January 16, 2014

MEMO

TO: Honorable Mayor and Members of the City Council

FROM: Karl Eberhard, AIA
Community Design and Redevelopment Manager

RE: Fourth Street Corridor Study - North
City of Flagstaff – Internal Link to Study

At the request of the City Council, Community Design and Redevelopment staff initiated a design study of the northern portion of Fourth Street, from Route 66 to Cedar Avenue. While the study suggests certain redevelopment ideas, and redevelopment would be expected following municipal investment, the study was specifically *not* an East Flagstaff Redevelopment Plan. The purpose of this study was to address community concerns about the corridor, the public realm, and to create a conceptual plan that provides an overall vision, a framework for physical and financial planning, and that could serve as the basis of future detailed work. As it turns out, the end result is a policy question ...

A Consultant team, lead by Otak Inc., was selected and the contract approved by the City Council in April of 2009. The City Council reviewed initial stakeholder input and several conceptual design schemes, and provided direction in February of 2010. In response to staff comments, in July of 2010, additional Traffic Study work was added to the contract and additional public outreach work was also added due to the extended timeframe. The final report was provided to City staff in November of 2010. Through February of 2013, potential traffic impacts were evaluated by staff, including additional traffic modeling by the consultant, modeling by the Flagstaff Metropolitan Planning Organization (FMPO), and modeling by a third party traffic engineer. So as not to be confused with business improvement district formation efforts on the east side, the report has not been presented to the City Council in the intervening time.

Goal and Plan Development:

The initial scope of work approved by the City Council included the goals of Pedestrian Safety and Comfort, Traffic Issues, Urban Design and Beautification, Multimodal Transportation, and Redevelopment of the public realm. The scope of work also included extensive Community Involvement and Cost information and recommendations.

Community Involvement:

Stakeholder input was obtained through workshops and presentations conducted on September 1st and 2nd, 2009, December 15th and 16th, 2009, January 26, 2010, and December 1, 2010. Stakeholders included property and business owners, neighborhood residents, community organizations (neighborhood, business, and religious), City Council members and County Supervisors, City Boards and Commissions, City (All Divisions), County, and FUSD staff, and the broader Flagstaff community.

The Consultant's outreach process started with a stakeholder review and confirmation of the scope of work goals. Through this process, the following vision was developed for the northern part of Fourth Street:

> "A signature street based on local ecology and cultural history that links neighborhoods, develops Fourth Street as a destination, and creates a sense of place"

The community review of preliminary concepts, and ongoing community discussions, further shaped the goals and objectives that were incorporated into the final plan recommendations.

Existing Conditions:

The stakeholder's observations and concerns weren't conveniently grouped into "Pedestrian Safety and Comfort, Traffic Issues, Multimodal Transportation, Urban Design and Beautification, and Redevelopment". Their observations were more ground level - such as "there's only one legal crossing in a mile of street", "the road divides the neighborhoods east and west of the street", "people drive too fast", and "more green, less grey". In summary, while the street sort of works for cars it's certainly not a neighborhood center and certainly not a place for people. It is that character, being severely pedestrian-adverse, that distinguishes Fourth Street from downtown, the mall, or the Sawmill – places of commercial investment and value, economic vitality, and places of redevelopment. This character is a product of neighborhood development in an era when auto-exclusive development was the norm, but importantly, it is also the product of a limited right-of-way width. The existing right-of-way is nearly completely filled by the road.

Preliminary Plan Concepts:

Otak, Inc. developed several conceptual design schemes that were considered (descriptions are included in the study). Two general ideas, or directions, were presented as initial schemes to the stakeholders and the City Council (February 2010).

The "Linear Park" concept involved reducing the overall width of the road, eliminating one driving lane in each direction, creating space for needed edge improvements including parkways and sidewalks, multi-modal transportation facilities, and a linear park on the east side. Intersections at Sixth, Seventh, and Cedar Avenues would have been re-aligned, other intersections improved, and driveways into the shopping malls would have been consolidated to assist in traffic flow and to create open spaces. Other key components included on-street parking, pedestrian crossings, and incorporated sustainability and "Green Street" technologies.

