



May 6, 2013

JN 133035

Mr. Gary Larson  
**Hilltop Group, Inc.**  
807 East Mission Road  
San Marcos, CA 92069

**Subject: Preliminary Traffic Assessment**  
County Project Number: 3500 08-015  
North County Environmental Resources (Parcel #187-100-37)

Dear Mr. Larson:

RBF Consulting has prepared this Preliminary Traffic Assessment on behalf of North County Environmental Resources for their property located at 25568 Mesa Rock Road, Escondido. The project site is located near the intersection of Mesa Rock Road and Centre City Parkway, west of I-15. An initial assessment was submitted to the County in October 2008. Since that time, the land use and circulation patterns for the project have changed and are reflected in this updated report.

### **Traffic Assessment**

The project is located west of I-15 along Mesa Rock Road. Access to the site is currently provided from a full access driveway approximately 400 feet north of where Mesa Rock Road curves east and intersects with Centre City Parkway. The project will relocate the access point approximately 120 feet north of the existing access point to resolve existing line of sight issues.

### **Site Function**

The site is currently occupied by a security trailer. The project being submitted by the applicant is for a recycling center. The recycling center will be operational from 5:00 a.m. to 7:00 p.m. Monday through Saturday and will be operated by up to 18 employees. The facility will not be open to the general public. The employees will operate out of a 12,000 square foot permanent metal building. Inbound green and construction/ demolition waste trucks will fluctuate between 6 and 8 trucks per day. Export trucks will range from 1 to 2 trucks per day and will transport recycled materials off site. The project site consists of 35.5 acres of which approximately 20 acres will be graded as five pads and an access road to be used for processing and storing recycling materials. The project will be served by a private sixty (60) foot paved easement road off Mesa Rock Road through five of the commonly owned parcels to service the area to be operated as the recycling center.

The grading of the project site will require an estimated 72,000 cubic yards of dirt materials to be imported to the site. The importing will occur over a six-month to one-year period depending on the

availability of dirt materials. The volume of traffic associated with the import material will not exceed the forecast volumes addressed in this study. Therefore, no additional construction impacts are forecast to occur with the import process. Traffic control plans may be required at the entrance to the proposed recycling center to address inbound and outbound construction traffic.

### **Traffic Generation**

The site will be maintained and operated by a staff of no more than 18 employees on a daily basis. Both SANDAG and ITE Trip Generation rates were reviewed to determine appropriate trip generation rates for the project site. Neither ITE nor SANDAG have published rates for the proposed use. Because reliable trip generation rates were not available from published sources, the trip generation rates for this site were determined based on zoning and permit limitations.

Of the 18 employees required to operate the facility, half will arrive when the facility opens (5:00- 6:00 a.m.) The other half will arrive midday (12:00-1:00 p.m.). Deliveries to the facility and export trips will occur throughout the day. It is assumed that approximately 13% of the delivery trucks arrive in the a.m. peak and 15% in the p.m. peak. These delivery percentages are based upon peak hour percentages included in the SANDAG (April 2002) trip generation rates for a warehouse use.

A passenger car equivalency (PCE) factor of 2.0 was applied to the delivery and export truck trips generated by the project to account for the additional impact of heavy vehicles.

The existing security trailer will remain on site. The trailer will serve as residence to provide 24 hour security on site. SANDAG trip rates for an apartment use were applied to this use.

Table 1 summarizes the forecast daily and peak hour traffic associated with the proposed use. As shown in Table 1, the proposed recycling center is forecast to generate approximately 110 trips per day, with approximately 29 trips occurring during the a.m. peak hour and 32 trips occurring during the p.m. peak hour.

