4.11 TRANSPORTATION

This section discusses the existing roadway network and transportation facilities in the project vicinity; describes the applicable federal, state, and local regulations and policies related to transportation; describes existing traffic and circulation conditions within the surrounding area; and analyzes the potential near- and long-term impacts from project activities on transportation and traffic. The analysis provided herein is based on a Traffic Impact Analysis (TIA) for the Recology Hay Road (RHR) Landfill Project conducted by KD Anderson and Associates, Inc. (KDA) (Appendix G of this Draft SEIR).

Comment letters pertaining to traffic and transportation were received in response to the Notice of Preparation for the proposed project from the California Department of Transportation (Caltrans) -District 4 and local residents. Traffic-related comments from Caltrans include general reminders related to grading and drainage requirements if the project were to impact a channel running parallel west of (State Route) SR 113 and the need for an encroachment permit from Caltrans should any work or traffic control that encroaches onto the state right-of-way occur. Traffic concerns from local residents were primarily related to the potential damage to SR 113 and other haul roads that could occur with an increase in daily truck trips.

4.11.1 Regulatory Setting

FEDERAL PLANS, POLICIES, AND REGULATIONS

No federal plans, policies, regulations, or laws related to transportation and circulation are applicable to the analysis in this Subsequent Environmental Impact Report (SEIR).

STATE PLANS, POLICIES, AND REGULATIONS

The California Department of Transportation (Caltrans) has set a minimum level of service (LOS) standard for state highways of LOS D in rural areas (populations less than 2,500), LOS E in urban clusters (populations 2,500 to 49,999), and LOS E in urbanized areas (populations over 50,000). These standards may vary depending on the corridor conditions and if a transportation concept report, specific to a SR, has been prepared. However, generally within the project area and for the purposes of this analysis, LOS D would be considered acceptable for state highways within the project area.

State Route 113 Transportation Concept Report

Transportation concept reports are long-term planning documents that Caltrans prepares for each highway within its jurisdiction. The purpose of these reports is to determine how a highway will be developed and managed over a 20-year planning horizon. A transportation concept report (TCR) was prepared for SR 113, which is included in the project study area and is under Caltrans' jurisdiction. The TCR does not identify a targeted LOS for the segment of SR 113 in the vicinity of the project site; however, it does identify the planning horizon concept for this segment as remaining as a two-lane conventional facility (Caltrans 2011). No TCR has been prepared for SR 12 as of the publication date of this EIR.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES

Solano County Road Improvement Standards and Land Development Requirements

Section 1-4 of the Solano County Road Improvement Standards and Land Development Requirements (Solano County 2006) states that it is the goal of Solano County to maintain LOS C for all roads and intersections. Additionally, all projects shall be designed to maintain LOS C for all Solano County roadway facilities, except where the existing facility currently operates below LOS C, in which case, the project shall be designed such that there will be no decrease in the existing LOS.

4.11.2 Environmental Setting

The following discussion describes the existing environmental transportation setting, which is the baseline scenario upon which project-specific impacts are evaluated. The baseline for this study represents conditions based on collected data and field observations. The environmental setting for transportation includes baseline descriptions for roadway, bicycle, pedestrian, and transit facilities.

PROJECT STUDY AREA

The project study area includes the project routes from the Interstate 80 (I-80) / Midway Road interchange to the north, and from the SR 113 / SR 12 intersection to the south. Based on allowable routes to and from the landfill as established under the RHR Road and Litter Agreement with the County, six roadway segments and eight intersections that provide access to the landfill site were evaluated within the study area.

Existing Roadway Network

SR 113 is a two-lane road in Solano County beginning at SR 12 to the south and runs north past I-80, continuing through Davis and Woodland to its terminus in Sutter County. Between SR 12 and Midway Road, the road has varying shoulder widths, ranging from approximately 10 feet at intersections to zero feet at points along the segments. The speed limit is 55 miles per hour (mph). SR 113 is identified in Solano County as a major arterial.

Midway Road is a two-lane road running east-west between I-80 and SR 113. The road has varying shoulder widths, ranging from 0 to 8 feet in width. The speed limit is 55 mph. Midway Road is identified in Solano County as a County Route of Regional Significance.

Hay Road is a two-lane local road running east-west between Meridian Road and SR 113. The road has shoulder widths ranging from zero to two feet in width. The speed limit is 55 mph. Hay Road is identified in Solano County as a collector road.

Study Intersections

The following eight intersections within the study area were evaluated as part of the TIA:

1. I-80 Westbound Ramps / Oday Road
2. Midway Road / Oday Road
3. I-80 Eastbound Ramps / Midway Road
4. Midway Road / Porter Road
5. SR 113 / Midway Road
6. SR 113 / Hay Road
7. SR 113 / SR 12
8. Hay Road / Project Entrance

Each study intersection is described below:

I-80 Westbound Ramps / Oday Road is a T-intersection with a hook on/off ramp. The I-80 off-ramp intersection approach is stop controlled. The Oday Road approaches consist of single lanes providing shared through and left or right turn right turn movements. The westbound off-ramp includes a stop-controlled left turn lane and a yield controlled short right turn lane.

Midway Road / Oday Road is an unsignalized T-intersection. The Oday Road intersection approach is stop controlled. Westbound Midway Road includes a through lane with a free right turn lane onto Oday Road. Eastbound Midway Road includes a shared through-left lane while Oday Road consists of a single lane approach.

Midway Road / I-80 Eastbound Ramps is an unsignalized diamond configuration (L-1) intersection. Midway Road in both directions consist of a single lane with the eastbound approach providing a shared through left lane and the westbound approach providing a shared through-right lane. The I-80 off-ramp is stop-controlled for through and left turn movements while the right turn movement merges onto eastbound Midway Road.

Midway Road / Porter is an unsignalized T-intersection. Eastbound Midway Road bypasses the Porter Road intersection while westbound Midway Road tees into Porter Road. The westbound left turn is stop controlled while the westbound right turn is yield controlled. The northbound and southbound approaches along Porter Road only allow through movements.

SR 113 / Midway Road is an unsignalized four-way intersection with stop control along the Midway Road approaches. The SR 113 approaches include left turn lanes and a shared through-right lane while the Midway Road approaches are a single lane. Midway Road is the designated truck route for the site.

SR 113 / Hay Road is an unsignalized T-intersection with stop control along the Hay Road approached. All approaches are single lanes.

