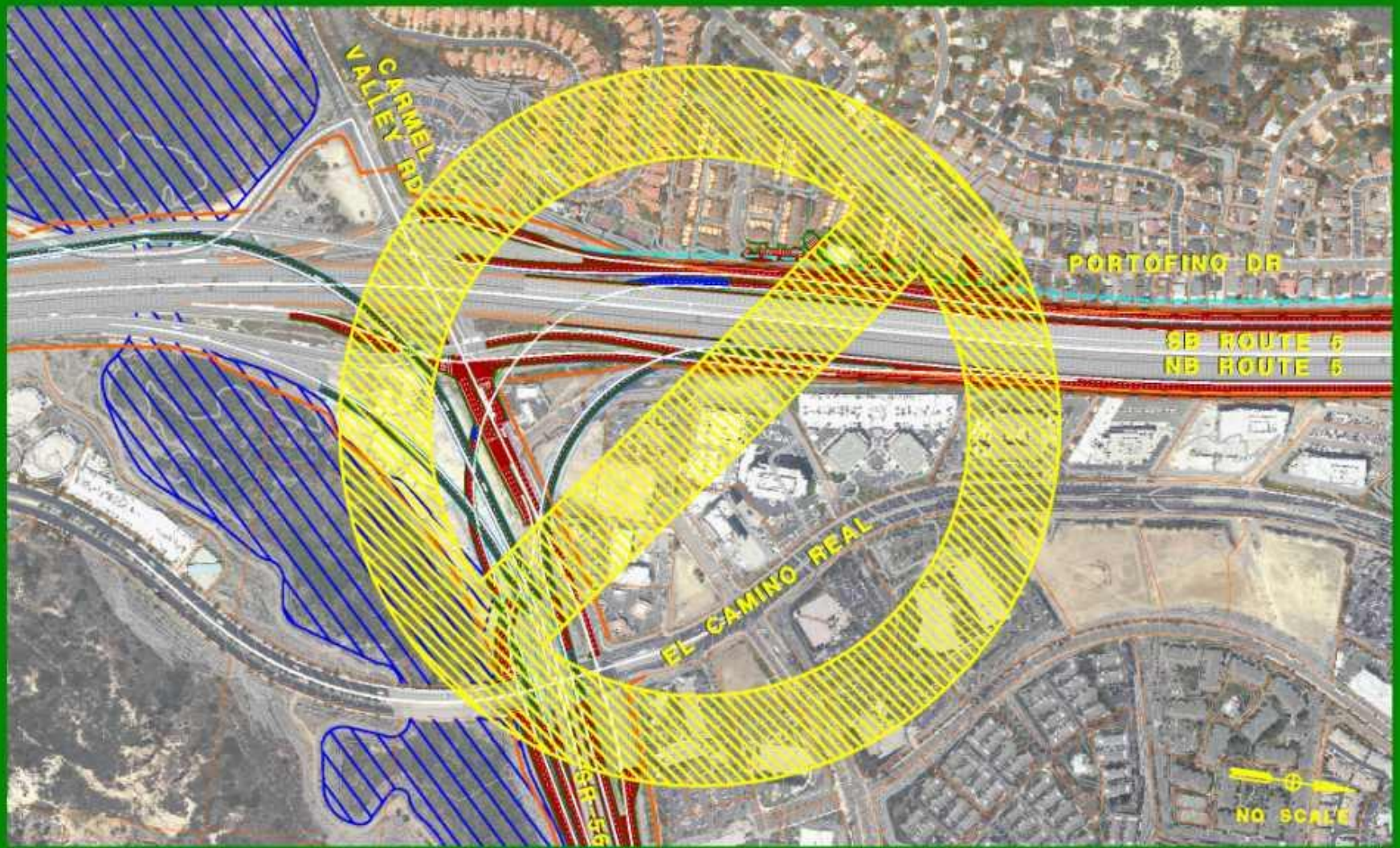

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EXHIBIT 14

ALTERNATIVE CONSIDERED & WITHDRAWN: DIRECT