The "Village Square" concept proposed organizing Fourth Street around a series of open areas that provide community spaces. The highlight was the development of a large central plaza between Sixth and Seventh Avenues. The four existing traffic lanes were preserved, requiring right-of-way (ROW) purchases to accommodate edge improvements, and the center shared turn lane would have become a planted median. Intersection and driveway modifications as well as pedestrian and multi-modal transportation facilities were similar, in function at least, to those of the "Linear Park" scheme.

The Final Plan Recommendations:

Consensus feedback, and traffic analysis, suggested that making all of Fourth Street two lanes was not workable, putting a plaza in the middle of the street was not workable, and eliminating the center turn lane was not workable. It seemed that the "Linear Park" scheme, with some modifications, worked pretty well from Cedar Avenue to Seventh Avenue and that the "Village Square" scheme, with some modifications, worked pretty well from Sixth Avenue to Route 66. This combination best balanced the various community goals and objectives and the final plan is indeed this blend of the two earlier schemes.

Pedestrian Safety and Comfort:

In addition to this direct goal, all of the stakeholder goals speak to the walkability of the neighborhood and the desire to create walkability where none exists today. The specific objectives of this goal include a complete sidewalk system, pedestrian crossings, corridor and neighborhood connectivity, shade, lighting, and slowing down traffic.

Pedestrian safety and comfort, and walkability, are accomplished in part by adding missing features. The plan describes these clearly and thus only highlights are addressed here. Pedestrian crossings are provided at ¼ mile intervals overall and at $^{1}/_{8}$ mile intervals in key places[1]. These crossings provide neighborhood connectivity, notably the east side of the street to the neighborhood areas west and vice versa. In addition, the plan recommends some street connections between Fourth Street and the neighborhood areas to the east, as well as a handful of purely pedestrian connection opportunities.

[1] For reference, 1/8 mile intervals are every 660 feet, approximately equal to two blocks in downtown Flagstaff – not ideal, but much better.

Altogether these added features increase the level of "friction", an alteration that naturally causes drivers to slow down. Notably, most of the traffic slowing is a result of the added signals and pedestrian crossings. The relationship between vehicle speed and the severity of collisions between cars and people is well established - decreasing vehicle speeds from forty miles per hour to thirty reduces the fatalities nearly in half.

The other significant alteration to create pedestrian safety and comfort, and walkability, is the removal of driving lanes from Sixth to Cedar Avenue. In that area, instead of being purchased, the existing ROW is reallocated to provide the necessary space for the place making and safety sought by the stakeholders. In the transportation industry, this solution is referred to as a "road diet". In addition to reducing speeds, reducing the number of lanes contributes significantly to pedestrian safety and walkability. Supported by the Federal Highway Administration (FHWA) and their studies and publications, five-lane roadways significantly discourage mobility and access of transit users, pedestrians and bicyclists.

Neighborhood Traffic Issues:

The stakeholder objectives with regard to changing the roadway included access management, intersection design (specifically aligning Sixth and Seventh Avenues and signalized intersections), turning movements, and slowing down the traffic.

Most of the intersection improvements are rather mundane and typical considerations of the number of turn lanes, signals, and so forth. Notably however, realignments are proposed at Cedar Avenue/Locket Road and at Sixth/Seventh Avenues and each location requires a notable investment in ROW acquisition. Clearly, the recommended design balances functional possibilities, spatial needs, and cost.

Cedar / Lockett & Fourth

Sixth / Seventh & Fourth

Access management recommendations do not include the traditional solution of adding raised medians, but does include consolidating driveways. The concern about turning movements initially suggested adding medians but upon vetting with the stakeholders, this objective was reduced to simply enhanced turn lane paving and improving the intersection designs.

The Consultant feels that the streetscape elements provide enough friction and the signals enough pause, that the task of slowing down traffic is accomplished without need of specific traffic calming features.

Urban Design and Beautification:

Within this goal, objectives included a coordinated community design creating gathering spaces, streetscaping (including landscaping, furniture, signage, and similar amenities), “more green, less gray”, and public art. The over-arching objective specifically included making Fourth Street a destination, or commercial activity center, as well as a place that serves the neighborhood population, and a community design element that unites rather than divides East Flagstaff. In the course of developing the study, the stakeholders referred to this over-arching objective as “place making”.

For many, the public process used to develop this study is referred to as “place making”. Under this definition, it involves looking at, listening to, and asking questions of the users to discover their needs and aspirations. This information is then used to create a common vision for that place.

