December 23, 2019

Mr. Barrett Elmer
UGI Riverbend Crossing, LLC
1746 Union Street
San Francisco, CA 94123

Traffic Study for the Riverbend Project

Dear Mr. Elmer;

As requested, W-Trans has prepared a traffic study evaluating potential impacts associated with the proposed Riverbend Project in the City of Petaluma. This work builds on the findings and recommendations in the *Traffic Impact Study Update for River Bend Crossing* (TIS) prepared in 2016 for the development of the Clover Site in conjunction with the Cedar Grove site located across the Petaluma River. The primary purpose of this letter is to review any identified impacts in the TIS and reevaluate them, as appropriate, to reflect the smaller project now being evaluated which no longer includes the Cedar Grove site.

Project Description

The proposed project includes the construction of 30 new single-family homes. The project site is currently vacant and is located west of Madison Street and south of Edith Street and is bounded by the Petaluma River to the west and the Clover dairy processing plant to the south. Access will be provided via connections at Madison Street and Edith Street. The updated site plan is enclosed.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for "Single Family Detached Housing" (ITE LU #210). The resulting trip generation was compared to the trip generation as presented in the TIS. It is noted that the TIS applied standard ITE rates for the same land use; however, given that the TIS was completed prior to the release of the 10th Edition, the trip generation rates applied in the TIS were published in the 9th Edition of the Manual. As summarized in Table 1, the proposed project is expected to generate an average of 283 trips per day, including 22 trips during the a.m. peak hour and 30 during the p.m. peak hour.

Table 1 – Trip Generation Summary Comparison

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
River Bend Crossing TIS											
Clover Site	30 du	9.52	286	0.75	23	6	17	1.00	30	19	11
Cedar Grove Site	83 du	9.52	790	0.75	62	15	47	1.00	83	52	31
Total	*113 du*		*1,076*		*85*	*21*	*64*		*113*	*71*	*42*
Proposed											
Riverbend Project	30 du	9.44	283	0.74	22	6	16	0.99	30	19	11

Note: du = dwelling unit

Based on the updated trip generation rates, the project is expected to generate one less trip in the morning peak hour compared to the project as evaluated in the TIS. The analysis as presented in the TIS would therefore be

expected to adequately capture the impacts associated with the project as currently proposed, and no update to the analysis is necessary. However, for comparison purposes, the proposed project was analyzed under the highest-volume, and therefore worst-case, p.m. peak hour condition and compared to the analysis in the TIS.

Cumulative plus Project Conditions

As presented in the TIS, a significant impact under the applied LOS standards was identified for p.m. peak hour Cumulative plus Project conditions at the intersections of East Washington Street/Wilson Street and East Washington Street/Edith Street. Upon the addition of project-generated traffic from the proposed Riverbend Project, the project would have a potentially significant impact at the Wilson Street intersection, but the increase in delay would be reduced to less than five seconds at the Edith Street intersection, so the delay at East Washington Street/Edith Street would be considered less-than-significant. These results are summarized in Table 2.

Table 2 – Cumulative and Cumulative plus Project Peak Hour Intersection Levels of Service

Study Intersection ***Approach***	**Cumulative**	**Cumulative plus Project**	
	PM Peak (TIS)	**PM Peak (TIS)**	**PM Peak (Updated Study)**
E Washington St/Wilson St	**414.6/F†**	**513.6/F†**	**453.0/F†**
Northbound (Wilson St) Approach	***/F*	***/F*	***/F*
Southbound (Wilson St) Approach	***/F*	***/F*	***/F*
Mitigated	--	**300.5/F†**	**270.6/F†**
Northbound Approach (Mitigated)	--	***/F*	***/F*
Southbound Approach (Mitigated)	--	***/F*	*118.7/F*
E Washington St/Edith St	**247.0/F†**	**262.8/F†**	**250.7/F†**
Northbound (Edith St) Approach	***/F*	***/F*	***/F*
Southbound (Edith St) Approach	***/F*	***/F*	***/F*
Mitigated	--	**123.1/F†**	**114.3/F†**
Northbound Approach (Mitigated)	--	***/F*	***/F*
Southbound Approach (Mitigated)	--	***/F*	***/F*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results shown as Delay/LOS; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* ** = delay greater than 120 seconds; **Bold** text = deficient operation; † PM Cumulative overall intersection delay greater than 120 seconds is reported to compare delays with and without recommended mitigation measures

Finding – Operation at East Washington Street/Wilson Street and East Washington Street/Edith Street is expected to further degrade from deficient LOS F overall during the p.m. peak hour, though the increase is greater than five seconds for only East Washington Street/Wilson Street, indicating a potentially significant impact.