**Table 1  
Forecast Project Generated Traffic**

Use	Unit	Daily Trips	AM Peak			PM Peak			
			Total	In	Out	Total	In	Out	
<b>Trip Generation Rates</b>									
Employees	employee	2	25%	100%	0%	25%	0%	100%	
Delivery/ Import Trucks	truck	2	13%	70%	30%	15%	40%	60%	
Export Trucks	truck	2	25%	30%	70%	25%	70%	30%	
Onsite Security (Residence)	DU	6	8%	20%	80%	9%	70%	30%	
<b>Forecast Project Generated Trips</b>									
Employees	18	employees	36	9	9	0	9	0	9
Delivery/ Import Trucks <sup>(1)</sup>	15	trucks	60	16	11	5	18	7	11
Export Trucks <sup>(1)</sup>	2	trucks	8	4	1	3	4	3	1
Onsite Security (Residence)	1	DU	6	0	0	0	1	1	0
<b>Total</b>			<b>110</b>	<b>29</b>	<b>21</b>	<b>8</b>	<b>32</b>	<b>11</b>	<b>21</b>

DU = Dwelling Unit

<sup>(1)</sup> A PCE factor of 2.0 was applied to all truck trips.

**Distribution of Project Related Traffic**

Based on the location of this facility and proximity to I-15, it is assumed that 85% of the employee trips will travel north of the site to access Deer Springs Road and I-15. Of that 85%, 80% are assumed to distribute onto I-15, with 40% in each direction. The other 5% of the trips are assumed to travel on Deer Springs Road west of Mesa Rock Road. The remaining 15% of project trips are assumed to travel south of the project on Mesa Rock Road and Centre City Parkway toward Escondido and SR-78.

The project proposes a truck route in which all truck trips will use Centre City Parkway to Mesa Rock Road to access the project site. From the I-15/Deer Springs Road interchange, all trucks will travel south on Centre City Parkway to Mesa Rock Road and proceed through the underpass to the west side of I-15 and the project site. Trucks exiting the site will travel north on Centre City Parkway to Deer Springs Road and I-15. Exhibit 1 illustrates the proposed truck route to and from the project site. Exhibit 2 shows the trip distribution for the truck trips.

It is assumed that employee and other passenger car trips traveling from and to the I-15/Deer Springs Road interchange will use Mesa Rock Road to access the project site. Exhibit 3 shows the trip distribution for the employee trips.

Project trips were assigned to the study roadway network based on the trip distribution for the truck and passenger car trips shown in Exhibits 2 and 3. Exhibit 4 shows the daily and peak hour project trip assignment.

## **Traffic Operating Conditions**

Daily traffic volumes were collected along Mesa Rock Road and Centre City Parkway in 2008. Since the traffic data was collected, no significant changes to land use or road conditions have occurred. RBF reviewed traffic count data collected in 2011 to determine ambient growth in the area. Daily traffic counts collected on Mesa Rock Road in 2011 showed that traffic increased by approximately 5% since 2008. Therefore, a 5% growth factor was applied to the 2008 counts to account for growth in the region. The adjusted existing conditions traffic volumes are illustrated in Exhibit 5. Project generated traffic was added to the adjusted existing conditions volumes based on distribution percentages presented earlier in this report. The existing plus project peak hour and daily traffic volumes are illustrated in Exhibit 6.

Table 2 summarizes the results of the roadway segment analysis. The roadway classifications and capacity thresholds provided in Table 2 are based on the County of San Diego Public Road Standards (March 2012). The currently constructed classification and capacity thresholds were used to determine level of service for the study roadway segments. As shown in Table 2, the two study roadway segments currently operate at LOS C or better and are forecast to continue operating at LOS C or better with the addition of project-related traffic to existing traffic volumes. Utilizing the SANDAG 2035 traffic volumes, the roads would operate at LOS C or D.

**Table 2  
Roadway Segment Analysis**

Road Segment	Existing (Constructed) Classification	Capacity Threshold (LOS D)	Existing		Project Added Traffic	Existing Plus Project	
			ADT	LOS		ADT	LOS
<b>Mesa Rock Road</b> – Deer Springs to Project Driveway	Light Collector (2.2E)	10,900	462	A	36	498	A
<b>Centre City Parkway</b> – Deer Springs to Mesa Rock Road	Light Collector (2.2E)	10,900	5,828	C	61	5,889	C

Table 3 summarizes the results of the peak hour intersections operations analysis. As shown, both study intersections operate at acceptable LOS without and with the proposed project.