SR 12 / SR 113 – Birds Landing Road is an unsignalized four-way, stop-controlled intersection. The SR 12 approaches include a left turn lane, a through lane and a right turn lane. Both the northbound Birds Landing Road approach and the SR 113 approach include a shared through-left lane and a right turn lane. Caltrans has an identified safety project that would construct a single lane roundabout at this intersection. Construction began in April 2019 and is slated for completion by October 2019. (Note to County: based on current project schedules, this may be completed prior to issuance of the Draft SEIR. Recommend leaving for now.)

Hay Road / Project Access is an unsignalized stop-controlled T-intersection that provides project access. Westbound Hay Road includes a through lane and a left turn lane while the eastbound approach includes a shared through-right lane. The project entrance is unstriped but wide enough to allow both right and left turning vehicles to queue.

Bicycle and Pedestrian Facilities

Due to the rural nature of the project location, there are no bike or pedestrian facilities present within the study area.

Transit Facilities

The Fairfield and Suisun Transit System (FAST), Rio Vista Delta Breeze, Solano Express and Vacaville City Coach all provide bus service in Solano County. These services provide local and intercity routes along the I-80 corridor; however, there are no routes along Midway Road or SR 113 within the study area.

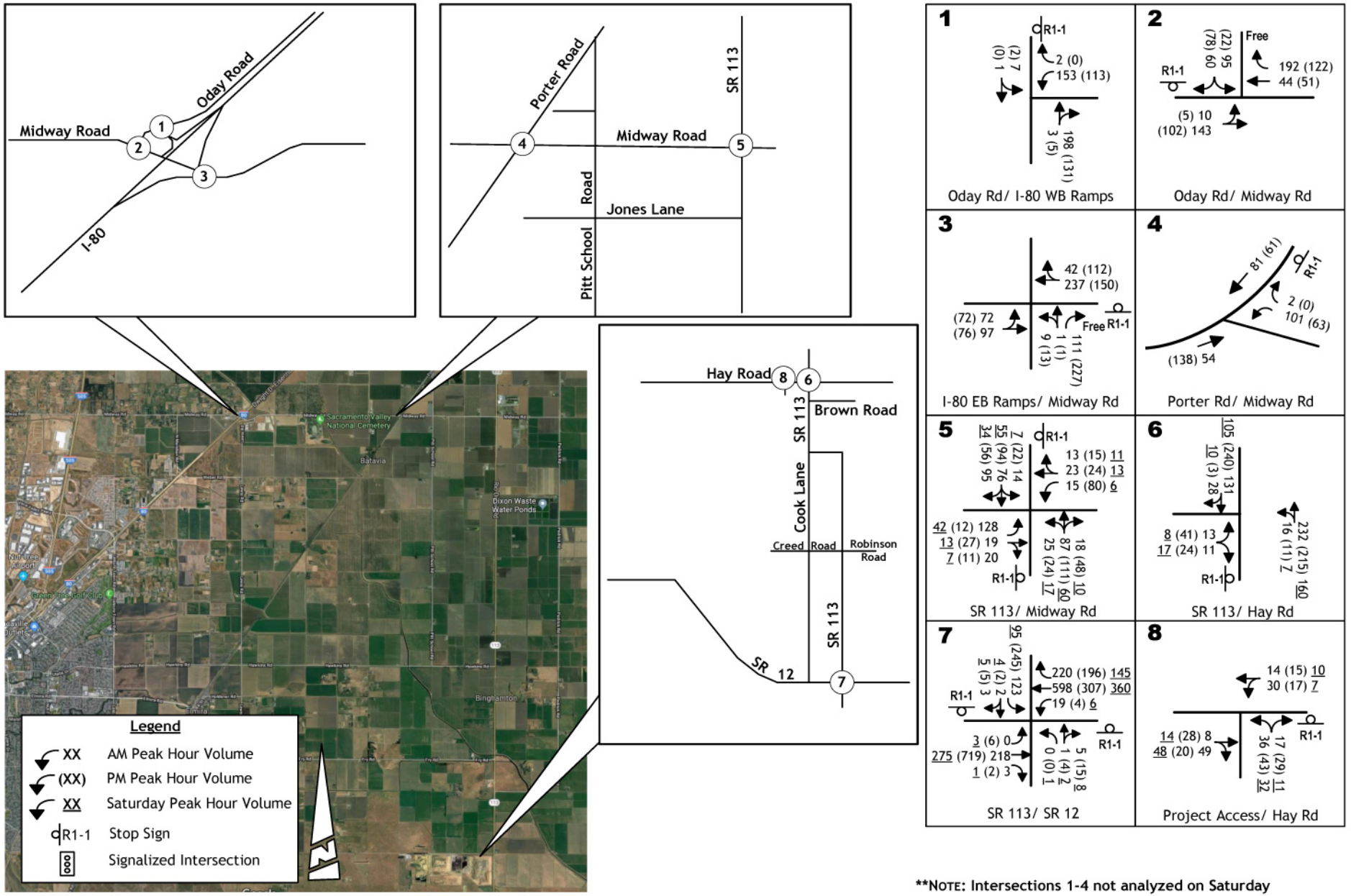
EXISTING TRAFFIC VOLUMES

Traffic Data Collection

AM and PM mid-week peak hour traffic counts were collected at the study intersections in late January and early February 2018. Traffic counts were also collected in late January 2018 at four study intersections (SR 113/Midway Road, SR 113/Hay Road, SR 113/SR 12, and Hay Road/Project Entrance) during the Saturday mid-day peak period. Due to the reopening of the I-80 / Midway Road interchange in July 2018, new counts were conducted at three study intersections (I-80 Westbound Ramps/Oday Road, Midway Road/Oday Road, and I-80 Eastbound Ramps/Midway Road) in early October 2018. Figure 4.11-1 presents the intersection turning movement volumes at each study intersection.

Intersection Level of Service

Study intersections and project driveways were analyzed using the concept of LOS. LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned to an intersection or roadway segment. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. Table 4.11-1 displays the delay range associated with each LOS category for signalized intersections, unsignalized intersections, and for roadway segments.



