Endo Engineering *Traffic Engineering* *Air Quality Studies* *Noise Assessments*

October 27, 2008

Mr. Jim Hildenbrand
Hofmann Land Development
1380 Galaxy Way
Concord, CA 94520-4912

SUBJECT: The Isle Travertine - Specific Plan 94-026 Amendment No. 1 GPA 08-113 and Zone Change 08-133 Off-Site Traffic Impact Study Response to Comments

Dear Mr. Hildenbrand;

Endo Engineering has reviewed comments prepared by the City of La Quinta Planning and Public Works Department on October 20, 2008 on the *Isle Travertine - Specific Plan 94-026 Amendment No. 1 GPA 08-113 and Zone Change 08-133 Traffic Impact Study* (dated August 20, 2008 and submitted to the City of La Quinta on September 25, 2008). To facilitate your review, we have reiterated each comment below, followed by the corresponding response.

COMMENTS FROM THE PLANNING DEPARTMENT:

Comment 1: It is our recommendation that a meeting be scheduled prior to the preparation of any revisions in order to discuss the following comments. Based on the number and nature of comments, it is our recommendation that a revised report be prepared, although a memorandum or supplemental report format may be considered with the consent and approval of Public Works. Once completed, please be sure to provide seven bound copies of the revisions to the Planning Department with the title and version identified on the cover page, along with a PDF copy.

Response 1: A meeting was scheduled for October 28, 2008 to discuss the City comments, prior to revisions to the traffic study.

Comment 2: The Planning Department is proposing to modify the General Plan Circulation Element to identify three new road sections for Madison St. and Monroe St. south of Avenue 60, Jefferson St., and Avenue 62 west of Monroe St. Attachments of the proposed locations and street cross sections have been attached with this memo. The report should be reviewed in order to take into account the proposed modifications.

Response 2: The traffic study correctly addresses the adopted Circulation Element of the General Plan and states that the City will be processing a Circulation Element Amendment in the future for the study area. A letter response will be submitted to the City of La Quinta regarding the effect that the proposed General Plan Amendment will have on the conclusions of the traffic study.

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Phone: (949) 362-0020 Facsimile: (949) 362-0015

Comment 3: The Traffic section of the Engineering Bulletin has been revised since this report was prepared.

Response 3: Endo Engineering was informed that there would be changes to Engineering Bulletin 06-013. On July 30, 2008, the City provided specific traffic study requirements by e-mail (see attachment) prior to the publication of the revised Engineering Bulletin, that were reflected in the traffic study.

Comment 4: There are a few minor spelling and grammatical errors noted throughout the report. Portions of the report could be clarified through a simplification and re-wording of lengthy descriptions and duplicative discussion.

Response 4: So noted. The text has been reviewed and three spelling errors were corrected. If the City will provide a marked copy indicating where grammatical errors require correction, revisions will be made. The report was written to provide a comprehensive discussion of each topic; therefore, similar issues may appear in different sections.

Comment 5: Please ensure that the source is identified or referenced when specific numbers or trip counts are cited from external documents such as the General Plan or other traffic studies.

Response 5: Extensive references were provided citing external documents throughout the traffic study. If the City will identify the page number and paragraph where any undocumented reference to external documents was found, the source will be cited.

Comment 6: Page 1-2, Second Paragraph: A statement is made that "Travertine SPA No. 1 development does not require the extension of Avenue 62 westerly to Madison Street as a public street for site access." Is this based upon Madison Street being constructed as a four-lane road? Note that Avenue 62 is identified as a required improvement while also being identified as "not being required for site access" in Table 8-1 in Page 8-4. On Page 1-2, Fifth Paragraph: A statement is made that the City projects that "up to 2,000 vehicles per day could eventually divert to Madison Street as an alternate north-south route." This statement quantifies the regional need for Avenue 62. It should be noted that Avenue 62 is also being identified in the Circulation Element Amendment as a Modified Collector street.

