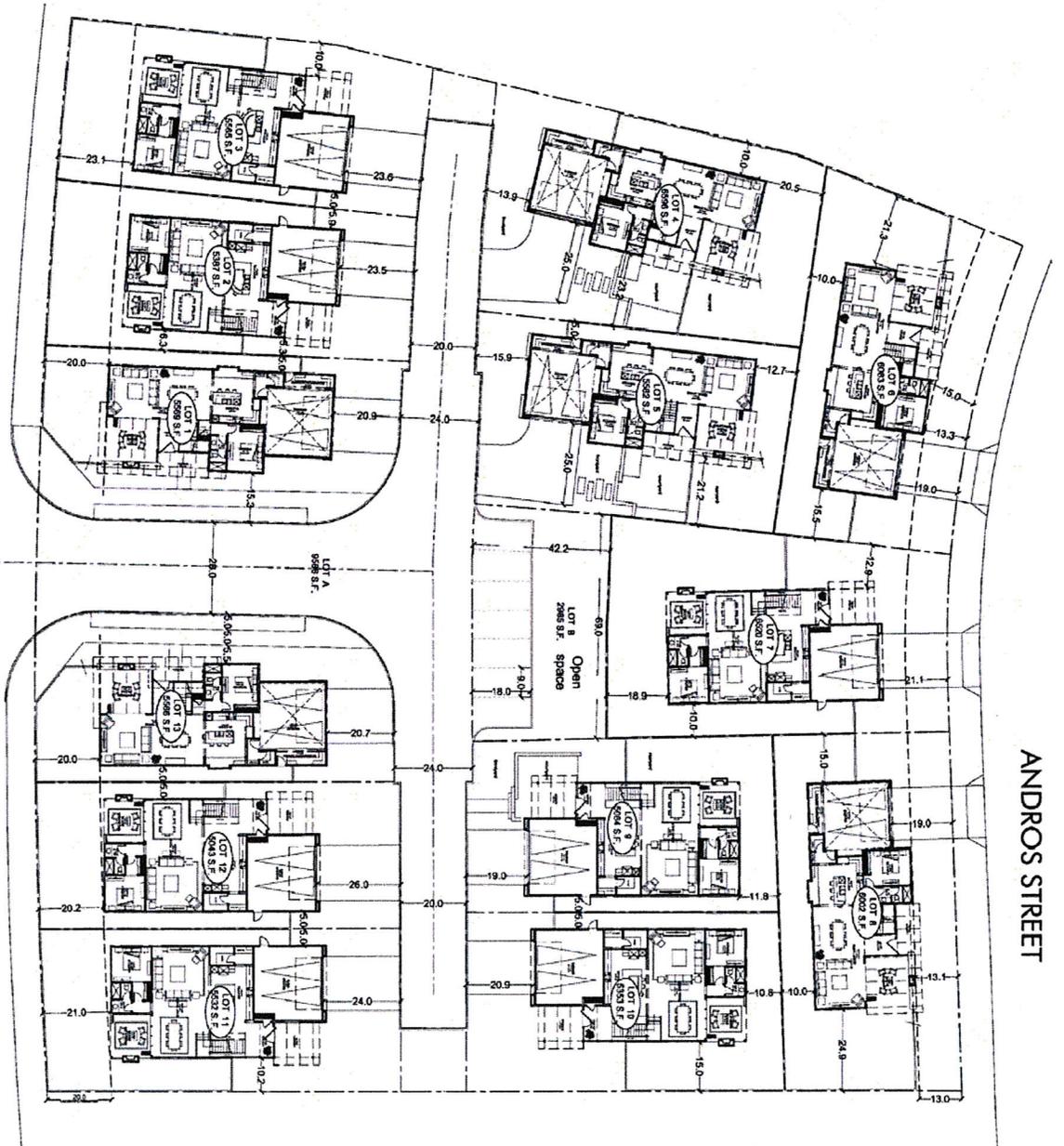


2880 MESA VERDE DRIVE TRIP GENERATION STUDY City of Costa Mesa, California

SERANG PL.