**NOTE: Intersections 1-4 not analyzed on Saturday

Source: Image prepared and provided by KD Anderson & Associates, Inc, in 2018

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Figure 4.11-1 Existing Traffic Volumes and Lane Configurations

Table 4.11-1 Level of Service Definitions

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
A	Uncongested operations, all queues clear in a single-signal cycle. Ave Delay ≤ 10 sec/veh	Little or no delay. Ave Delay ≤ 10 sec/veh	Completely free flow.
B	Uncongested operations, all queues clear in a single cycle. Delay > 10 sec/veh and ≤ 20 sec/veh	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
C	Light congestion, occasional backups on critical approaches. Delay >20 sec/veh and <35 sec/veh	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
D	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35 sec/veh and < 55 sec/veh	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
E	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay >55 sec and ≤ 80 sec/veh	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
F	Total breakdown, stop-and-go operation. Delay > 80 sec/veh	Intersection often blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Notes: sec/veh = seconds per vehicle

Source: Transportation Research Board 2010

LOS is based on and measured in terms of delay (seconds) per vehicle for the peak fifteen-minute analysis period. For unsignalized minor leg stop controlled intersections the movement with the worst delay approach movement is considered the critical LOS for the intersection. For multiway stop-controlled intersections the LOS is determined based on the overall average delay in the intersection.

Various methodologies exist to determine operating LOS at signalized intersections. The available techniques vary with regard to factors such as traffic signal timing, interaction between adjoining signals, etc. At unsignalized intersections the number of gaps in through traffic, gap acceptance time and corresponding delays for motorists waiting to turn are used for LOS analysis. Traffic operations at all study intersections were analyzed using procedures and methodologies contained in the Highway Capacity Manual, 2010 Edition (HCM 2010) for calculating delay at intersections.

Roadway Segment Level of Service

Roadway segments were analyzed using methods presented in HCM 2010. A two-lane highway is an undivided roadway with one lane in each direction. Passing a slower vehicle requires use of the opposing lane as sight distance and gaps in the opposing traffic stream permit. As volumes and geometric restrictions increase, the ability to pass decreases and platoons form. Motorists in platoons are subject to delay because they are unable to pass. The HCM divides these roadways into three types: Class I, Class II and Class III. They are defined as follows:

- *Class I two-lane highways* are highways where motorists expect to travel at relatively high speeds. Two-lane highways that are major intercity routes, primary connectors of major traffic generators, daily commuter routes, or major links in state or national highway networks are generally assigned to Class I. These facilities serve mostly long-distance trips or provide the connections between facilities that serve long-distance trips.

- *Class II two-lane highways* are highways where motorists do not necessarily expect to travel at high speeds. Two-lane highways functioning as access routes to Class I facilities, serving as scenic or recreational routes (and not as primary arterials), or passing through rugged terrain (where high-speed operation would be impossible) are assigned to Class II. Class II facilities most often serve relatively short trips, the beginning or ending portions of longer trips, or trips for which sightseeing plays a significant role.
- *Class III two-lane highways* are highways serving moderately developed areas. They may be portions of a Class I or Class II highway that pass through small towns or developed recreational areas. On such segments, local traffic often mixes with through traffic, and the density of unsignalized roadside access points is noticeably higher than in a purely rural area. Class III highways may also be longer segments passing through more spread-out recreational areas, also with increased roadside densities. Such segments are often accompanied by reduced speed limits that reflect the higher activity level.

Additional detail regarding roadway segment analysis methodology is provided in Appendix G of this Draft SEIR. Table 4.11-2 displays the criteria used to determine each LOS category for roadway segments.

Table 4.11-2 Roadway Segments LOS Definitions

LOS	Class I Highways		Class II Highways	Class III Highways
	ATS (mi / hr)	PTSF (%)	PTSF (%)	PFFS (%)
A	>55	≤35	≤40	>91.7
B	>50-55	>35-50	>40-55	>83.3 – 91.7
C	>45-50	>50-65	>55-70	>75.0 – 83.3
D	>40-45	>65-80	>70-85	>66.7 – 75.0
E	≤40	>80	>85	≤66.7

Notes: LOS = Level of Service, ATS = Average Travel Speed, PTSF = Percent Time Spent Following, PFFS = Percent of Free-Flow Speed

Source: Transportation Research Board 2010

EXISTING INTERSECTION OPERATIONS

Table 4.11-3 summarizes existing LOS at the study area intersections during AM and PM peak hours. Saturday peak hour LOS was also calculated along the SR 113 intersections and at the Hay Road / Project Entrance intersection. Sunday traffic was reviewed at the project site and was consistently lower than Saturday traffic; therefore, the weekend analysis included only Saturday. All intersections except for the SR 12 / SR 113 intersection currently operate at LOS C or better. The SR 12/ SR 113 intersection operates at LOS E in the AM peak hour and LOS F in the PM peak hour. This intersection meets the peak hour signal warrant in the AM peak hour. Caltrans has an identified safety improvement at this intersection which will construct a single lane roundabout. This project is identified for completion in the fall 2019.

Table 4.11-3 Existing Peak Hour Levels of Service at Intersections

Location	Control	Existing AM Peak Hour		Existing PM Peak Hour		Existing Saturday Peak Hour		Peak Hour Warrant Met?
		LOS	Average Delay (secs)	LOS	Average Delay (secs)	LOS	Average Delay (secs)	
I-80 Westbound Ramps / Oday Rd	Westbound							No
Southbound Left	Stop	A	6.7	A	7.5	---	---	
Westbound		B	10.3	A	9.6	---	---	
Midway Road/ Oday Rd	Southbound							No
Southbound	Stop	B	11.0	A	9.8	---	---	
Eastbound Left		A	7.8	A	7.6	---	---	
I-80 Eastbound Ramps / Midway Rd	Northbound							No
Northbound	Stop	B	13.0	B	12.2	---	---	
Eastbound Left		A	8.1	A	8.1	---	---	
Midway Rd / Porter Rd	Westbound							No
Westbound	Stop	A	9.0	A	8.8	---	---	
SR 113 / Midway Rd	Eastbound/							No
Northbound Left	Eastbound	A	7.7	A	7.6	A	7.5	
Southbound Left	Stop	A	7.5	A	7.6	A	7.4	
Eastbound		B	13.7	B	12.0	B	10.5	
Westbound		B	11.4	B	13.7	A	9.9	
SR 113 / Hay Rd	Eastbound							No
Northbound Left	Stop	A	7.6	A	7.8	A	7.5	
Eastbound		B	10.6	B	12.1	A	9.5	
SR 113 / SR 12	Northbound /							Yes
Northbound	Southbound	C	24.1	C	17.8	B	12.0	
Southbound	Stop	E	38.8	F	373.3	C	20.5	
Eastbound Left		A	0.0	A	8.6	A	8.6	
Westbound Left		A	7.8	A	9.3	A	7.9	
Hay Rd / Project Entrance	Northbound							No
Northbound	Stop	A	9.2	A	9.1	A	9.0	
Westbound Left		A	7.4	A	7.3	A	7.4	