Response 6: The Travertine Specific Plan does not require the extension of Avenue 62 westerly of Madison Street, and does not require Madison Street to be constructed as a four-lane road between Avenue 60 and Avenue 62. The Public Works Department directed that the analysis assume that Avenue 62 will cross the levee. Although Avenue 62 would, if constructed, be used by traffic from the Travertine Specific Plan, Table 8-1 recognizes that improvements to Avenue 62 would not be required to provide adequate roadway capacity to serve the proposed development. The future Circulation Element Amendment to be processed by the City would provide sufficient roadway capacity for the Travertine Specific Plan, with or without the extension of Avenue 62 across the levee.

No circulation model has identified any regional through traffic for Avenue 62 at the levee crossing. The potential for westbound traffic on Avenue 62 to travel west of Monroe Street to Madison Street was discussed in a meeting with City staff where direction was provided to assume 2,000 regional through trips at the levee crossing on Avenue 62. There appears to be more than sufficient capacity on Monroe Street for projected future traffic volumes, even if Avenue 62 is not extended across the levee to Madison Street. With the future classifications of Avenue 62 and Madison Street (compared to Monroe Street and Avenue 60) the likelihood of 2,000 regional through trips using Avenue 62 to cross the levee is relatively small.

Comment 7: Page 1-3, the design of the Jefferson Street/Madison Street transition - is identified on 1-3 as a sweeping curve to avoid a turning movement and intersection. How will the intersection with Avenue 62 work if it is designed as a modified collector? An exhibit to clarify the design is recommended.

Response 7: The traffic study assumed that Avenue 62 would tee into Madison Street/Jefferson Street on the outside of a horizontal curve with a minimum 850-foot radius curve. STANTEC has developed a draft illustration of the proposed roadway realignment which has been provided as an attachment.

Comment 8: Page 1-4, Second Paragraph, and Page 2-2, Second Paragraph: First statement identifies a trip reduction of 27% (6,430) while second statement identifies a trip reduction of 36% (9,910 trips). Which one is correct? Please clarify, as there is a conflict with Page 2-2, Second Paragraph.

Response 8: So noted. The trip reduction of 27% (6,430) referred to adjusted trip-ends (i.e., after corrections were made to remove the double counting of internal trips). The trip reduction of 36% (9,910 trips-ends) was based upon a comparison of the unadjusted trips calculated from the ITE *Trip Generation* data. For consistency, the traffic study will be revised to reflect only the 36% reduction (9,910 trips-ends) to eliminate confusion.

The elimination of 900 homes and 10 acres of commercial retail uses from the Travertine Specific Plan would reduce the number of weekday trip-ends generated by the residential development on-site by 3,120 and reduce the number of weekday commercial trip-ends by 6,790. Therefore, a total trip reduction of 36% (9,910 trips) is projected to occur if the proposed project is implemented.

Comment 9: Page 8-2, Last Paragraph: Sentence reads "Monroe Street may require four through lanes, between Avenue 60 and Jefferson Street ..." This appears to be a mistake, as Jefferson and Monroe do not intersect. Please clarify.

Response 9: This sentence should refer to Madison Street, not Monroe Street. It will be corrected in the traffic study.

Comment 10: Page 8-3, Second Paragraph: Author is recommending Jefferson to be a four lane undivided roadway through previous sentence that states that "a two lane road appears to be adequate to serve the future traffic demands on-site with dedicated turn lanes where needed ..." This is inconsistent. Why is a two-lane divided roadway with dedicated turn lanes not sufficient to serve the proposed development? This conflict is also referenced on page 7-29.

Response 10: Although the key intersections along Jefferson Street were shown to operate at acceptable levels of service with Jefferson Street as a two-lane <u>divided</u> roadway, the projected daily traffic volumes along a short segment of Jefferson Street slightly exceeded the City's daily capacity for a two-lane <u>undivided</u> collector street. Since the City of La Quinta did not have an approved daily capacity for a two-lane <u>divided</u> roadway, the daily capacity for a two-lane <u>undivided</u> roadway was assumed in the analysis. The Department of Public Works has subsequently determined that a higher daily capacity can be assumed for two-lane divided roadways. Therefore, a four-lane cross-section is no longer required or recommended for Jefferson Street, west of Madison Street. A two-lane divided roadway is sufficient to meet future projected traffic volumes for both Jefferson Street (west of Madison Street) and Madison Street (between Avenue 60 and Avenue 62).