MESA VERDE DR. E



ANDROS STREET

February 27, 2015

Mr. Peter Zehnder
MESA VERDE EAST, LLC.
20 Enterprise, Suite 320
Aliso Viejo, CA 92656

**Subject: 2880 Mesa Verde Drive Trip Generation Study (Updated 02/27/15),
City of Costa Mesa**

Dear Mr. Zehnder:

Introduction

RK ENGINEERING GROUP, INC. (RK) is pleased to provide this trip generation analysis for the 2880 Mesa Verde Drive Project in the City of Costa Mesa. A location map is provided in Exhibit A.

The proposed project would replace the existing 8,598 square foot church with 13 dwelling units of single family residential. The proposed project would provide 26 garage parking spaces, and 33 open parking spaces, for a total of 59 parking spaces provided. Access for the proposed residential development is planned via Mesa Verde Drive and Serang Place. An aerial site plan for the project is shown in Exhibit B.

The project site is currently zoned for Institutional and Recreational use, and has an area of approximately 2 acres. Hence, the project site could operate as either a church or an institutional use under current approvals. The current zoning allows for a floor area ratio (FAR) of 0.25. Therefore, the 2-acre project site would allow for up to 21,780 square feet of church or institutional use without the need for any further approvals. As part of this analysis, the potential trips which could be generated by the currently allowed maximum of 21,780 square feet of church or institutional use is determined.

The purpose of this trip generation analysis is to determine the proposed project's AM and PM peak hour and daily trip generation as it compares to the following:

1. Existing church land use without any changes;
2. Current Zoning Option 1: Expansion of the existing church land use to 21,780 square feet as allowed under current approvals; and
3. Current Zoning Option 2: Replacement of the existing church with 21,780 square feet of institutional land use (community or trade college) as allowed under current approvals.

Trip Generation

Trip generation represents the amount of trips that are produced and attracted by a development. Trip generation rates are developed by the ITE (Institution of Transportation Engineers) in their *Trip Generation Manual*, 9th Edition, 2012. The trip generation rates for this project are shown in Table 1.

The existing land use is a church (ITE Land Use Code 560). The proposed project will consist of 13 single family residential dwelling units (ITE Land Use Code 210). Without the need for a zone change and under current approvals, the project site could be developed with 21,780 square feet of church (ITE Land Use Code 560) or 21,780 square feet of community/trade college (ITE Land Use Code 540). This analysis is conducted in order to provide a comparison between these various land use scenarios for the project site.

ITE trip generation calculations for the various land use scenarios are summarized in Table 2.

As shown in Table 2, based on ITE trip generation calculations:

- The existing church land use is currently generating approximately 78 trip ends per day, with 5 vehicles per hour during the AM peak hour and 4 vehicles per hour during the PM peak hour;
- The proposed 13-unit residential project is forecast to generate 124 trip ends per day, with 9 vehicles per hour during the AM peak hour and 13 vehicles per hour during the PM peak hour;
- Current Zoning Option 1 (expansion of the existing church to 21,780 square feet) is forecast to generate 198 trip ends per day, with 13 vehicles per hour during the AM peak hour and 12 vehicles per hour during the PM peak hour; and
- Current Zoning Option 2 (replacement of the existing church with 21,780 square feet of community or trade college) is forecast to generate 601 trip ends per day, with 65 vehicles per hour during the AM peak hour and 55 vehicles per hour during the PM peak hour.

Table 3 provides a comparison of trip generation between the proposed project and the land use alternatives. As shown in Table 3:

- When compared to the existing church land use, the proposed project is forecast to generate 46 more trip ends per day, with four (4) more trips generated in the AM peak hour, and nine (9) more trip generated in the PM peak hour;

- When compared to Current Zoning Option 1 (expansion of the existing church to 21,780 square feet), the proposed project is forecast to generate 74 fewer trip ends per day, with four (4) fewer vehicles per hour during the AM peak hour and one (1) more vehicle per hour during the PM peak hour; and
- When compared to Current Zoning Option 2 (replacement of the existing church with 21,780 square feet of community or trade college), the proposed project is forecast to generate 477 fewer trip ends per day, with 56 fewer vehicles per hour during the AM peak hour and 42 fewer vehicles per hour during the PM peak hour.

