City of Placerville
Public Works / Engineering
M E M O R A N D U M

DATE: January 27, 2009

TO: City Council

FROM: Richard Tippett, City Engineer
Nate Stong, Associate Civil Engineer

SUBJECT: PROJECT DEVELOPMENT STATUS -MAIN STREET/CEDAR RAVINE ROAD/CLAY STREET ROUNDABOUT

RECOMMENDATION

Staff recommends that the City Council:

1. Receive a project development status report.
2. Provide input on the design concept of a roundabout at the intersection of Main Street and Cedar Ravine Road and/or direction for project development.
3. Authorize continuation of project development of the Clay Street Bridge replacement and Main Street/Cedar Ravine Road/Clay Street intersection improvements.

BACKGROUND

The existing intersections of Clay Street/Main Street and Main Street/Cedar Ravine Road experience traffic congestion which is forecast to continue to deteriorate to Level of Service (LOS) F by 2025. Over time, the City has been collecting Traffic Impact Fees and pursuing state and federal funding to allow for improvements to be constructed alleviating this congestion.

The project has two major components: (1) the Clay Street roadway and bridge reconstruction and realignment, which would bring Clay Street into alignment with the Main Street/Cedar Ravine Drive intersection; and, (2) redesign of the Main Street/Cedar Ravine intersection for a roundabout or alternate intersection design in order to improve current traffic flow and handle future traffic volumes. The roundabout with all four approaches is the preferred configuration as outlined in the City-adopted 2006 Main Street Streetscape Design Development Plan. The outcome of the realignment and roundabout would be to improve vehicle circulation and safety, while providing an enhanced pedestrian-friendly downtown environment.

Funding for design and construction has been programmed from multiple federal, state, and local sources including the Highway Bridge Program (HBP), Congestion Mitigation Air Quality (CMAQ), Regional Surface Transportation Program (RSTP), and local developer Traffic Impact Mitigation (TIM) fees.

The totals are as follows:

CMAQ Funds	$ 800,000
HBRR Funds	$1,402,293
RSTP Exchange Funds	$ 400,000
Developer Contribution	$ 65,817
TOTAL FUNDING	**$2,668,110**

At the June 26, 2007 City Council meeting, Council authorized Staff to enter into a Consulting Services Agreement with Quincy Engineering to design a new bridge and roundabout. Environmental work commenced shortly thereafter and alternatives were developed to evaluate the impacts of the project. It quickly became evident that the roundabout would create significant impacts to the Ivy House Parking Lot, thus the design was delayed until potential and acceptable alternatives could be developed.

DESIGN ALTERNATIVES

There are three primary alternatives available for intersection design at Main Street and Cedar Ravine:

- **Alternative 1** incorporates Cedar Ravine and both legs of Main Street into a three leg roundabout configuration. Clay Street is maintained at its existing location, intersecting Main Street approximately 120' west of Cedar Ravine.
- **Alternative 2 (Staff preferred)** realigns Clay Street to bring it into a roundabout configuration along with Cedar Ravine and both legs of Main Street.
- **Alternative 3** is the "no project" alternative. The intersections at Cedar Ravine and Clay Street would remain as they are today. CMAQ funding would be forfeited under this alternative, and the city could be responsible to repay any CMAQ funds expended toward project development.

DESIGN DEVELOPMENT

The design process included a public meeting in November 2007 where the community was invited, impacts and operations of the roundabout were discussed, and concerns were aired. The primary concerns were regarding traffic, parking and drivers unfamiliar with the roundabout. After the public meeting, the alternatives were again revised to take into consideration some of the concerns raised at the meeting.

There are several geometric considerations that are involved with roundabout design. The diameter of the roundabout and the entry and exit angles are all carefully laid out to control vehicle speeds and to maximize safety. Several iterations of roundabout design were laid out in an attempt to balance good geometric design with limiting impacts to parking and local businesses. Specifically the alternatives were developed to avoid any impact to the Title Company at the southwest corner and the Auto Parts store at the southeast corner. Impacts to parking at the Ivy House parking lot were unavoidable, but were minimized to the extent practical.