Comment 11: Figure 8-2: Is a northbound dedicated left turn lane necessary at Avenue 60? Is a southbound dual left also necessary for this same intersection? This will be a signalized intersection.

Response 11: Although the projected traffic volume using the northbound left-turn lane is projected to remain low, a dedicated northbound left-turn lane on Madison Street at Avenue 60 should be aligned opposite the dual southbound left-turn traffic lanes that will be required to accommodate future turning volumes at acceptable levels of service.

Comment 12: Figure 8-3: Geometry proposed for Avenue 62 and Monroe appears to be excessive. Does this include dedicated left turns for westbound Avenue 62 and northbound Monroe?

Response 12: The approach lanes recommended for the intersection of Monroe Street and Avenue 62 in Figure 8-3 include a left-turn lane and a through/right-turn lane in all directions because this intersection will need to be signalized. The MUTCD guidance indicates that when signals are installed at an intersection, a minimum of two approach lanes should be provided in all directions. Therefore, dedicated left-turn lanes are generally recommended at signalized intersections based on safety and operational considerations to allow the left-turning vehicles to pull out of the flow of through traffic. Left-turn lanes are not required to provide sufficient capacity at this intersection.

Comment 13: Table 8-1, Page 8-4: Why is Avenue 62 identified as a required improvement with a footnote stating "Avenue 62 is not required for site access." This doesn't make sense. There is a regional need, as identified in comment #6 above. If Avenue 62 is not constructed, is there an impact? Would there be additional adjustments or changes needed in the mitigation measures?

Response 13: Refer to the response to Comment 6 above. If Avenue 62 is not extended across the levee, the 2,000 daily regional through trips on Avenue 62 assumed to cross the levee would use Monroe Street instead. Similarly, the 2,410 daily project-related trips crossing the levee would utilize Madison Street instead. Therefore, without the levee crossing, the diversion of the 2,000 daily regional trips and the diversion of the 2,410 daily project trips crossing over the levee would result in traffic impacts which would be similar with and without the levee crossing. No additional changes in the mitigation measures would be required.

Comment 14: Table 8-3, Page 8-6: The improvements listed for Madison are inconsistent. First, it is listed as either divided two-lane or undivided four lanes as being required. Later, it is identified that a second northbound and southbound though lane is necessary. Also, a reference is made to traffic signals.

Response 14: Refer to the response to Comment 10 above. Since the Department of Public Works has determined that a higher lane capacity of 9,500 vehicles per lane per day can be assumed for a two-lane divided roadway, Madison Street (between Avenue 60 and Avenue 62) would operate at acceptable levels of service as a two-lane divided roadway. If Avenue 62 includes a crossing of the levee, the intersection of Avenue 62 and Madison Street will ultimately require signalization.

The intersection of Madison Street and Avenue 62 will not require a second northbound through or southbound through lane to provide sufficient intersection capacity. With a single northbound and southbound through lane, the intersection is projected to operate at LOS B (68.3 percent of capacity) with year 2020+project traffic volumes (see attachment).

COMMENTS FROM THE DEPARTMENT OF PUBLIC WORKS:

Comment 1: Traffic Engineer should review and make recommendations for intersection lane configurations that would allow Jefferson St. between proposed "F" St. and Madison St. to maintain its two lane divided cross section through this reach. Note: A higher road segment capacity for a divided roadway can be used of 9,500 vehicles/lane.

Response 1: With the higher daily road segment capacity of 9,500 vehicles/lane, both Jefferson Street and Madison Street would operate at acceptable levels of service as two-lane divided roadways.

Comment 2: In section 7-6, the study discusses the ability of Madison Ave., due to its limited access points, should be assigned an increased capacity over that approved in the City's General Plan. Report should also address the ability of the roadway to handle the projected peak volumes at the point where it transitions from a 4 lane to 2 lane roadway.

Response 2: With the increased daily road segment capacity, both Jefferson Street and Madison Street would have sufficient capacity to accommodate ultimate traffic volumes with a 2-lane divided cross-section. Madison Street will transition from a 4-lane cross-section north of Avenue 60 to a 2-lane divided cross-section south of Avenue 60.