**Table 3  
Peak Hour Intersection Analysis**

Intersection	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
		Delay	LOS	Delay	LOS
Mesa Rock Road / Deer Springs Road	AM	22.1	C	22.2	C
	PM	20.9	C	21.5	C
Mesa Rock Road / Centre City Parkway	AM	10.6	B	12.1	B
	PM	9.3	A	10.3	B
Mesa Rock Road / Project Driveway	AM	-	-	9.0	A
	PM	-	-	9.3	A

## **Assessment of Need for Traffic Impact Analysis Report**

The proposed project is forecast to generate approximately 110 trips per day. This is well below the County's minimum threshold for a traffic impact analysis report (500 trips per day for non-conforming uses). Recognizing that in certain circumstances it may be necessary to conduct a traffic analysis when the ADT volumes fall below this threshold, RBF assessed whether the total traffic generated by the site would fall below the County's adopted Significance Criteria/Traffic Impact Guidelines (dated August 24, 2011), such that a significant impact directly relating to the project could occur. For LOS "F" roadways, this threshold is 100 vehicles per day for a two-lane road. With the proposed use, the forecast trip generation for this site is approximately 110 trips per day, which includes the PCE factor applied to the truck trips. The traffic from the site is split between northbound and southbound Mesa Rock Road, with northbound consisting of employee trips only, and southbound consisting of a mix of employee and truck trips. Based on the distribution of traffic from the project site, the maximum ADT added to any one link is approximately 78 vehicles per day, which is below the county's significant criteria. Therefore, the proposed project is not forecast to result in any direct traffic impacts.

Assessment of existing conditions shows that roads and intersections providing access to the site currently operate at LOS C or better and are forecast to remain at acceptable LOS with the proposed project. According to the SANDAG Series 12 traffic model, traffic volumes along Mesa Rock Road is forecast to be approximately 1,300 vpd by year 2035, which is within the acceptable LOS thresholds for a Light Collector road.

The County's Mobility Element Update (November 2011) classifies Centre City Parkway from Deer Springs Road to the Escondido City Limits as a four-lane Major Road. According to the SANDAG Series 12 traffic model, traffic volumes along the study segment of Centre City Parkway is forecast to be approximately 8,200 vpd by year 2035. If improved to a four-lane Major Road, Centre City Parkway is forecast to operate at LOS A by 2035. Based on the existing capacity, the study segment of Centre City Parkway is forecast to operate at LOS D by 2035, which is within the acceptable LOS threshold for a two-lane Light Collector road.

Since the project falls below the threshold for needing a traffic study and the total ADT of the study roadway segments are within the capacity thresholds for acceptable levels of service, a traffic report is not necessary for this project. The project will be subject to the payment of Traffic Impact Fees associated with the forecast project daily trip generation which will address cumulative impacts that may occur in the vicinity of the project site.

### **Sight Distance Assessment**

The proposed project will take access from Mesa Rock Road. Currently, there is a driveway located approximately 400 feet north of where Mesa Rock Road curves east. The project will construct a new access road approximately 120 feet north of the existing location to resolve potential line of sight issues, as illustrated in Exhibit 7. To demonstrate that adequate sight distance will be provided, a Sight Distance analysis was conducted for the location of the new access road.

**Measurement of Prevailing Speed**

A speed survey was conducted by Traffic National Data Service in February 2013. The travel speed of each approach was collected over a two-hour period to determine the 85<sup>th</sup> percentile speed in each direction. Speed data was collected using radar detection. The results of the speed survey show that the 85<sup>th</sup> percentile speeds on Mesa Rock Road at the existing driveway are as follows:

***Measurement of Prevailing Speed***

- South of driveway: 47 mph
- North of driveway: 55 mph

**Minimum Corner Sight Distance**

County of San Diego Public Road Standards summarizes the Standard Corner Sight Distance for Intersections, provided in Table 4. According to the measured prevailing speed, the minimum Corner Sight Distance at the project driveway should be:

