Appendix G

Transportation and Circulation Information for Analysis

Fehr & Peers conducted the Traffic Study for the Pebble Beach Company Project (see bibliographic information below). The following pieces from the study have been extracted and included in this appendix as supplemental background information to Section 3.11, *Transportation and Circulation*.

- **Appendix G.1:** Fehr & Peers Intersection Traffic Volumes (Appendix B in Fehr & Peers 2011)
- **Appendix G.2:** Fehr & Peers Alternative 2 Analysis (Appendix E in Fehr & Peers 2011)
- **Appendix G.3:** Fehr & Peers Circulation Improvements

Source:

Fehr & Peers. 2011. Del Monte Forest Plan: Pebble Beach, CA. August. Prepared for Pebble Beach Company. Walnut Creek, CA.

G.1

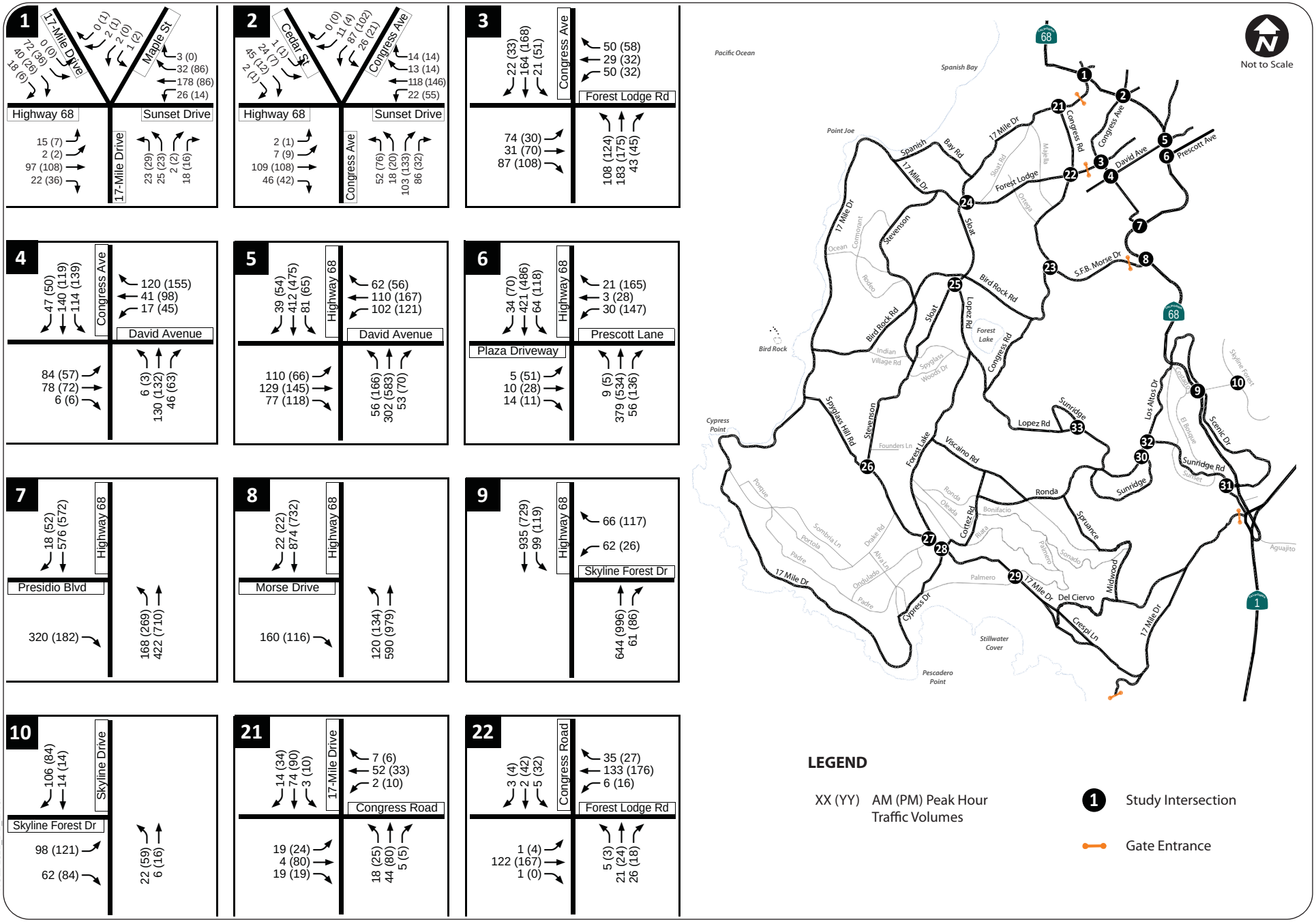
Fehr & Peers
Intersection Traffic Volumes

Appendix B
Intersection Traffic Volumes

FEHR PEERS

Table of Contents

EXISTING PEAK HOUR VOLUMES



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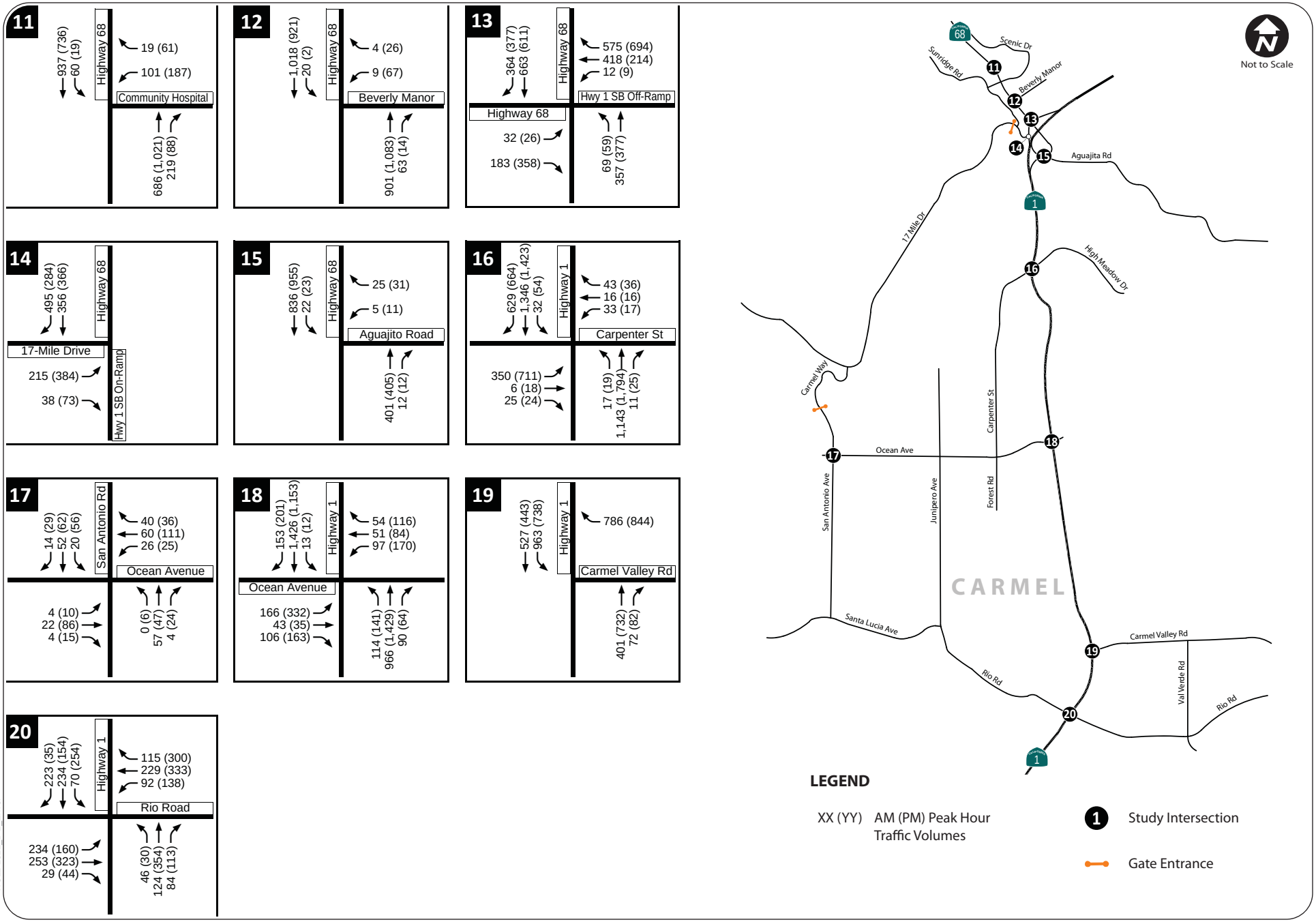

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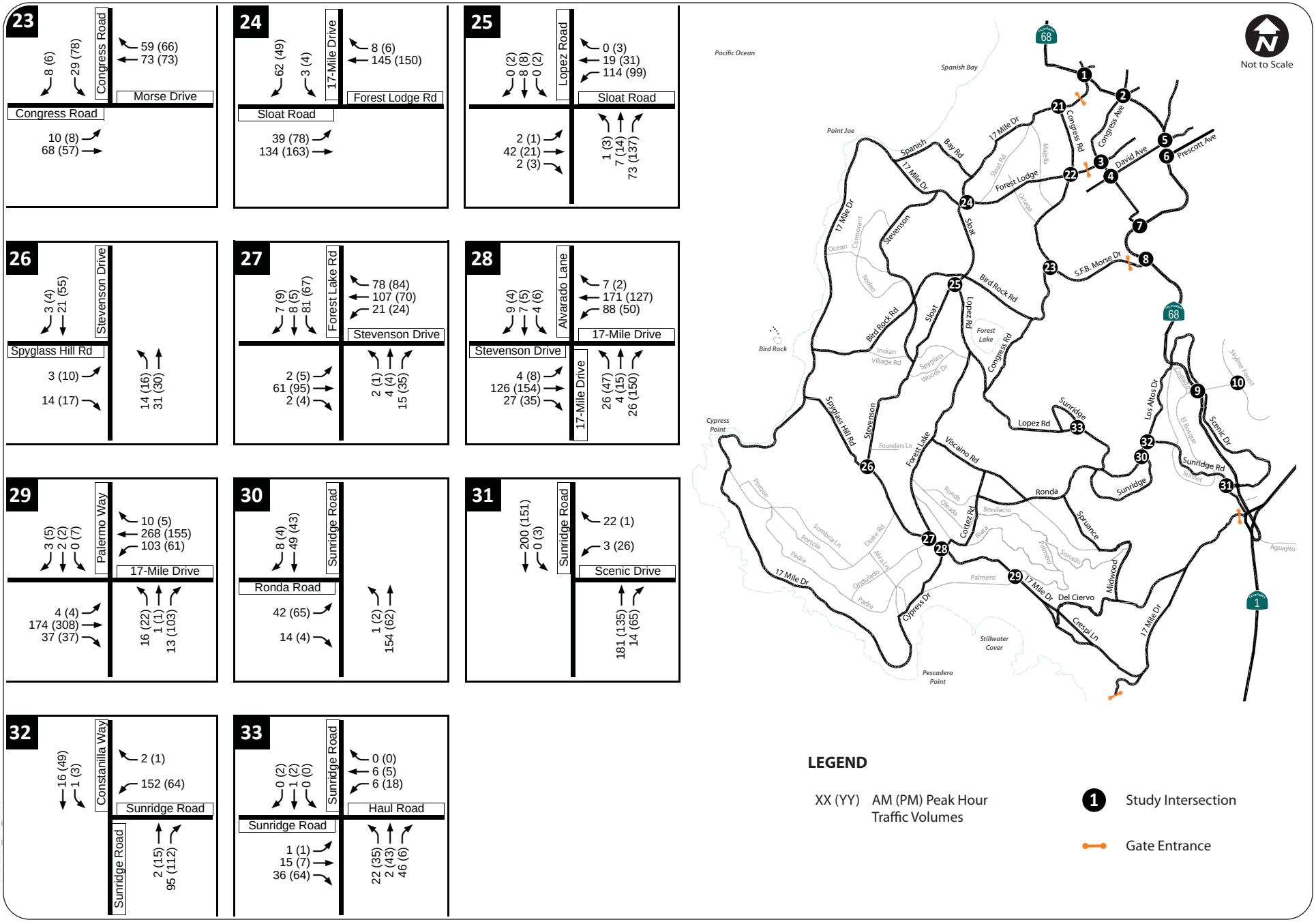

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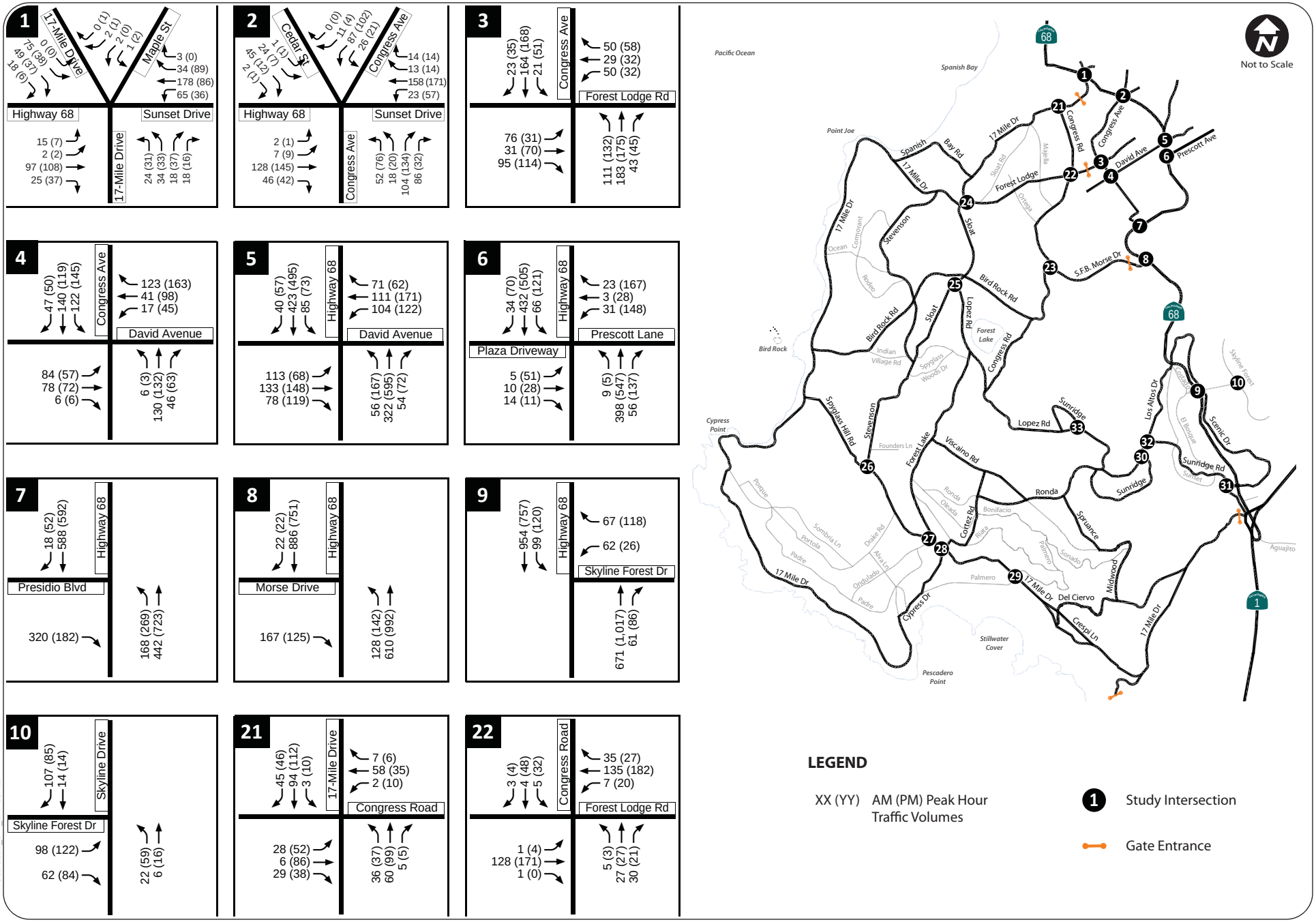

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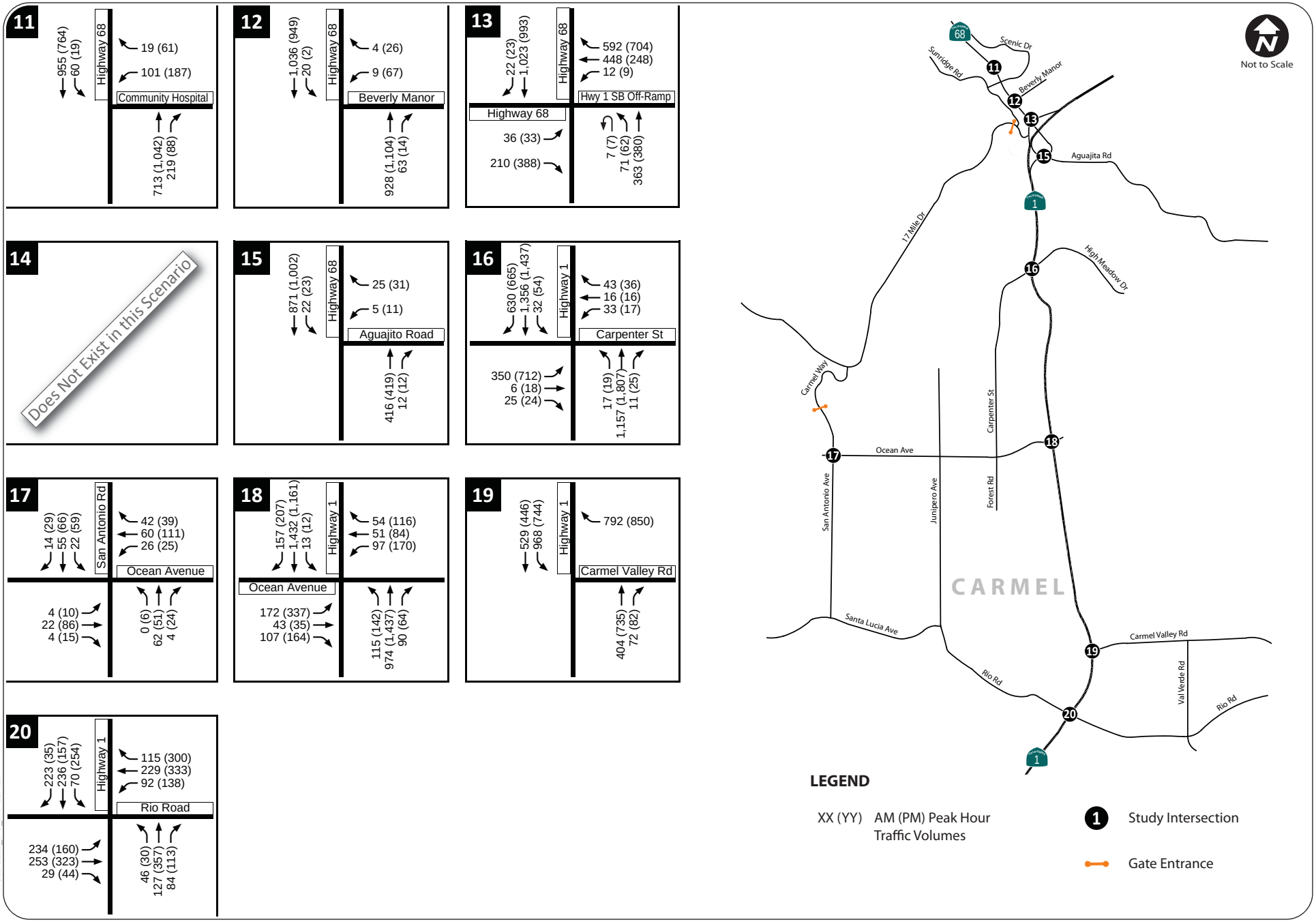

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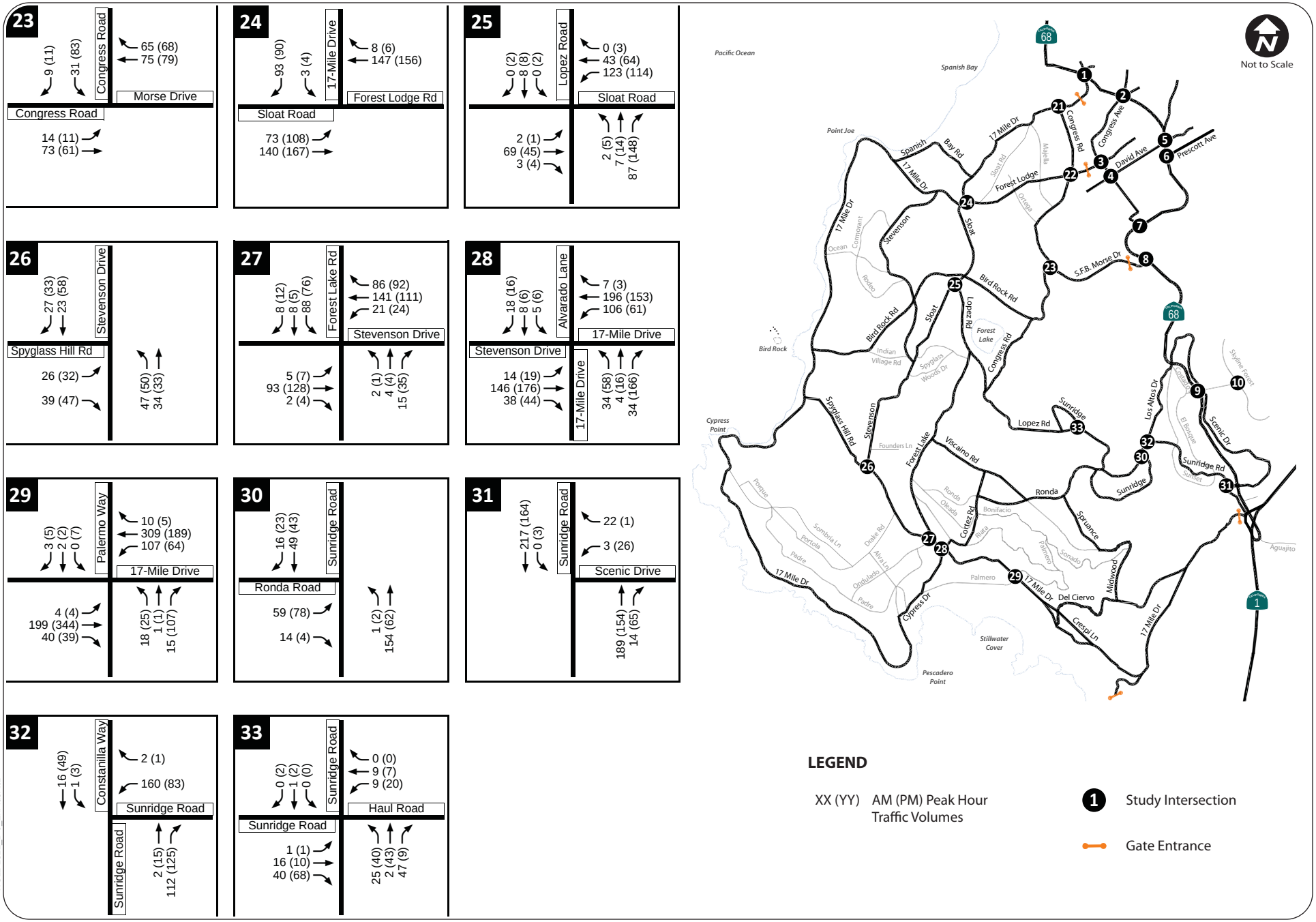

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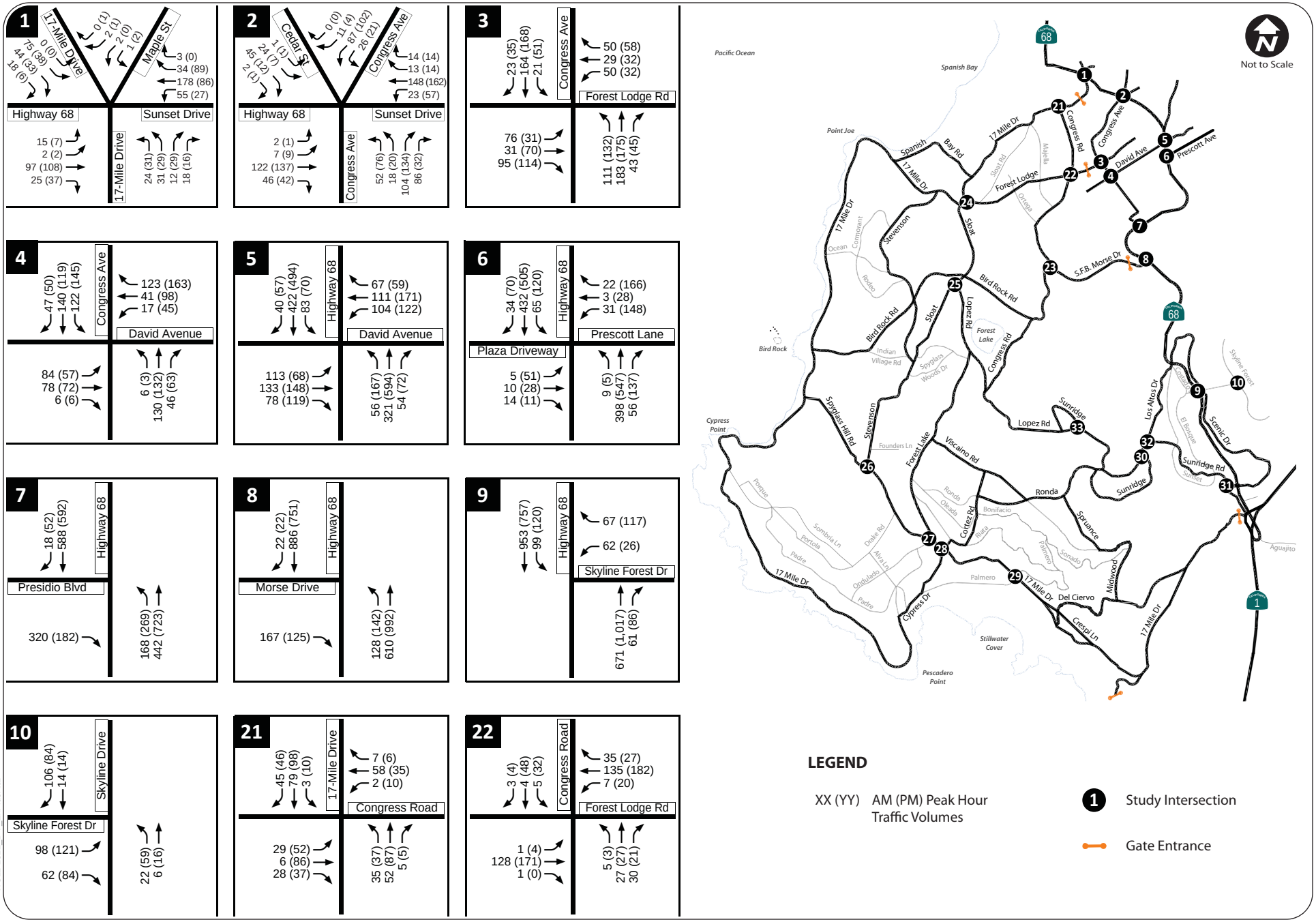