Comment 3: In subsection entitled "Interim Year 2016 Roadway Widening" of section 8.2, the report states that The Country Club of the Desert is conditioned to widen Ave. 54. The Madison Club should be substituted as the entity that is responsible.

Response 3: So noted. The traffic study will be modified accordingly.

Comment 4: Section 4.6 states that the measured volume on Ave. 54 was possibly below normal due to the closure of the roadway east of Madison. The report should explain what steps, if any, were used to normalize that number. If number was not normalized, report should explain why.

Response 4: The travel patterns in the area have substantially changed since the 2007 CVAG traffic counts were made. The 2007 CVAG traffic counts on Avenue 54 appear to have been made prior to the opening of Madison Street between Avenue 54 and Avenue 52. Now that Madison Street is open to through traffic, many of the vehicles previously using Avenue 54, west of Madison Street, currently travel north on Madison Street. Although Avenue 54 was closed for construction for a period of time, the traffic counts made on Avenue 54 at the intersections of Madison Street and Monroe Street for inclusion in the traffic study were made after Avenue 54 was reopened. The peak hour counts at the key intersections along Avenue 54 were adjusted to reflect the peak hour in the peak season. Since Avenue 54 was open to through traffic and Madison Street, north of Avenue 54, was also open, no normalization of traffic volumes on Avenue 54 was undertaken or required.

We trust that the supplemental information herein and the modifications to the *Isle Travertine - Specific Plan 94-026 Amendment No. 1 GPA 08-113 and Zone Change 08-133 Traffic Impact Study* will adequately respond to the City of La Quinta comments. If additional clarification is required, please do not hesitate to contact our offices.

Sincerely,
ENDO ENGINEERING

Gregory Endo
Principal

Subject: RE: La Quinta Traffic Study Guidelines
From: "Rusty Beardsley" <Rbeardsley@la-quinta.org>
Date: Wed, 30 Jul 2008 17:11:58 -0700
To: "Gregory Endo" <endoengr@cox.net>
CC: "Ed Wimmer" <ewimmer@la-quinta.org>, "Jim Hildenbrand" <jhildenbrand@hofmannld.com>

Greg,
Per our conversation earlier today, here is the City's response to your questions posed in the attached email.

The City will be using the ICU method for determining impacts at all signalized intersections. The HCM methodology should be utilized for all non-signalized locations.

The assumptions to be used for the ICU analysis are:

1) A capacity of 1600 vpl for through traffic and turn lanes (2880 vpl for dual turn lanes) should be used unless unusual conditions are observed in the field.
2) No adjustment is to be used for lost time.
3) A Peak Hour Factor of 1.00 should be assumed.
4) Assign 55% of the volume in a dual turning lane to one of the lanes for establishing the critical volume.
5) Divide the sum of the critical volumes by 1600 to calculate an intersections volume/capacity ratio.
6) Assume a Heavy Vehicle Mix of 8% on Ave. 52 and all roadways north of it. For roadways south of Ave. 52 a mix of 5% should be used. Individual mix percentages for Hwy. 111 and Washington St. will be determined soon for future reference.

If you have any questions regarding any issue, please feel free to contact me.

Rusty Beardsley, T.E.
Traffic Engineer
City of La Quinta

From: Gregory Endo [mailto:endoengr@cox.net]
Sent: Monday, July 28, 2008 12:42 PM
To: Rusty Beardsley
Cc: Ed Wimmer; Jim Hildenbrand
Subject: La Quinta Traffic Study Guidelines

Rusty,

The new City of La Quinta traffic study guidelines appear to be ambiguous with respect to the use of the Intersection Capacity Utilization methodology versus the "Highway Capacity Manual" methodology for evaluating impacts at signalized intersections.

Engineering Bulletin #06-13 states that traffic studies for the City of La Quinta shall conform to the general specifications contained within the Riverside County Transportation Department guidelines. The Riverside County Transportation Department guidelines state that signalized intersection Levels of Service shall be analyzed using the Operational Method as described in Chapter 16 of the "Highway Capacity Manual." The "Highway Capacity Manual" methodology has been required for signalized intersection analysis in traffic studies for projects within Riverside County for two decades.