Multimodal Transportation:

Because of the real or perceived dire need for pedestrian facilities (sidewalks, crossing, and so forth), these became a goal separate from other multi-modal transportation objectives. The other two objectives of a balanced multi-modal transportation system include bicycle and transit facilities.

Fourth Street currently has bike lanes and the recommended plan proposes a bicycle path instead. Bike lanes are appropriate to meet the Engineering Standards. This change can readily be accommodated with the detailed design and engineering work without materially changing the study. This critique exemplifies that specific details shown now do not detract from the current function of the plan - as the basis of financial planning, grant applications, and future detailed design and engineering work.

The study recommends bus service in both directions, double the number of stops, and enhanced stop facilities (shelters, urban design, public art and so forth). And, the plan offers up an operational strategy to achieve this level of service.

Redevelopment:

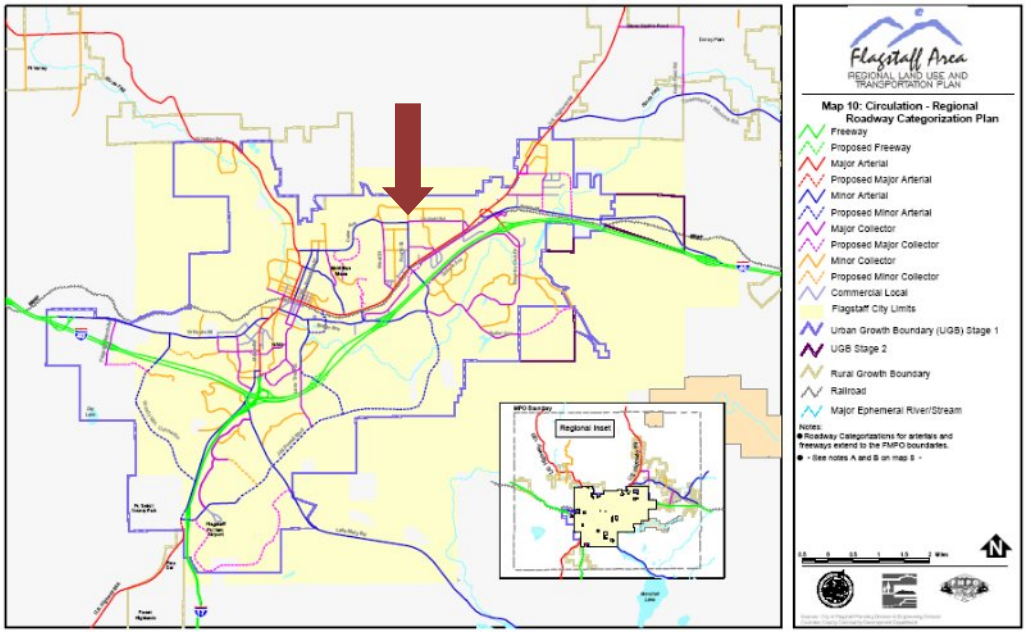
The stakeholders identified place making, walkability, neighborhood connection, and a balanced street design as issues to be addressed by the corridor study. Importantly, these were put forth as means to achieve redevelopment in the area. Fourth Street has not seen notable reinvestment and has been declining for some time. Compared to years past, other corridors of the City now compete to serve the driving public and other places that are walkable have been redeveloped, and developed, and are prospering. The decline of Fourth Street has not only made it less serving to people passing through, it has also made it less neighborhood serving – less of an activity center. Redeveloping Fourth Street is necessary to address this, to provide local commercial and employment opportunities, and to bring prosperity to the area.

The stakeholder's redevelopment objectives also included a desire for more comprehensive branding, or theming, for the neighborhood. The streetscape and beautification elements, furnishings, signage, interpretive elements, and public art all work together to express the community character in a unifying and unique way.

Note that the study was intentionally limited to the public realm and is not a redevelopment plan for East Flagstaff. Thus, the depth of "redevelopment" recommendations includes only those that relate to the public realm and those that the Consultant felt needed to be conceptualized in order to perform the task at hand.