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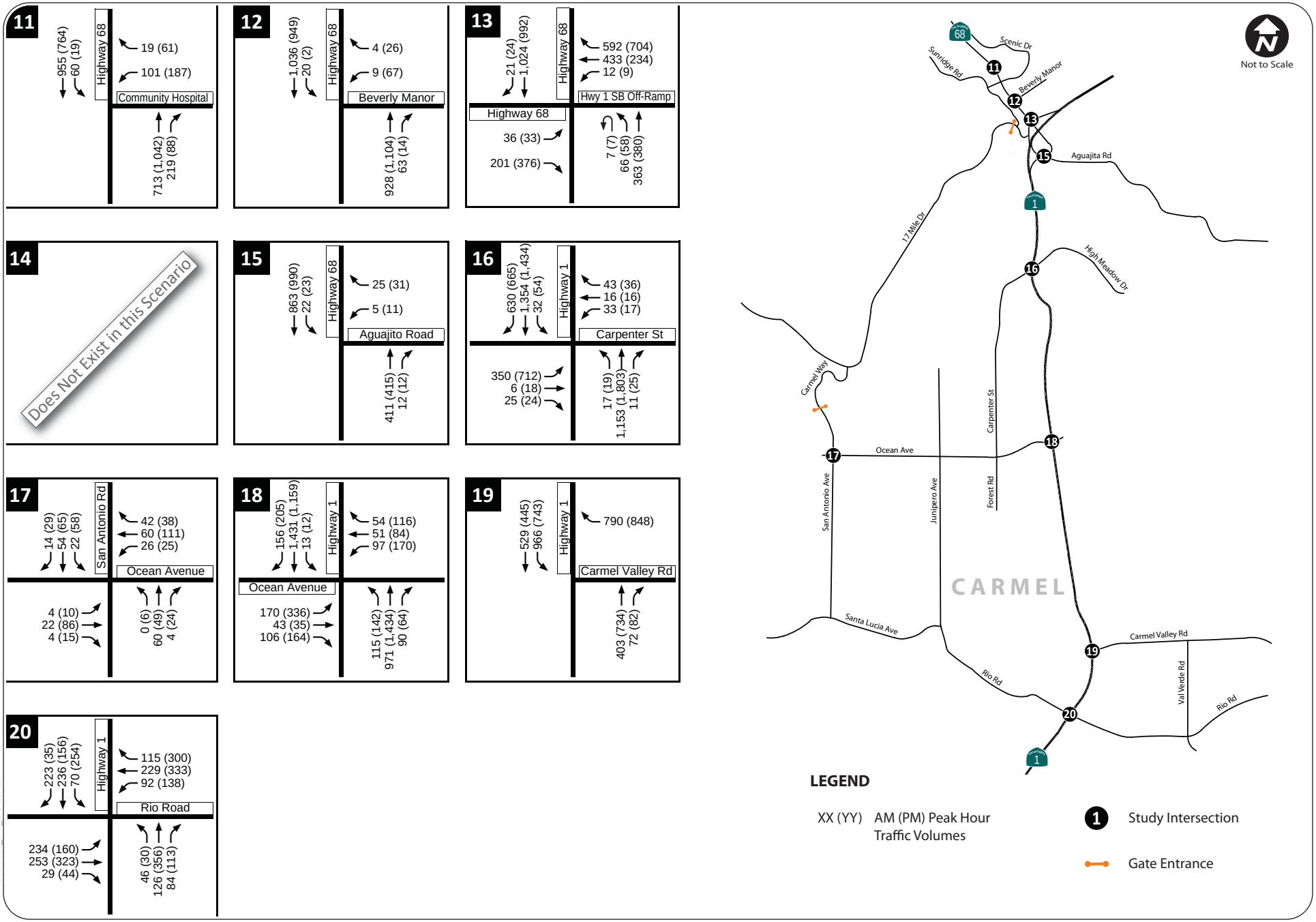

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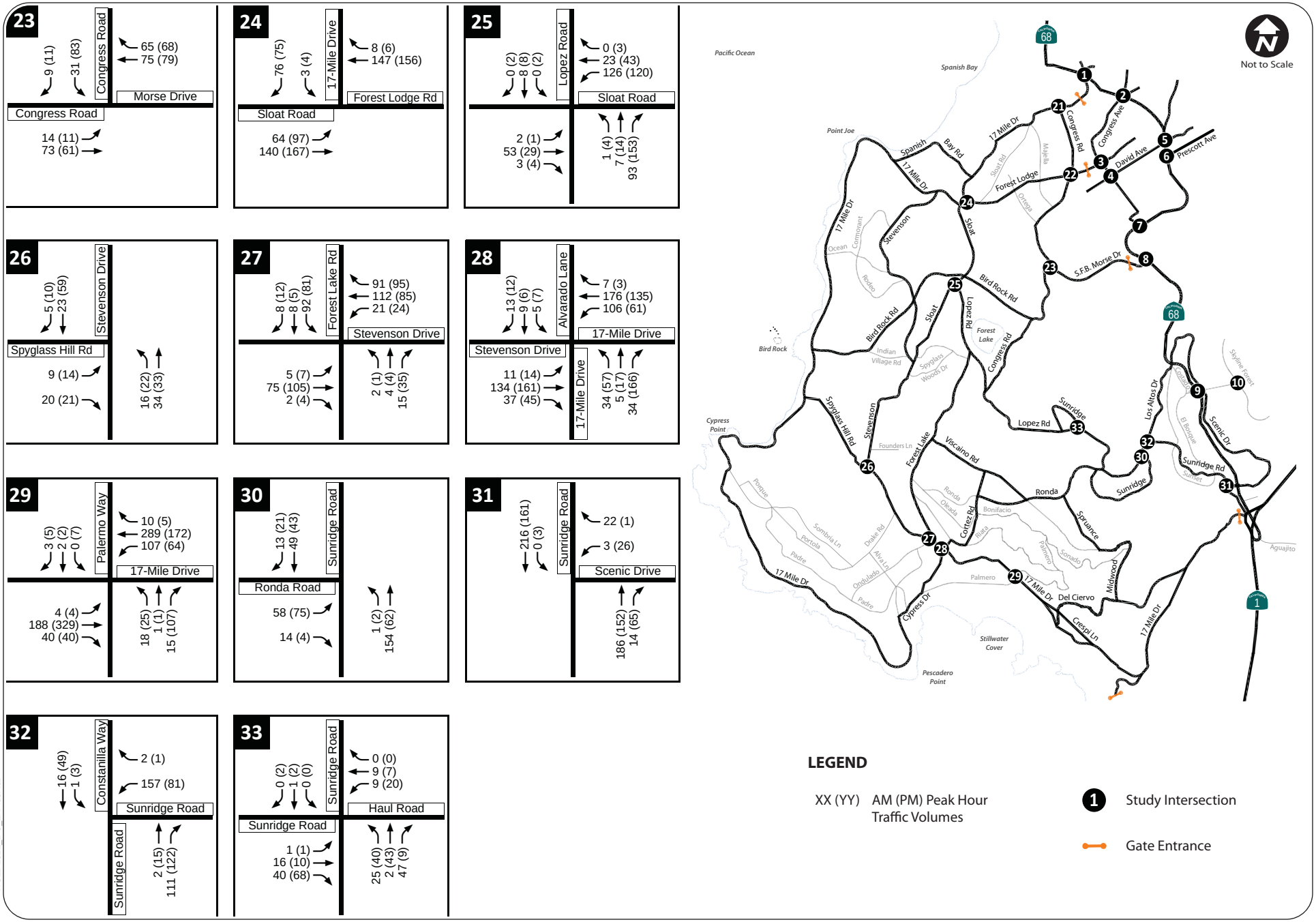

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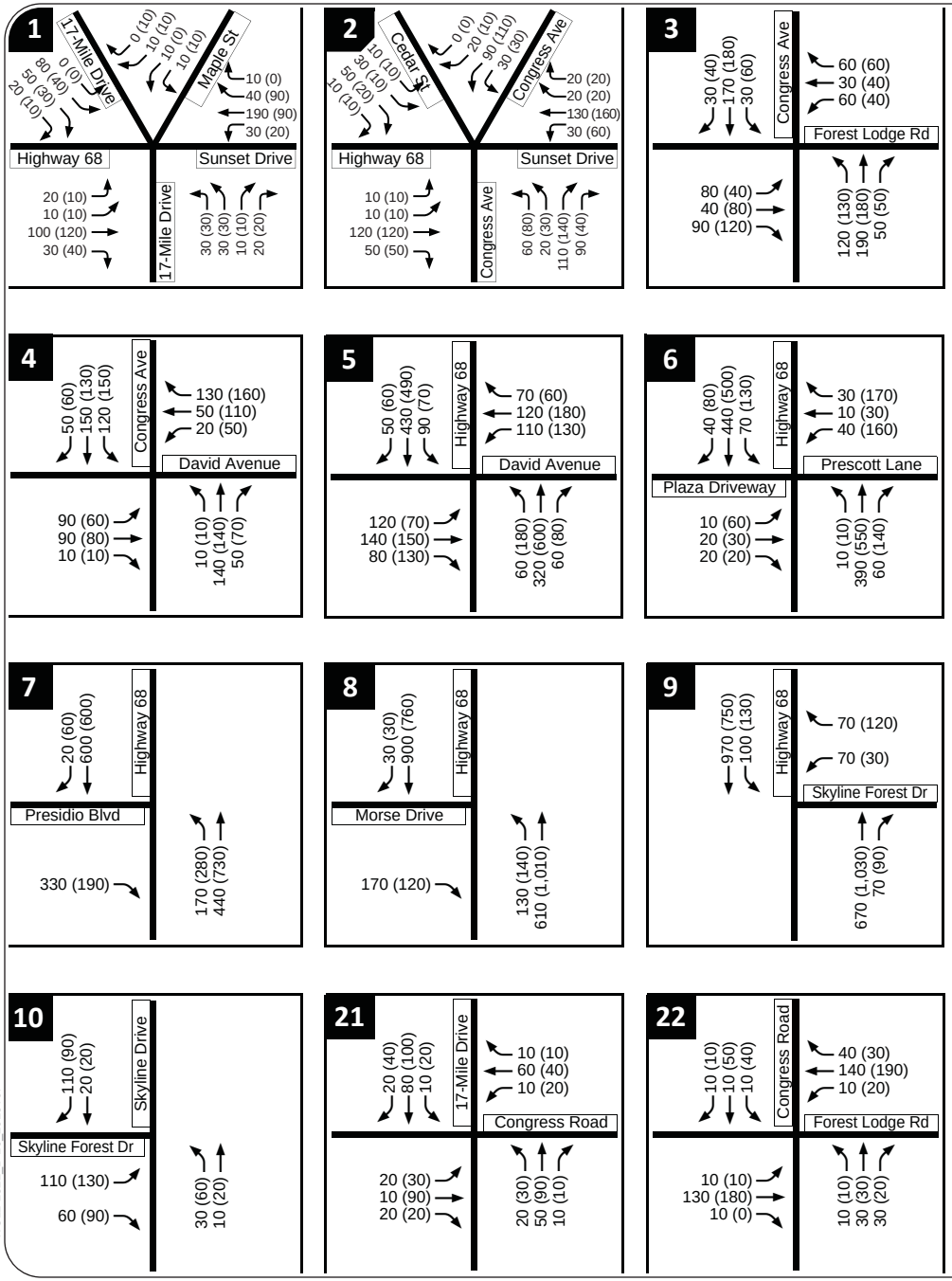

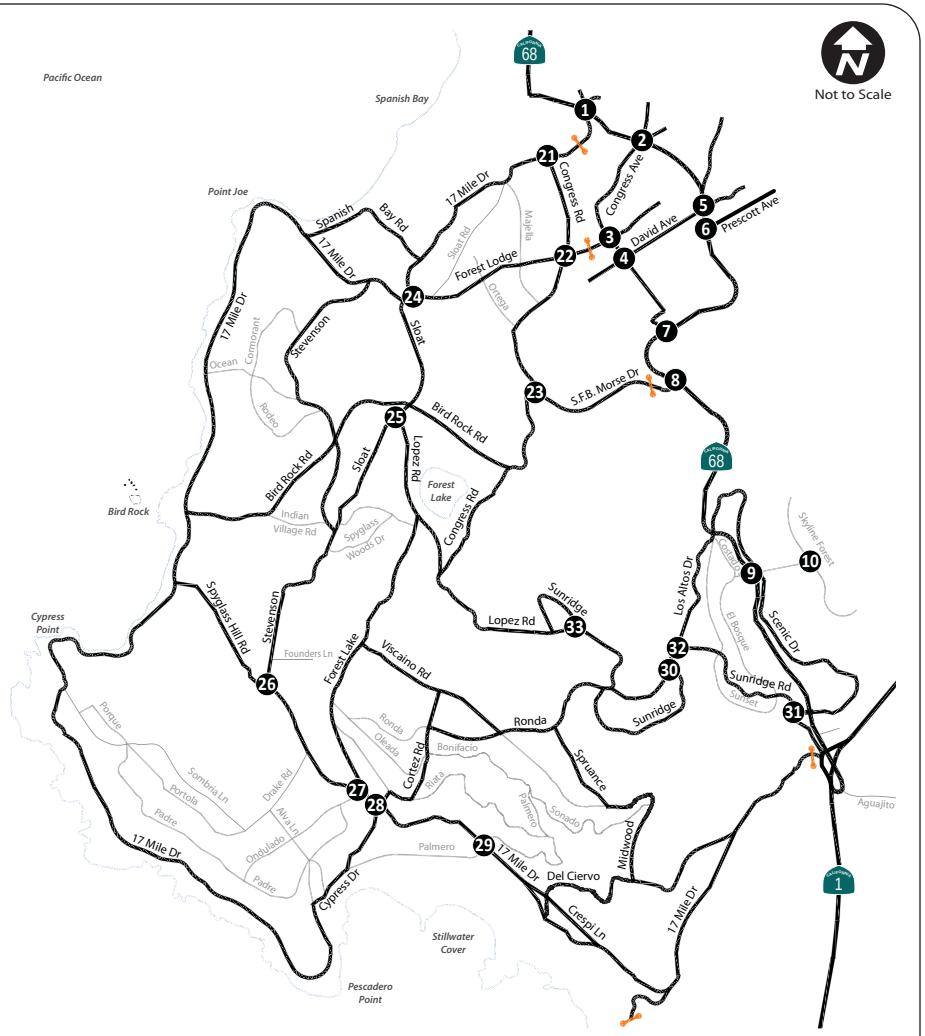

LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

1 Study Intersection

Gate Entrance

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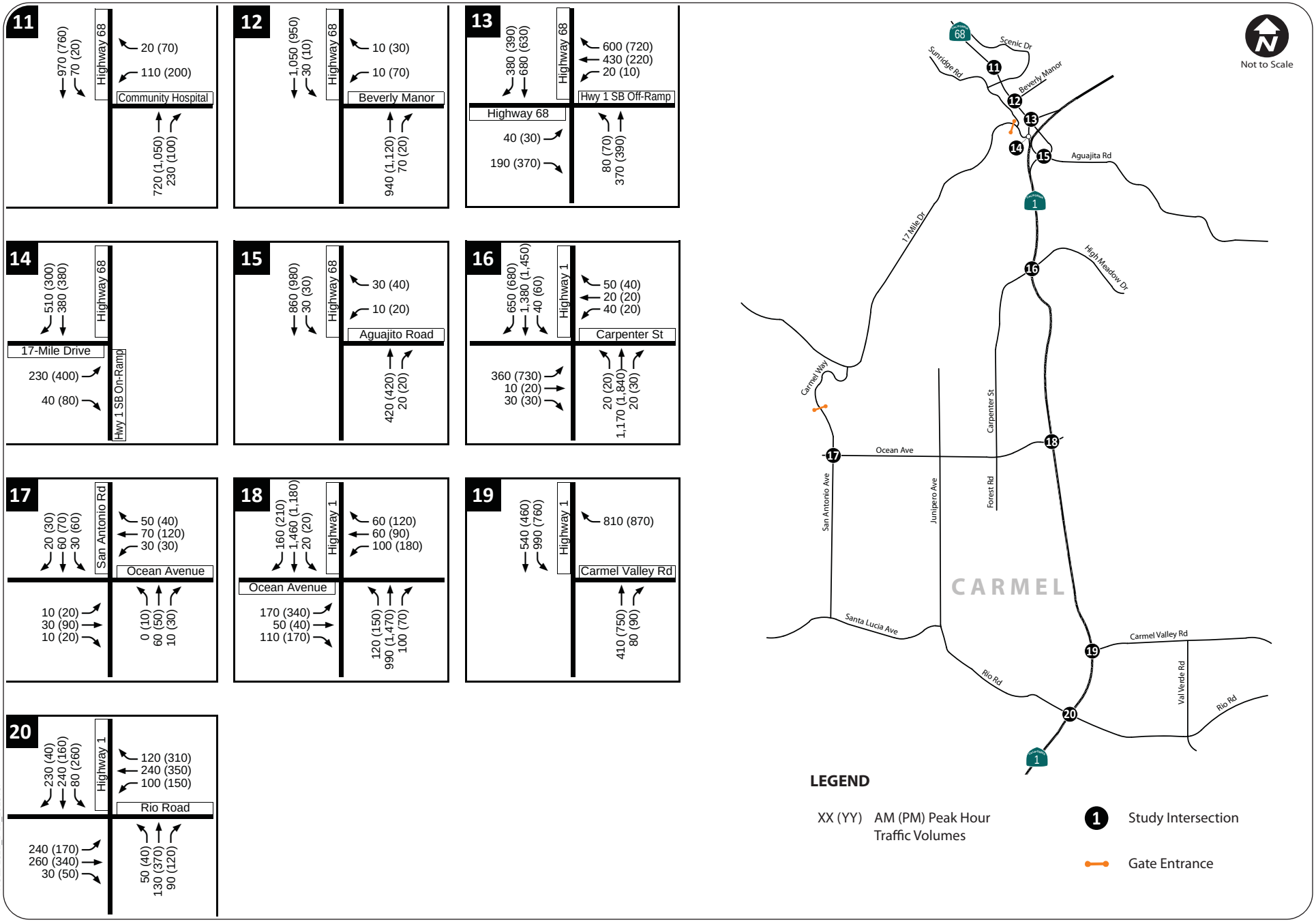

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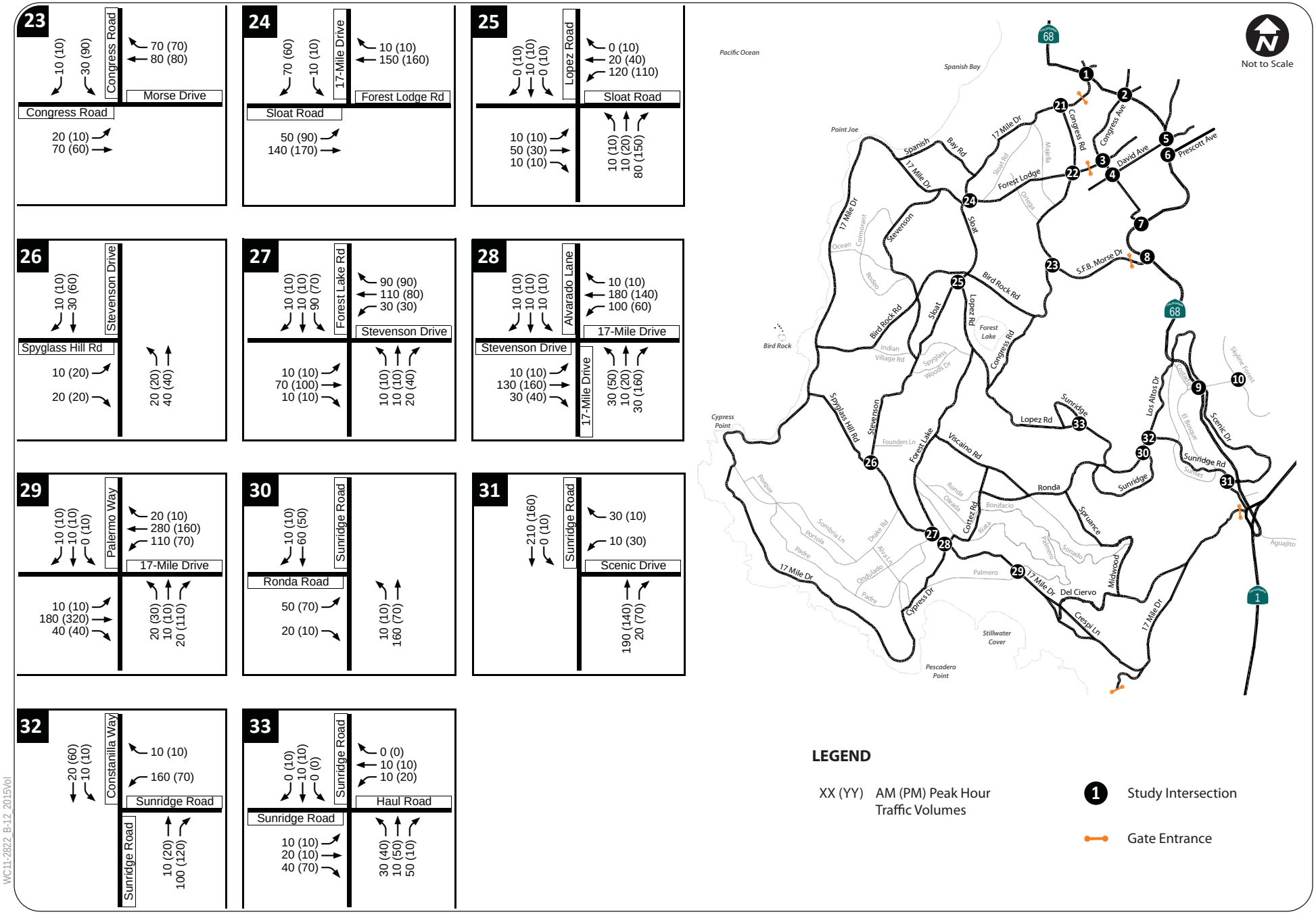

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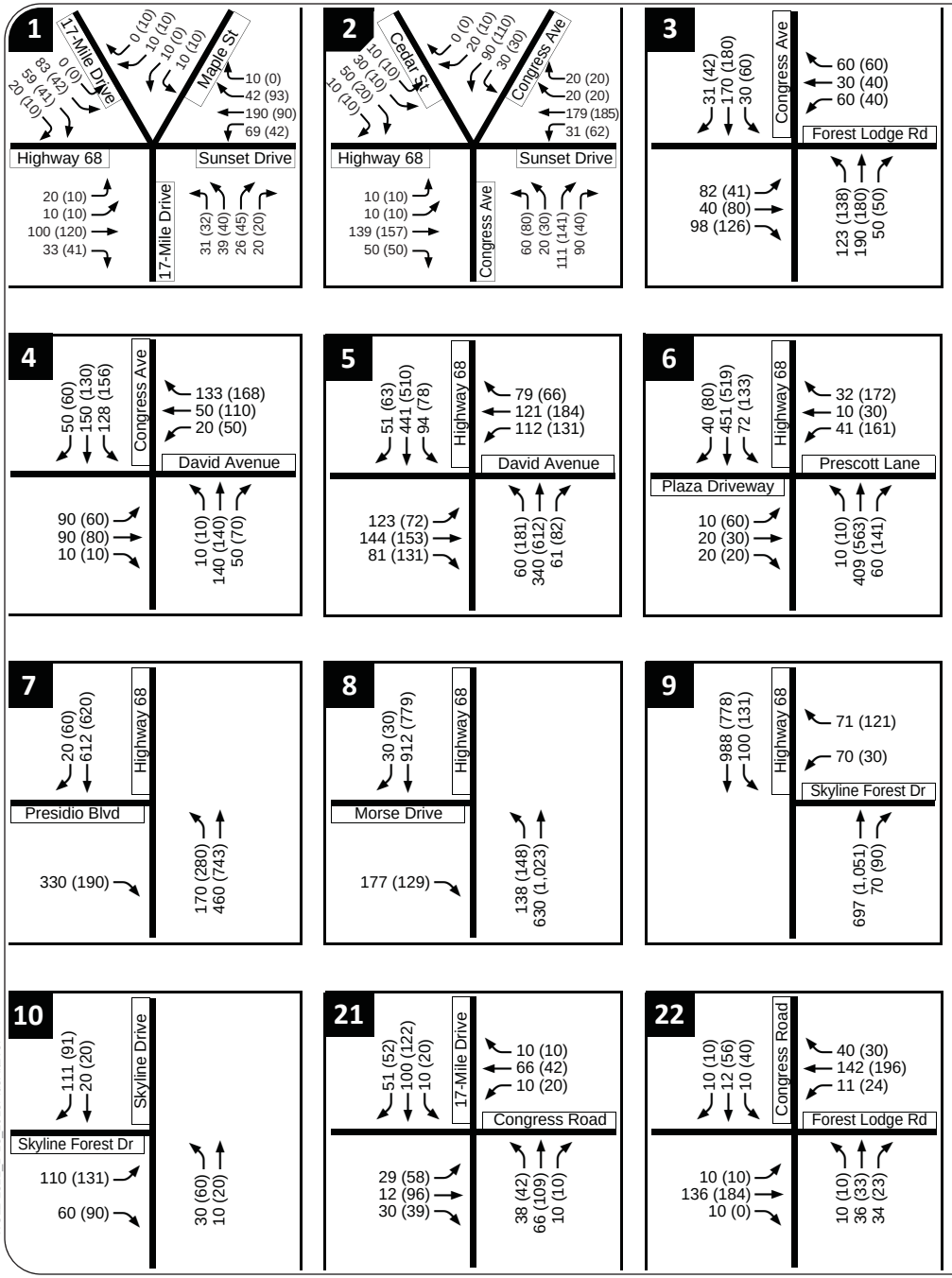