CONNECTOR - WITH EASTBOUND ACCESS TO CARMEL CREEK RD

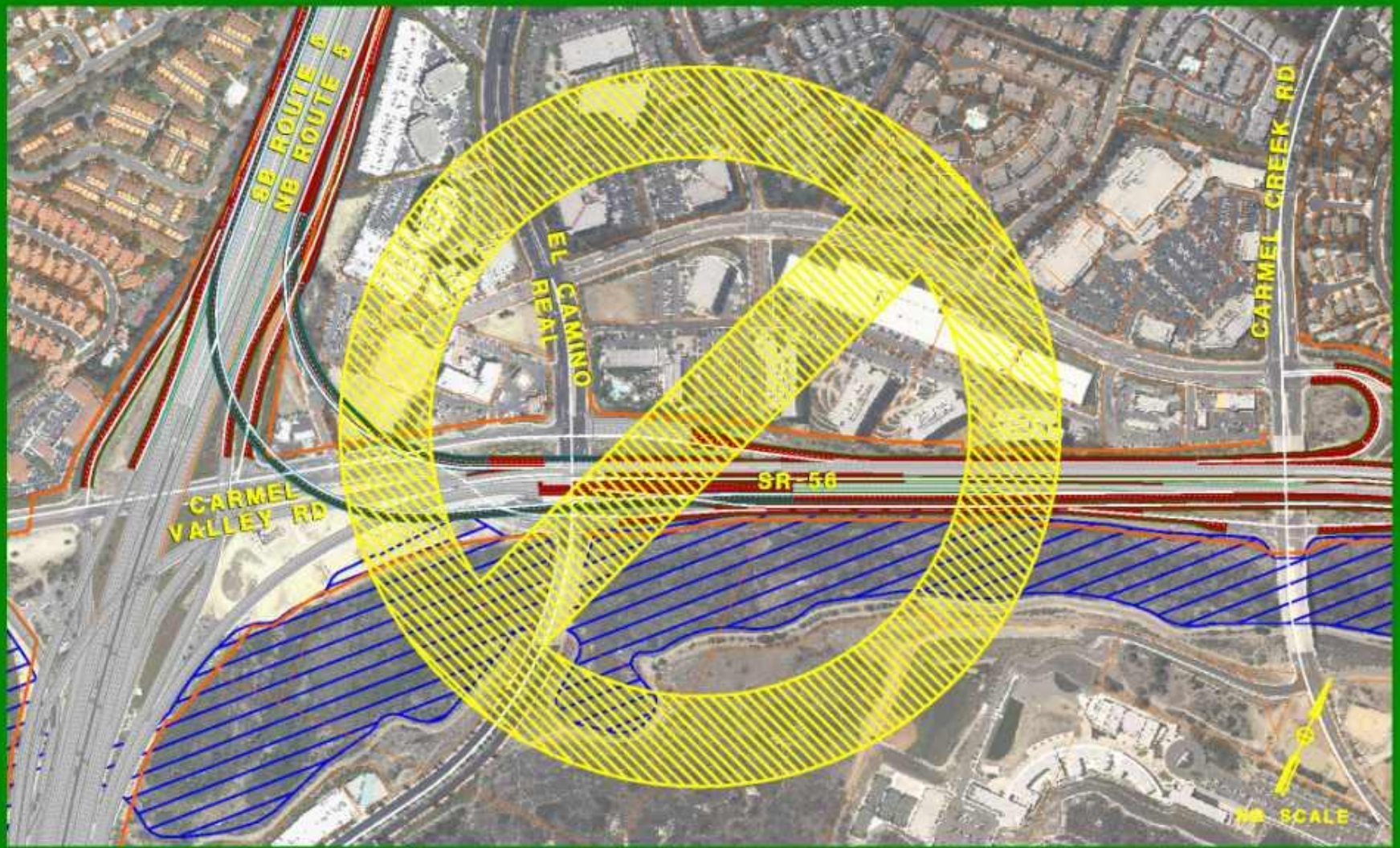

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EXHIBIT 15