Service as an Arterial Road:

In looking at the overall picture of Flagstaff's road network, Fourth Street is an important arterial, and it will be more so when it is connected to Pulliam Drive. It is a rare north-south connection and allows direct access from East Route 66, areas of the City to the east and south, to McMillan Mesa, the hospital, Highway 180, and the residential neighborhoods to the north of Cedar Avenue / Lockett Road. Recognizing this community serving role, the ability of Fourth Street to continue to serve as a part of the City's overall arterial network was an objective of the study.



Today, Fourth Street has a peak hour demand of approximately 15,250 Average Daily Traffic (ADT) at the north end and 17,500 at the south end. The Consultant estimated the current capacity at 34,000 ADT. The proposed road design, in addition to the modified intersections, edge improvements, and access controls noted above, includes removing a driving lane on each side from just north of Seventh Street to Cedar Avenue. Known as a "road diet", this solution allows the proposed improvements to be constructed without purchasing right-of-way by utilizing the surplus capacity of the road. While the Consultant believed this "worked" from a traffic engineering point of view, they were also influenced by the stakeholders input.

Stakeholder thoughts specific to the road diet were certainly mixed. Those who felt Fourth Street currently worked well, those who felt its primary function is that of an arterial road, and businesses that believe passing cars are more beneficial than passing pedestrians, clearly and emphatically *do not* support the lane reductions. Those groups and individuals that believe Fourth Street should be a destination first, that slowing down traffic is good for people and business, and those that felt the contribution of Fourth Street to the overall arterial road system is a lesser priority, supported the road diet concept.

Starting with the review of the first concepts, staff struggled with the Consultants supposition that acceptable Levels of Service (LOS) could be maintained with the road diet. As a result, the Consultant contract was amended to include additional traffic engineering. Substantial additional traffic analysis was performed over the next two years, and during this period the Consultant replaced their first traffic engineer and purchased and used traffic modeling software recommended by the City. To provide background data, at the request of the City, the Consultant modeled the existing road design with no change other than growth, and reported a forecasted LOS of B and C. For the corridor as proposed, the Consultant maintained that the City would experience LOS C and D. The Regional Transportation Plan (RTP) recommends LOS E as the acceptable minimum for an urban arterial road.

Since the City of Flagstaff has no experience with road diets, no methodologies for analysis, and no metrics or standards for results, we looked at many other communities and case studies for guidance. The most pertinent information was provided by the Seattle Department of Transportation (SDOT), an agency with more than thirty completed road diets. While SDOT uses current traffic volumes for their analysis, we elected to use 2032 traffic volumes. SDOT proceeds with road diets if the LOS does not drop by more than two letter grades, if the letter grade is not less than LOS E, and if the reduction in travel time (delay) is not greater than 30%.

So, we took a look at delay. If the proposed plan were implemented, at Peak Hour, over the mile long reach, southbound drivers would experience 53 seconds of delay and northbound drivers would experience 74 seconds of delay. The majority of that delay is the result of the "free flow" speed dropping to the posted 30 miles per hour and due to the introduction of new signals and crossings. The delay attributable to the road diet is less than 30% of the total travel time.

If our projected 2032 conditions were the existing conditions in Seattle, they would proceed with this plan.

Staff believes that the introduced delay may cause some drivers to divert to other routes, primarily those drivers that are just "passing through" East Flagstaff. It is difficult to establish a magnitude for this expectation, so we looked at documented measurements of diversion at eleven other comparable road diets. Half showed *no* diversion of traffic. The worst case was Valencia

Street in San Francisco which experienced a ten percent diversion of traffic. The best case was State Route 516 in Covington, Washington, where traffic *increased* by ten percent after a road diet.

If we then suppose that ten percent of the traffic on Fourth Street is diverted to other routes, a small number would likely divert to local streets, more to collector streets including Cedar Avenue/Lockett Road, West Street, Main Street, and a Steves/Elder/Paterson Blvd. cut-through route. Some will divert to alternative arterial roads including Switzer Canyon Road/Columbus Avenue, San Francisco/Beaver Streets, and Humphreys Street. Taking a best guess at the distribution among these possible alternative routes, these alternative routes may experience as much as three percent additional traffic. Notably however, our Traffic Program is sometimes called upon to respond to (fix / stop) neighborhood cut-through traffic that is of this magnitude.