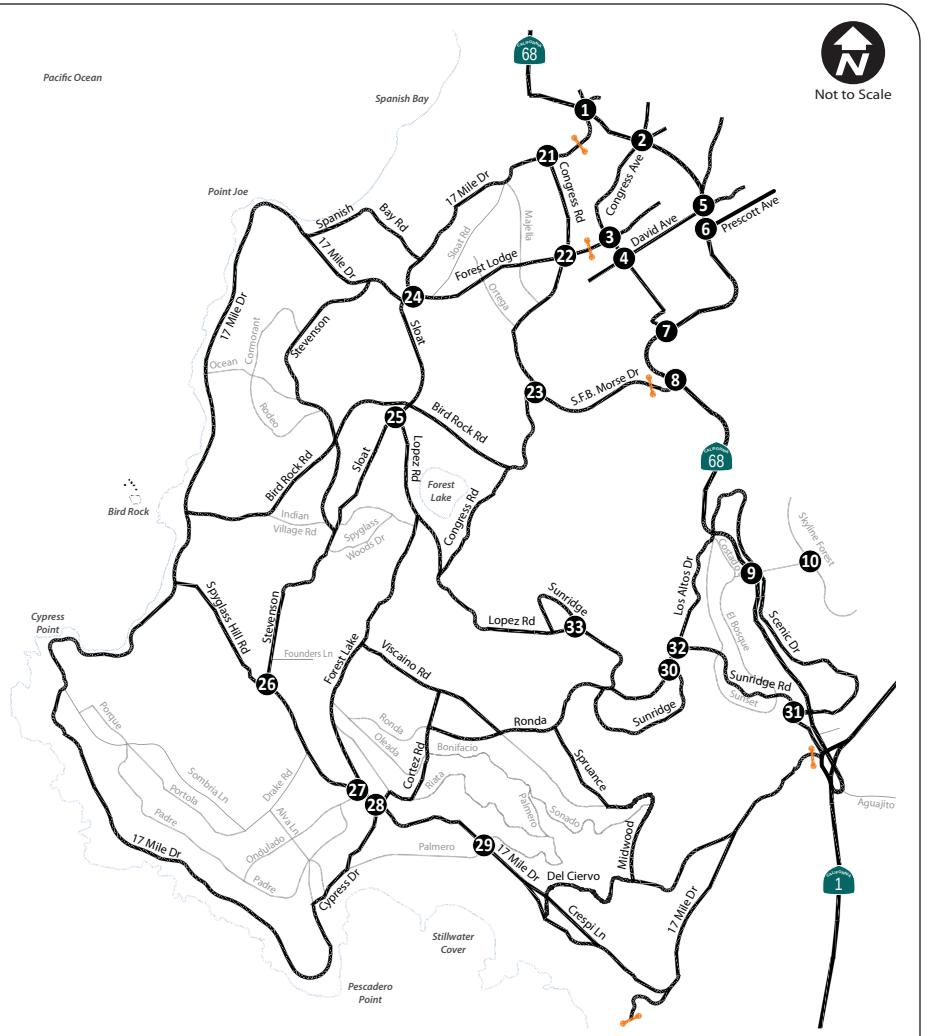

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XX (YY) AM (PM) Peak Hour Traffic Volumes

1 Study Intersection

Gate Entrance

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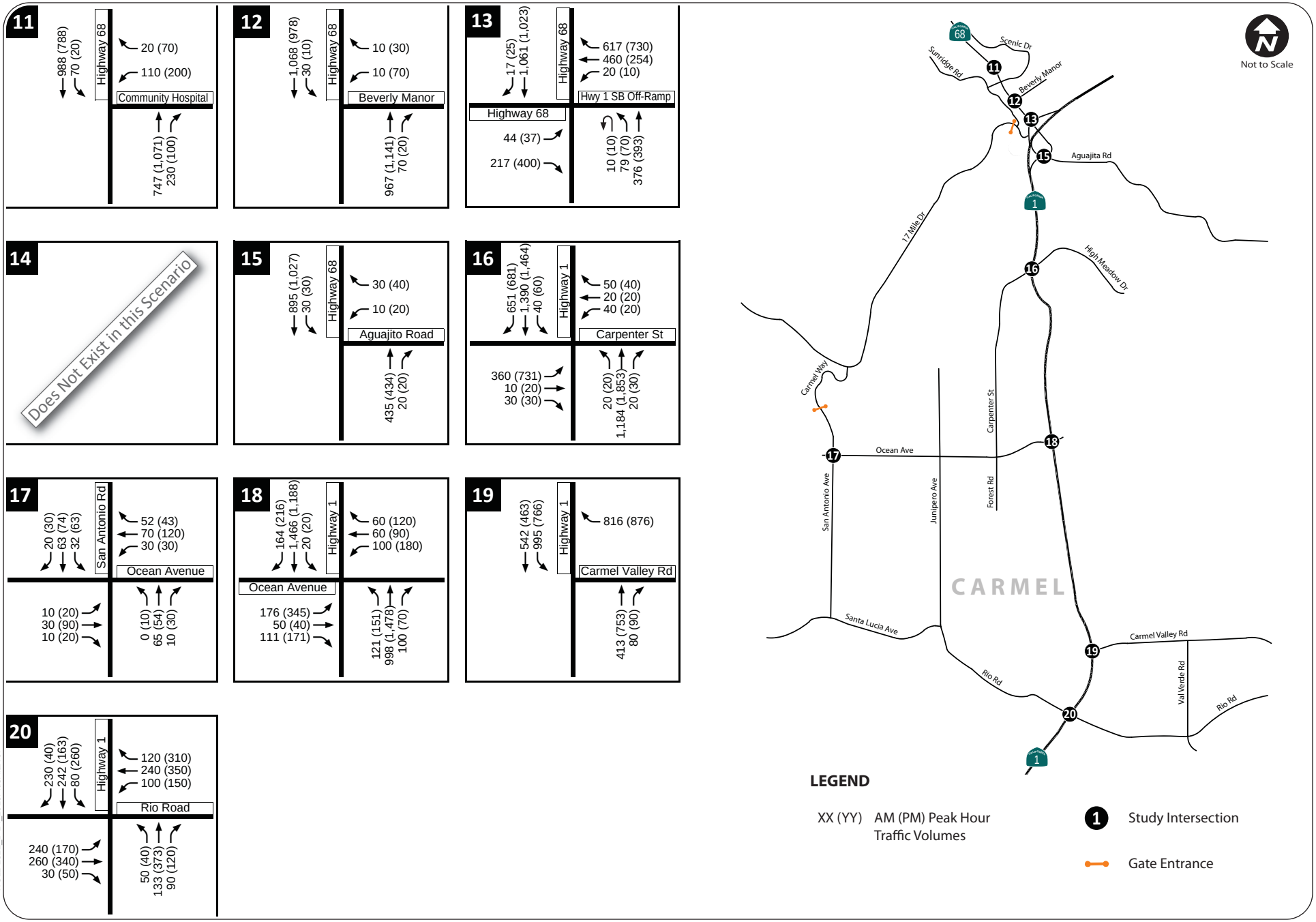

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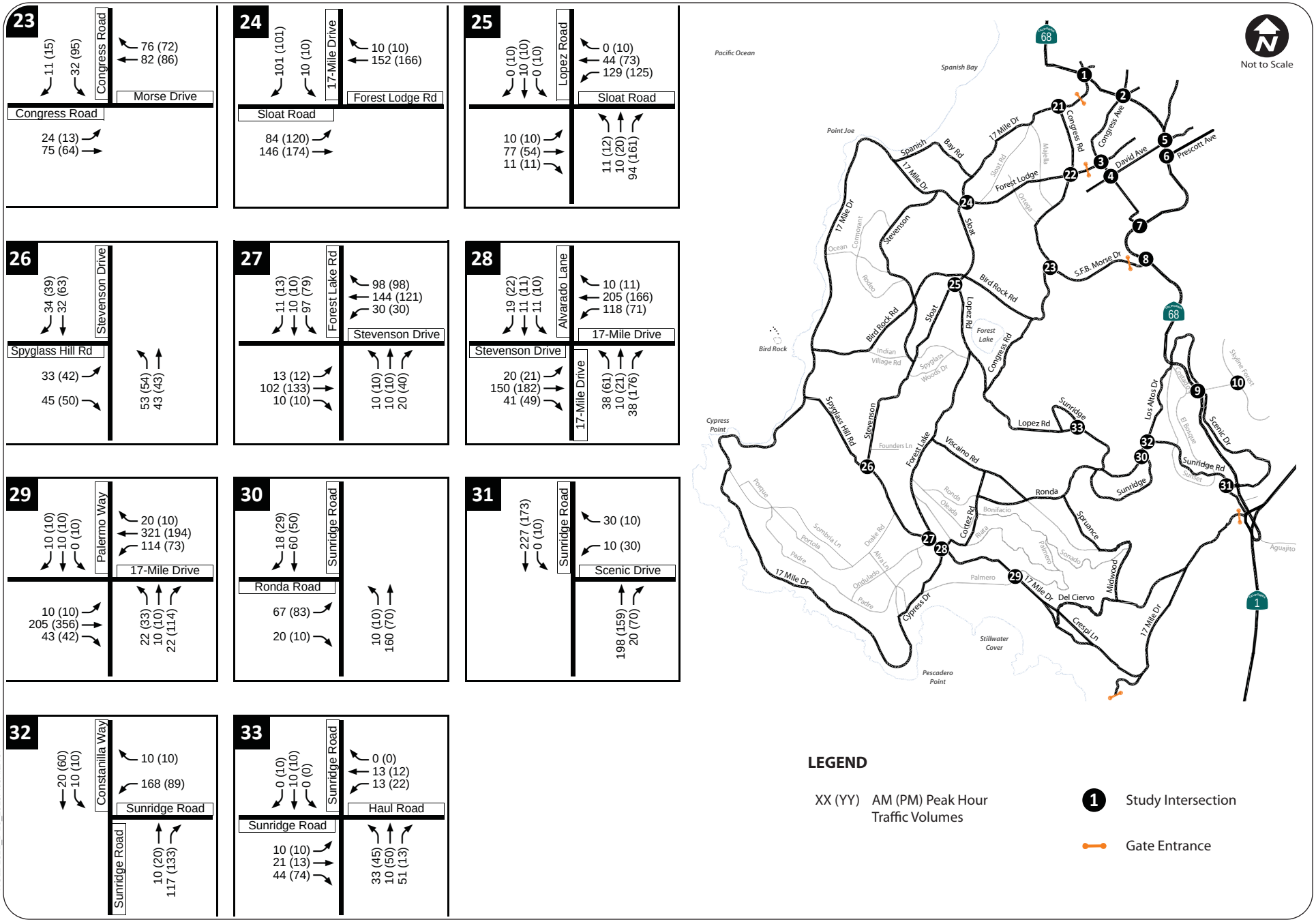

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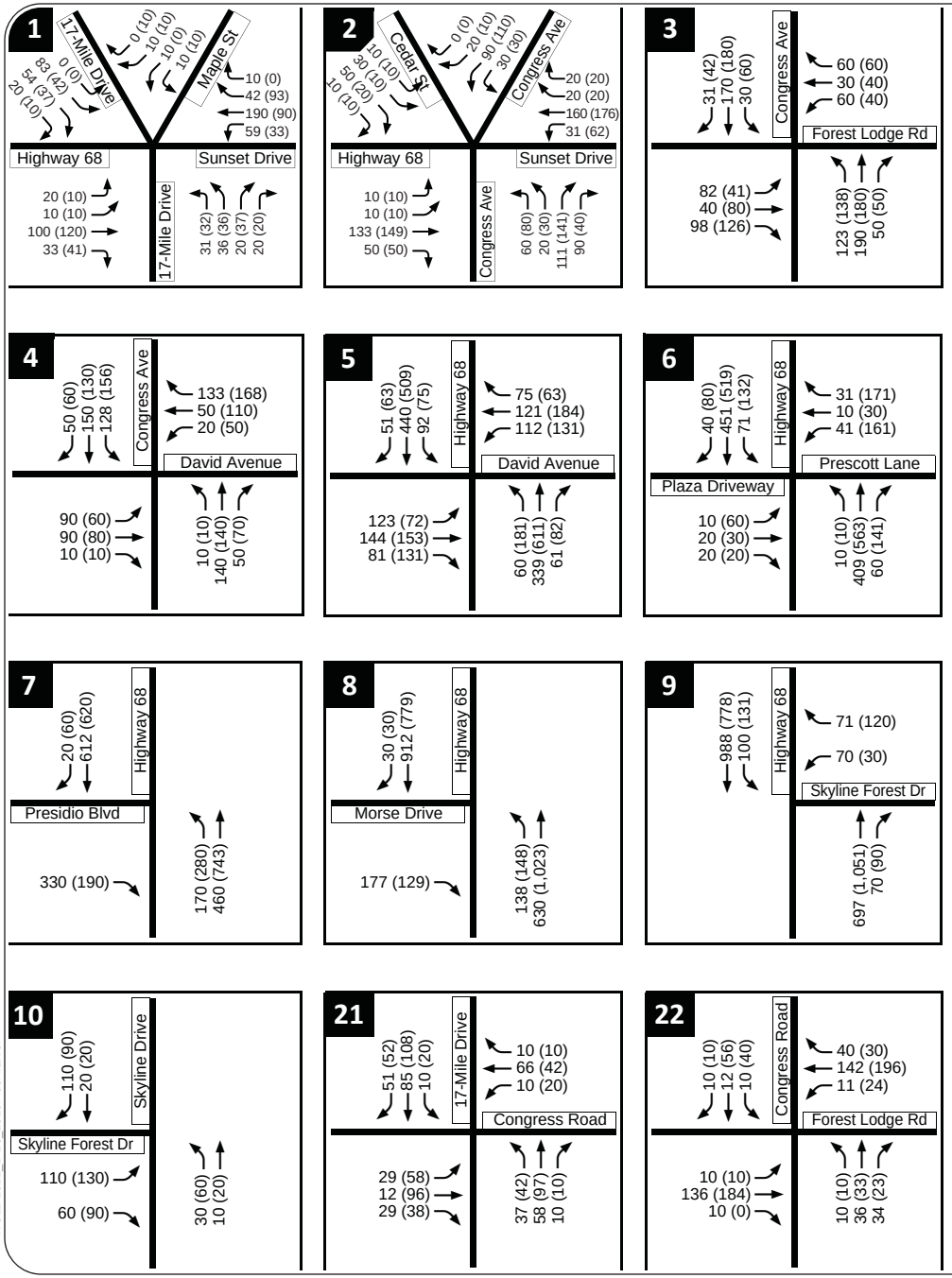

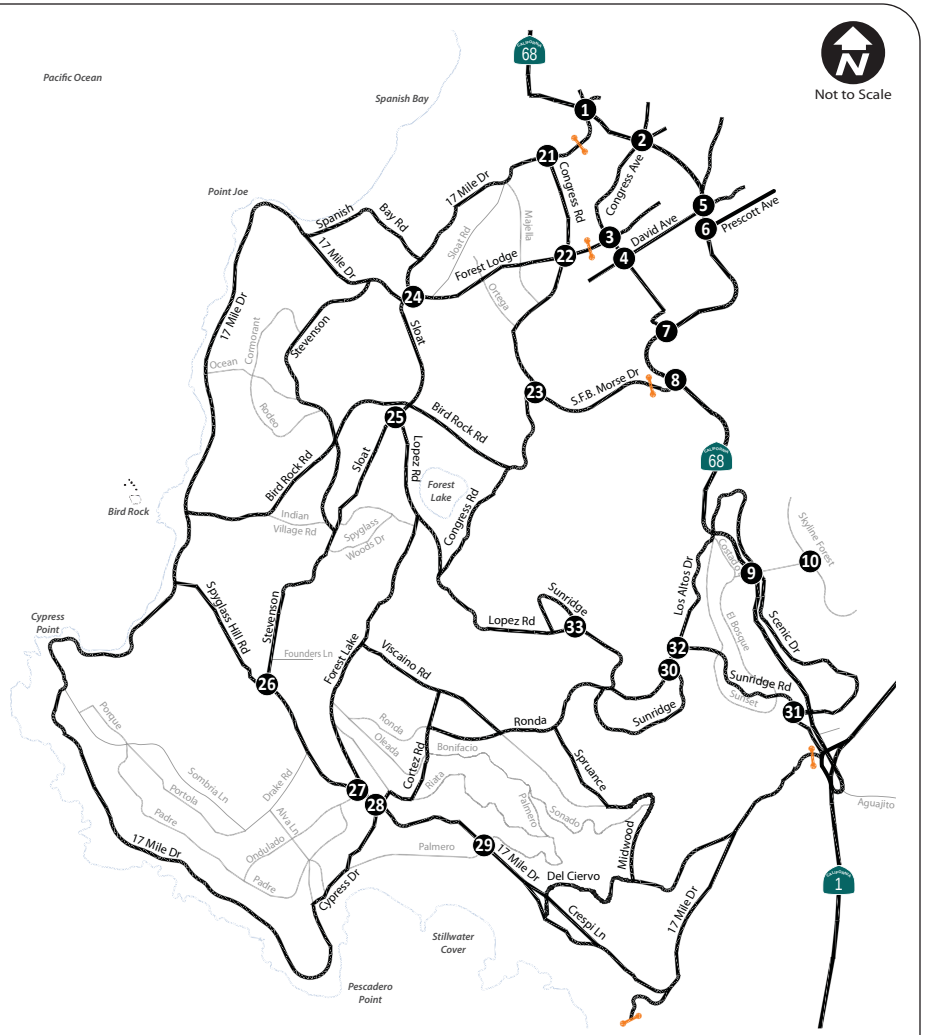

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1 Study Intersection

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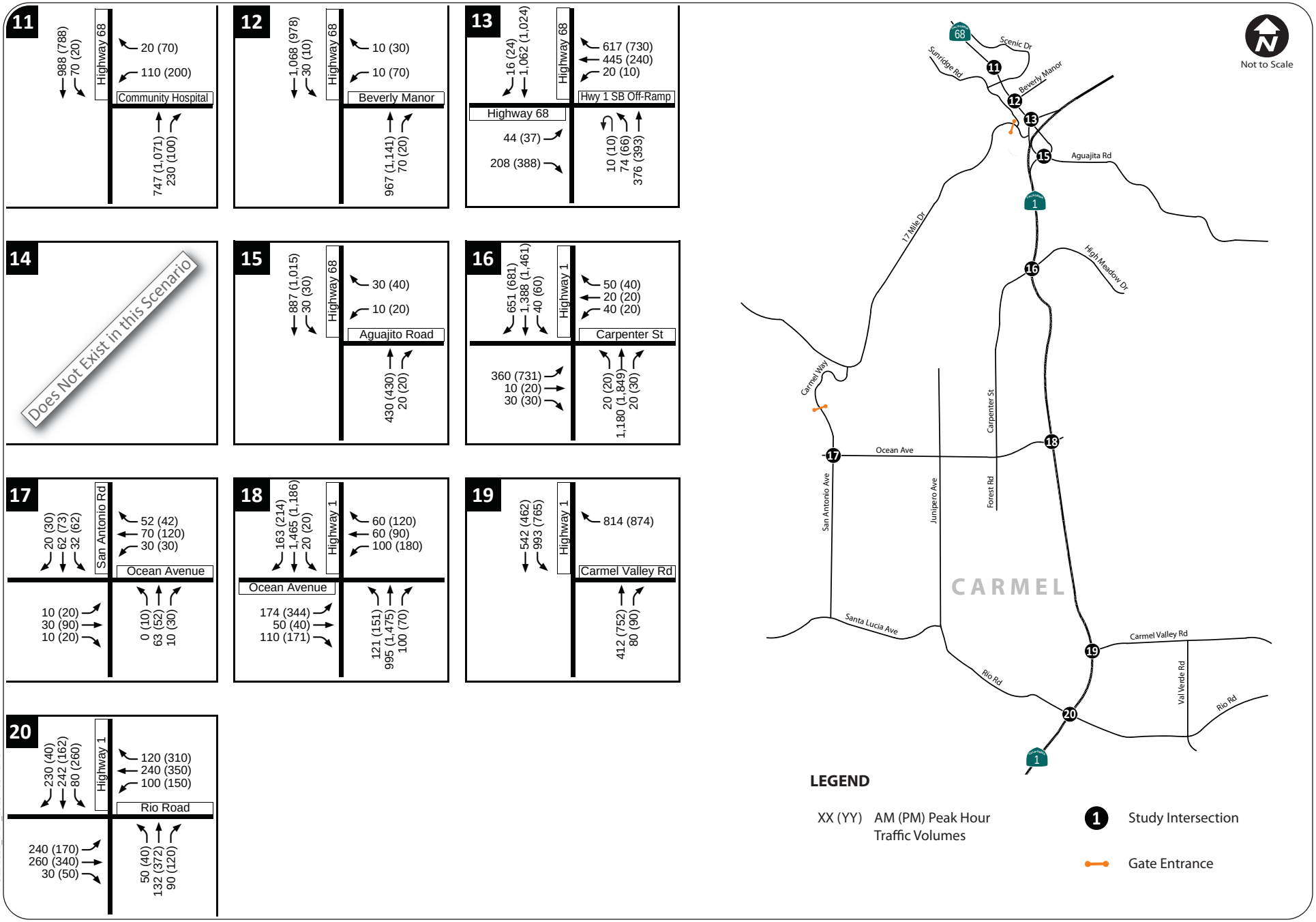

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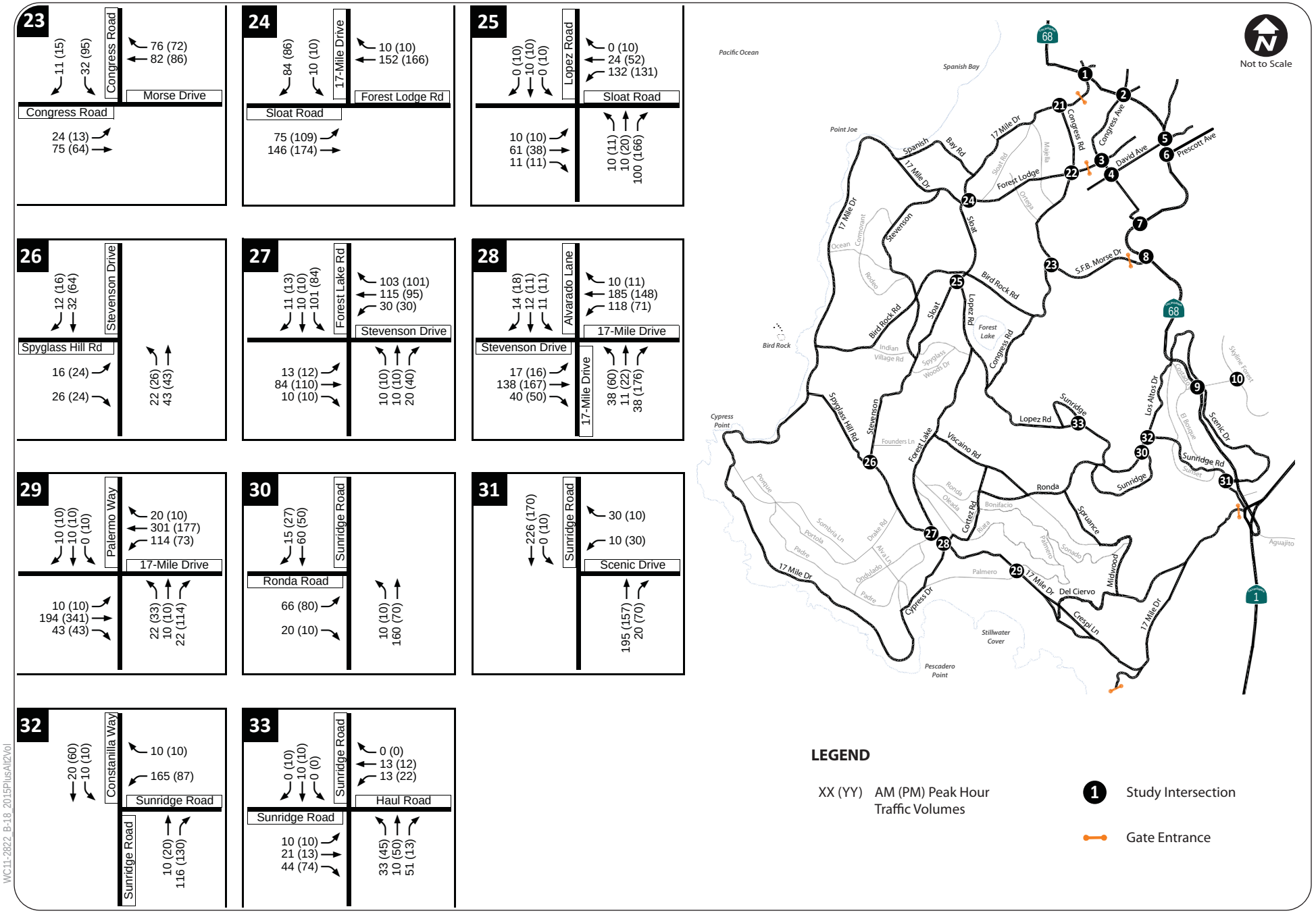