Notes: LOS = Level of Service

Source: KDA 2018

EXISTING ROADWAY SEGMENT OPERATIONS

Table 4.11-4 summarizes the study roadway segment LOS based on the existing traffic volumes and roadway configuration. Applicable LOS thresholds and roadway classifications are presented. The LOS along Midway Road, SR 113, and Hay Road were analyzed using the HCS two-lane roadway methodology. Study roadway segments along both County study roadways (Midway Road and Hay Road) will operate at LOS C or better while the study roadway segments along SR 113 operate at LOS D or better. Therefore, all study roadway segments are currently operating at acceptable levels.

Table 4.11-4 Existing Roadway Segment Levels of Service

Roadway	Location	Facility Classification	ATS/PTSF/LOS Existing AM	ATS/PTSF/LOS Existing PM
Midway Rd	I-80 to Porter Rd	Class I Highway		
	Eastbound		46.6 / 42.8 / C	45.9 / 55.0 / C
	Westbound		46.5 / 53.3 / C	46.0 / 49.8 / C
	Porter Rd to SR 113	Class I Highway		
	Eastbound		48.2 / 35.3 / C	50.0 / 13.9 / B
	Westbound		48.0 / 30.5 / C	50.2 / 28.1 / B
SR 113	Midway Rd to Fry Rd	Class I Highway		
	Northbound		47.7 / 29.1 / C	45.9 / 36.8 / C
	Southbound		47.5 / 25.0 / C	45.9 / 37.3 / C
	Fry Rd to Hay Rd	Class I Highway		
	Northbound		45.8 / 44.2 / C	44.8 / 46.1 / D
	Southbound		45.6 / 31.7 / C	44.8 / 43.8 / D
	Hay Rd to SR 12	Class I Highway		
	Northbound		46.1 / 48.2 / C	44.9 / 45.3 / D
	Southbound		45.7 / 30.5 / C	44.9 / 50.4 / D
Hay Rd	SR 113 to Daily Rd	Class I Highway		
	Eastbound		49.7 / 24.9 / C	49.5 / 26.4 / C
	Westbound		49.7 / 24.9 / C	49.4 / 15.1 / C

Notes: LOS = Level of Service; ATS = average travel speed; PTSF = percent time spent following
Source: KDA 2018

4.11.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Project Elements Affecting Traffic and Transportation

As noted in Chapter 3, "Project Description," the project would amend the existing Land Use Permit (LUP) by allowing up to 3,400 tons of refuse to be delivered to the site, while maintaining an average 7-day average of 3,200 tons per day. The LUP also limits vehicles travelling to and from the landfill and JPO to 620 per day, averaged over a 7-day period. As shown in Table 4-11-5, the current 7-day average of vehicles travelling to and from the landfill is less than 500.

During 2017 and 2018, the landfill assisted in the disposal of fire debris from wildfires in Northern California (i.e., emergency conditions), which resulted in the temporary increase in allowable tonnage within the disposal area and additional vehicles travelling to and from the landfill. Table 4.11-5 identifies the annual tonnage received, with and without the fire debris and the number of vehicles travelling to and from the landfill during those periods. Because the acceptance of fire debris was in response to an emergency condition, the additional tonnage received, and trips conducted were not subject to the established limits within the LUP for the landfill. As a result, use of either 2017 or 2018 tonnage data as part of the baseline against which the potential impacts of an amended LUP does not represent the landfill's typical operating condition. Therefore, the 2016 tonnage received, and vehicle trips was determined within the TIA to be the appropriate baseline for the existing landfill against which to assess the potential net growth in vehicles travelling to and from the landfill as a result of the project.

Table 4.11-5 Historical Annual Tonnage 2016 – 2018

Year	Baseline Tonnage	Baseline Vehicles
2016	**1,682**	**425**
2017 (with fire debris)	1,947	471
2018 (with fire debris)	2,083	465

Notes: **Bold** = Baseline
Source: KDA 2018

In addition, due to recent import restrictions imposed by China on recyclable materials, baled, single-stream recyclable materials are planned to be temporarily stored at the RHR Landfill site until the restrictions are lifted and/or new markets are developed to accept the material. The landfill site is proposing to store up to 3,680 bales for up to 6 months before being transported to offsite processing facilities. Each truck delivering bales would contain approximately 50 bales. The project applicant proposes to deliver on average five trucks per day and up to twenty trucks on a given day of baled recyclable materials. If deliveries were to occur daily the landfill would reach its storage limit in 4 to 15 days. It is assumed that similar outbound shipments would be made to the processing facilities or buyer, however, the potential destination of the material is not known at this time. Trucks could return to the San Francisco Bay Area along westbound I-80, head east toward Sacramento along eastbound I-80, or head east toward Stockton via SR 12.

Because a reasonable projection of the number of vehicles (591) traveling to the landfill with implementation of the proposed project are not anticipated to exceed the daily vehicle limit (620) evaluated in this analysis, the potential additional truck trips associated with the delivery of bales to the landfill is within the modeling results identified above. A further qualitative assessment was conducted to determine what impacts the addition of five trucks per day would have on the local road system. As noted above the site could be filled in 15 days with no additional storage available until onsite material is shipped offsite. It is expected that the maximum of 20 truck shipments could occur on a rare basis, with the five-truck average being more likely, given the amount of storage space available and the expected storage time. With five trucks delivering recyclables and five trucks hauling recyclables to a processing facility this would add 10 round trip truck trips per day to the roadway network. While delivery and shipping times are unknown Recology has indicated in their Bale Storage Management Plan that they would attempt to avoid peak hours to the extent possible. All bales would be shipped along I-80 with 75 percent of the baled material west of the Midway Road interchange and 25 percent of the baled material east of the interchange. Thus, because the vehicular trips associated with recyclable material storage activities are not anticipated to occur during the peak hours of traffic on the surrounding roadway network, and the additional trips would not occur every day and would be part of the daily fluctuation in traffic, these additional trips were not included as part of the intersection or roadway analyses that follows. For additional details and a qualitative analysis of the impacts of the trips associated with the recyclable material trips, see Appendix G of this Draft SEIR.