Engineering Bulletin #06-13 indicates that the ICU method only shall be used to calculate potentially significant project specific traffic impacts and cumulative impacts. Engineering Bulletin #06-13 also

indicates that a maximum volume-to-capacity ratio of 0.90 applies to peak hours at intersections. This appears to indicate that an ICU analysis is required by the City of La Quinta.

Does this mean that the City of La Quinta will no longer accept the "Highway Capacity Manual" methodology for determining the LOS at signalized intersections? Does it imply that every study will have to use both the HCM and the ICU methodology for signalized intersections but only the HCM methodology for unsignalized intersections?

The ICU methodology is implemented with a wide variety of assumptions. Will the City be modifying Engineering Bulletin #06-13 to specify a consistent set of ICU assumptions? In the interim, are the following assumptions acceptable to the City of La Quinta for ICU analyses?

1. Capacity: 1600 vehicles/lane for all through and turn lanes (2880 total for dual turn lanes).

2. Clearance: 0.10 Adjustment For Lost Time (no phasing adjustment)

3. Peak Hour Factor: 1.00 (Unlike the HCM which evaluates the peak 15-minute flowrate)

4. Dual Turn Lanes: Assume 55% of the turning volume is assigned to the heavier lane for establishing the critical volume.

5. Intersection V/C: Divide the sum of critical volumes by 1600 and add 0.10.

6. Heavy Vehicle Mix Correction: None.

Should the latest guidelines apply to the *Isle of Travertine SPA No. 1 Off-Site Traffic Impact Analysis* currently underway or should it be completed with the previous guidelines, to ensure consistency with the other recently completed *Isle of Travertine SPA No. 1 Traffic Impact Study*?

Gregory Endo

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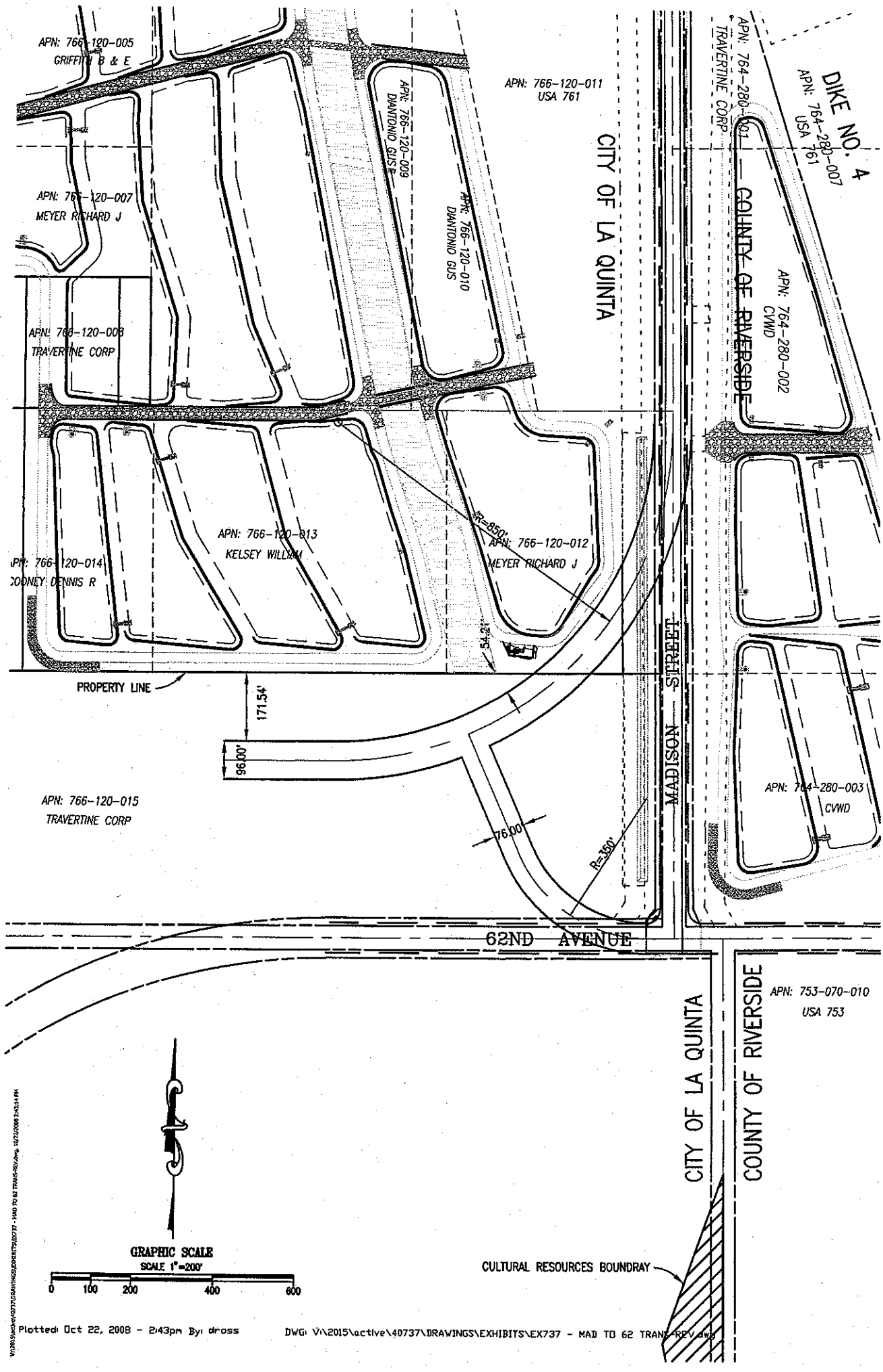