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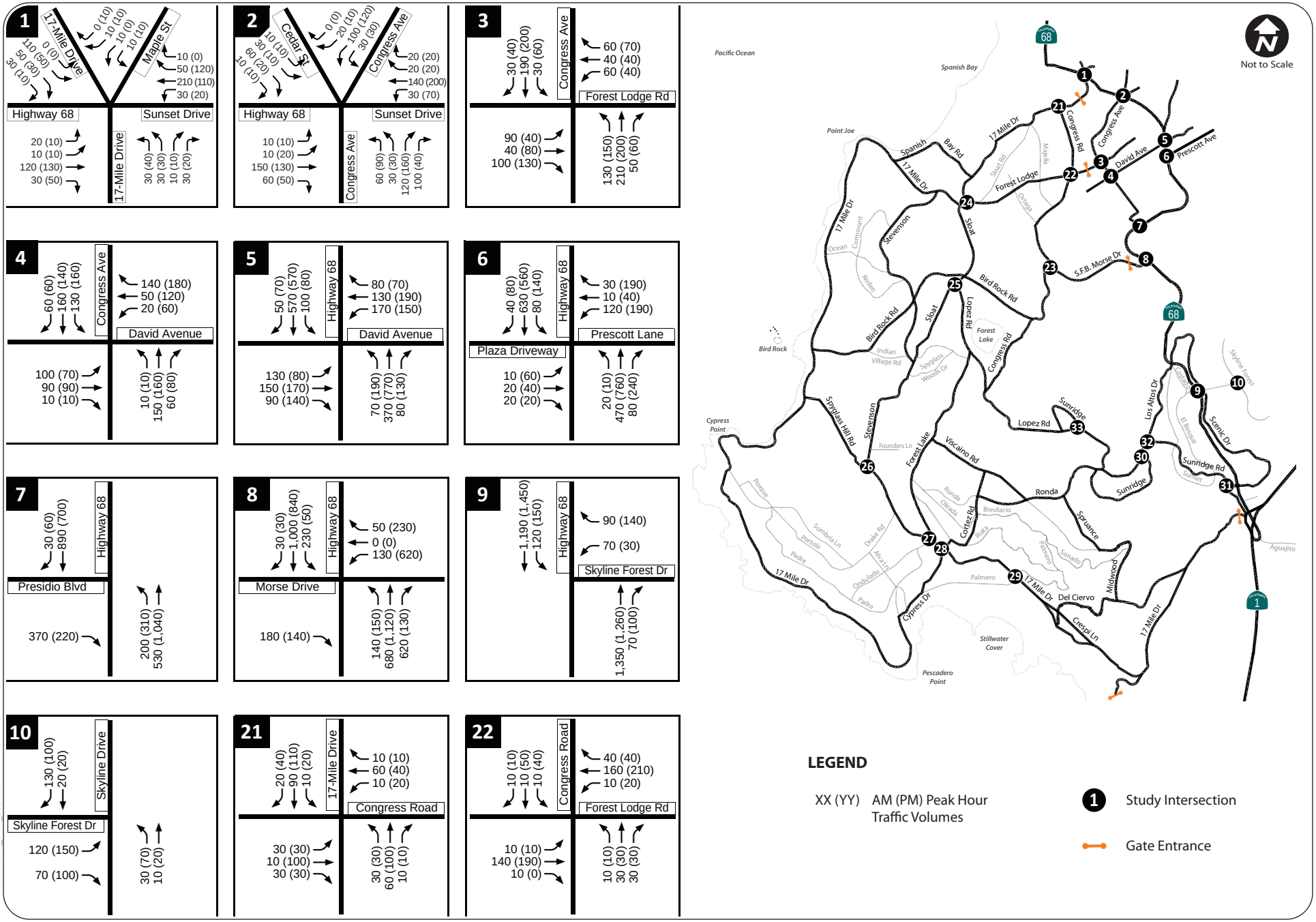

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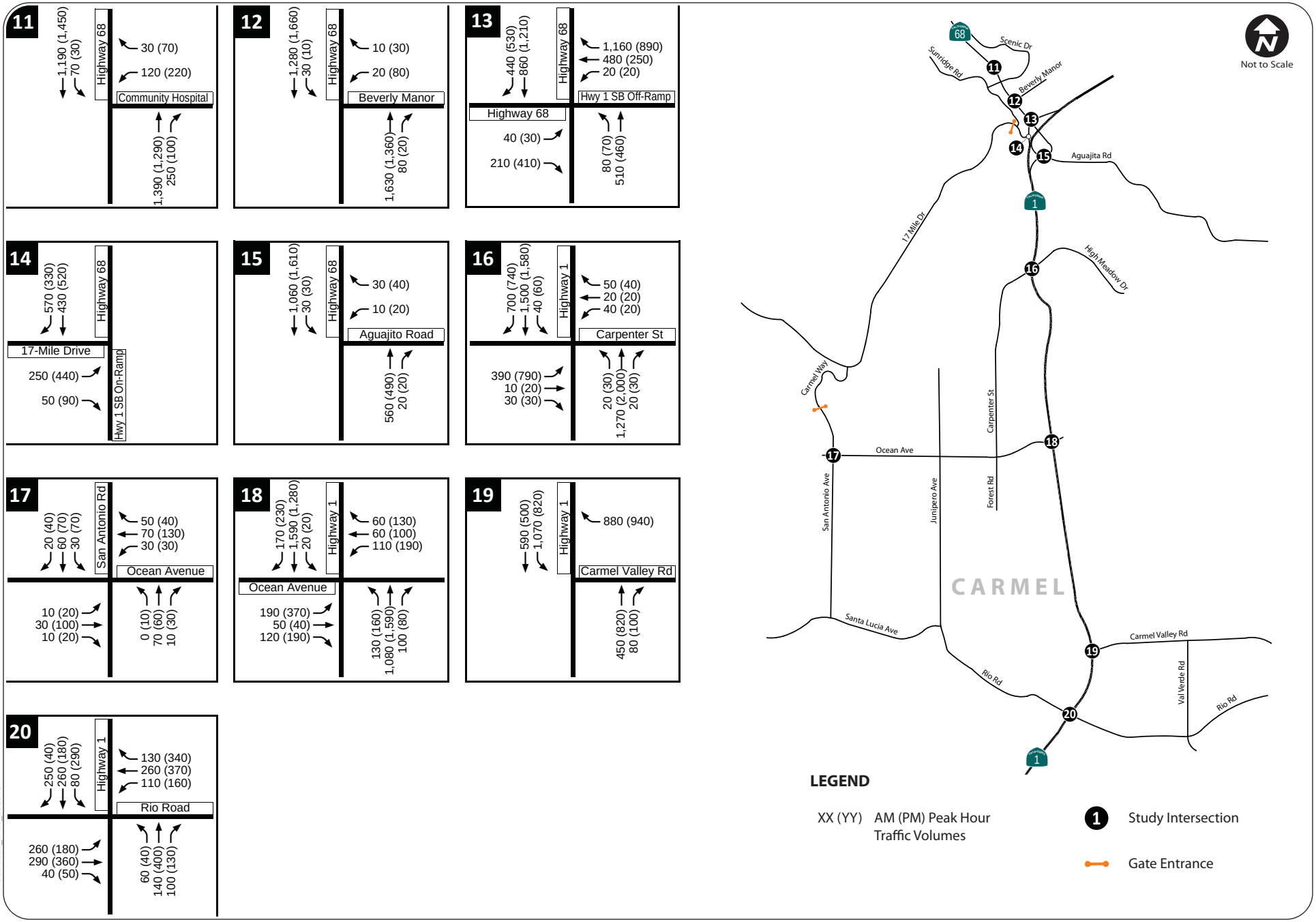

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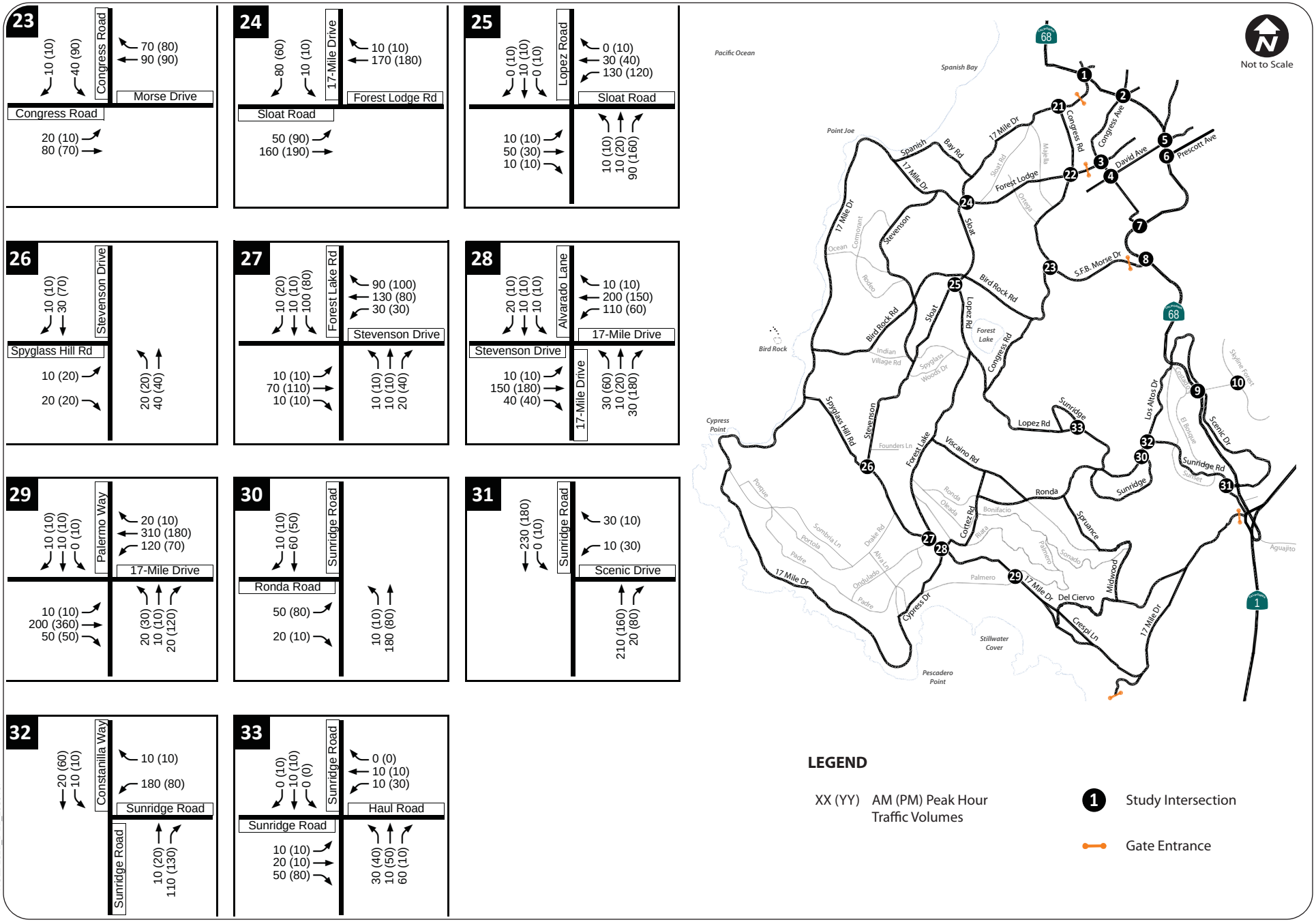

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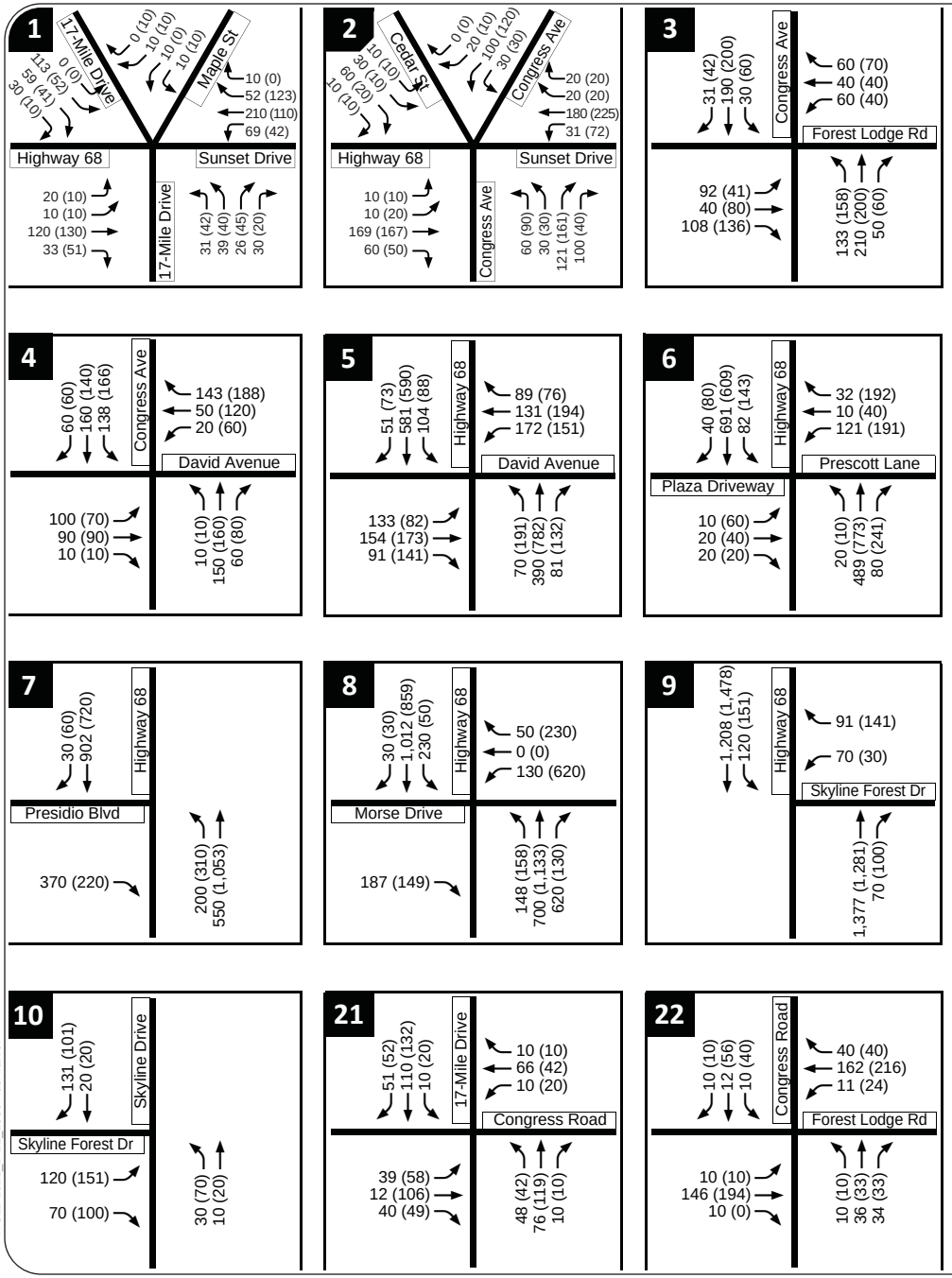

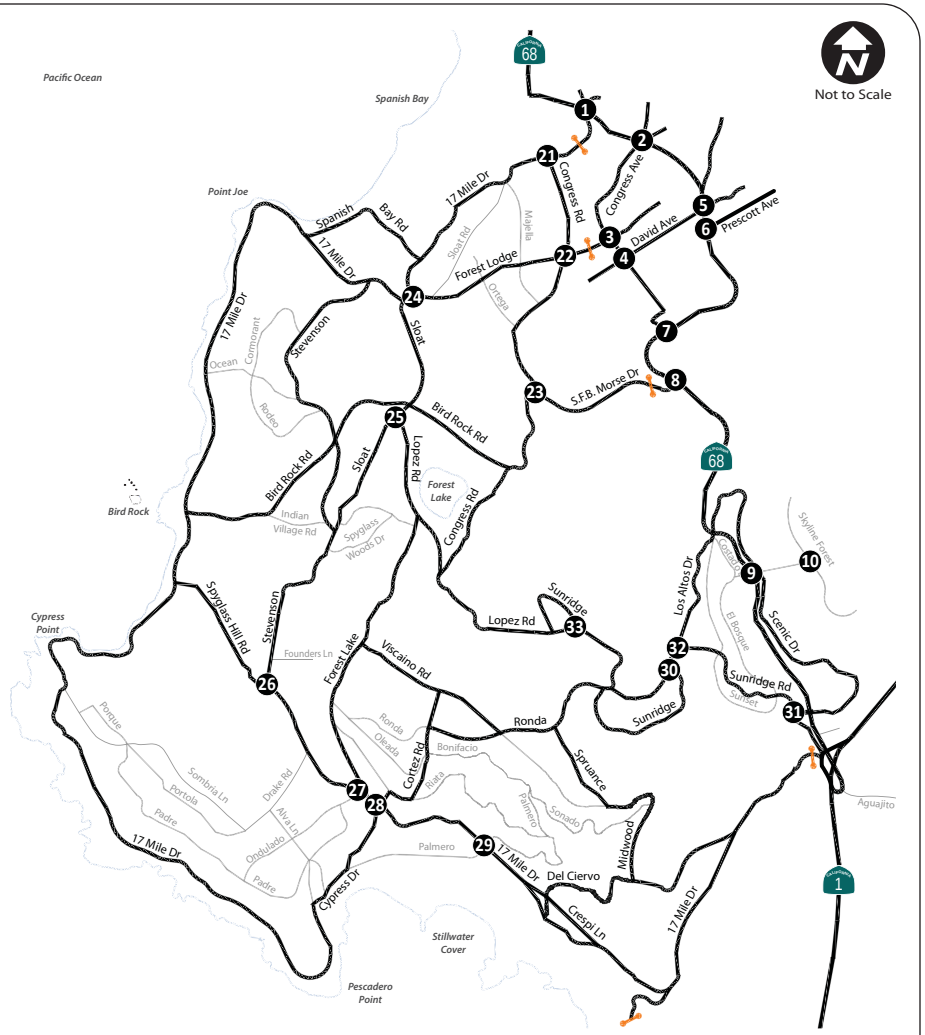

LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

1 Study Intersection

Gate Entrance

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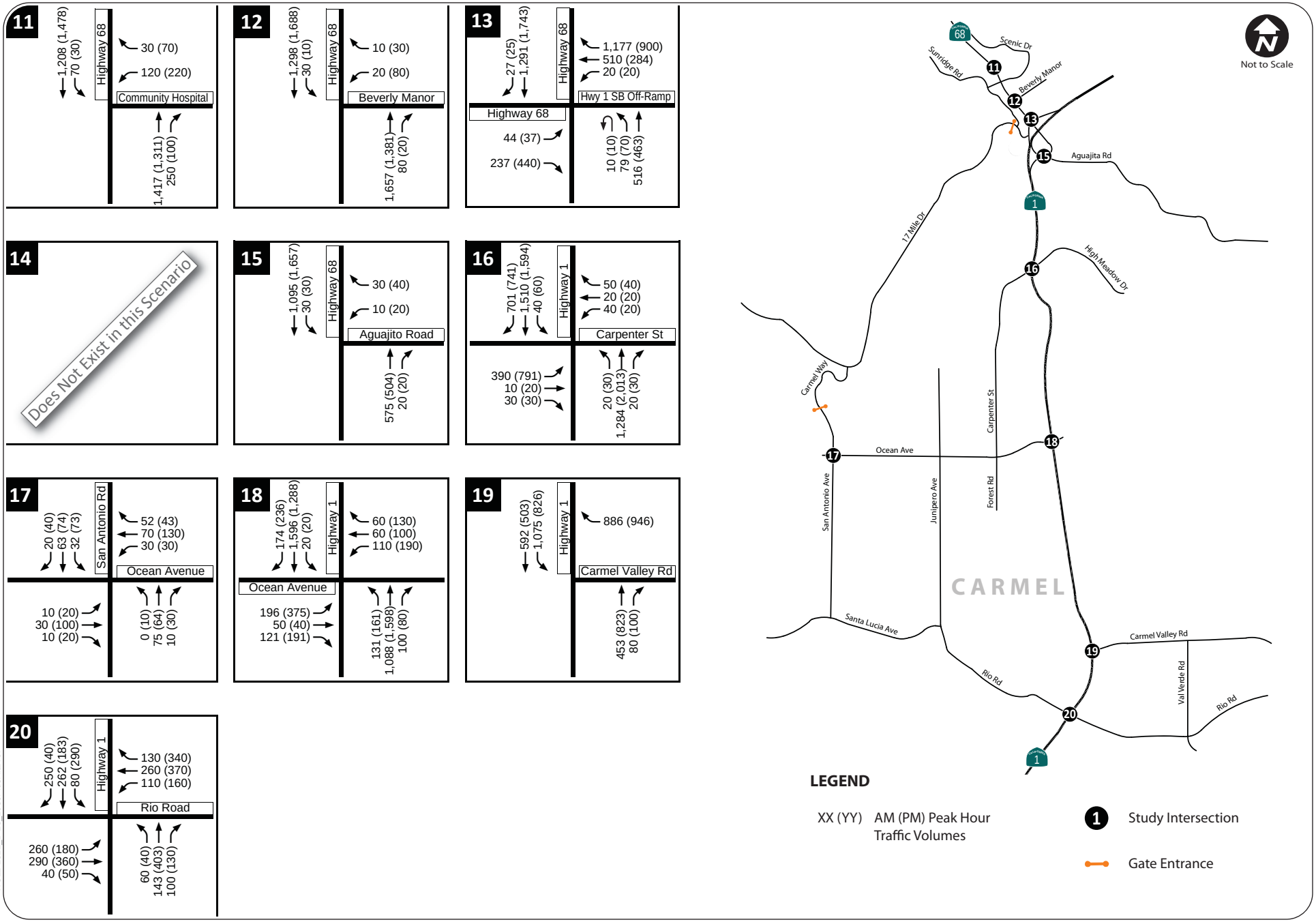

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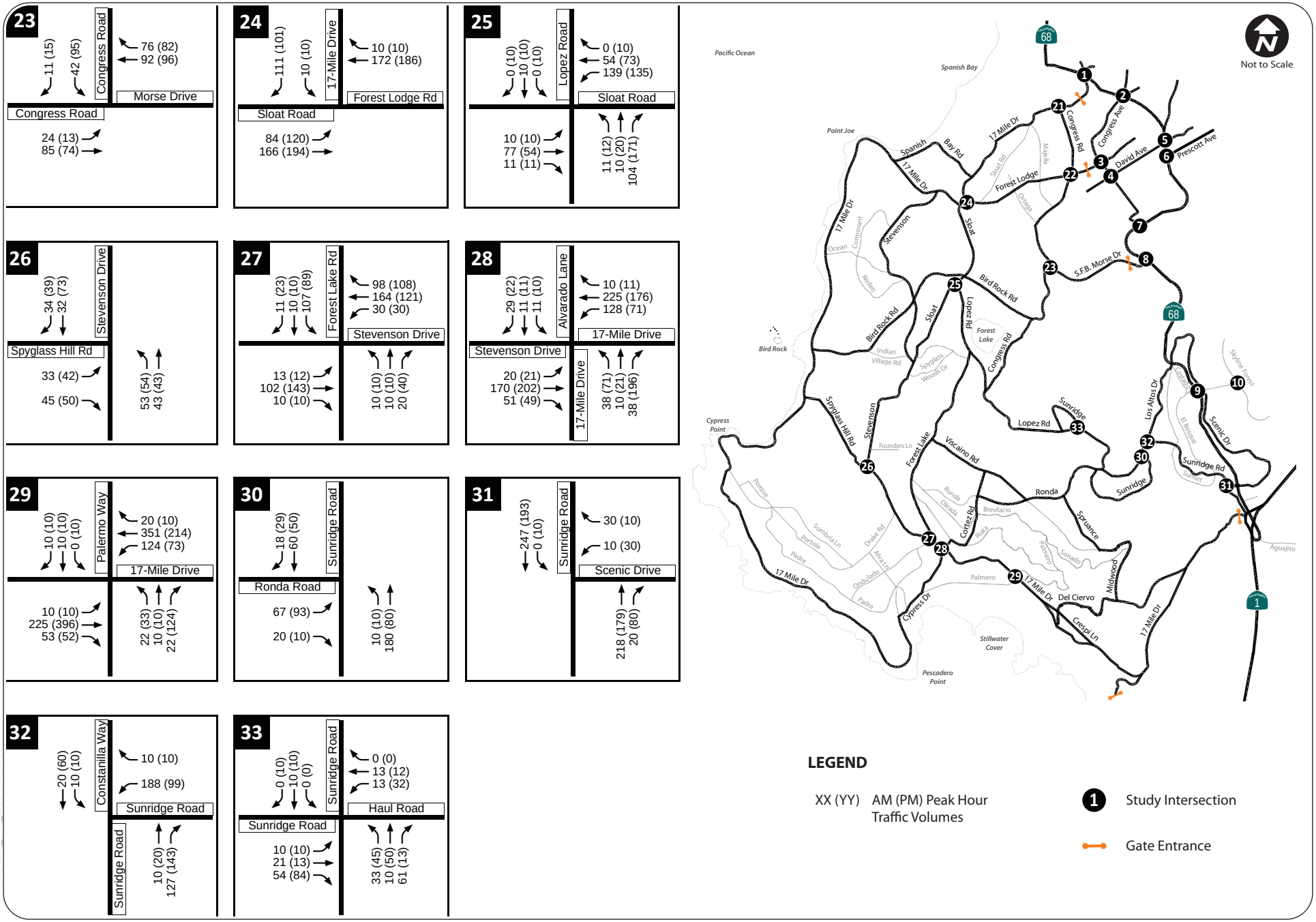