Other Considerations

A single lane roundabout is being constructed by Caltrans at the intersection of SR 12, SR 113, and Birds Landing Road to reduce traffic safety issues by streamlining the flow of traffic through the intersection, removing the need for vehicles to cross highways. The intersection improvement project is scheduled for completion in October 2019. The roundabout is funded through the 2014 State Highway Operation and Protection Program (SHOPP), under the Safety Improvements Program, Program Code 201.010 (Caltrans 2016). Therefore, the Existing Plus Project scenario intersection operations modeling assumes the roundabout will be completed and in place before implementation of the project.

Project Trip Generation

The 2016 7-day tonnage averaged approximately 1,682 tons per day. RHR projects that most new municipal solid waste (MSW) associated with the proposed project will arrive from outside the surrounding local areas and would be transported using semitrailer. MSW tonnage arriving to the site is projected as follows:

- 90 percent via 20-ton transfer trucks,
- 8 percent via 7-ton packer trucks, and
- 2 percent via ½-ton self-haul vehicles.

Table 4.11-6 presents the new projected-generated vehicular trips, broken down by vehicle type, based on the proposed expansion of the site. Both average daily and peak day MSW tonnage to the site were considered. Peak tonnage was based on the difference between the maximum proposed peak tonnage per day (maximum 3,400 tons per day) and the average 2016 weekday tonnage (1,682 tons per day). The project will generate an additional 1,718 tons of MSW on a peak day while the additional average daily MSW will be 1,518 tons per day.

Table 4.11-6 Projected Daily Trips*

Average MSW Tons		Average Daily Tonnage per Week (Proposed)	Maximum Daily Tonnage (Proposed)	Net New Tonnage	
(a)	(b)	(c)	(d)	(e)	(f)
Weekday	Weekend			Weekday	Maximum
1,682	924	3,200	3,400	1,518[1]	1,768[2]

PEAK TONNAGE VEHICLES							
Maximum Daily Tonnage	Transfer Trucks 90% of entering vehicles (20 tons / vehicle)		Packer Trucks 8% of entering vehicles (7 tons / vehicle)		Self-Haul vehicles 2% of entering vehicles (0.5 tons / vehicle)		Total Vehicles
(g)	In	Out	In	Out	In	Out	
1,718 (Inbound)	91[3]		23[4]		81[5]		195
Empty (Outbound)		91		23		81	195

Notes: MSW – municipal solid waste

* Based on 2016 traffic at RHR site

1 (c) – (a)

2 (d) – (a)

3 [(g)*0.90] / 20

4 [(g)*0.08] / 7

5 [(g)*0.02] / 0.5

Source: KDA 2018

As shown in Table 4.11-6, based on the projected additional daily tonnage and the mix of vehicle types bringing MSW to the site it is projected that 195 new inbound and 195 new daily outbound trips will be generated by the project. Of these trips, 91 new semi-trailer trips will be generated, with 23 additional packer trucks and 81 new self-haul vehicles.

Table 4.11-7 presents the projected AM and PM peak hour trips including a breakdown by trip type. On a peak day the project is expected to generate 46 additional AM peak hour trips and 27 additional PM peak hour trips.

Table 4.11-7 Projected Peak Hour Trips

Existing Conditions				
Avg Total Daily Vehicles	AM		PM	
	In	Out	In	Out
526 vehicles*	69†	53†	3‡	53‡
Percent Traffic◊	13.1%	10.1%	0.6%	13.1%
Project Traffic				
New Daily Vehicles	AM		PM	
	In	Out	In	Out
195 vehicles				
Peak Hour Traffic	26♦	20	1	26
Transfer Truck	12ϕ	9	1	12
Packer	3μ	2	0	3
Self-Haul	11β	8	0	11

Notes:

* average entering midweek vehicles

† existing AM peak hour traffic

‡ existing PM peak hour traffic

◊ directional peak hour traffic / ADT

♦ (195 daily vehicles* 13.1%) typ.

ϕ 26*(91/195) typ.

μ 26*(23/195) typ.

β 26*(81/195) typ.

Source: KDA 2018

Saturday traffic volumes are projected to be similar to mid-week traffic volumes. Table 4.11-8 presents the projected Saturday peak hour trips based on current inbound and outbound peak hour Saturday trips relative to the total daily Saturday trips.

Table 4.11-8 Projected Saturday Daily Trips

Existing Conditions						
Average Total Daily Vehicles			In	Out		
459 vehicles			55†	43‡		
Percent Traffic			12.0%	9.4%		
Project Traffic						
Transfer Trucks		Packer Trucks		Self-Haul Vehicles		Total Vehicles
In	Out	In	Out	In	Out	
11 [1]	9 [2]	3 [3]	2 [4]	10 [5]	8 [6]	43

Notes:

† entering Saturday vehicles

‡ exiting Saturday vehicles

[1] (91 weekday transfer trucks) * 12.0%

[2] (91 weekday transfer trucks) * 9.4%

[3] (23 weekday packer trucks) * 12.0%

[4] (23 weekday packer trucks) * 9.4%

[5] (81 weekday self-haul) * 12.0%

[6] (81 weekday self-haul) * 9.4%

Source: KDA 2018

Project Trip Distribution

The distribution of project vehicular traffic was determined based on the haul routes for semi-trailer and packer vehicles, and a review of existing traffic counts at the surrounding intersections. Table 4.11-9 displays the trip distribution assumptions used for the analysis of the project.

Table 4.11-9 Trip Distribution

Route	Percent of Total Trips		
	AM	PM	Saturday
	62	46	48
West on Hay Road	20	30	30
To / From SR 12 east of SR 113	9	8	10
To / From SR 12 west of SR 113	0	8	6
North on SR 113	9	8	6
Total	**100**	**100**	**100**

Source: KDA 2018

Project Trip Assignment

Traffic generated by the project was assigned to the study roadway system based on the projected distribution percentages. Figure 4.11-2 displays the project generated traffic. Figure 4.11-3 displays the resulting sum of existing AM, PM and Saturday peak hour volumes and project trips at the study intersections for the Existing Plus Project condition.