Finally, in April of 2012, a third traffic engineer was engaged directly by the City to review the work to date and to perform additional traffic modeling. Using a growth rate of 1.5%[2], considering pedestrian crossings as full intersections, and changing the modeling to account for "Flagstaff driver habits", this engineer determined that overall the proposed corridor will perform "similar to the current roadway design" in 2032. In other words, by 2032 both the existing roadway and the roadway proposed in the plan will get to LOS E and F[3], with the redevelopment (plan) scenario likely getting there sooner.

Any road design scenario that addresses the traffic concerns of the stakeholders, slowing down traffic, addressing the need of crossing opportunities, and reducing "wild left turns", will lower the level of service and increase the overall travel time on the corridor. This may motivate drivers to seek alternative routes, including the adjacent residential streets. Therefore staff recommends that the entire street grid in this area be studied comprehensively so that neighborhood cut-through issues can be identified and addressed when the Fourth Street traffic issues are addressed.

Cost:

Of less concern to most stakeholders who were engrossed in the long awaited "visioning", a goal the City placed in the balance was "costs". The Consultant was directed to consider options that were realistic and to balance the goals and objectives against the costs.

In summary, for planning purposes, to convert Fourth Street to "a place to be" as proposed, the study outlines a five phase construction process with an estimated cost of $8,862,668. Real estate acquisition is estimated at $3,700,000. With mobilization, construction engineering, and contingency added, the total estimated cost is $16,358,901.

Notably, this estimate relies on the removal of driving lanes to balance the desired goals and features with the cost of ROW acquisition. If all of the "edge treatments" were simply appended onto the existing roadway, with no road diet, the budget needs to be increased by at least $3,700,000 to account for additional right-of-way acquisition.

[2] The Flagstaff Regional Plan 2030 (Place Matters) uses a growth rate of 1%.
[3] This LOS is due to failure at the intersections.

Policy Context:

Regional Land Use and Transportation Plan (RLUTP):

The RLUTP generally envisions a community where livability and a sense of community are a priority. Giving dimension to this vision, it calls for community driven planning, place making, walkability, connectivity, neighborhood integration, and being a pedestrian, bicycle, and transit friendly community. Specifically with regard to the design of our transportation system, notably in priority order, it calls for "safety, balance[4], connectivity, efficiency, and diversity". And specifically with regard to Fourth Street, the plan calls for it to be a minor arterial road, a multi-modal corridor, and an activity center – a place to be and the most efficient corridor possible.

The community concerns, vision, goals, and objectives regarding Fourth Street speak directly to the RLUTP vision, generally and specifically. It is currently a low density, suburban, auto-dominated, excessively paved, over capacity road that has little or no livability or walkability features, that lacks any positive sense of community, and that economically and spiritually fails to serve – in fact, it divides – the community most affected by it. As a result, it currently functions, and is sometimes thought of, more like a major arterial – defined as "through capacity is emphasized over local access". The proposed plan transforms it into the opposite.

Flagstaff Regional Plan 2030 (Place Matters):

Place Matters similarly looks to Fourth Street as an activity center, and specifically identifies arterial level of service as a low priority when compared to pedestrian, bicycle, and transit levels of service. This plan would change Fourth Street to an activity center as envisioned in Place Matters.

Regional Transportation Plan (RTP):

The foundation of the RTP is to support the RLUTP in both its vision and basis upon the region's core values. The primary objectives include supporting transportation projects that "enhance neighborhood and community character, environmental sustainability, safety, and the region's economy". To do this, the plan calls for *balancing* mobility, access, and trip choice with the needs and character of each neighborhood. It also specifically identifies Fourth Street as an activity center – the northern portion as a district activity center and the southern portion as a community activity center – as proposed.

It prescribes the use of four transportation planning strategies for all areas; Context Sensitive Solutions, Complete Streets, connectivity for all modes, and maximizing personal travel choices. The RTP notes that Complete Streets increase personal mobility and are designed to safely and attractively accommodate all transportation users, and that Context Sensitive Solutions result in transportation facilities that reflect community values based on the input of designers and stakeholders and are integrated with surrounding land uses. All of these objectives and strategies are accomplished by the proposed plan for Fourth Street.

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[4] RLUTP: Planning and design seeks to balance the various, and sometimes competing, goals and objectives of a project. A design that provides absolute satisfaction for one variable at the expense of other variables is a poor design. A good design balances all of the variables proportionally according to user preferences.