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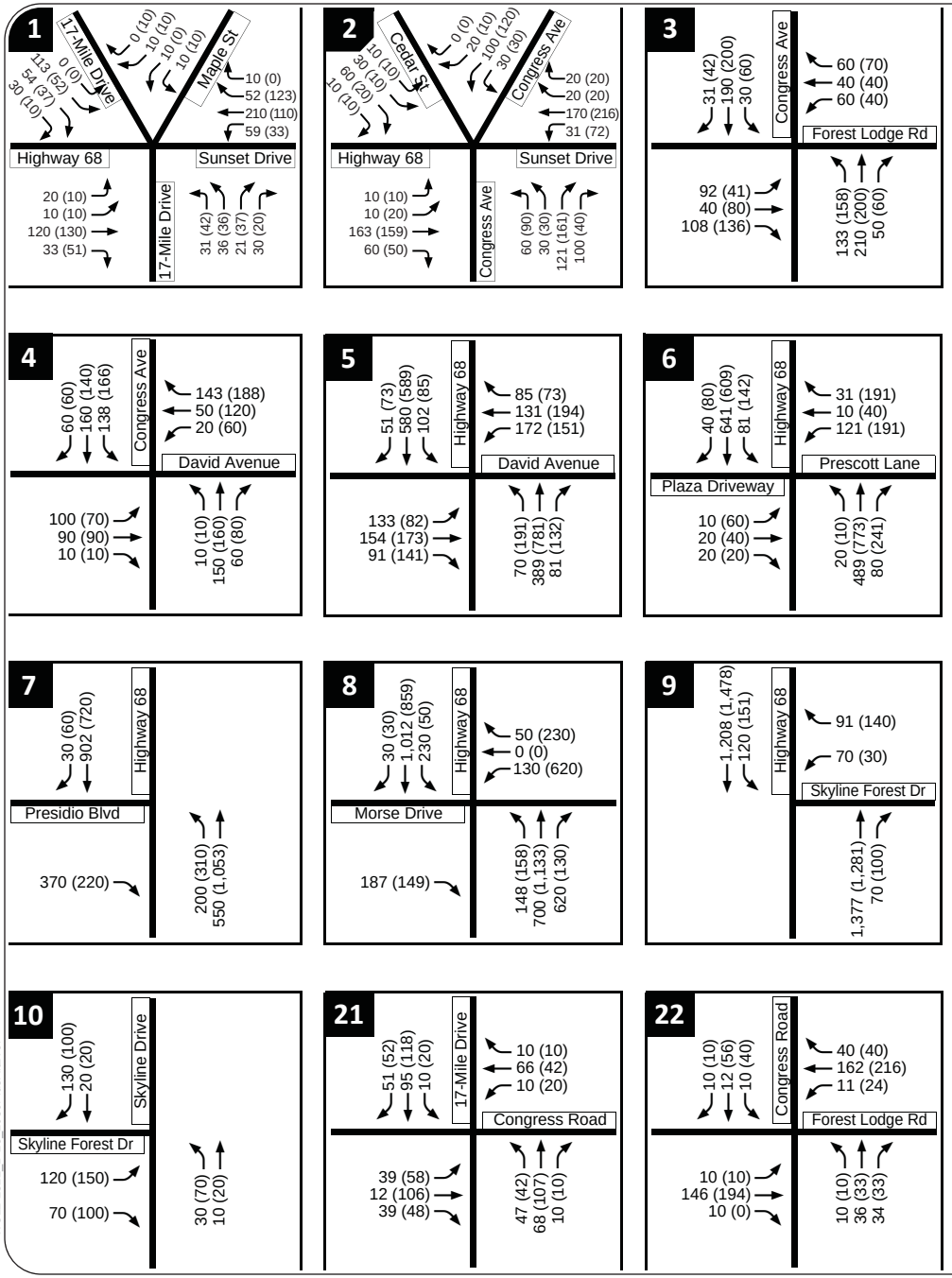

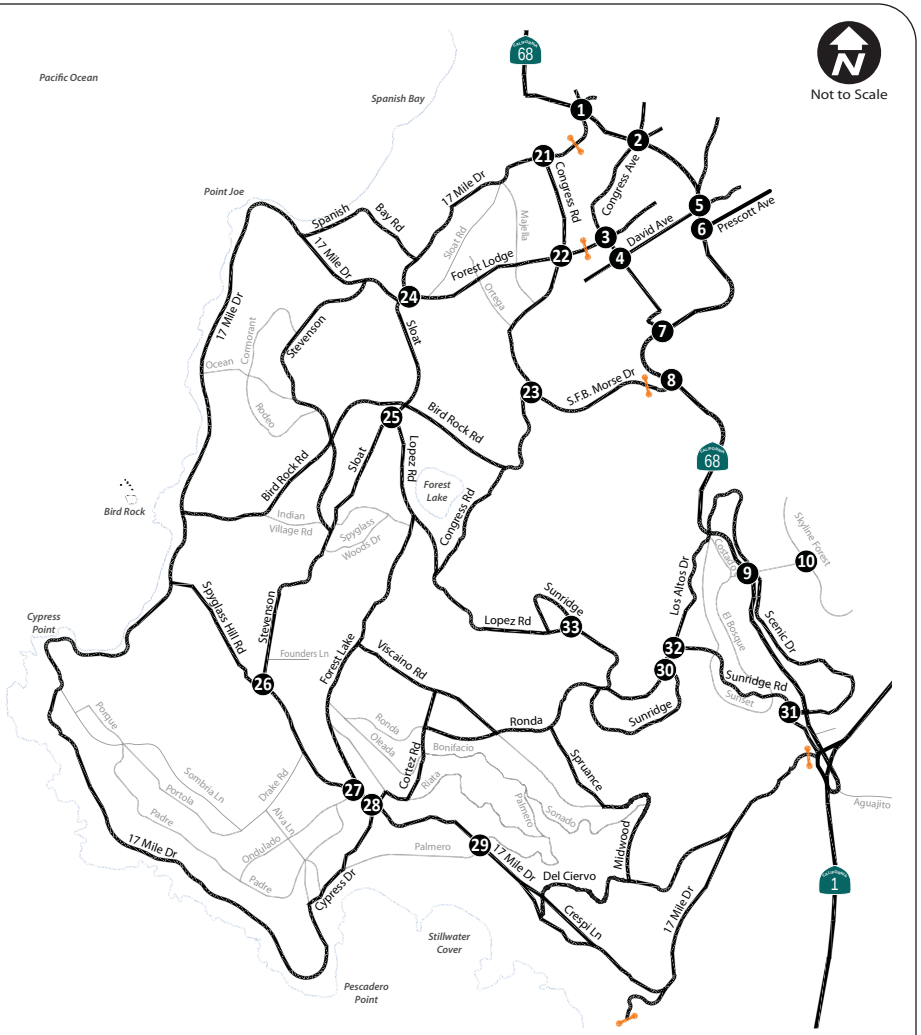

LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

1 Study Intersection

Gate Entrance

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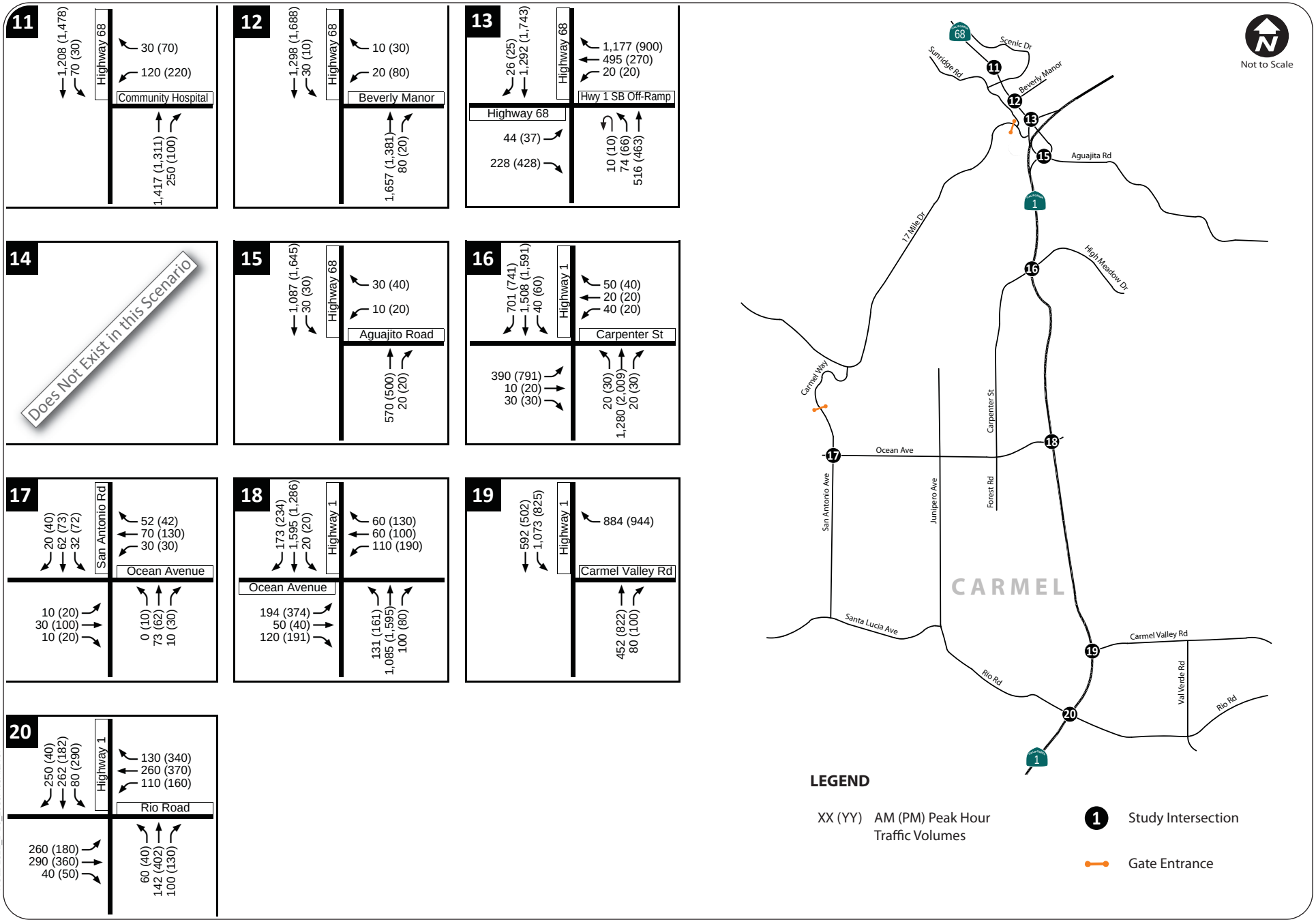

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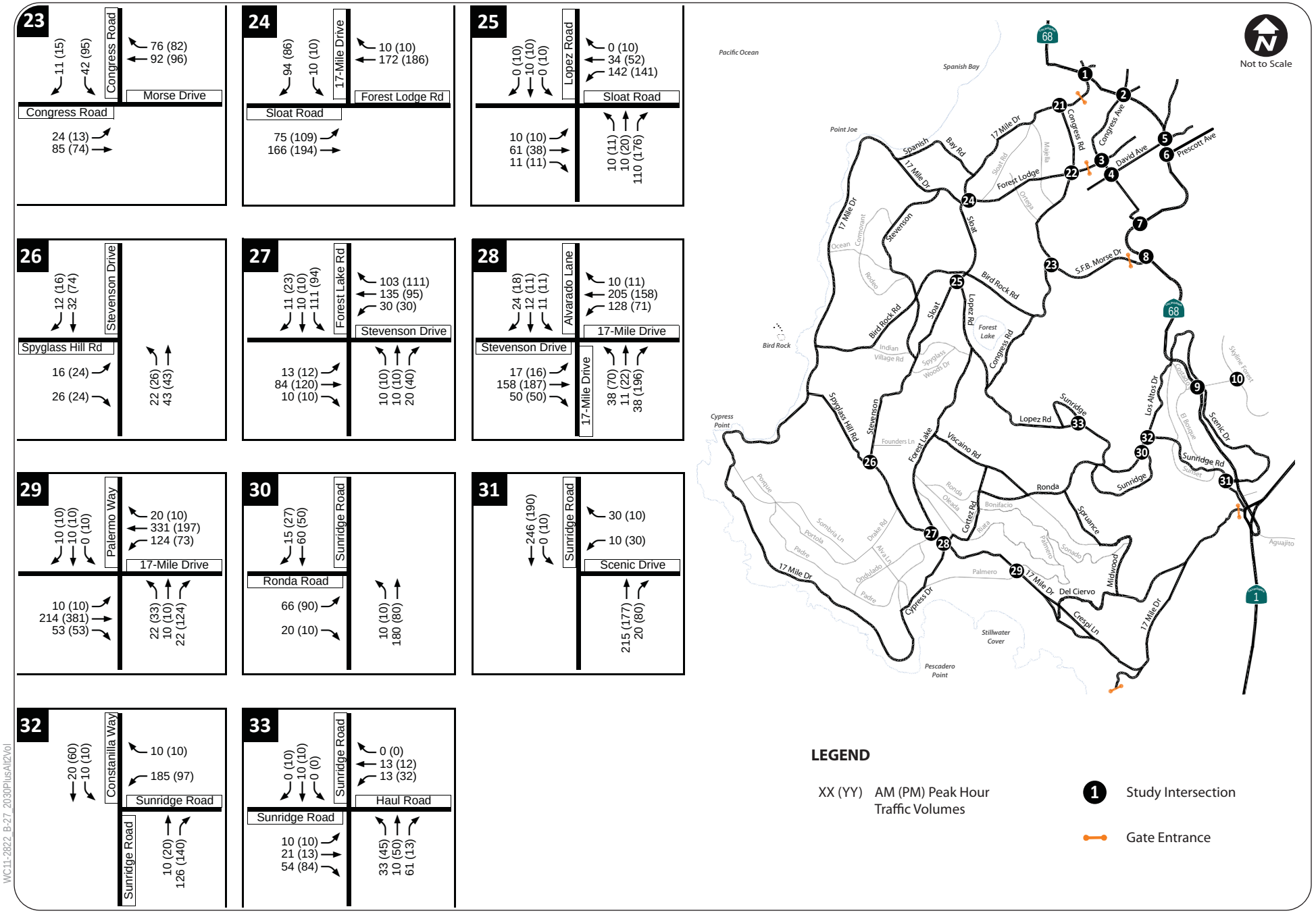

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G.2

Fehr & Peers
Alternative 2 Analysis

Appendix E
Alternative 2 Analysis

FEHR PEERS

APPENDIX E. AUTO TRAFFIC IMPACTS

This chapter addresses the auto traffic impacts at the study intersections, Forest gates, and highway segments. The analysis results are summarized in the following tables which are contained at the end of this chapter.

- Table E-1 AM Peak Hour Intersection Level of Service with DMFP Alternative 2
- Table E-2 PM Peak Hour Intersection Level of Service with DMFP Alternative 2
- Table E-3 AM and PM Peak Hour Traffic Signal Warrant Analysis with DMFP Alternative 2
- Table E-4 Forest Gate AM and PM Peak Hour volumes and Level of Service with DMFP Alternative 2
- Table E-5 Highway Segment AM Peak Hour Level of Service with DMFP Alternative 2
- Table E-6 Highway Segment PM Peak Hour Level of Service with DMFP Alternative 2
- Table E-7 Highway 1 Ramps at Highway 68 (West) AM and PM Peak Hour Level of Service with DMFP Alternative 2

The intersection turning movement data for each study scenario is provided in **Appendix B** while the intersection and highway analysis worksheets are provided in **Appendix C**. The peak hour traffic signal warrant worksheets are provided in **Appendix D**.

The analysis in this chapter addresses Alternative 2, which replaces the Spyglass Hotel with 10 single family residential units from Alternative 1.

E.1 IMPACTS AND MITIGATION MEASURES – EXISTING PLUS PROJECT

E.1.1 Forest Intersections

As shown in **Tables E-1** and **Table E-2**, the level of service at all study intersections within the Forest continue to operate at LOS C or better under existing plus project conditions. Additionally, none of the study intersections within the Forest meet peak hour signal warrants (see **Table E-3**). ***Impacts resulting from the DMFP are less than significant at all internal Forest study intersections and no mitigation measures are required.***

E.1.2 Forest Gates

The volume-to-capacity results are presented in **Table E-4**. Traffic conditions for the gates are determined from previous studies identifying the capacity of each entry gate (see **Table E-5**). The service levels represent traffic conditions experienced by the inbound traffic. Under existing plus DMFP conditions, all gates will continue to operate at acceptable levels. ***Impacts resulting from the DMFP are less than significant at all Forest gates and no mitigation measures are required.***

E.1.3 Intersections outside the Forest

Tables E-1 and **Table E-2** show the existing plus DMFP intersection level of service outside the Forest. The signalized and unsignalized intersection service levels generally do not change with additional DMFP traffic. The Highway 68/Highway 1 SB off-ramp intersection improves from unacceptable LOS E/F conditions to LOS C conditions as a result of the DMFP-related improvements at this intersection. Four

intersections will operate at levels of service below the County's threshold of LOS C for intersections in the Coastal Zone. These intersections include:

- Highway 68 at Skyline Forest Drive – This is an unsignalized intersection. The left turning traffic from Skyline Drive (the stop-controlled approach) onto Highway 68 currently operates at LOS F during both the weekday AM and PM peak hours and would continue to do so with the DMFP. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 68 at Carmel Hill Professional Center – This is an unsignalized intersection. The left turning traffic from Carmel Hill Professional Center (the stop-controlled approach) onto Highway 68 currently operates at LOS F during both the weekday AM and PM peak hours and would continue to do so with the DMFP. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 1 at Carpenter Avenue – This is a signalized intersection. The intersection currently operates at LOS D (45.9 seconds of delay) during the weekday PM peak hour and would operate at LOS D (46.7 seconds of delay) with the DMFP. This impact is considered **Less Than Significant** because the DMFP would not change the intersection's critical movement volume-to-capacity ratio of 0.91 during the PM peak hour.
- Highway 1 at Ocean Avenue – This is a signalized intersection. The intersection currently operates at LOS D (45.4 seconds of delay) during the weekday PM peak hour and would operate at LOS D (45.9 seconds of delay) with the DMFP. During the AM peak hour the operations would transition from LOS C (34.5 seconds of delay) to LOS D (35.1 seconds of delay). The critical movement volume-to-capacity ratio would not change with the DMFP. This impact is considered **Significant** because the DMFP would cause a change in the LOS from C to D in the AM peak hour.

The all-way stop and side-street stop controlled intersections were evaluated for Warrant 3, the peak hour volume warrant, published by the Federal Highway Administration in the *Manual on Uniform Traffic Control Devices 2000* (MUTCD). The peak hour volume warrant is applied where traffic conditions are such that for one (1) hour of the day, minor street traffic suffers undue delay in entering or crossing a major street. **Table E-3** summarizes the results from the peak hour signal warrant analysis. The following intersections meet the traffic signal peak hour volume warrant:

- Highway 68 / Skyline Forest Drive (both morning and evening peak hours)

Auto

Impact 1 ***Under existing plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Skyline Forest Drive which is anticipated to operate at LOS F without the DMFP. This intersection also meets the peak hour traffic signal warrant without and with the DMFP.***

Auto

Mitigation 1 **Signalize the Highway 68 intersection with Skyline Forest Drive and widen Highway 68 from two to four lanes through the intersection to accommodate traffic signal operations and minimize vehicle queues. The widening would generally occur within 500 to 600 feet on either side of Skyline Forest Drive.**

With mitigation, the Highway 68 intersection with Skyline Forest Drive would operate at LOS A (7.7 seconds of delay) and LOS A (8.9 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	1,867	63.6%	2,073	65.2%
Growth	283	9.6%	317	10.0%
Presidio of Monterey	740	25.2%	740	23.2%
DMFP	46	1.6%	50	1.6%
Total Volume	***2,936***	***100%***	***3,180***	***100%***

Discussion

The poor operating conditions at the Highway 68 intersection with Skyline Forest Drive is due to left turning traffic from Skyline Forest Drive (the stop-controlled approach) onto Highway 68. There is an existing refuge lane for the left turning traffic so drivers can cross the westbound traffic flow and wait in the refuge lane until a gap in eastbound traffic occurs. The refuge lane is about 90 feet long and 15 feet wide at its opening, narrowing to 10 feet prior to the merge area.

Observations indicate that the merge area functions reasonably well. Extending the refuge length would not help because the optimal sight distance for drivers using the refuge is at its beginning point. Beyond the existing 90-foot refuge area the sight lines decrease due to the road's curvature.

Installing a traffic signal on Highway 68 at Skyline Forest Drive does require that Highway 68 be widened through the intersection. The widening is necessary because (once signalized) two lanes are needed in both directions on Highway 68 to handle the traffic demand approaching the intersection when the traffic signal light is red for drivers on Highway 68.

The *Skyline Neighborhood Traffic Study*, completed in November 2003, was reviewed. That study concluded that about 20 percent of traffic going through the neighborhood is traffic that is passing through the neighborhood to another destination. The same study also concluded that while cutting through the Skyline neighborhood may seem advantageous for a driver, the actual travel-time through the neighborhood is greater than using Highway 1 and Highway 68. While signalization would not make traveling through the neighborhood faster than the state highway system, it could make the neighborhood route appear more attractive because traffic signals are generally installed on primary routes and not lower volume neighborhood streets.

Auto Impact 2

Under existing plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Carmel Hill Professional Center Driveway which is anticipated to operate at LOS F without the DMFP.

Auto Mitigation 2

Construct the full Highway 68 Widening Project (as identified in the Regional Transportation Plan) from the Highway 1 Southbound Off-Ramp intersection to the Community Hospital intersection.

With mitigation, the Highway 68 intersection with the Carmel Hill Professional Center would operate at LOS A (2.6 seconds of delay) and LOS A (4.8 seconds of delay) during the AM and PM peak hours, respectively. The Highway 68 and Highway 1 intersection would operate at LOS C (22.3 seconds of delay) and LOS B (16.7 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	2,015	65.1%	2,113	65.8%
Growth	306	9.9%	318	10.0%
Presidio of Monterey	729	23.6%	726	22.6%
DMFP	45	1.4%	49	1.5%
Total Volume	***3,095***	***100%***	***3,209***	***100%***

Discussion

The poor operating condition at the Highway 68 intersection with the Carmel Hill Professional Center Driveway is due to the left turning traffic from the driveway (the stop-controlled approach) onto Highway 68. The DMFP would construct intersection improvements at the adjacent Highway 68 intersection with Highway 1 Southbound Off-Ramp including:

- Widen Highway 68 eastbound from one to two lanes from west of the Carmel Hill Professional Center Driveway to the ramp terminal intersection with Highway 1.
- Widen the Highway 1 southbound off-ramp to provide a left-turn lane and upgrade the traffic signal to allow protected left-turn phasing.
- Reconfigure the Highway 1 southbound on-ramp to separate Pebble Beach-related and highway-related traffic.

These changes are a phased implementation of the full Highway 68 Widening Project and will substantially reduce traffic congestion in the area such that the redesigned intersection at the Highway 1 Southbound Off-Ramp will operate at LOS C. However, this improvement does not include signalizing the driveway to Carmel Hill Professional Center. Signalization of this driveway cannot occur until the Scenic Drive overcrossing is replaced and a second lane is provided on westbound Highway 68 to the Community Hospital intersection as well as extending the second eastbound Highway 68 lane back to Community Hospital.

The full Highway 68 Widening Project was identified in the Regional Transportation Plan. Caltrans completed and approved a PSR (November 2000) for Highway 68 between its interchange with Highway 1 and the Community Hospital. The intent of the project described in the PSR is to relieve existing and future traffic congestion on Highway 68 and improve traffic safety and vehicular access to the Pebble Beach entrance, CHOMP, and Carmel Hill Professional Center. The recommended Highway 68 Widening Project includes the following features:

- Widen Highway 68 from a two-lane to four-lane cross-section from the ramp terminal intersection with Highway 1 through the Community Hospital intersection
- Replace the Scenic Drive overcrossing to accommodate the four-lane Highway 68
- Widen the Highway 1 southbound off-ramp for more vehicle storage and provide a left-turn lane
- Reconfigure the Highway 1 southbound on-ramp to separate Pebble Beach-related and highway-related traffic
- Extend the Highway 1 southbound on-ramp merge from Pebble Beach
- Signalize the Carmel Hill Professional Center driveway at Highway 68

Auto Impact 3 ***Under existing plus DMFP conditions, the DMFP would add traffic to the Highway 1 intersection with Ocean Avenue during the AM peak hour when intersection operations would transition from LOS C (34.5 seconds of delay) to LOS D (35.1 seconds of delay) with the DMF.***

Auto Mitigation 3 **Establish new traffic signal timings at the Highway 1 intersection with Ocean Avenue after the visitor serving uses of the DMFP have been developed. The timings shall be adjusted while maintaining the same off-sets to the adjacent signalized intersection at Carpenter Road.**

With mitigation, the Highway 1 intersection with Ocean Avenue would improve to LOS C (33.1 seconds of delay) during the AM peak hour, bringing the intersection back to an acceptable operation. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	3,279	88.7%	3,900	88.6%
Growth	401	10.8%	480	10.9%
DMFP	18	0.5%	21	0.5%
Total Volume	***3,698***	***100%***	***4,401***	***100%***

Discussion The traffic signal timing changes proposed as mitigation will improve vehicle flow through the intersection and minimize vehicle delays without adding additional vehicle capacity.

E.1.4 Highway Segments

Tables E-5 and **Table E-6** show the existing plus DMFP highway segment volume to capacity ratios and levels of service. **Table E-7** shows the levels of service for the ramp merge, diverge, and weave sections for the Highway 1 ramps at Highway 68 (west).

Nine highway segments will operate at levels of service below the County's threshold of LOS C in the Coastal Zone. These segments include:

- Highway 1 northbound on-ramp from Highway 68 (west)
- Highway 1, Highway 68 (west) to Munras Avenue
- Highway 1, Munras Avenue to Fremont Street
- Highway 1, Fremont Street to Fremont Boulevard
- Highway 1, Fremont Boulevard to Imjin Parkway
- Highway 1, North of Highway 156
- Highway 68, East of Olmsted Road
- Highway 68, East of Laguna Seca
- Highway 156, Highway 1 to US-101

Several of these segments operate at LOS F without the DMFP and the DMFP would add traffic to these segments which represents a **Significant** impact. The Highway 1 northbound on-ramp merge from Highway 68 (west) operates at LOS D with a 29.6 density (29.3 without the DMFP). The DMFP would not change the LOS but would have more than 0.01 v/c change to the merge volumes and so represents a **Significant** impact at this merge location.