Conclusions

RK has completed a trip generation analysis for the proposed 2880 Mesa Verde Drive Project. The proposed project will consist of 13 dwelling units of single family residential use, with 59 parking spaces provided. The main access would be provided on Mesa Verde Drive and Serang Place.

When compared to the existing church land use, the proposed project is forecast to generate 46 more trip ends per day, with four (4) more trips generated in the AM peak hour, and nine (9) more trip generated in the PM peak hour;

When compared to Current Zoning Option 1 (expansion of the existing church to 21,780 square feet), the proposed project is forecast to generate 74 fewer trip ends per day, with four (4) fewer vehicles per hour during the AM peak hour and one (1) more vehicle per hour during the PM peak hour.

When compared to Current Zoning Option 2 (replacement of the existing church with 21,780 square feet of community or trade college), the proposed project is forecast to generate 477 fewer trip ends per day, with 56 fewer vehicles per hour during the AM peak hour and 42 fewer vehicles per hour during the PM peak hour.

RK concludes that a traffic impact study would not be appropriate to determine how the slight increase of trips generated by the proposed project will affect the nearby intersections. Additionally, it can be concluded that the proposed residential project would generate less trips overall than if the approved land use were to fully utilize the project site.

Mr. Peter Zehnder
MESA VERDE EAST, LLC.
February 27, 2015
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RK Engineering Group, Inc. appreciates this opportunity to work with MESA VERDE EAST, LLC on this project. If you have any questions regarding this study, please do not hesitate to call us at (949) 474-0809.

Sincerely,
RK ENGINEERING GROUP, INC.