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Intersection Capacity Utilization Worksheet (7)

Intersection: 7 (N-S) **Madison Street** (W-E) **Avenue 62**

Scenario: Year 2020 W/ Project Morning Peak Hour

Analyst: Greg Company: Endo Engineering

Movement	Volume	Number of Lanes	Capacity	V/C Ratio	Critical V/C	Total
NB Left	0	0	0	---		
NB Thru	637	1	1600	0.489	<==	
NB Right	145	0	0	---		
SB Left	67	1	1600	0.042	<==	
SB Thru	324	1	1600	0.203		
SB Right	0	0	0	---		
EB Left	0	0	0	---		
EB Thru	0	0	0	---		
EB Right	0	0	0	---		
WB Left	73	0	0	---		
WB Thru	0	1	1600	0.102	<==	
WB Right	91	0	0	---		

Sum of Critical V/C Ratios	0.633
Heavy Vehicle Adjustment	0.050
Peak Hour Adjustment	0.000
Total Adjusted V/C Ratio	0.683
Level of Service (LOS) - refer to table below	B

Notes:

1. Per lane Capacity = 1,600 VPH
2. Dual turn lane Capacity = 2,880 VPH

Maximum LOS	V/C
A	0.6
B	0.7
C	0.8
D	0.9
E	1
F	n/a

Intersection Capacity Utilization Worksheet (7)

Intersection: 7 (N-S) **Madison Street** (W-E) **Avenue 62**

Scenario: Year 2020 W/ Project Afternoon Peak Hour

Analyst: Greg Company: Endo Engineering

Movement	Volume	Number of Lanes	Capacity	V/C Ratio	Critical V/C	Total
NB Left	0	0	0	---		
NB Thru	426	1	1600	0.327		
NB Right	97	0	0	---		
SB Left	124	1	1600	0.078		
SB Thru	663	1	1600	0.414	<==	
SB Right	0	0	0	---		
EB Left	0	0	0	---		
EB Thru	0	0	0	---		
EB Right	0	0	0	---		
WB Left	152	0	0	---		
WB Thru	0	1	1600	0.142	<==	
WB Right	76	0	0	---		

Sum of Critical V/C Ratios	0.556
Heavy Vehicle Adjustment	0.050
Peak Hour Adjustment	0.000
Total Adjusted V/C Ratio	0.606
Level of Service (LOS) - refer to table below	B

Notes:

1. Per lane Capacity = 1,600 VPH
2. Dual turn lane Capacity = 2,880 VPH

Maximum	
LOS	V/C
A	0.6
B	0.7
C	0.8
D	0.9
E	1
F	n/a