SIGNIFICANCE CRITERIA

The significance criteria used to evaluate the project-related impacts to transportation under CEQA are based on Appendix G of the CEQA Guidelines, and thresholds of significance adopted by Solano County and Caltrans. Recent amendments to the CEQA Guidelines on December 28, 2018 allow for the removal of LOS as the primary metric for assessing transportation impacts of a project and its replacement with VMT. However, the amendments also allow lead agencies until July 2020 to adopt appropriate thresholds for the evaluation of VMT as the primary metric of

transportation impact significance under CEQA. As the County has yet to adopt VMT significance thresholds based on evidence and because lead agencies may tailor the thresholds identified in Appendix G of the CEQA Guidelines to suit the individual agency needs and circumstances, LOS will be used as the primary metric for impact determination in this section.[1]

Section 1-4 of the Solano County Road Improvement Standards and Land Development Requirements (2006) states that it is the goal of Solano County to maintain LOS C for roadways segments and intersections. Additionally, all projects shall be designed to maintain LOS C for all Solano County roadway facilities, except where the existing facility currently operates below LOS C, in which case, the project shall be designed such that there will be no decrease in the existing LOS. Caltrans has set a minimum LOS standard of LOS D for roadway segments and intersections in rural areas. Therefore, for the purposes of this analysis an impact is considered significant if implementation of the project would result in any of the following:

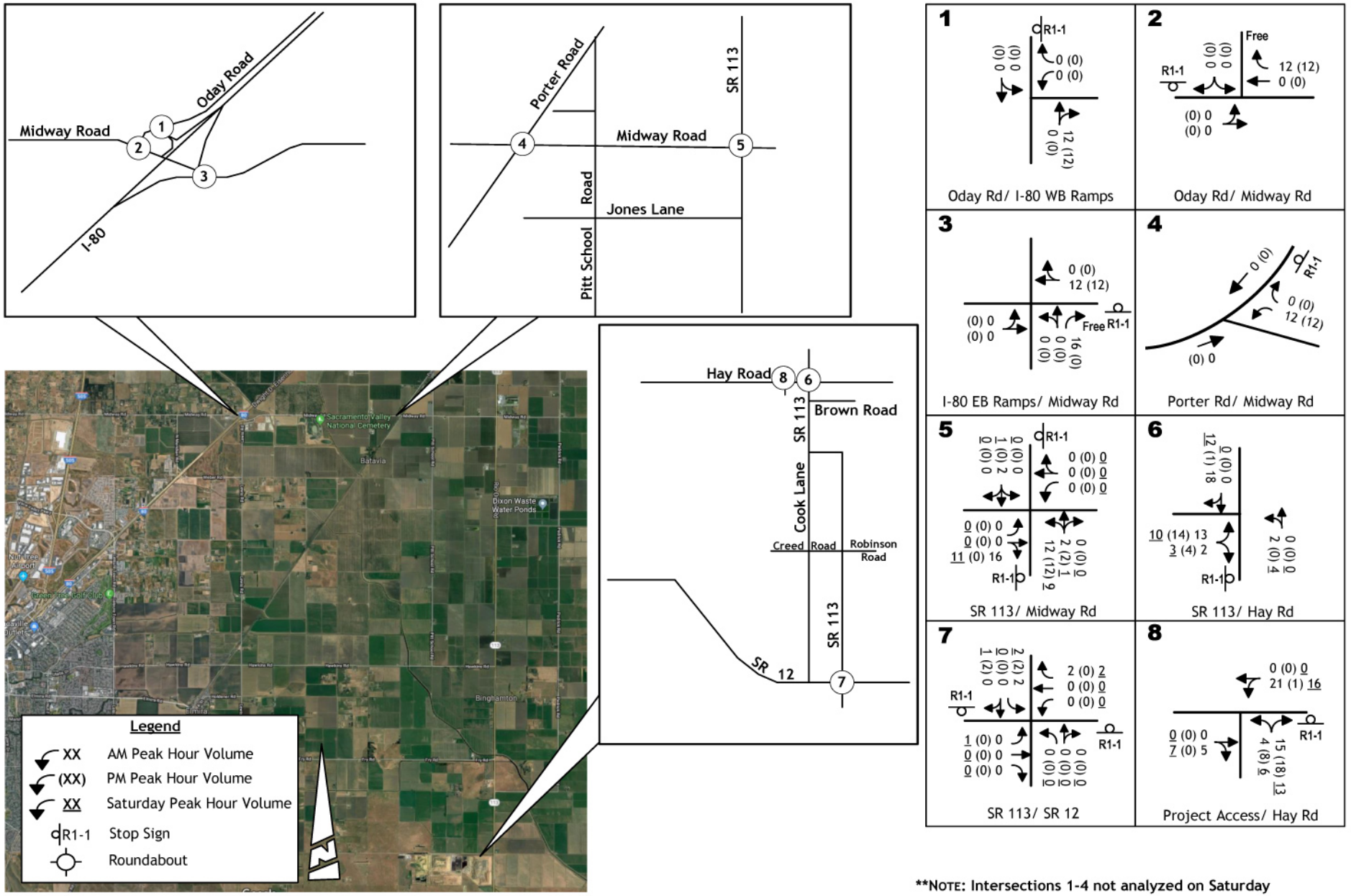
Intersections

- traffic generated by the project causes an intersection within Solano County that currently operates (or is projected to operate) at LOS C or better to degrade to LOS D or worse; or
- traffic generated by the project decreases the LOS (i.e., increases delay) at an intersection in Solano County that currently operates (or is projected to operate) at LOS D or worse; or
- traffic generated by the project causes a Caltrans intersection that currently operates (or is projected to operate) at LOS D or better to degrade to LOS E or worse; or
- traffic generated by the project decreases the LOS (i.e., increases delay) at a Caltrans intersection that currently operates (or is projected to operate) at LOS E or worse.

Roadway Segments

- traffic generated by the project causes a Solano County roadway segment that currently operates (or is projected to operate) at LOS C or better to degrade to LOS D or worse; or
- traffic generated by the project decreases the LOS (i.e., decreases average travel speed [ATS] and/or increases percent time spent following [PTSF]) along a roadway segment in Solano County that currently operates (or is projected to operate) at LOS D or worse; or
- traffic generated by the project causes a Caltrans roadway segment that currently operates (or is projected to operate) at LOS D or better to degrade to LOS E or worse; or
- traffic generated by the project decreases the LOS (i.e., decreases ATS and/or increases PTSF) along a Caltrans roadway segment that currently operates (or is projected to operate) at LOS E or worse.