Mohammad "Alex" Tabrizi, P.E., T.E.
Associate Principal



Tiffany Giordano, E.I.T.
Engineer II

Attachments



Exhibits

Exhibit A
Location Map

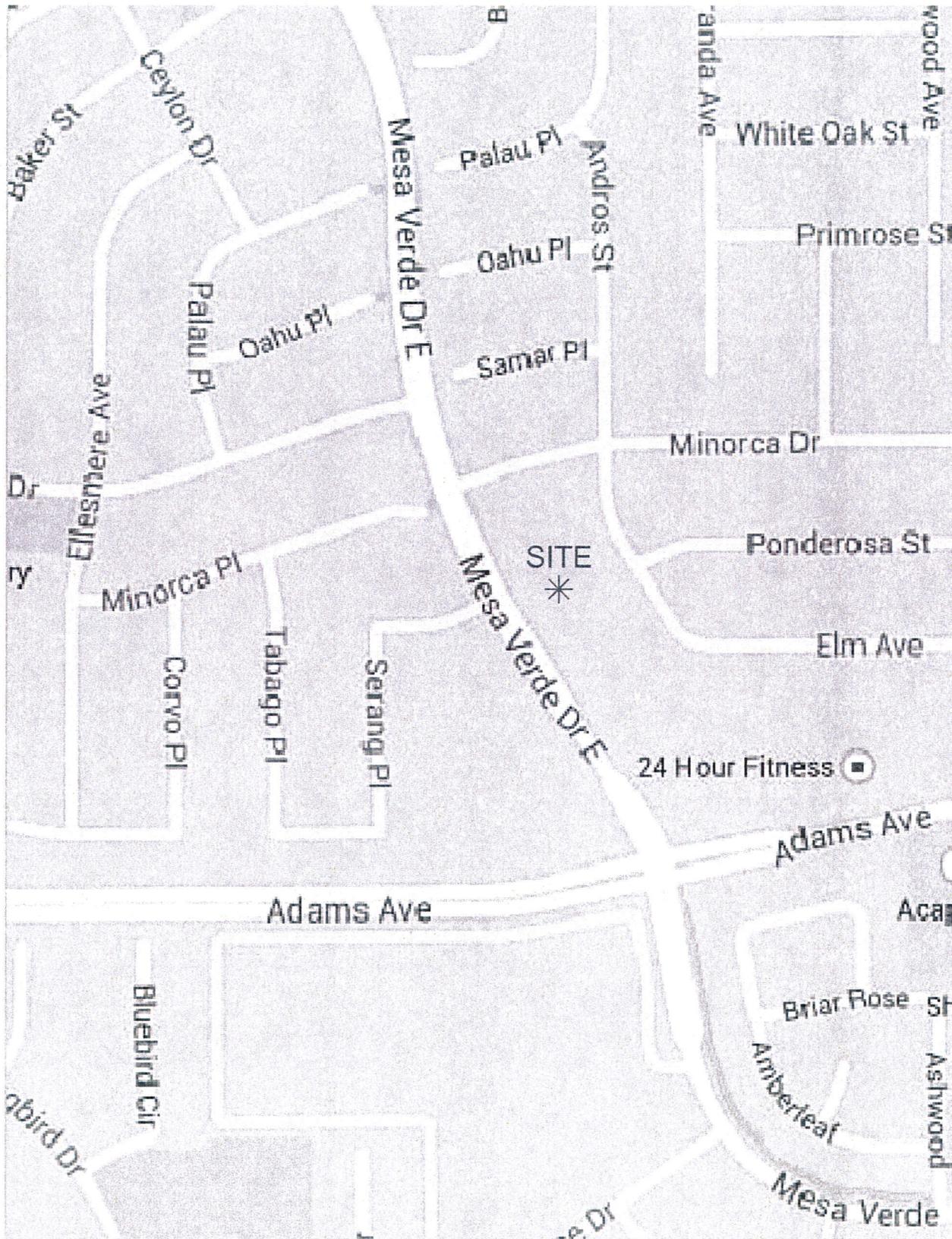
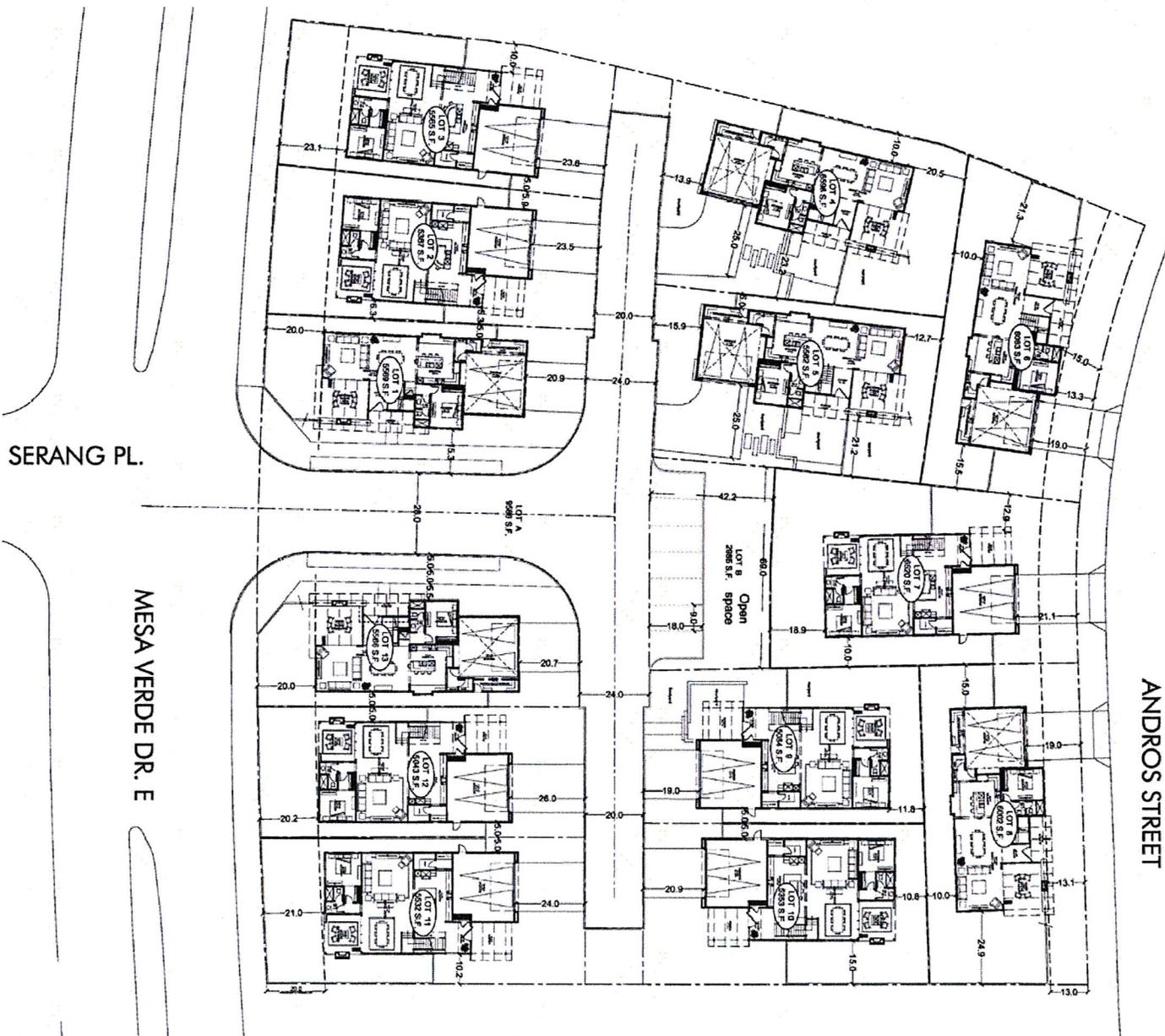