Policy Question:

The report and subsequent traffic discussions pose an interesting policy question: Is Fourth Street a place to *pass through* more than a *place* to be? Or, is Fourth Street a *place* to be more than a place to *pass through*?

Note that this is not an either/or question but rather a question of balance. Design, including planning, is a function of balancing goals, and the question posed here seeks what design variables are more important than others.

Another way to pose the question is: Does the benefit of *place* outweigh the cost?

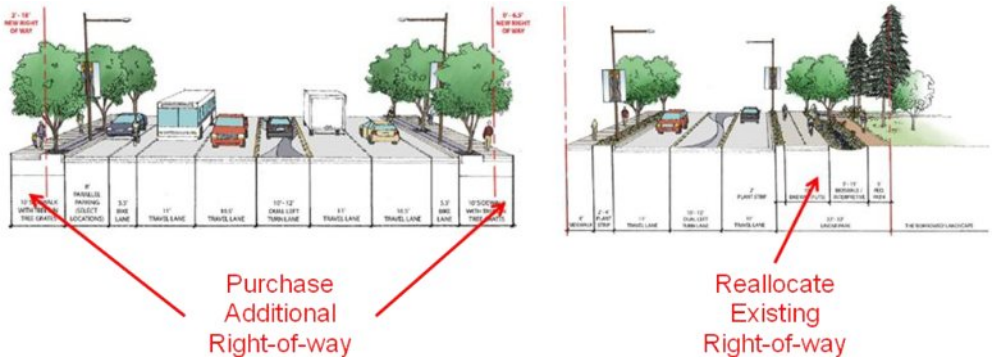
On the benefit side, implementing the plan as prepared addresses pedestrian safety and comfort, neighborhood traffic issues, urban design and beautification, multimodal transportation, and redevelopment. Service as an arterial road is maintained at acceptable levels for a decade or two. And, the place making process, the desires of the community, are honored.

On the cost side, the current surplus road capacity is consumed, drivers will experience delay in passing through East Flagstaff, drivers may or may not divert to neighborhood streets, and expanding the road and intersections for better pass-through functionality in the future, should we choose to do that, will be more difficult and costly. The cost is roughly $17M, not considering any additional work performed to address neighborhood cut-through traffic (should that occur).

Alternatives:

An immediate question comes to mind from the above consideration: Why don't we just append the edge improvements on to the existing roadway?

This solution, assuming we kept the traffic enhancing features like intersection realignments, added turn lanes, and consolidated driveways would likely address the neighborhood traffic issues. It would still allow for adding sidewalks, improved multimodal transportation, and notable enhancement of the urban design and beautification. Keeping the various pedestrian crossings would help a lot, but not as well as also narrowing the crossing. Service to redevelopment would be improved, but also not as well. Overall, the character will be noticeably different, being less safe and less conducive to livability and walkability.



However, drivers will still experience delay, with the delay only reduced from seventy-four seconds to sixty-eight seconds. Diversion of drivers to neighborhood streets still may or may not occur. Expanding the road and intersections for better pass-through functionality in the future will still be difficult and costly, however likely less so because the right-of-way expansion. The $17M cost is certainly increased by at least $4M for additional right-of-way acquisition. Potential expenses to address diverted traffic are still not included. And, while both options suggest that an expansion of Cedar Avenue and Lockett Road is appropriate, this option suggests a larger expansion to match the larger capacity of Fourth Street.

Interim Measures:

Some of the features proposed in the study would serve this plan as well as alternative road designs, and can be addressed at this time. Between Route 66 and Sixth Avenue, right-of-way can be acquired so that missing sidewalks could be installed and inadequate sidewalks could be upgraded. Additional crossing opportunities could be installed. Driveway consolidations can be pursued. With these efforts, street trees and other streetscape elements could be installed. Some of these can be accomplished north of Sixth Avenue if the policy question can be answered or on a temporary basis. Over the entire length of the street, the proposed decorative median could be installed. And, while needing some time to accomplish, the re-alignment of Cedar Avenue/Locket Road and at Sixth/Seventh Avenues makes sense for all road design scenarios. With these realignments, the two gathering spaces could be developed.