[1] An evaluation of VMT is presented in Section 4.7, "Greenhouse Gas Emissions" as it relates to the generation of GHG emissions through motor vehicle use.

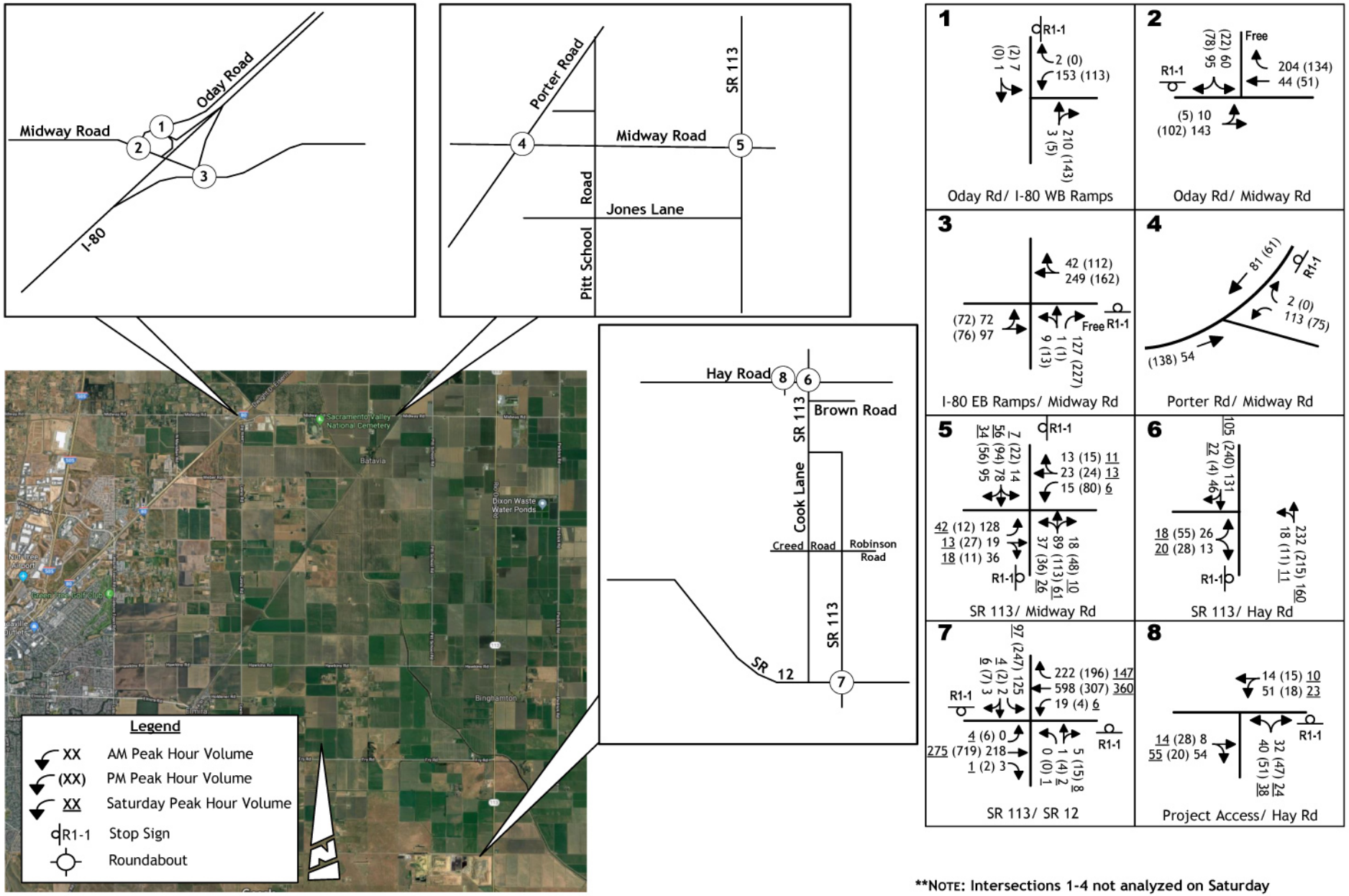


**NOTE: Intersections 1-4 not analyzed on Saturday

Source: Image prepared and provided by KD Anderson & Associates, Inc, in 2018

X17010046.01 012

Figure 4.11-2 Project Volumes and Lane Configurations



**NOTE: Intersections 1-4 not analyzed on Saturday

Source: Image prepared and provided by KD Anderson & Associates, Inc, in 2018

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Figure 4.11-3 Existing Plus Project Volumes and Lane Configurations

ISSUES NOT DISCUSSED FURTHER

There are no transit facilities or transit routes within the project study area; and thus, the project would not affect operations of existing transit lines, nor would it degrade access to transit. Therefore, the project would not adversely affect public transit operations. Additionally, implementation of the project would not generate new demand for transit trips; and thus, would not result in demands to transit facilities greater than available capacity. This issue is not discussed further in this SEIR.

There are no bike facilities or pedestrian facilities present within the study area. Therefore, the project would not disrupt any existing or planned bicycle/pedestrian facilities, nor would it create inconsistencies with any adopted plans, guidelines, policies or standards related to bicycle or pedestrian systems. This issue is not discussed further in this SEIR.

The project would not result in the alteration to the existing roadway network; and thus, would not increase hazards because of a design feature. The mix of vehicles generated by the project (i.e., transfer trucks, packer trucks, self-haul vehicles) are generally consistent with the existing vehicle types using the surrounding roadway network to access the project site. Therefore, the project would not increase hazards because of incompatible uses. This issue is not discussed further in this SEIR.

The project would not result in alteration to the existing roadway network, nor would it change or increase the size of vehicles that may travel to and from the project site. Thus, existing emergency access would be maintained, and adequate emergency access would be provided. This issue is not discussed further in this SEIR.

The closest airfield to the RHR Landfill is Travis Airforce Base, located approximately 3.3 miles southwest of the project site. The project would not involve the construction of tall structures such that potential interference with existing flight patterns may occur. Thus, the project would not result in a change in air traffic patterns such that significant physical environmental impacts could occur, nor would it result in the construction and operation of uses within the study area that may be incompatible with the nearby airfield. This issue is not discussed further in this SEIR. With respect to the risk of bird strikes as a result of increased wildlife activity as a result of the project, refer to Section 4.8, "Hazards and Hazardous Materials."