Exhibit B Site Plan



Tables

TABLE 1
Trip Generation Rates¹

Land Use	ITE Code	Units ²	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Church	560	TSF	0.35	0.21	0.56	0.26	0.29	0.55	9.11
Single Family Residential	210	DU	0.19	0.56	0.75	0.63	0.37	1.00	9.52
Junior / Community College	540	TSF	2.21	0.78	2.99	1.47	1.07	2.54	27.49

¹ Source: Institute of Transportation Engineers (ITE), *Trip Generation, 9th Edition*, 2012.

² DU = Dwelling Units
TSF= Thousand Square Feet

TABLE 2
Project Trip Generation

Existing Land Use										
Existing Land Use	ITE Code	Quantity	Units ¹	Peak Hour						Daily
				AM			PM			
				In	Out	Total	In	Out	Total	
Church	560	8.598	TSF	3	2	5	2	2	4	78

Proposed Land Use										
Proposed Land Use	ITE Code	Quantity	Units ¹	Peak Hour						Daily
				AM			PM			
				In	Out	Total	In	Out	Total	
Single Family Residential	210	13	DU	2	7	9	8	5	13	124

High Intensity Approved Land Use										
High Intensity Approved Land Use	ITE Code	Quantity	Units ¹	Peak Hour						Daily
				AM			PM			
				In	Out	Total	In	Out	Total	
Option 1: Church	560	21.780	TSF	8	5	13	6	6	12	198
Option 2: Community College	540	21.780	TSF	48	17	65	32	23	55	601

¹ DU = Dwelling Units
TSF = Thousand Square Feet

TABLE 3
Project Trip Generation Comparison

Comparison: Existing Land Use vs. Proposed Land Use							
	Peak Hour						Daily
	AM			PM			
	In	Out	Total	In	Out	Total	
Existing Land Use (Church Land Use)	3	2	5	2	2	4	78
Proposed Land Use (Residential Land Use)	2	7	9	8	5	13	124
Difference	-1	+5	+4	+6	+3	+9	+46

Comparison: High Intensity Approved Land Use Option 1 vs. Proposed Land Use							
	Peak Hour						Daily
	AM			PM			
	In	Out	Total	In	Out	Total	
High Intensity Approved Land Use (Church Land Use)	8	5	13	6	6	12	198
Proposed Land Use (Residential Land Use)	2	7	9	8	5	13	124
Difference	-6	+2	-4	+2	-1	+1	-74

Comparison: High Intensity Approved Land Use Option 2 vs. Proposed Land Use							
	Peak Hour						Daily
	AM			PM			
	In	Out	Total	In	Out	Total	
High Intensity Approved Land Use (Community College Land Use)	48	17	65	32	23	55	601
Proposed Land Use (Residential Land Use)	2	7	9	8	5	13	124
Difference	-46	-10	-56	-24	-18	-42	-477