Auto Impact 4 ***Under existing plus DMFP conditions, the DMFP would add traffic to the Highway 1, Highway 68, and Highway 156 corridors and some of the highway segments operate at LOS F without the DMFP.***

Auto Mitigation 4 **The DMFP is responsible for its fair-share contribution to this impact through payment of TAMC's regional fee.**

Auto Impact 5 ***Under existing plus DMFP conditions, the DMFP would add traffic to the Highway 1 northbound on-ramp merge from Highway 68 (west) which operates at LOS D during the PM peak hour without the DMFP; and the DMFP would increase the volume by more than 0.01.***

Auto Mitigation 5 **Replace the Highway 1 northbound merge at Highway 68 (west) with an auxiliary lane between Highway 68 (west) and Munras Avenue.**

With mitigation, Highway 1 northbound between Highway 68 (west) and Munras Avenue would operate at LOS B during the AM and PM peak hours. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because the existing merge operates at unacceptable levels (LOS D) under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	1,964	88.2%	3,090	77.5%
Growth	116	5.2%	255	6.4%
Presidio of Monterey	120	5.4%	605	15.2%
DMFP	27	1.2%	35	0.9%
Total Volume	***2,227***	***100%***	***3,985***	***100%***

Discussion The northbound Highway 1 on-ramp merge at Highway 68 (west) operates at LOS D today during the PM peak hour. Caltrans completed the *Transportation Concept Report (TCR) for State Route 1 in District 5* in April 2006. Segment 14 in the TCR included Highway 1 from the Carmel River Bridge to Highway 156 and the LOS objective was to achieve LOS D for the segment where feasible. The merge segment under study achieves the LOS D objective in the TCR but does not meet the County's significance criteria of LOS C for roads in the coastal zone; thus, the significant impact. Auxiliary lanes are identified in the TCR as one transportation strategy to consider for achieving LOS D. The Regional Development Impact Fee Program was updated in 2008 by TAMC and while it included improvements to Highway 68 at the Highway 1 interchange, the program did not include the auxiliary lane identified in the mitigation measure.

E.2 IMPACTS AND MITIGATION MEASURES – NEAR TERM PLUS PROJECT

E.2.1 Forest Intersections

As shown in **Tables E-1** and **Table E-2**, the level of service at all study intersections within the Forest continue to operate at LOS C or better under near term plus project conditions. Additionally, none of the study intersections within the Forest meet peak hour signal warrants (see **Table E-3**). ***Impacts resulting from the project are less than significant at all internal Forest study intersections and no mitigation measures are required.***

E.2.2 Forest Gates

The volume-to-capacity results are presented in **Table E-4**. Traffic conditions for the gates are determined from previous studies identifying the capacity of each entry gate (see **Table 2-3**). The service levels represent traffic conditions experienced by the inbound traffic. Under existing plus DMFP conditions, all gates will continue to operate at acceptable levels. ***Impacts resulting from the project are less than significant at all Forest gates and no mitigation measures are required.***

E.2.3 Intersections outside the Forest

Tables E-1 and **Table E-2** show the existing plus DMFP intersection level of service outside the Forest. The signalized and unsignalized intersection service levels generally do not change with additional DMFP traffic.

Six intersections will operate at levels of service below the County's threshold of LOS C for intersections in the Coastal Zone. These intersections include:

- Highway 68 at Skyline Forest Drive – This is an unsignalized intersection. The left turning traffic from Skyline Drive (the stop-controlled approach) onto Highway 68 will operate at LOS F during both the weekday AM and PM peak hours under near term conditions. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 68 at Carmel Hill Professional Center – This is an unsignalized intersection. The left turning traffic from Carmel Hill Professional Center (the stop-controlled approach) onto Highway 68 will operate at LOS F during both the weekday AM and PM peak hours under near term conditions. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 68 at Highway 1 Southbound Off-Ramp – This is a signalized intersection. The operations improve under near term conditions from unacceptable LOS E/F conditions to LOS C/D conditions as a result of the DMFP-related road improvements at this intersection. This impact is considered **Less Than Significant** because the DMFP improves intersection operations over the condition without the DMFP.
- Highway 1 at Carpenter Street – This is a signalized intersection. The intersection will operate at LOS E (57.9 seconds of delay) during the weekday PM peak hour and would operate at LOS E (59.2 seconds of delay) with the DMFP. This impact is considered **Less Than Significant** because the DMFP would not change the intersection's critical movement volume-to-capacity ratio of 0.94 during the PM peak hour.
- Highway 1 at Ocean Avenue – This is a signalized intersection. The intersection will operate at LOS D (39.5 seconds of delay) and LOS D (51.8 seconds of delay) during the weekday AM and PM peak hours, respectively. The LOS would remain at D with the DMFP but the delay would increase to 40.5 seconds and 52.6 seconds, respectively. This impact is considered **Significant**

because the DMFP would increase the intersection's critical movement volume-to-capacity ratio from 0.81 to 0.82 in the AM peak and 0.92 to 0.93 in PM peak, both of which are equal to the 0.01 threshold change.

- Highway 1 at Rio Road – This is a signalized intersection. The intersection will operate at LOS D (35.9 seconds of delay) during the weekday PM peak hour and would operate at LOS D (36.0 seconds of delay) with the DMFP. This impact is considered **Less Than Significant** because the DMFP would not change the intersection's critical movement volume-to-capacity ratio of 0.74 during the PM peak hour.

The all-way stop and side-street stop controlled intersections were also evaluated for Warrant 3, the peak hour volume warrant, published by the Federal Highway Administration in the *Manual on Uniform Traffic Control Devices 2000* (MUTCD). The peak hour volume warrant is applied where traffic conditions are such that for one (1) hour of the day, minor street traffic suffers undue delay in entering or crossing a major street. **Table E-3** summarizes the results from the peak hour signal warrant analysis. The following intersections meet the traffic signal peak hour volume warrant:

- Highway 68 / Skyline Forest Drive (both morning and evening peak hours)
- Highway 68 / Carmel Hill Professional Center (evening peak hour only)

Auto
Impact 6 ***Under near term plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Skyline Forest Drive which is anticipated to operate at LOS F without the DMFP. This intersection will also meet the peak hour traffic signal warrant without and with the DMFP.***

Auto
Mitigation 6 **Implement Auto Mitigation 1.**

With mitigation, the Highway 68 intersection with Skyline Forest Drive would operate at LOS A (7.7 seconds of delay) and LOS A (9.1 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Auto
Impact 7 ***Under near term plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Carmel Hill Professional Center Driveway which is anticipated to operate at LOS F without the DMFP. This intersection meets the peak hour traffic signal warrant without or with the DMFP.***

Auto
Mitigation 7 **Implement Auto Mitigation 2.**

With mitigation, the Highway 68 intersection with the Carmel Hill Professional Center would operate at LOS A (5.2 seconds of delay) and LOS A (5.4 seconds of delay) during the AM and PM peak hours, respectively. The Highway 68 and Highway 1 intersection would operate at LOS C (24.2 seconds of delay) and LOS 15.4 (B seconds of delay). The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Auto Impact 8 ***Under near term plus DMFP conditions, the DMFP would add traffic to the Highway 1 intersection with Ocean Avenue during the AM and PM peak hours when intersection operations would be LOS D; and the DMFP would increase the intersections critical volume-to-capacity ratio by 0.01 during both peak hours.***

Auto Mitigation 8 **Construct an eastbound to southbound and westbound to northbound right-turn lane approaching Highway 1 and establish new traffic signal timings at the Highway 1 intersection with Ocean Avenue.**

With mitigation, the Highway 1 intersection with Ocean Avenue would improve to LOS C (24.4 seconds of delay) and LOS C (34.8 seconds of delay) during the AM and PM peak hours, respectively. These off-sets the DMFP impact, and improves intersection operations to LOS C or better. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	3,279	88.7%	3,900	88.6%
Growth	401	10.8%	480	10.9%
DMFP	18	0.5%	21	0.5%
Total Volume	***3,698***	***100%***	***4,401***	***100%***

Discussion The eastbound right-turn lane at the Highway 1 intersection with Ocean Avenue was also identified in the *September Ranch EIR* as a mitigation measure with the understanding that the September Ranch Project would contribute its fair-share to construct the improvement.

E.2.4 Highway Segments

Tables E-5 and **Table E-6** show the near term plus DMFP highway segment volume to capacity ratios and levels of service. Table E-7 shows the levels of service for the ramp merge, diverge, and weave sections for the Highway 1 ramps at Highway 68 (west).

Nine highway segments will operate at levels of service below the County's threshold of LOS C in the Coastal Zone. These segments include:

- Highway 1 northbound on-ramp from Highway 68 (west)
- Highway 1, Highway 68 (west) to Munras Avenue
- Highway 1, Munras Avenue to Fremont Street
- Highway 1, Fremont Street to Fremont Boulevard
- Highway 1, Fremont Boulevard to Imjin Parkway
- Highway 1, North of Highway 156
- Highway 68, East of Olmsted Road
- Highway 68, East of Laguna Seca
- Highway 156, Highway 1 to US-101

Several of these segments operate at LOS F without the DMFP and the DMFP would add traffic to these segments which represents a **Significant** impact. The Highway 1 northbound on-ramp merge from Highway 68 (west) operates at LOS D with a 30.3 density (30.0 without the DMFP). The DMFP would not change the LOS but would have more than 0.01 v/c change to the merge volumes and so represents a **Significant** impact at this merge location.

Auto Impact 9 ***Under near term plus DMFP conditions, the DMFP would add traffic to the Highway 1 and Highway 156 corridors and some of the segments along these corridors operate at LOS F.***

Auto Mitigation 9 **Implement Auto Mitigation 4.**

Auto Impact 10 ***Under near term plus DMFP conditions, the DMFP would add traffic to the Highway 1 northbound on-ramp merge from Highway 68 (west) which operates at LOS D during the PM peak hour without the DMFP; and the DMFP would increase the volume by more than 0.01.***

Auto Mitigation 10 **Implement Auto Mitigation 5.**

With mitigation, Highway 1 northbound between Highway 68 (west) and Munras Avenue would operate at LOS B during the AM and PM peak hour. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because the existing merge operates at unacceptable levels (LOS D) under existing conditions.

E.3 IMPACTS AND MITIGATION MEASURES – CUMULATIVE PLUS PROJECT

E.3.1 Forest Intersections

As shown in **Tables E-1** and **Table E-2**, the level of service at all study intersections within the Forest continue to operate at LOS C or better under cumulative plus project conditions. Additionally, none of the study intersections within the Forest meet peak hour signal warrants (see **Table E-3**). ***Impacts resulting from the project are less than significant at all internal Forest study intersections and no mitigation measures are required.***

E.3.2 Forest Gates

The volume-to-capacity results are presented in **Table E-4**. Traffic conditions for the gates are determined from previous studies identifying the capacity of each entry gate (see **Table 2-3**). The service levels represent traffic conditions experienced by the inbound traffic. Under existing plus DMFP conditions, all gates will continue to operate at acceptable levels. ***Impacts resulting from the project are less than significant at all Forest gates and no mitigation measures are required.***

E.3.3 Intersections outside the Forest

Tables E-1 and **Table E-2** show the existing plus DMFP intersection level of service outside the Forest. The signalized and unsignalized intersection service levels generally do not change with additional DMFP traffic.

Nine intersections will operate at levels of service below the County's threshold of LOS C for intersections in the Coastal Zone. These intersections include:

- Forest Avenue at David Avenue – This is a signalized intersection. The intersection will operate at LOS D (38.9 seconds of delay) during the weekday PM peak hour and LOS D (40.1 seconds of delay) with the DMFP. This impact is considered **Significant** because the DMFP would increase the intersection's critical movement volume-to-capacity ratio from 0.78 to 0.79 in the PM peak which is equal to the 0.01 threshold change.
- Highway 68 at Skyline Forest Drive – This is an unsignalized intersection. The left turning traffic from Skyline Drive (the stop-controlled approach) onto Highway 68 operates at LOS F during both the weekday AM and PM peak hours under cumulative conditions. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 68 at Carmel Hill Professional Center – This is an unsignalized intersection. The left turning traffic from Carmel Hill Professional Center (the stop-controlled approach) onto Highway 68 operates at LOS F during both the weekday AM and PM peak hours under cumulative conditions. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 68 at Highway 1 Southbound Off-Ramp – This is a signalized intersection. The operations would be LOS F conditions under cumulative conditions without or with the DMFP. The intersections critical volume-to-capacity ratio would improve from 1.56 to 1.38 during the AM peak hour and from 1.54 to 1.30 during the PM peak hour. The improved ratios occur as a result of the DMFP road improvements. Even with the improved ratios this impact is considered **Significant** because the DMFP adds traffic to an intersection that would operate at LOS F.
- Highway 68 at Aguajito Road – This is an unsignalized intersection. The left turning traffic from Aguajito Road (the stop-controlled approach) onto Highway 68 operates at LOS F during the weekday AM and PM peak hours under cumulative conditions. This impact is considered **Significant** because the DMFP adds more than one vehicle trip to an intersection operating at LOS F without the DMFP.
- Highway 1 at Carpenter Street – This is a signalized intersection. The intersection will operate at LOS E (74.1 seconds of delay) during the weekday PM peak hour and would operate at LOS E (75.6 seconds of delay) with the DMFP. The impact is considered **Significant** because the DMFP would increase the intersection's critical movement volume-to-capacity ratio from 0.98 to 0.99 in the PM peak which is equal to the 0.01 threshold change.
- Highway 1 at Ocean Avenue – This is a signalized intersection. The intersection will operate at LOS D (45.0 seconds of delay) and LOS E (63.9 seconds of delay) during the weekday AM and PM peak hours, respectively. The LOS would remain at D and E with the DMFP but the delay would increase to 46.2 seconds and 65.4 seconds, respectively. This impact is considered **Less Than Significant** because the DMFP would not worsen the intersection's critical movement volume-to-capacity ratio of 0.84 in the AM peak hour and 0.97 in the PM peak hour.
- Highway 1 at Rio Road – This is a signalized intersection. The intersection will operate at LOS D (38.3 seconds of delay) during the weekday PM peak hour and would operate at LOS D (38.2 seconds of delay) with the DMFP. This impact is considered **Less Than Significant** because the

DMFP would not change the intersection's critical movement volume-to-capacity ratio of 0.76 during the PM peak hour.

The all-way stop and side-street stop controlled intersections were also evaluated for Warrant 3, the peak hour volume warrant, published by the Federal Highway Administration in the *Manual on Uniform Traffic Control Devices 2000* (MUTCD). The peak hour volume warrant is applied where traffic conditions are such that for one (1) hour of the day, minor street traffic suffers undue delay in entering or crossing a major street. **Table E-3** summarizes the results from the peak hour signal warrant analysis. The following intersections meet the traffic signal peak hour volume warrant:

- Highway 68 / Skyline Forest Drive (both morning and evening peak hours)Highway 68 / Carmel Hill Professional Center (evening peak hour only)

Auto
Impact 11 ***No longer an impact under Alternative 2.***

Auto
Mitigation 11 **No mitigation required under Alternative 2.**

Auto
Impact 12 ***Under cumulative plus DMFP conditions, the DMFP would add traffic to the Forest Avenue intersection with David Avenue during the PM peak hour when intersection operations would be LOS D; and the DMFP would increase the intersection critical volume-to-capacity ratio by 0.01.***

Auto
Mitigation 12 **Establish new traffic signal timings and phasings at the Forest Avenue intersection with David Avenue to allow protected left-turns from the westbound and eastbound approach after the visitor serving uses of the DMFP have been developed. The timings shall be adjusted while maintaining the same off-sets to the adjacent signalized intersections in the corridor.**

With mitigation, the Forest Avenue intersection with David Avenue would improve to LOS C (29.5 seconds of delay) during the PM peak hour. These off-sets the DMFP impact and the intersection would operate at LOS C. The DMFP is responsible for its fair-share contribution to this impact based on new traffic growth because the intersection operated at acceptable levels under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	1,533	75.2%	2,086	78.3%
Growth	277	13.6%	344	12.9%
Presidio of Monterey	180	8.8%	180	6.7%
DMFP	49	2.4%	55	2.1%
Total Volume	***2,039***	***100%***	***2,665***	***100%***

Discussion The traffic signal timing changes proposed as mitigation will improve vehicle flow through the intersection and minimize vehicle delays without adding additional vehicle capacity. These changes will achieve LOS C or better.

Auto
Impact 13 ***Under cumulative plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Skyline Forest Drive which is***

anticipated to operate at LOS F without the DMFP. This intersection will also meet the peak hour traffic signal warrant without and with the DMFP.

Auto Mitigation 13 **Implement Auto Mitigation 1.**

With mitigation, the Highway 68 intersection with Skyline Forest Drive would operate at LOS A (9.7 seconds of delay) and LOS A (9.2 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Auto Impact 14 ***Under cumulative plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Carmel Hill Professional Center Driveway which is anticipated to operate at LOS F without the DMFP. This intersection will meet peak hour traffic signal warrant without or with the DMFP.***

Auto Mitigation 14 **Implement Auto Mitigation 2.**

With mitigation, the Highway 68 intersection with Carmel Hill Professional Center would operate at LOS A (4.1 seconds of delay) and LOS A (5.7 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Auto Impact 15 ***Under cumulative plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Highway 1 southbound off-ramp intersection which is anticipated to operate at LOS F without the DMFP.***

Auto Mitigation 15 **Implement Auto Mitigation 2. Plus, construct a third eastbound lane on Highway 68 from about the Scenic Drive over-crossing through the Highway 1 intersection. One lane would become a dedicated lane to the Highway 1 southbound on-ramp. The other two lanes would continue across a widened Highway 68 overcrossing and merge into a single lane prior to the Aguajito Road intersection.**

With mitigation, the Highway 68 intersection with Highway 1 southbound off-ramp would operate at LOS B (19.9 seconds of delay) and LOS B (17.6 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	2,673	68.9%	2,725	68.8%
Growth	402	10.3%	420	10.6%
Presidio of Monterey	725	18.7%	725	18.3%
DMFP	82	2.1%	92	2.3%
Total Volume	***3,882***	***100%***	***3,962***	***100%***

Discussion The DMFP includes improvements at this intersection that eliminate the project's intersection impact under existing and near term conditions. The poor operating conditions under cumulative i.e., LOS F are directly attributable to the POM's *Real Property Master Plan* which includes provisions for a new access control point. This access would be located on Highway 68 at the SFB Morse Drive intersection and contribute over 800 cars to the Highway 68 corridor during the AM and PM peak hours. The additional traffic would be redistributed from the existing POM gates at Franklin and Taylor and the High Street gate would be closed. The additional traffic associated with the POM was not contemplated when the Highway 68 Widening Project was studied by Caltrans. Nor, was it considered in when TAMC developed the regional development fee program. Excluding the POM traffic from the analysis would improve cumulative operations at the Highway 68 intersection with the Highway 1 southbound off-ramp to LOS C and B during the AM and PM peak hours, respectively, without the stated mitigation measure.

Auto Impact 16 ***Under cumulative plus DMFP conditions, the DMFP would add more than one vehicle to the Highway 68 intersection with Aguajito Road intersection which is anticipated to operate at LOS F without the DMFP.***

Auto Mitigation 16 **Construct a refuge lane on Highway 68 for traffic turning left out of the Aguajito Road intersection.**

With mitigation, the Highway 68 intersection with Aguajito Road would operate at LOS A (2.5 seconds of delay) and LOS C (20.7 seconds of delay) during the AM and PM peak hours, respectively. The DMFP is responsible for its fair-share contribution to this impact based on new traffic because the intersection operates at acceptable levels under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	1,301	74.5%	1,437	63.7%
Growth	208	11.8%	249	11.0%
Presidio of Monterey	201	11.5%	524	23.3%
DMFP	37	2.2%	45	2.0%
Total Volume	***1,747***	***100%***	***2,255***	***100%***

Discussion The poor operating conditions under cumulative i.e., LOS F are directly attributable to the POM's *Real Property Master Plan* which includes provisions for a new access control point. This access would be located on Highway 68 at the SFB Morse Drive intersection and contribute over 800 cars to the Highway 68 corridor during the AM and PM peak hours. The additional traffic would be redistributed from the existing POM gates at Franklin and Taylor and the High Street gate would be closed. Excluding the POM traffic from the analysis would improve cumulative operations for westbound traffic at Aguajito Road to LOS B and C during the AM and PM peak hours, respectively, without the stated mitigation measure.

Auto Impact 17 ***Under cumulative plus DMFP conditions, the DMFP would add traffic to the Highway 1 intersection with Carpenter Road during the PM peak hour when the intersection operates at LOS E with the DMFP; and the DMFP would increase intersection critical volume-to-capacity ratio by 0.01.***

Auto

Mitigation 17 **Establish new traffic signal timings at the Highway 1 intersection with Carpenter Road after the visitor serving uses of the DMFP have been developed. The timings shall be adjusted while maintaining the same off-sets to the adjacent signalized intersection at Ocean Avenue.**

With mitigation, the Highway 1 intersection with Carpenter Road would improve to LOS E (63.0 seconds of delay) during the PM peak hour. These off-sets the DMFP impact, but the existing deficiency would remain. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because it is a deficient intersection under existing conditions.

Traffic Component	AM Peak Hour Traffic		PM Peak Hour Traffic	
Existing	3,651	88.9%	4,801	89.2%
Growth	439	10.7%	559	10.4%
DMFP	19	0.4%	22	0.4%
Total Volume	***4,109***	***100%***	***5,382***	***100%***

Discussion Making improvements to Highway 1 through the Carmel area is controversial. Past studies have identified possible improvements, but none have been formally adopted and none have been incorporated into the regional transportation fee program.

The most recent study *Carmel Valley Master Plan SR-1 Study* (August 2009) assumed improvements to the Highway 1 corridor including a second northbound lane from south of Rio Road through the Carmel Valley Road intersection and a second right-turn lane from Rio Road onto Highway 1. The study also identified intersection improvement at Ocean Avenue including a westbound right turn lane at Ocean Avenue and extending the southbound lane merge at the intersection. The study did note that long-term capacity improvements including additional lanes are needed to improve the corridor to an acceptable LOS standard. However, the study excluded the Highway 1 improvements from the Carmel Valley Transportation Improvement Program because, in part, the roadway deficiencies are existing and traffic growth from the Carmel Valley Master Plan is expected to only contribute between 4 and 11% to the corridor's traffic. The traffic signal timing changes proposed as mitigation will improve vehicle flow through the intersection and minimize vehicle delays without adding additional vehicle capacity.

E.3.4 Highway Segments

Tables 4-5 and **Table E-6** show the cumulative plus DMFP highway segment volume to capacity ratios and levels of service. Table E-7 shows the levels of service for the ramp merge, diverge, and weave sections for the Highway 1 ramps at Highway 68 (west).

Ten highway segments will operate at levels of service below the County's threshold of LOS C in the Coastal Zone. These segments include:

- Highway 1 northbound on-ramp from Highway 68 (west)
- Highway 1, Highway 68 (west) to Munras Avenue
- Highway 1, Munras Avenue to Fremont Street
- Highway 1, Fremont Street to Fremont Boulevard
- Highway 1, Fremont Boulevard to Imjin Parkway

- Highway 1, North of Highway 156
- Highway 68, East of Olmsted Road
- Highway 68, East of Laguna Seca
- Highway 156, Highway 1 to US-101
- US 101, North of Highway 156

Several of these segments operate at LOS F without the DMFP and the DMFP would add traffic to these segments which represents a **Significant** impact. The Highway 1 northbound on-ramp merge from Highway 68 (west) would operate at LOS E with a 35.7 density (density is 35.4 without the DMFP) during the PM peak hour. The DMFP would add traffic to this location and so represents a ***Significant*** impact at this merge location.

Auto Impact 18 ***Under cumulative plus DMFP conditions, the DMFP would add traffic to the Highway 1 and Highway 156 corridors and some of the segments along these corridors operate at LOS F.***

Auto Mitigation 18 **Implement Auto Mitigation 4.**

Auto Impact 19 ***Under cumulative plus DMFP conditions, the DMFP would add traffic to the Highway 1 northbound on-ramp merge from Highway 68 (west) which operates at LOS E during the PM peak hour without the DMFP; and the DMFP would increase the volume by more than 0.01.***

Auto Mitigation 19 **Implement Auto Mitigation 5.**

With mitigation, Highway 1 northbound between Highway 68 (west) and Munras Avenue would operate at LOS B and D during the AM and PM peak hours respectively. The DMFP is responsible for its fair-share contribution to this impact based on total traffic because the existing merge operates at unacceptable levels (LOS D) under existing conditions.

Discussion The poor operating conditions under cumulative i.e., LOS E are directly attributable to the POM's *Real Property Master Plan* which includes provisions for a new access control point. This access would be located on Highway 68 at the SFB Morse Drive intersection and contribute over 800 cars to the Highway 68 corridor during the AM and PM peak hours. The additional traffic would be redistributed from the existing POM gates at Franklin and Taylor and the High Street gate would be closed.

Excluding the POM traffic from the analysis would improve cumulative operations for the Highway 1 northbound merge from Highway 68 (west) to LOS D during the PM peak hour without the stated mitigation measure which still exceeds the County's LOS C threshold but is within Caltrans LOS D objective for the Highway 1 corridor through Monterey County.