Recommendation – To reduce the project's potentially significant impact at the intersection of East Washington Street/Wilson Street, the northbound and southbound Wilson Street approaches to East Washington Street should be restriped to provide dedicated left-turn/through lanes and separate right-turn lanes. Wilson Street is approximately 35 feet wide curb-to-curb and can accommodate three 11-foot lanes, though red curb and parking restrictions would need to be installed on both sides of the streets for a distance of about 50 feet. With these improvements the intersection would continue operating deficiently, but the change would result in improved

conditions as compared to Cumulative conditions without the project, reducing the incremental project increase in delay to less than five seconds and reducing the impact to a less-than-significant level.

Traffic Signal Warrants

It should be noted that in the TIS, a signal warrant analysis was performed to determine the potential need for traffic signals at East Washington Street/Wilson Street and East Washington Street/Edith Street. It was determined that volumes were sufficient to meet the peak hour volume warrant under Cumulative p.m. peak hour conditions; therefore, it would continue to be met under Cumulative plus Project conditions. However, since the recommended mitigation for the intersection of East Washington Street/Wilson Street still holds for the reduced 30 dwelling-unit project and would improve operations to levels better than those for conditions without the project, signalization would not be required to address the project's traffic impacts. The revised project would have a less-than-significant impact on operation at East Washington Street/Edith Street; therefore, the potential need for signalization of this intersection is no longer relevant to this project.

Vehicle Miles Traveled (VMT)

Senate Bill (SB) 743 established a change in the metric to be applied for determining traffic impacts associated with development projects. Rather than the delay-based criteria associated with a Level of Service analysis, the increase in Vehicle Miles Traveled (VMT) as a result of a project will be the basis for determining impacts once this new metric is fully vetted and adopted. Since the City has not yet adopted a criterion regarding project significance relative to VMT, the project's contribution was estimated for informational purposes only.

Vehicle miles traveled as a result of the project were calculated by multiplying the estimated number of trips and the average trip distance for the Traffic Analysis Zone (TAZ) in which the project is located. Average trip lengths were obtained from the Sonoma County Transportation Authority (SCTA) 2016 *Comprehensive Transportation Plan* (CTP). Based on the daily trips generated for 30 dwelling units (dus) as determined above using the standard trip generation rate, and an average distance of 14.6 miles traveled per daily trip in the project's location as available from the SCTA Model, the estimated VMT for the project is 3,747 vehicle miles traveled. These results are shown in Table 3.

Table 3 – Vehicle Miles Traveled

Land Use	Units	Average Trip Length	Daily Trips	Calculated Daily VMT
Single-family Housing	30 units	13.24 miles	283	3,747

As stated in the Proposed CEQA Guidelines Section 15064.3, Subdivision (b)(1), projects including residential, retail, and office space, as well as projects that are a mix of these uses, that are located within half-a-mile of an existing major transit stop or an existing stop along a high-quality transit corridor will have a less-than-significant impact on VMT.

Finding – The calculated total VMT for the project is 3,747 miles and the project is located half-a-mile from the Petaluma SMART Station and Transit Mall, a major transit hub. The project is therefore presumed to have a less-than-significant impact on vehicle miles traveled.

Alternative Modes

Pedestrian Facilities

Since the TIS was issued, one notable change to pedestrian facilities has been constructed, and that is the installation of rectangular rapid flashing beacons (RRFBs) for the crosswalk on East Washington Street at Edith

Street. In the TIS, upgrades to the existing pedestrian facilities in the vicinity of the project site were recommended. It was recommended that the Petaluma River Trail from the new bridge to the north end of the project site should be updated to meet paved Class I facility standards. The updated site plan does not include a bridge across the Petaluma River, thus the recommendation to upgrade and meet facility standards for the bridge is no longer valid. The updated site plan indicates that the existing sidewalk along the west side of Edith Street will be maintained and that landscape and bio-retention areas will be installed as a buffer between the sidewalk and Edith Street. It is noted that the Pedestrian and Bicycle Advisory Committee has worked with City staff to revise the facility recommendation for Edith Street from the previous Class I multi-use path to a Class III bike route. Therefore, the previous recommendation that the sidewalk along the west side of Edith Street be widened to a minimum of 10 feet along the project frontage between the river and Madison Street no longer applies. However, because Edith Street provides connections to a major pedestrian and bicycle trail, a marked crosswalk should be provided across the project access roadway at Edith Street.

The updated site plan indicates that sidewalk will be installed along the project's frontage on Madison Street. The sidewalks on Madison Street and within the project site are expected to provide adequate pedestrian access and connectivity to the surrounding pedestrian network; however, a crosswalk should be marked across the stop-controlled project access roadway at Madison Street.

Finding – Pedestrian facilities serving the project site would be adequate with the implementation of recommendations listed below.