Another consideration in the design of the roundabout is the design vehicle. This influences the size of the "inscribed diameter", or the size of the roundabout, as well as the width of the approaches. A "California Legal" design vehicle was selected which is a truck tractor-semitrailer with a maximum length of 65 feet, such as a large moving van. The range of

diameters that were considered for design ranged from 90' to 150'. An optimal inscribed diameter of 120' for the roundabout was used, which allows for trucks to make all turns.

Utilizing the above design considerations, two alternatives were developed for analysis plus a no project alternative. Results are summarized in Table 1 below. All of the alternatives except the no project alternative include the following:

- Some impact to the park area located between Hangtown Creek and the Ivy House Parking Lot,
- Replacement of the bridge across Hangtown Creek at Clay Street.

Table 1: Summary of Alternatives

	Parking (total existing spaces = 72)	**Traffic LOS (Level of Service) (AM/PM)**
Alt 1	There would be 36 spaces remaining, with a loss of 36 spaces at the Ivy House Lot.	Cedar Ravine Intersection LOS B/D Clay Street Intersection LOS F/F • Delays exceed 50 seconds to make a left turn onto eastbound Main St.
Alt 2	There would be 29 spaces remaining, with a loss of 43 spaces at the Ivy House Lot.	LOS B/C
Alt 3	There would be no impact to parking with the "no project" alternative.	Cedar Ravine Intersection LOS C/F Clay Street Intersection LOS F/F • Delays exceed 50 seconds to make a left turn onto eastbound Main St.

In addition to the above, a traffic analysis was performed for the Cedar Ravine/ Main Street intersection utilizing a conventional signalized intersection. Analysis was done for Clay Street realigned to meet Cedar Ravine and for Clay Street remaining in its existing location. This analysis was performed to satisfy alternatives analysis requirements under CEQA, and to consider the potential for a signalized intersection at that location should the roundabout configuration prove to be infeasible.

The signalized intersection did not perform as well as the roundabout, however the 4-leg signalized intersection would maintain an acceptable level of service through 2025. If for some reason the City Council determined that the roundabout was not feasible and elected to pursue a signalized intersection, an action would be required by the El Dorado County Transportation Commission to authorize the use of CMAQ funds for the construction of a signalized intersection at this location.

Recommended Alternative

Staff recommends Alternative 2 because it provides the most consistency with the Streetscape Plan and the best vehicular circulation and safety. Alternative 1 would preserve seven more spaces near the Ivy House Lot, however it would result in the sacrifice of operation and safety characteristics of the overall project.

PARKING MITIGATION

To address the loss of parking at the Ivy House lot, Staff explored locations for replacement parking. It was determined that the best opportunity for replacement parking is located at a lot on the west side of Locust Avenue just south of US 50 about 800 feet east of the Ivy Lot location.

This lot is currently owned by Joseph Stancil and leased by Thompson's auto dealership. Its potential 44 spaces would essentially mitigate the worst case loss of 47 parking spaces at the Ivy Lot.

Caltrans Local Assistance has indicated that providing replacement parking to mitigate the loss of parking at the Ivy House Lot will be an eligible project cost for HBRR and CMAQ funding.

In addition to the Locust Avenue location, other nearby locations exist to provide replacement parking with varying degrees of right of way, design, and construction work needed. If direction is given to Staff to pursue additional parking, these locations can be explored further. The locations include:

1. Locust Avenue just north of US 50 (owned by the City; could readily provide eight or more parking spaces).
2. Main Street just east of C&H Auto Parts (envisioned as part of a separate project which could provide an additional 30 spaces).
3. The northeast parcel at Cedar Ravine Road & Thompson Way with 12 space potential

A component of the parking mitigation will be the balance of leased parking and public parking. Currently, there is 37 spaces available for public parking and 37 spaces for lease parking. It is recommended that the determination be made later in the project development process based upon discussions with surrounding property owners, business owners, and leased space holders.

PROJECT FUTURE

Project development will proceed with Council's direction for the alternatives as described here. All presented alternatives will be carried forward for analysis in the Project Report (project approval document) and for CEQA and NEPA documentation. This document will be taken to the Planning Commission late winter, early spring 2009. Once the environmental process is complete, Engineering Staff and the Design Consultant will begin preparing the plans and specifications. Once that is complete, Staff expects to start construction in the summer of 2010.

FISCAL IMPACT

It is anticipated that this project will be fully funded through various funding sources listed above.

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