TABLE E-1
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE WITH DMFP ALTERNATIVE 2

	Description	Intersection Delay and Level of Service					
		Existing Year 2011 LOS		Near Term Year 2015 LOS		Cumulative Year 2030 LOS	
		No Project	With DMFP	No Project	With DMFP	No Project	With DMFP
Signalized Intersections[1]							
5	Forest Ave. (Highway 68) / David Ave.	24.8 / C	25.3 / C	25.8 / C	26.4 / C	26.5 / C	26.9 / C
6	Highway 68 / Prescott Avenue	11.2 / B	11.4 / B	12.7 / B	12.8 / B	15.7 / B	15.7 / B
8	Highway 68 / SFB Morse Gate	5.3 / A	5.4 / A	5.5 / A	5.3 / A	12.8 / B	12.9 / B
11	Highway 68 / Community Hospital	7.1 / A	7.1 / A	8.2 / A	8.4 / A	9.5 / A	9.7 / A
13	Highway 68 / Highway 1 SB Off-Ramp	**80.8 / F**	29.8 / C	**105.7 / F**	33.7 / C	**>120.0 / F**	**>120.0 / F**
16	Highway 1 / Carpenter Street	16.0 / B	16.1 / B	18.3 / B	18.4 / B	18.3 / B	18.3 / B
18	Highway 1 / Ocean Avenue	34.5 / C	**35.1 / D**	**39.5 / D**	**40.5 / D**	**45.0 / D**	**46.2 / D**
19	Highway 1 / Carmel Valley Road	9.4 / A	9.5 / A	9.7 / A	9.4 / A	10.2 / B	10.3 / B
20	Highway 1 / Rio Road	30.5 / C	30.6 / C	32.3 / C	32.3 / C	33.7 / C	33.9 / C
All-Way Stop Intersections[2]							
1	Sunset Dr. (Highway 68) / 17-Mile Dr.[4]	6.9 / A	7.2 / A	7.3 / A	7.7 / A	8.0 / A	8.8 / A
2	Sunset Dr. (Highway 68) / Congress Rd.[4]	11.8 / B	12.9 / B	16.3 / C	17.8 / C	18.1 / C	22.7 / C
3	Congress Ave. / Forest Lodge Rd.	11.5 / B	11.6 / B	12.9 / B	13.0 / B	12.2 / B	12.3 / B
4	Congress Ave. / David Ave.	10.9 / B	11.0 / B	11.9 / B	12.0 / B	11.3 / B	11.4 / B
10	Skyline Dr. / Skyline Forest Dr.	7.9 / A	7.9 / A	8.1 / A	8.1 / A	8.2 / A	8.2 / A
17	San Antonio Rd. / Ocean Ave.	7.9 / A	7.9 / A	8.2 / A	8.3 / A	8.2 / A	8.2 / A
23	Congress Road / SFB Morse Drive	7.7 / A	7.8 / A	7.8 / A	7.9 / A	7.8 / A	7.9 / A
25	Lopez Road / Sloat Road	8.0 / A	8.2 / A	8.2 / A	8.4 / A	8.1 / A	8.3 / A
28	Stevenson Drive / 17-Mile Drive / Alvarado	9.4 / A	10.0 / A	9.9 / A	10.6 / B	9.9 / A	10.5 / B
Side-Street Stop Intersections[3]							
7	Highway 68 / Presidio Blvd.[5]	3.8 (4.3) / A (A)	4.1 (4.6) / A (A)	4.2 (4.7) / A (A)	4.3 (4.6) / A (A)	12.8(21.6) / B(C)	13.4(23.3) / B (C)
9	Highway 68 / Skyline Forest Dr.	**21.4(>120) / C(F)**	**24.3(>120) / C(F)**	**33.3(>120) / D(F)**	**37.3(>120) / E(F)**	**>120(>120) / F(F)**	**>120(>120) / F(F)**

TABLE E-1
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE WITH DMFP ALTERNATIVE 2

Description		Intersection Delay and Level of Service					
		Existing Year 2011 LOS		Near Term Year 2015 LOS		Cumulative Year 2030 LOS	
		No Project	With DMFP	No Project	With DMFP	No Project	With DMFP
12	Highway 68 / Carmel Hill Professional Center	**64.6(>120) / F(F)**	**63.2(>120) / F(F)**	**95.0(>120) / F(F)**	**93.0(>120) / F(F)**	**98.6(>120) / F(F)**	**97.2(>120) / F(F)**
14	Highway 1 SB On-Ramp / 17-Mile Dr.	3.2 (14.1) / A (B)	Eliminated with project	3.5 (15.1) / A (C)	Eliminated with project	3.1 (16.8) / A (C)	Eliminated with project
15	Highway 68 / Aguajito Rd. [5]	2.6 (9.5) / A (A)	2.1 (8.5) / A (A)	2.4 (11.8) / A (B)	2.5 (10.5) / A (B)	3.1 (17.4) / A (C)	3.2 (19.8) / A (C)
21	Congress Road /Spanish Bay /17-Mile Dr	4.8 (10.6) / A (B)	5.0 (11.6) / A (B)	5.2 (11.2) / A (B)	5.5 (12.3) / A (B)	5.2 (11.2) / A (B)	5.4 (12.2) / A (B)
22	Congress Road / Forest Lodge	2.0 (11.1) / A (B)	2.3 (11.3) / A (B)	3.1 (11.8) / A (B)	3.3 (12.0) / A (B)	2.8 (11.5) / A (B)	3.0 (11.7) / A (B)
24	Sloat Road / Forest Lodge / 17-Mile Dr.[4]	4.5 (7.1) / A (A)	4.7 (7.5) / A (A)	4.6 (7.4) / A (A)	4.7 (7.8) / A (A)	4.8 (7.5) / A (A)	4.9 (7.9) / A (A)
26	Spyglass Hill Road / Stevenson Drive	2.9 (8.6) / A (A)	3.5 (8.8) / A (A)	3.2 (8.9) / A (A)	3.6 (9.1) / A (A)	3.2 (8.8) / A (A)	3.6 (9.0) / A (A)
27	Forest Lake / Stevenson-Ondulado	4.0 (11.9) / A (B)	4.1 (12.7) / A (B)	4.8 (13.4) / A (B)	5.0 (14.3) / A (B)	4.6 (12.8) / A (B)	4.7 (13.6) / A (B)
29	Palmero Way / 17-Mile Drive	2.2 (15.5) / A (C)	2.3 (16.5) / A (C)	3.1 (18.4) / A (C)	3.2 (20.0) / A (C)	2.9 (17.3) / A (C)	2.9 (18.4) / A (C)
30	Sunridge Road / Ronda Road	2.1 (10.0) / A (A)	2.6 (10.2) / A (B)	2.6 (10.4) / A (B)	3.0 (10.7) / A (B)	2.4 (10.2) / A (B)	2.8 (10.4) / A (B)
31	Sunridge Road / Scenic Drive	0.6 (9.8) / A (A)	0.6(9.8) / A (A)	0.9 (10.2) / A (B)	0.9 (10.3) / A (B)	0.8 (10.1) / A (B)	0.8 (10.2) / A (B)
32	Sunridge Road / Constanilla Way	5.5 (9.5) / A (A)	5.2 (9.5) / A (A)	5.6 (9.7) / A (A)	5.4 (9.7) / A (A)	5.6 (9.6) / A (A)	5.4 (9.7) / A (A)
33	Sunridge Road / Haul Road[4]	0.8 (5.3) / A (A)	1.1 (5.4) / A (A)	1.2 (7.4) / A (A)	1.4 (6.4) / A (A)	1.2 (7.3) / A (A)	1.3 (7.1) / A (A)

Notes:

Intersections with calculated delay greater than 120 seconds are shown with >120 to indicate that the analysis tool has limitations above this delay level.

1 Signalized intersection level of service based on control delay per vehicle, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.

2 All-way stop intersection level of service based on average intersection delay, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.

3 Side street stop controlled intersection level of service based on average control delay for critical side street movement, according to the 2010 *Highway Capacity Manual*, Transportation Research Board, 2010.

4 These intersections are analyzed using SimTraffic software because of unique conditions including more than four approach legs.

5 The Aguajito Road left turning traffic is fewer than 20 vehicles in the peak hour and so SimTraffic provides a more reasonable analysis result. Presidio Boulevard side-street left turning traffic is prohibited and so SimTraffic provides more reasonable result for the right turning traffic at the intersection.

Source: Fehr & Peers (June 2011)

TABLE E-2
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE WITH DMFP ALTERNATIVE 2

	Description	Intersection Delay and Level of Service					
		Existing Year 2011 LOS		Near Term Year 2015 LOS		Cumulative Year 2030 LOS	
		No Project	With DMFP	No Project	With DMFP	No Project	With DMFP
Signalized Intersections[1]							
5	Forest Ave. (Highway 68) / David Ave.	30.1 / C	31.1 / C	32.4 / C	33.3 / C	**38.9 / D**	**40.1 / D**
6	Highway 68 / Prescott Avenue	19.2 / B	19.9 / B	21.4 / C	21.4 / C	24.0 / C	24.1 / C
8	Highway 68 / SFB Morse Gate	3.9 / A	4.1 / A	4.0 / A	4.2 / A	17.8 / B	18.1 / B
11	Highway 68 / Community Hospital	8.7 / A	8.8 / A	9.1 / A	9.3 / A	23.7 / C	26.2 / C
13	Highway 68 / Highway 1 Off-Ramp	**70.1 / E**	34.2 / C	**79.0 / E**	**39.8 / D**	**>120.0 / F**	**>120.0 / F**
16	Highway 1 / Carpenter Street	**45.9 / D**	**46.7 / D**	**57.9 / E**	**59.2 / E**	**74.1 / E**	**75.6 / E**
18	Highway 1 / Ocean Avenue	**45.4 / D**	**45.9 / D**	**51.8 / D**	**52.6 / D**	**63.9 / E**	**65.4 / E**
19	Highway 1 / Carmel Valley Road	17.4 / B	17.7 / B	18.7 / B	18.5 / B	21.7 / C	21.8 / C
20	Highway 1 / Rio Road	32.9 / C	33.1 / C	**35.9 / D**	**36.0 / D**	**38.3 / D**	**38.2 / D**
All-Way Stop Intersections[2]							
1	Sunset Dr. (Highway 68) / 17-Mile Dr.[4]	5.6 / A	6.0 / A	6.0 / A	6.5 / A	6.6 / A	7.0 / A
2	Sunset Dr. (Highway 68) / Congress Rd.[4]	9.6 / A	10.5 / B	11.4 / B	13.9 / B	18.2 / C	21.1 / C
3	Congress Ave. / Forest Lodge Rd.	10.6 / B	10.7 / B	11.4 / B	11.5 / B	12.6 / B	12.8 / B
4	Congress Ave. / David Ave.	10.5 / B	10.5 / B	11.5 / B	11.6 / B	12.6 / B	12.7 / B
10	Skyline Dr. / Skyline Forest Dr.	8.3 / A	8.3 / A	8.5 / A	8.5 / A	8.8 / A	8.8 / A
17	San Antonio Rd. / Ocean Ave.	8.8 / A	8.9 / A	9.2 / A	9.2 / A	9.4 / A	9.5 / A
23	Congress Road / SFB Morse Drive	7.9 / A	8.0 / A	8.1 / A	8.2 / A	8.1 / A	8.2 / A
25	Lopez Road / Sloat Road	8.0 / A	8.4 / A	8.5 / A	8.9 / A	8.4 / A	8.8 / A
28	Stevenson Drive / 17-Mile Drive / Alvarado	9.6 / A	10.4 / B	10.3 / B	11.2 / B	10.5 / B	11.3 / B
Side-Street Stop Intersections[3]							
7	Highway 68 / Presidio Blvd.[5]	3.6 (3.8) / A (A)	3.6 (3.7) / A (A)	3.7 (3.9) / A (A)	3.8 (4.0) / A (A)	5.2 (5.6) / A (A)	5.3 (5.8) / A(A)

TABLE E-2
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE WITH DMFP ALTERNATIVE 2

Description		Intersection Delay and Level of Service					
		Existing Year 2011 LOS		Near Term Year 2015 LOS		Cumulative Year 2030 LOS	
		No Project	With DMFP	No Project	With DMFP	No Project	With DMFP
9	Highway 68 / Skyline Forest Dr.	**15.9(>120) / C(F)**	**17.9(>120) / C(F)**	**25.1(>120) / D(F)**	**28.0(>120) / D(F)**	**>120(>120) / F(F)**	**>120(>120) / F(F)**
12	Highway 68 / Carmel Hill Professional Center	**23.4(>120) / C(F)**	**38.8(>120) / E(F)**	**39.3(>120) / E(F)**	**>120(>120) / F(F)**	**>120(>120) /F(F)**	**>120(>120) / F(F)**
14	Highway 1 On-Ramp / 17-Mile Dr.	8.7 (22.9) / A (C)	Eliminated with project	9.6 (25.7) / A (D)	Eliminated with project	**18.8(56.3)/ (C(F)**	Eliminated with project
15	Highway 68 / Aguajito Rd. [5]	2.9 (11.0) / A (B)	3.0 (11.9) / A (B)	3.3 (16.0) / A (C)	3.6 (19.6) / A (C)	**32.4(>120) / D(F)**	**42.6(>120) / F(F)**
21	Congress Road / Spanish Bay / 17-Mile Dr.	5.5 (11.8) / A (B)	6.3 (12.7) / A(B)	6.2 (12.9) / A (B)	7.2 (14.5) / A (B)	6.1 (12.6) / A (B)	7.1 (14.1) / A (B)
22	Congress Road / Forest Lodge	3.5 (13.9) / A (B)	3.8 (14.5) / A (B)	4.4 (15.4) / A (C)	4.7 (16.2) / A (C)	4.2 (15.4) / A (C)	4.5 (16.1) / A (C)
24	Sloat Road / Forest Lodge / 17-Mile Dr.[4]	4.1 (7.7) / A (A)	4.5 (8.3) / A (A)	4.5 (7.8) / A (A)	4.8 (8.6) / A (A)	4.6 (8.2) / A (A)	4.9 (8.8) / A (A)
26	Spyglass Hill Road / Stevenson Drive	2.7 (9.0) / A (A)	3.1 (9.1) / A (A)	3.1 (9.3) / A (A)	3.3 (9.4) / A (A)	2.9 (9.3) / A (A)	3.1 (9.4) / A (A)
27	Forest Lake / Stevenson-Ondulado	3.9 (11.7) / A (B)	4.0 (12.4) / A (B)	4.4 (12.6) / A (B)	4.6 (13.5) / A (A)	4.5 (12.3) / A (B)	4.7 (13.1) / A (B)
29	Palmero Way / 17-Mile Drive	3.5 (16.2) / A (C)	3.6 (17.3) / A (C)	4.6 (17.7) / A (C)	4.8 (19.0) / A (C)	4.4 (18.1) / A (C)	4.6 (19.4) / A (C)
30	Sunridge Road / Ronda Road	3.7 (9.5) / A (A)	3.8 (9.6) / A (A)	3.9 (9.8) / A (A)	3.9 (10.0) / A (A)	4.0 (9.8) / A (A)	4.0 (10.0) / A (A)
31	Sunridge Road / Scenic Drive	0.8 (10.6) / A (B)	0.8 (10.8) / A (B)	1.2 (10.5) / A (B)	1.2 (10.7) / A (B)	1.1 (10.6) / A (B)	1.1 (10.9) / A (B)
32	Sunridge Road / Constanilla Way	2.5 (9.2) / A (A)	2.9 (9.3) / A (A)	2.8 (9.4) / A (A)	3.1 (9.5) / A (A)	3.0 (9.4) / A (A)	3.2 (9.5) / A (A)
33	Sunridge Road / Haul Road[4]	1.1 (5.6) / A (A)	1.1 (5.7) / A (A)	1.4 (5.5) / A (A)	1.5 (5.7) / A (A)	1.6 (5.9) / A (A)	1.6 (5.9) / A (A)

Notes:

Intersections with calculated delay greater than 120 seconds are shown with >120 to indicate that the analysis tool has limitations above this delay level.

1 Signalized intersection level of service based on control delay per vehicle, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.

2 All-way stop intersection level of service based on average intersection delay, according to the *Highway Capacity Manual*, Transportation Research Board, 2000.

3 Side street stop controlled intersection level of service based on average control delay for critical side street movement, according to the 2010 *Highway Capacity Manual*, Transportation Research Board, 2010.

4 These intersections are analyzed using SimTraffic software because of unique conditions including more than four approach legs.

5 The Aguajito Road left turning traffic is fewer than 20 vehicles in the peak hour and so SimTraffic provides a more reasonable analysis result. Presidio Boulevard side-street left turning traffic is prohibited and so SimTraffic provides more reasonable result for the right turning traffic at the intersection.

Source: Fehr & Peers (June 2011)

TABLE E-3
PEAK HOUR TRAFFIC SIGNAL WARRANT ANALYSIS WITH DMFP ALTERNATIVE 2

Description		Period	Existing Year 2011	Near Term Year 2015	Cumulative Year 2030
1	Sunset Drive (Highway 68) / 17-Mile Dr	AM(PM)	No (No)	No (No)	No (No)
2	Sunset Drive (Highway 68) / Congress Road	AM(PM)	No (No)	No (No)	No (No)
3	Congress Avenue / Forest Lodge Road	AM(PM)	No (No)	No (No)	No (No)
4	Congress Avenue / David Avenue[1]	AM(PM)	No (No)	No (No)	No (No)
7	Highway 68 / Presidio Boulevard [2]	AM(PM)	No (No)	No (No)	No (No)
9	Highway 68 / Skyline Forest Drive	AM(PM)	**Yes (Yes)**	**Yes (Yes)**	**Yes (Yes)**
10	Skyline Drive / Skyline Forest Drive	AM(PM)	No (No)	No (No)	No (No)
12	Highway 68 / Carmel Hill Professional Center	AM(PM)	No **(Yes)**	No **(Yes)**	No **(Yes)**
14	Highway 1 SB On-Ramp / 17-Mile Drive	AM(PM)	Intersection eliminated with DMFP		
15	Highway 68 / Aguajito Road	AM(PM)	No (No)	No (No)	No (No)
17	San Antonio Road / Ocean Avenue	AM(PM)	No (No)	No (No)	No (No)
21	Congress Road / Spanish Bay / 17-Mile Dr.	AM(PM)	No (No)	No (No)	No (No)
22	Congress Road / Forest Lodge	AM(PM)	No (No)	No (No)	No (No)
23	Congress Road / SFB Morse Drive	AM(PM)	No (No)	No (No)	No (No)
24	Sloat Road / Forest Lodge / 17-Mile Dr.	AM(PM)	No (No)	No (No)	No (No)
25	Lopez Road / Sloat Road	AM(PM)	No (No)	No (No)	No (No)
26	Spyglass Hill Road / Stevenson Drive	AM(PM)	No (No)	No (No)	No (No)
27	Forest Lake / Stevenson-Ondulado	AM(PM)	No (No)	No (No)	No (No)
28	Stevenson Drive / 17-Mile Drive / Alvarado	AM(PM)	No (No)	No (No)	No (No)
29	Palmero Way / 17-Mile Drive	AM(PM)	No (No)	No (No)	No (No)
30	Sunridge Road / Ronda Road	AM(PM)	No (No)	No (No)	No (No)
31	Sunridge Road / Scenic Drive	AM(PM)	No (No)	No (No)	No (No)
32	Sunridge Road / Constanilla Way	AM(PM)	No (No)	No (No)	No (No)
33	Sunridge Road / Haul Road	AM(PM)	No (No)	No (No)	No (No)

Yes – The intersection meets the peak hour traffic signal warrant

No – The intersection does not meet the peak hour traffic signal warrant

1 The Congress Avenue / David Avenue intersection does not meet the peak hour signal warrants when the westbound right turn volume is removed from the calculation which was done because the westbound right-turn movements operates independently from the westbound through and left movements.

2 The Presidio Boulevard intersection does not meet the peak hour signal warrant when the right turn volume is removed from the calculation which was done because left turns from Presidio Boulevard are prohibited.

Source: Fehr & Peers (June 2011)

TABLE E-4
FOREST GATE PEAK HOUR VOLUMES AND LEVEL OF SERVICE WITH DMFP ALTERNATIVE 2

Description	Capacity	Peak Hour	Peak Hour Volume (Volume-to-Capacity Ratio)[1]		
			Existing Year 2011	Near Term Year 2015	Cumulative Year 2030
Pacific Grove Gate	600	AM	139 (0.23)	141 (0.24)	153 (0.26)
		PM	156 (0.26)	160 (0.27)	175 (0.29)
Carmel Gate	900	AM	132 (0.15)	136 (0.15)	150 (0.17)
		PM	141 (0.16)	145 (0.16)	160 (0.18)
Highway 1 Gate	920	AM	509 (0.55)	523 (0.57)	576 (0.63)
		PM	360 (0.39)	369 (0.40)	405 (0.44)
Country Club Gate	600	AM	192 (0.32)	197 (0.33)	218 (0.36)
		PM	222 (0.37)	228 (0.38)	252 (0.42)
SFB Morse Gate	520	AM	138 (0.27)	142 (0.27)	156 (0.30)
		PM	140 (0.27)	144 (0.28)	158 (0.30)

Note:
1 Volume-to-capacity ratio describes the inbound peak hour traffic flow as it relates to gate capacity. A ratio less than 0.9 is considered acceptable.

Source: Fehr & Peers (June 2011)

TABLE E-5
HIGHWAY SEGMENT AM PEAK HOUR LEVEL OF SERVICE WITH DMFP ALTERNATIVE 1

Segment	Segment Capacity	Direction	Volume (Volume-to-Capacity Ratio) / Level of Service		
			Existing Year 2011	Near Term Year 2015	Cumulative Year 2030
Highway 1					
Pebble Beach to Munras Avenue[1]	3,550	NB	2,320 (0.65) / C	2,330 (0.66) / C	**2,470 (0.70) / D**
Munras Avenue to Fremont Street	3,550 3,550	NB SB	1,780 (0.50) / C **2,600 (0.73) / D**	1,810 (0..51) / C **2,640 (0.74) / D**	1,980 (0.56) / C **3,200 (0.90) / E**
Fremont Street to Fremont Boulevard	3,550 3,550	NB SB	1,740 (0.49) / C **3,850 (1.08) / F**	1,780 (0.50) / C **3,920 (1.10) / F**	1,950 (0.55) / C **4,460 (1.26) / F**
Fremont Boulevard to Imjin Parkway	5,330 5,330	NB SB	1,810 (0.34) / B **3,880 (0.73) / D**	1,830 (0.34) / B **3,910 (0.73) / D**	1,920 (0.36) / B **4,220 (0.79) / D**
North of Highway 156	1,420 1,420	NB SB	**1,000 (0.70) / D** **1,930 (1.36) / F**	**1,050 (0.74) / D** **2,030 (1.43) / F**	**1,290 (0.91) / E** **2,530 (1.78) / F**
Highway 68					
East of Olmsted Road	1,420 1,420	EB WB	**1,020 (0.72) / D** **1,080 (0.76) / D**	**1,020 (0.72) / D** **1,080 (0.76) / D**	**1,060 (0.75) / D** **1,270 (0.89) / E**
East of Laguna Seca	1,420	EB WB	**1,630 (1.15) / F** **1,110 (0.78) / D**	**1,640 (1.15) / F** **1,120 (0.79) / D**	**1,680 (1.18) / F** **1,240 (0.87) / D**
US-101					
South of Salinas	3,550 3,550	NB SB	960 (0.27) / B 880 (0.25) / B	970 (0.27) / B 80 (0.25) / B	980 (0.28) / B 900 (0.25) / B
North of Highway 156	3,550 3,550	NB SB	1,510 (0.43) / B 2,000 (0.56) / C	1,550 (0.44) / B 2,060 (0.58) / C	1,710 (0.48) / C 2,310 (0.65) / C
Highway 156					
Highway 1 to US-101	1,420 1,420	NB SB	770 (0.54) / C **1,280 (0.90) / E**	780 (0.55) / C **1,280 (0.90) / E**	**800 (0.56) / C** **1,350 (0.95) / E**

1 Southbound segment analyzed as a weave section.

Source: Fehr & Peers (June 2011)

TABLE E-6
HIGHWAY SEGMENT PM PEAK HOUR LEVEL OF SERVICE WITH DMFP ALTERNATIVE 1

Segment	Segment Capacity	Direction	Volume (Volume-to-Capacity Ratio) / Level of Service		
			Existing Year 2011	Near Term Year 2015	Cumulative Year 2030
Highway 1					
Pebble Beach to Munras Avenue[1]	3,550	NB	**3,090 (0.87) / D**	**3,100 (0.87) / D**	**3,650 (1.03) / F**
Munras Avenue to Fremont Street	3,550 3,550	NB SB	**2,440 (0.69) / D** 2,0140 (0.57) / C	**2,470 (0.70) / D** 2,040 (0.57) / C	**3,020 (0.85) / D** 2,220 (0.63) / C
Fremont Street to Fremont Boulevard	3,550 3,550	NB SB	**3,580 (1.01) / F** **2,740 (0.77) / D**	**3,640 (1.03) / F** **2,790 (0.79) / D**	**4,160 (1.17) / F** **3,050 (0.86) / D**
Fremont Boulevard to Imjin Parkway	5,330 5,330	NB SB	**4,440 (0.83) / D** 2,650 (0.50) / C	**4,480 (0.84) / D** 2,670 (0.50) / C	**4,800 (0.90) / E** 2,790 (0.52) / C
North of Highway 156	1,420 1,420	NB SB	**2,240 (1.58) / F** **1,400 (0.99) / E**	**2,370 (1.67) / F** **1,480 (1.04) / F**	**2,940 (2.07) / F** **1,810 (1.27) / F**
Highway 68					
East of Olmsted Road	1,420 1,420	EB WB	**1,040 (0.73) / D** **1,200 (0.85) / D**	**1,040 (0.73) / D** **1,200 (0.85) / D**	**1,230 (0.87) / D** **1,240 (0.87) / D**
East of Laguna Seca	1,420 1,420	EB WB	**1,290 (0.91) / E** **1,710 (1.20) / F**	**1,300 (0.92) / E** **1,720 (1.21) / F**	**1,420 (1.00) / E** **1,760 (1.24) / F**
US-101					
South of Salinas	3,550 3,550	NB SB	1,260 (0.35) / B 1,580 (0.45) / B	1,270 (0.36) / B 1,590 (0.45) / B	1,280 (0.36) / B 1,610 (0.45) / B
North of Highway 156	3,550 3,550	NB SB	2,160 (0.61) / C 2,300 (0.65) / C	2,220 (0.63) / C 2,360 (0.66) / C	**2,490 (0.70) / D** **2,600 (0.73) / D**
Highway 156					
Highway 1 to US-101	1,420 1,420	NB SB	**1,690 (1.19) / F** 900 (0.63) / C	**1,700 (1.20) / F** 900 (0.63) / C	**1,770 (1.25) / F** 920 (0.65) / C

1 Southbound segment analyzed as a weave section.

Source: Fehr & Peers (June 2011)