PROJECT IMPACTS AND MITIGATION MEASURES

Potential impacts of the project on the transportation system are evaluated in this section based on the thresholds of significance and analysis results. Mitigation measures are recommended for any identified significant impacts.

Impact 4.11-1: Impacts to Intersection Operations

Implementation of the project would add an estimated 46 AM peak hour, 27 PM peak hour, and 43 Saturday peak hour trips to the roadway network in the study area. Based on the traffic modeling and analysis, all study intersections would operate at acceptable LOS with the addition of project-generated trips. This impact would be **less than significant**.

Existing Plus Project traffic volumes account for the addition of project-generated vehicle trips to the existing volumes in accordance with the trip distribution previously presented. Figure 4.11-3 displays the resulting AM, PM, and Saturday peak hour intersection traffic volumes under Existing Plus Project conditions

Table 4.11-10 displays the AM, PM, and Saturday peak period LOS at each study intersection under Existing Plus Project conditions. Refer to Appendix G of this Draft SEIR for detailed modeling and technical calculations.

Table 4.11-10 Existing PLUS Peak Hour Levels of Service at Intersections

Location	Control	Existing Plus Project AM Peak Hour		Existing Plus Project PM Peak Hour		Existing Plus Project Saturday Peak Hour		Peak Hour Warrant Met?
		LOS	Average Delay (secs)	LOS	Average Delay (secs)	LOS	Average Delay (secs)	
I-80 Westbound Ramps / Oday Rd	Westbound Stop							No
Southbound Left		A	7.7	A	7.5	---	---	
Westbound		B	10.3	A	9.6	---	---	
Midway Road / Oday Rd	Southbound Stop							No
Southbound		B	11.1	A	9.8	---	---	
Eastbound Left		A	7.8	A	7.6	---	---	
I-80 Eastbound Ramps / Midway Rd	Northbound Stop							No
Northbound		B	13.2	B	12.4	---	---	
Eastbound Left		A	8.2	A	8.1	---	---	
Midway Rd / Porter Rd	Westbound Stop							No
Westbound		A	9.1	A	8.9	---	---	
SR 113 / Midway Rd	Westbound Stop/ Eastbound Stop							No
Northbound Left		A	7.7	A	7.7	A	7.5	
Southbound Left		A	7.5	A	7.6	A	7.4	
Eastbound		B	14.3	B	12.3	B	10.5	
Westbound		B	11.8	B	14.2	B	10.0	
SR 113 / Hay Rd	Eastbound Stop							No
Northbound Left		A	7.6	A	7.8	A	7.5	
Eastbound		B	11.2	B	12.5	A	9.9	
SR 113 / SR 12	Roundabout	A	7.1	C	19.1	---	---	N/A
Hay Rd / Project Entrance	Northbound Stop							No
Northbound		A	9.5	A	9.3	A	9.2	
Westbound Left		A	7.4	A	7.3	A	7.4	

Notes: LOS = Level of service, SR = State Route

Source: KDA 2018

As shown in Table 4.11-10, all intersections would operate at acceptable LOS (i.e., LOS C or better for Solano County intersections, LOS D or better for Caltrans intersections) with the addition of project-generated trips to the study intersections under Existing Plus Project conditions. Therefore, this impact would be **less than significant.**

Mitigation Measures

No mitigation is required.

Impact 4.11-2: Impacts to Roadway Segment Operations

Implementation of the project would add an estimated 46 AM peak hour and 27 PM peak hour trips to the roadway network in the study area. Based on the traffic modeling and analysis, all study roadway segments would operate at acceptable LOS with the addition of project-generated trips. This impact would be **less than significant**.

Table 4.11-11 displays the results of the AM and PM peak hour roadway segment operations analysis for each of the six study roadway segments. Refer to Appendix G of this Draft SEIR for detailed modeling and technical calculations.

Table 4.11-11 Existing Plus Project Roadway Segment Levels of Service

Roadway	Location	Facility Classification	ATS/PTSF/LOS	ATS/PTSF/LOS
			Existing Plus Project AM	Existing Plus Project PM
Midway Rd	I-80 to Porter Rd Eastbound Westbound	Class I Highway	 46.4 / 45.4 / C 46.3 / 55.3 / C	 45.8 / 55.6 / C 45.9 / 51.3 / C
	Porter Rd to SR 113 Eastbound Westbound	Class I Highway	 47.9 / 37.5 / C 47.6 / 32.3 / C	 49.8 / 13.3 / C 50.1 / 29.6 / B
SR 113	Midway Rd to Fry Rd Northbound Southbound	Class I Highway	 47.2 / 31.0 / C 47.0 / 28.1 / C	 45.7 / 38.5 / C 45.7 / 37.7 / C
	Fry Rd to Hay Rd Northbound Southbound	Class I Highway	 45.3 / 45.3 / C 45.3 / 34.0 / C	 44.7 / 47.8 / D 44.7 / 44.1 / D
	Hay Rd to SR 12 Northbound Southbound	Class I Highway	 46.0 / 48.5 / C 45.7 / 30.9 / C	 44.8 / 45.0 / D 44.8 / 50.7 / D
Hay Rd	SR 113 to Daily Rd Eastbound Westbound	Class I Highway	 49.0 / 27.2 / C 49.0 / 21.8 / C	 49.3 / 29.3 / C 49.2 / 13.1 / C

Notes: ATS = average travel speed, PTSF = percent time spent following, LOS = Level of service, SR = State Route

Source: KDA 2018

As shown in Table 4.11-11, all Solano County study roadway segments would operate at LOS C or better during the AM and PM peak hours. Additionally, all Caltrans study roadway segments (i.e., roadway segment along SR 113) would operate at LOS D or better during the AM and PM peak hours. Therefore, all study roadway segments would operate at acceptable LOS during both the AM and PM peak hours with the addition of project generated traffic under Existing Plus Project conditions. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 4.11-3: Impacts to Local Roadways

Operation of the project could cause additional damage to local roadways within the vicinity of the landfill. Compliance with the Road and Litter Agreement between Recology and Solano County would ensure that any additional road damage caused by facility operations are paid for by RHR. Therefore, this impact would be **less than significant**.

The existing agreement between the County and RHR requires the facility operator to pay for road damage caused by their operations (2016 RHR Road and Litter Agreement), and this agreement is updated periodically based on road conditions. If any additional road damage associated with the proposed increase in truck trips occurred, the terms of the existing agreement would continue to govern and RHR would be responsible for the repair of landfill-related road damage. Thus, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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