**Minimum Corner Sight Distance (County Standards)**

- South of driveway (47 mph) 470 feet
- North of driveway (55 mph) 550 feet

**Table 4  
County of San Diego Public Road Standards (Table 5)  
Standard Corner Sight Distance at Intersections**

Design Speed (MPH)	Minimum Corner Intersection Sight Distance (Feet*)
60	600
50	500
40	400
35**	350**
30	300
20	200
<small>*Corner sight distance measured from a point on the minor road at least 10 feet from the edge of the major road pavement and measured from a height of eye of 3.5 feet on the minor road to a height of object of 4.25 feet on the major road. The design speed used to determine the minimum sight distance requirements shall be the greater of the current prevailing speed (if known) and the minimum design speed of the respective classification shown in Table 2. ** Interpolated by RBF for 35 mph.</small>	

A registered land surveyor was retained to conduct a sight distance assessment at the existing driveway. Because adequate sight distance could not be provided at that location, the project will relocate the driveway to a location approximately 120 north. The sight distances provided below were adjusted by 120 feet to reflect the location of the proposed project driveway:

**Measured Sight Distance (November 16, 2006 line of sight survey)**

- South of driveway 380 feet + 120 feet = 500 feet
- North of driveway 1,490 feet – 120 feet = 1,270 feet

The proposed location of the project access road and associated driveway will provide sufficient corner sight distance north and south, which exceed the County requirement. Therefore, the project access will meet County of San Diego Corner Sight Distance requirements.

**Truck Turning Assessment**

The proposed truck route will utilize Centre City Parkway and Mesa Rock Road to the south of the project driveway location. Approximately 520 feet south of the project driveway, Mesa Rock Road curves at an approximately 90-degree angle to the east. An asphalt berm is constructed along both sides of the road through the curve, with a dirt shoulder on either side.

A WB-40 truck turning template was applied to the curve to determine if large trucks can negotiate the curve in both directions of travel on Mesa Rock Road. Exhibit 8 illustrates the WB-40 turning template for the existing curve on Mesa Rock Road. As shown in Exhibit 8, trucks making the westbound to northbound turn would need to travel over the asphalt berm slightly to avoid traveling into the opposing lane of traffic. The project applicant will widen the road through the curve to allow large trucks to negotiate the westbound to northbound turn while staying within their lane.

An advisory speed limit of 15 miles per hour is posted on either end of the curve to warn drivers of the sharp turn. An unobstructed sight line is provided approaching the curve in each direction. Therefore, if two trucks happen to approach the curve at the same time, they will be able to clearly see one another and one may need to yield through the turn.

**Conclusions and Recommendations**

It has been shown that the North County Environmental Resources generates approximately 110 trips on the average day. This level of traffic falls below the threshold for determining the need for a traffic study. Although there are circumstances where it is necessary to study a project when the traffic volumes fall below the threshold, the North County Environmental Resources trip generation is well below the significance criteria for public roads. The study intersections and roadway segments currently operate at LOS C or better. There are no forecast deficiencies identified through the year 2035 on either Mesa Rock Road or Centre City Parkway.

The County has adopted the TIF program for addressing regional cumulative impacts. The project will contribute toward the TIF program to mitigate any cumulative impacts. RBF recommends that the traffic study requirement for the project be waived, as the project traffic is not forecast to result in direct impacts.

Access to the site is provided along Mesa Rock Road. Measurement of prevailing speed and line of sight shows that County of San Diego Corner Sight Distance is met at the proposed location of the project access road (approximately 120 feet north of the existing driveway).

Trucks negotiating the westbound to northbound turn of the existing curve on Mesa Road would need to travel slightly over the asphalt berm on the side of the road to avoid traveling into the opposing lane of traffic. The project applicant will widen the road through the curve to allow large trucks to negotiate the westbound to northbound turn while staying within their lane.

### **Closure**

If you should have any further questions regarding this analysis, please contact me directly at (760) 603-6246.

Sincerely,

Dawn L. Wilson, P.E.  
Project Manager  
Transportation Services

Attachments: Exhibits 1-8  
Traffic Count Data  
Speed Survey Data  
HCM Worksheets



# NORTH COUNTY ENVIRONMENTAL RESOURCES