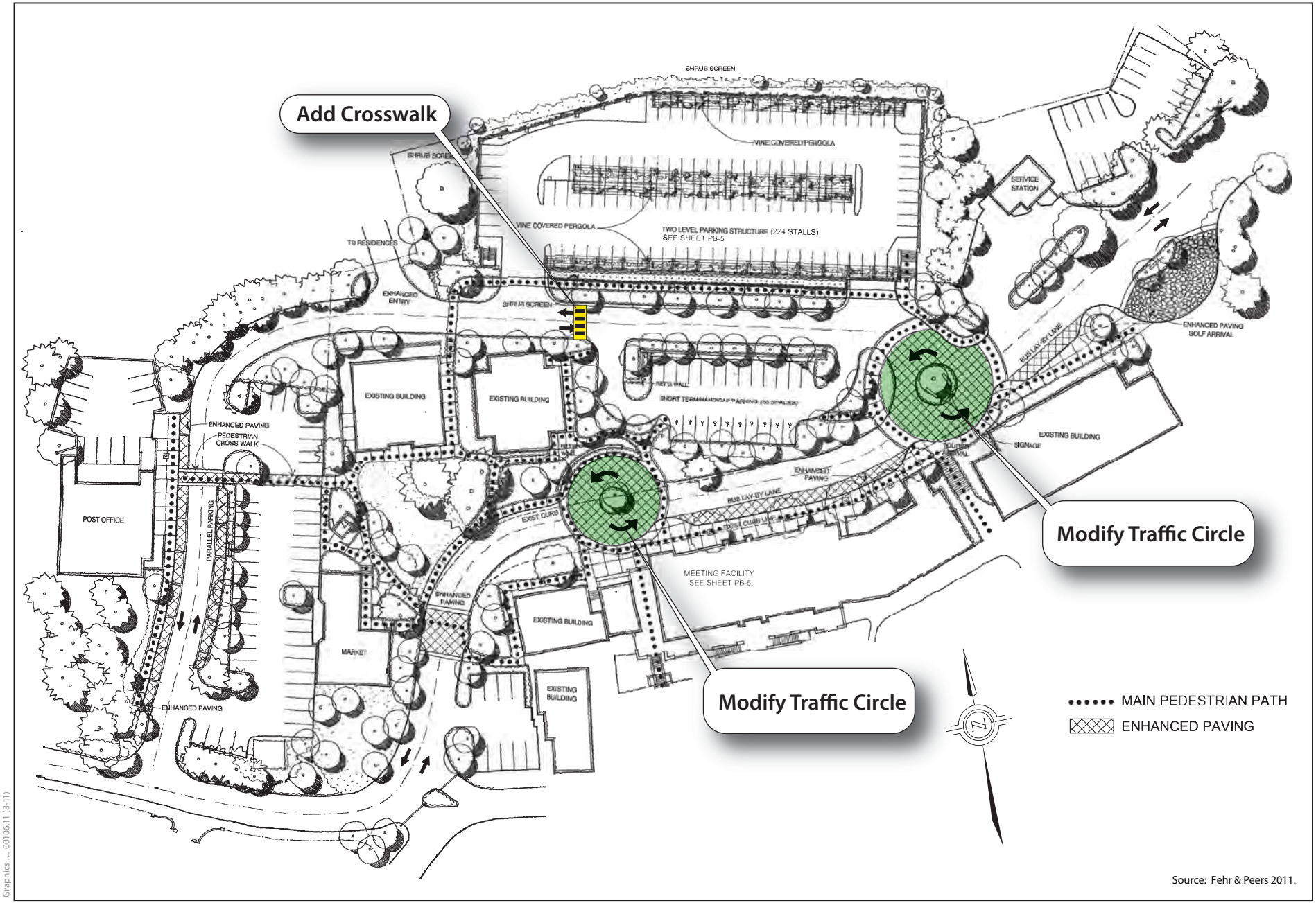
TABLE E-7
HIGHWAY 1 RAMPS AT HIGHWAY 68 (WEST)
PEAK HOUR LEVEL OF SERVICE WITH DMFP ALTERNATIVE 2

Freeway	Peak Hour	Existing		Base (2015)		Cumulative (2030)	
		Density (pcplpm) [1]	LOS	Density (pcplpm) [1]	LOS	Density (pcplpm) [1]	LOS
Merge /1/							
Highway 1 NB On-Ramp from Highway 68	AM	20.2	C	20.6	C	21.1	C
	PM	**29.6**	**D**	**30.3**	**D**	**35.7**	**E**
Highway 1 SB On-Ramp from Highway 68	AM	20.4	C	20.9	C	21.4	C
	PM	21.2	C	21.6	C	22.5	C
Diverge /1/							
Highway 1 NB Off-Ramp to Highway 68	AM	18.3	B	18.8	B	19.2	B
	PM	21.2	C	21.6	C	22.5	C
		Weaving Speed	**LOS**	**Weaving Speed**	**LOS**	**Weaving Speed**	**LOS**
Weave /2/							
Highway 1 SB Off-Ramp to Highway 68	AM	38.3	B	37.7	B	32.9	C
	PM	35.0	C	34.8	C	33.8	C

Notes:
1 Passenger car equivalence per lane per mile
2 *Highway Capacity Manual*, Transportation Research Board, 2000
3 Caltrans Highway Design Manual Methodology
Source: Fehr & Peers (June 2011)

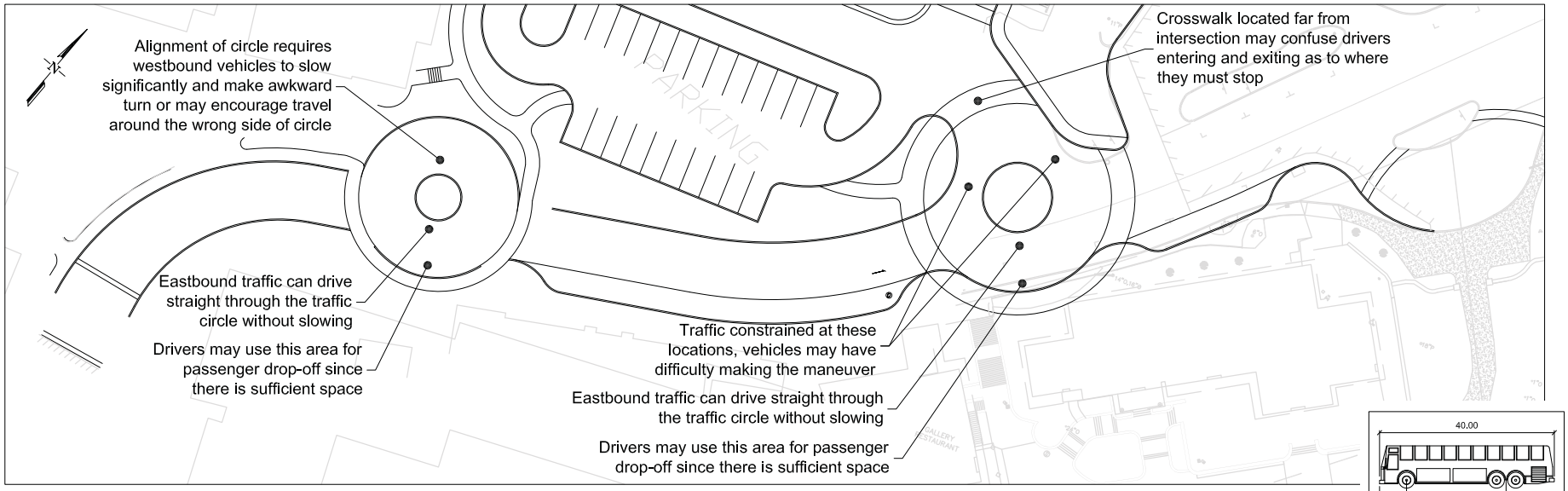
G.3

Fehr & Peers
Circulation Improvements

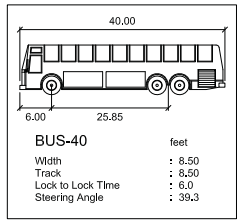


Graphics ... 00106.11 (8-11)

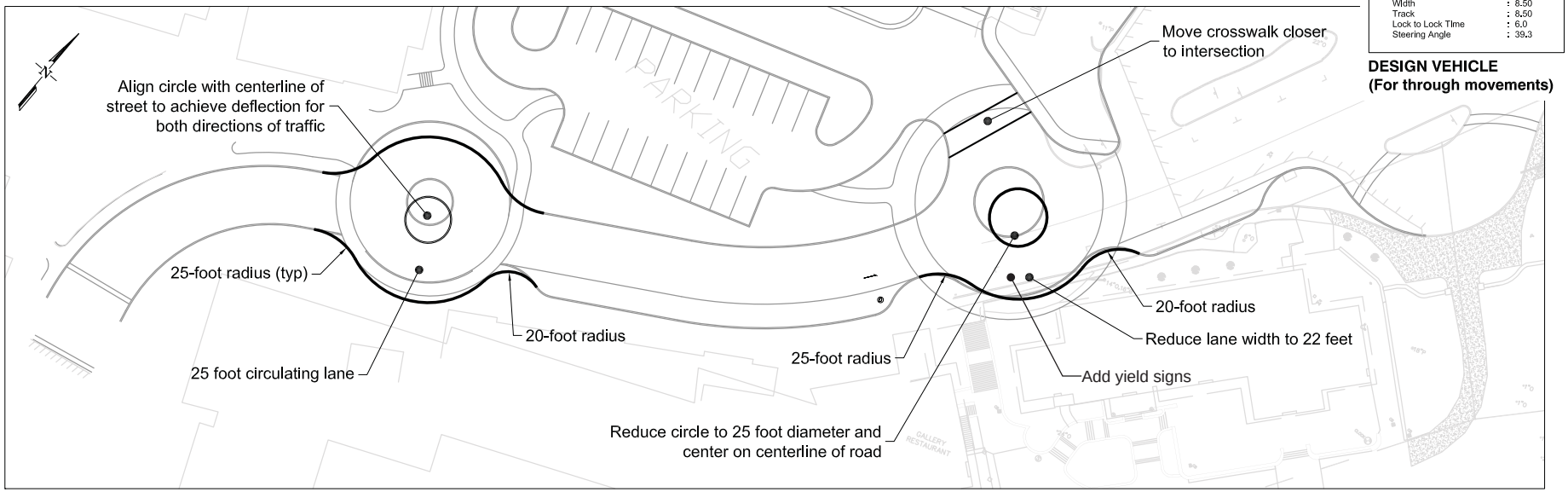
Figure G-1
The Lodge at Pebble Beach Circulation Improvements



PROPOSED CONFIGURATION



DESIGN VEHICLE
(For through movements)

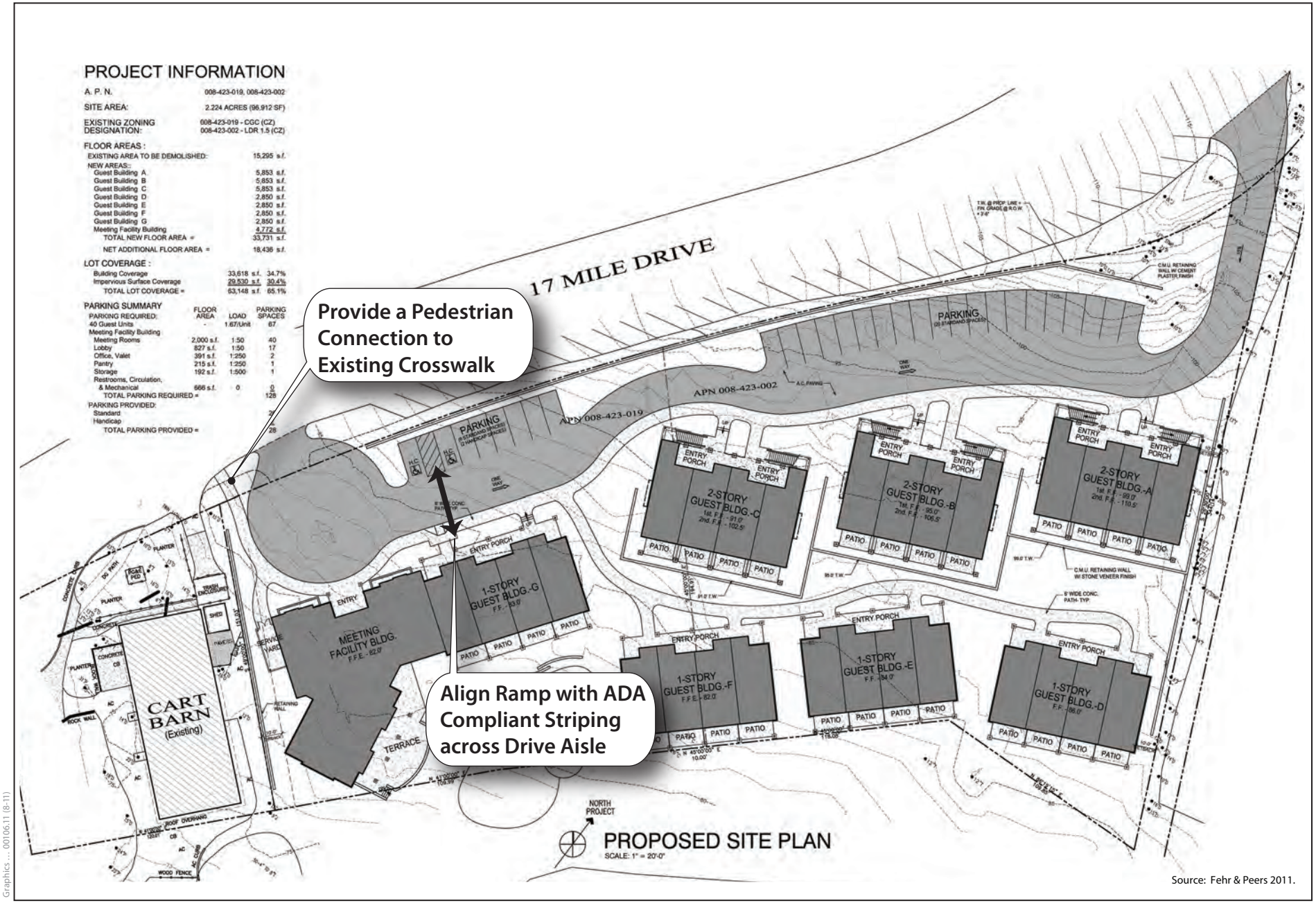


RECOMMENDED CONFIGURATION

Source: Fehr & Peers 2011.

Graphics ... 00106.11 (8-11)

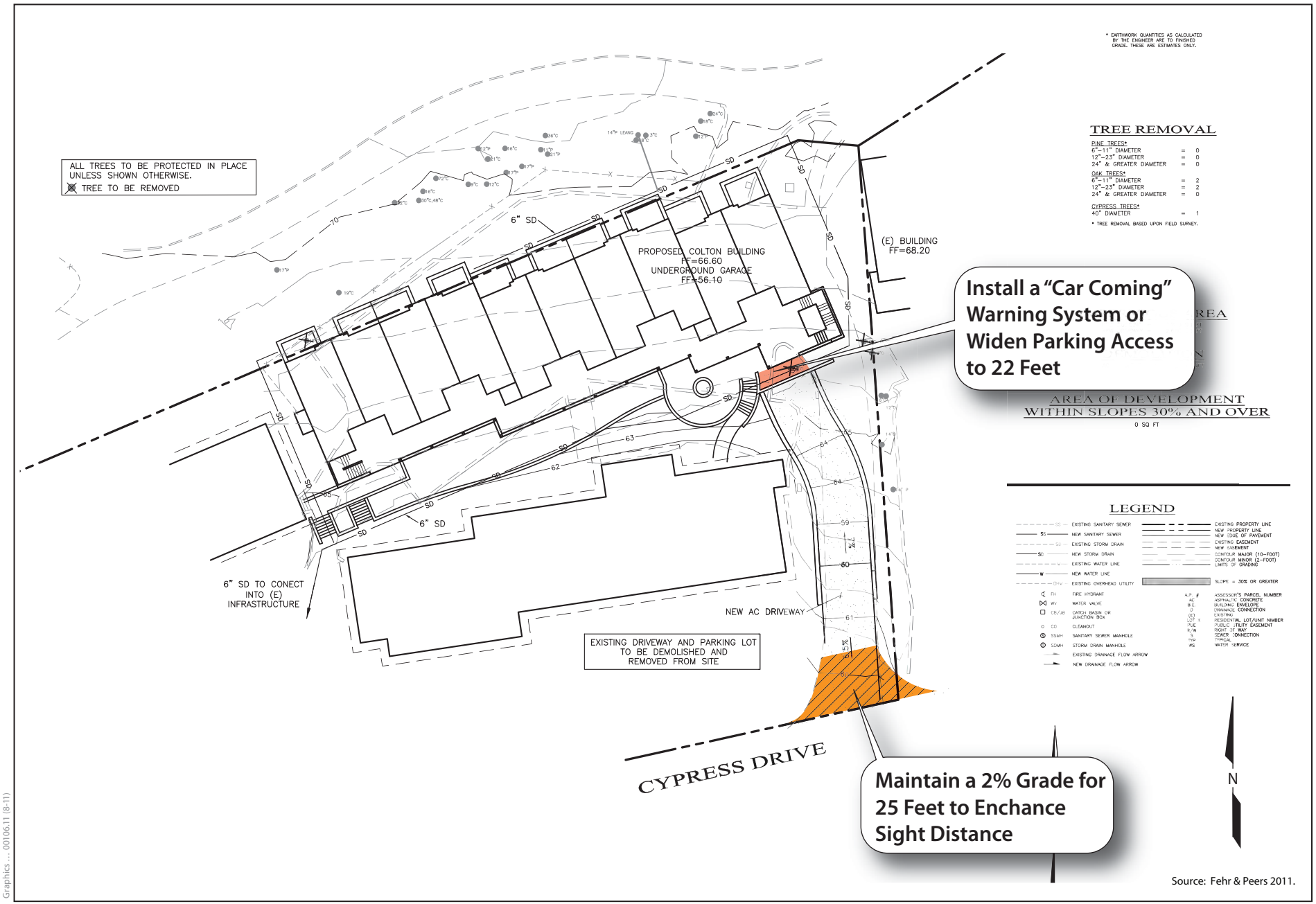
Figure G-2
The Lodge at Pebble Beach Traffic Circle Review



Source: Fehr & Peers 2011.

Graphics ... 00106.11 (8-11)

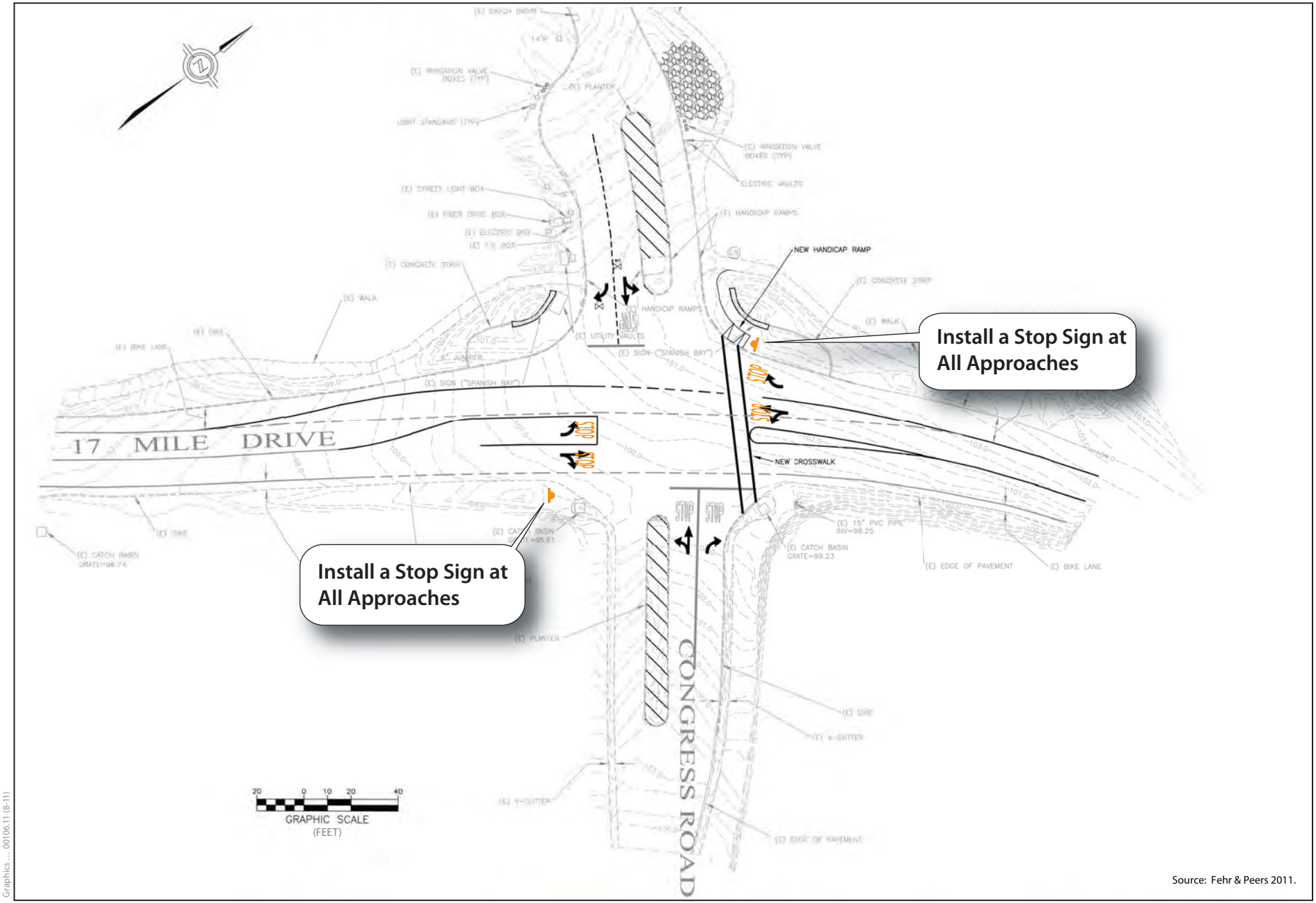
Figure G-3
Fairway One Reconstruction Circulation Improvements



Source: Fehr & Peers 2011.

Graphics ... 00106.11 (8-11)

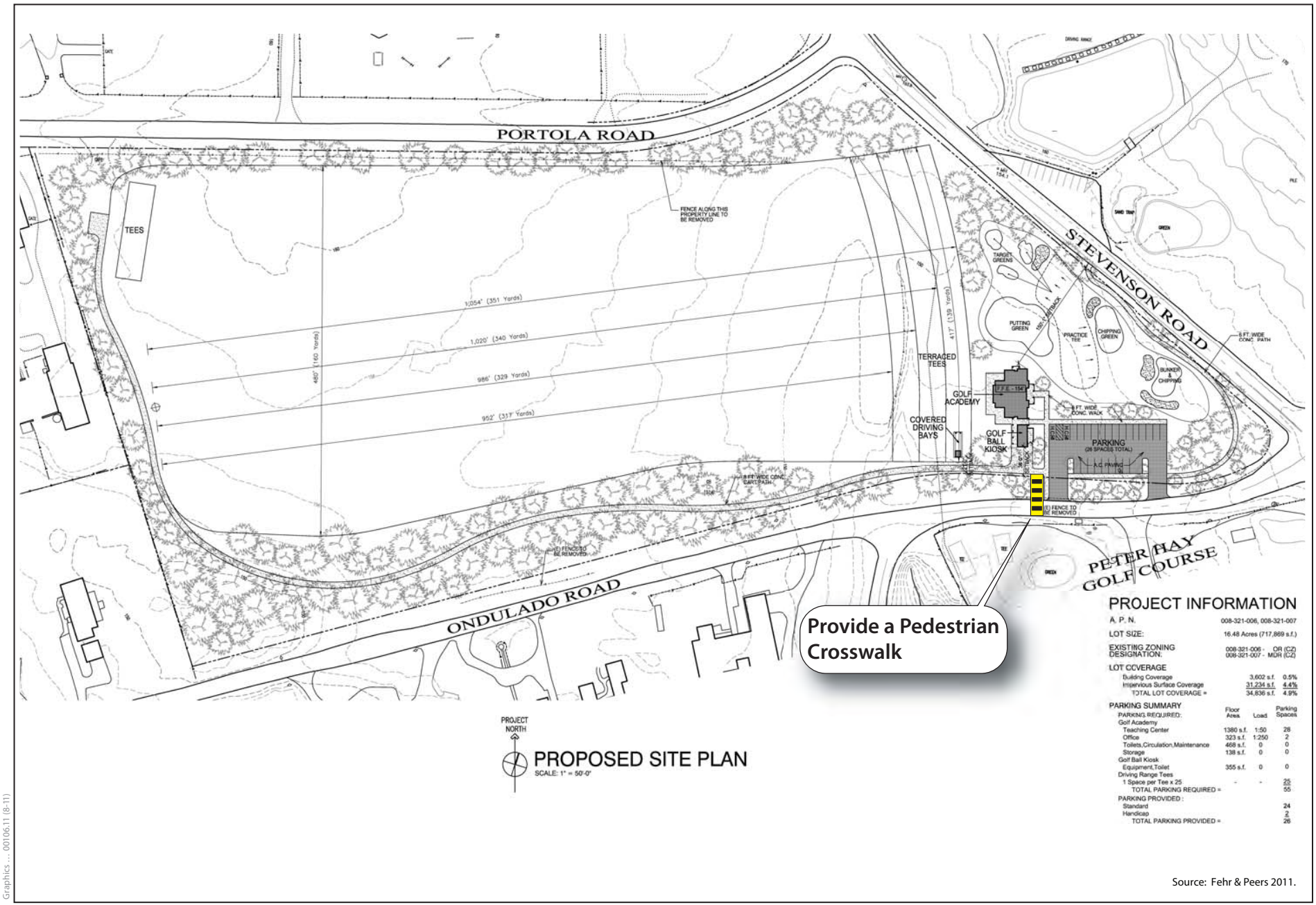
Figure G-4
New Colton Building Circulation Improvements



Source: Fehr & Peers 2011.

Graphics ... 00106.11 (8-11)

Figure G-5
The Inn at Spanish Bay Circulation Improvements



Source: Fehr & Peers 2011.

Graphics ... 00106.11 (8-11)

Figure G-6
Pebble Beach Driving Range Circulation Improvements