Recommendations – The applicant should modify the Lynch Creek Trail along the project site to meet paved Class I facility criteria and update the trail access point at the terminus of Edith Street to a fully-accessible pedestrian/bicycle ramp. The applicant should also provide crosswalks across the project access roadway at its intersections with Edith Street and Madison Street.

Bicycle Facilities

In the TIS, upgrades to the existing bicycle facilities in the vicinity of the project site were recommended. The recommendations pertaining to the Petaluma River bridge are no longer valid because the bridge is not part of the updated site plan.

Finding – Per the TIS, existing bicycle facilities serving the project site would be adequate with the completion of improvements to the Lynch Creek Trail as recommended above in the assessment of Pedestrian Facilities.

Parking

At the request of City staff and given that the project would reduce the number of on-street parking spaces, the project was analyzed to determine whether the proposed parking supply would be sufficient for the anticipated parking demand. The project as proposed would provide 48 covered garage parking spaces and 63 uncovered parking spaces, for a total of 111 off-street parking spaces. Additionally, the project would retain ten of the 31 currently existing on-street parking spaces on Edith Street and Madison Street; the construction of driveways for the homes fronting on these streets would replace the remaining existing spaces. It is noted that the on-street parking is currently utilized by employees of the Clover Sonoma manufacturing site, which is located just south of the proposed project.

The off-street parking supply requirements for the project are included in the proposed Riverbend PUD Development Standards, Section 7.2; Vehicle Parking Spaces. Per these standards, detached single-family residences with two-car garages are required to provide two covered parking spaces plus two additional uncovered spaces per dwelling unit. Detached single-family residences with one-car garages and attached single-family residences are required to provide one covered and one uncovered space per dwelling unit. For the proposed 30-unit development, which includes 24 detached and six attached units, this requirement translates to

a total of 48 covered parking spaces on-site and 48 uncovered parking spaces. Therefore, the total proposed on-site parking supply of 111 spaces, 48 of which are covered, satisfies the requirement set forth in the PUD Development Standards. The parking requirements applied are shown in Table 4.

Table 4 – Parking Requirements

Land Use	Units	Rate Required	Spaces Required
PUD Requirements			
Detached Dwelling – Single Household with Two-Car Garage	18 du	2 covered plus 2 additional uncovered spaces per du	36 covered, 36 uncovered
Detached Dwelling – Single Household with One-Car Garage	6 du	1 covered and 1 uncovered space per du	6 covered, 6 uncovered
Attached Dwelling – Single Household	6 du	1 covered and 1 uncovered space per du	6 covered, 6 uncovered
Total Supply Required			**48 covered, 48 uncovered**
Total Proposed On-Site			**48 covered, 63 un-covered**

Notes: du = dwelling unit

Conclusions and Recommendations

The conclusions and recommendations as presented in the TIS were reviewed and updated to reflect the construction of 30 new single-family homes. Except as modified or restated below, they remain valid for the project as now proposed.

- The proposed project would be expected to generate a total of 283 new trips per day, with 22 new trips during the a.m. peak hour and 30 trips during the p.m. peak hour.

- The project would be expected to generate a total VMT of 3,747 miles per day.

- Under Cumulative plus Project conditions, overall delay at East Washington Street/Wilson Street is expected to increase, further degrading the already deficient LOS F and resulting in more than a five-second increase in average delay upon the addition of project-added traffic during the p.m. peak hour. This is a significant impact under the applied standards.

- The applicant should proceed with the recommendation outlined in the TIS to complete improvements to the northbound and southbound approaches of Wilson Street at East Washington Street by installing right-turn pockets along with approximately 50 feet of red curb markings and associated parking prohibitions. These improvements should be completed to mitigate the project's impact to a level of less-than-significant. Similar improvements at East Washington Street/Edit Street are no longer necessary to achieve a less-than-significant impact.

- As recommended in the TIS, the applicant should be responsible for upgrading the Lynch Creek Trail on the project site to meet paved Class I facility criteria, improve the trail access point at the terminus of Edith Street, and install crosswalks across the project access roadway at its intersections with Edith Street and Madison Street.

- The total proposed parking supply is adequate to satisfy the PUD parking requirements.

- Given that the proposed bridge over the Petaluma River is no longer part of the proposed Clover Site Project, all recommendations outlined in the TIS pertaining to the bridge should be disregarded.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

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Assistant Engineer II

Kevin Rangel, EIT
Assistant Engineer III

Dalene J. Whitlock, PE, PTOE
Senior Principal

DJW/kr/akw/PET220.L1

Enclosures: *Traffic Impact Study Update for Riverbend Crossing*, June 6, 2016, W-Trans; Updated Site Plan; Intersection Level of Service Calculations