



## **SMART TRANSPORTATION PLANNING OPENS THE DOOR TO VALUE-DRIVEN RECOMMENDATIONS IN EAGLE, IDAHO**

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### **Abstract**

The Eagle/State Intersection Concept Study was a holistic, intersection and roadway network planning study to determine the future transportation needs within the core of Eagle, Idaho. The City of Eagle is a suburb of Boise, Idaho with a population approaching 25,000 and the Eagle/State intersection is located in the heart of downtown Eagle. The study's solutions had to best balance the need to safely accommodate the expected growth in traffic demand with the goal of fostering a walkable, active, vibrant, mixed-use environment in downtown Eagle. This study was a collaborative effort between the citizens, stakeholders, and elected officials of the City of Eagle and Ada County Highway District (ACHD). ACHD and the City of Eagle partnered to employ the process and ideal of *Smart Transportation Planning*, considering a wide range of context-sensitive solutions.

Five intersection alternatives were evaluated and presented to the public: No-Build, Expanded Signal, Quadrant, Roundabout, and One-Way Couplet. The study also evaluated several downtown street improvements originally identified in the Downtown Eagle Plan, which included the extension of several existing dead end streets as well as widening and streetscape improvements. The roundabout alternative was recommended for the Eagle Road/State Street intersection, due in large part to the safety benefits realized from roundabouts and with consideration for the expected improvement in traffic operations and enhancement of the character of downtown Eagle. Consistent public support was also received throughout the course of the project for the several downtown circulation projects, which support many of the City's land use and transportation values and goals. The study's adoption process highlights some of the benefits and challenges of employing the principals of *Smart Transportation Planning*. Expedited funding and implementation of the downtown circulation projects has become a reality due to a new Economic Development Program instituted by ACHD within the district's Integrated Five-Year Work Program.

#### **PRINCIPLES OF SMART TRANSPORTATION**

1. Tailor solutions to the context.
2. Tailor the approach.
3. Plan all projects in collaboration with the community.
4. Plan for alternative transportation modes.
5. Use sound professional judgment.
6. Scale the solution to the size of the problem.

#### **Implementation of the *Smart Transportation Planning* Process**

ACHD and the City of Eagle partnered to employ the process and principles of *Smart Transportation Planning*, which fosters an effective means of collaboration founded upon a process in which a multi-disciplinary team considers a wide range of context-sensitive solutions and works closely with the community to determine the best transportation solutions (Reference 1).

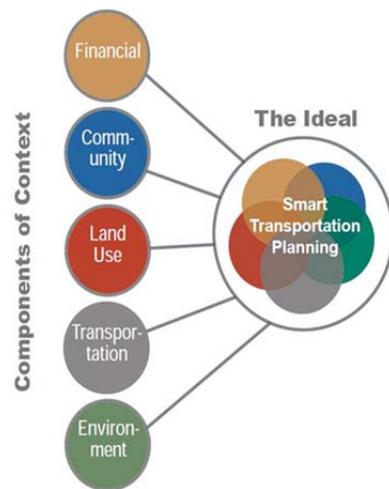
*Source: Smart Transportation Planning Guidebook (Reference 1)*

An 11-person Project Management Team (PMT) comprised

of staff representatives from ACHD and the City of Eagle served to evaluate alternatives and make recommendations to the elected officials of the City of Eagle and ACHD. The PMT worked closely with a 17-person Stakeholder Committee (SC), comprised of local citizens, agency representatives, and local officials, to understand the political, social, financial, and physical “landscapes” within the community and gather feedback on alternatives. The PMT and the SC served to implement the principles of *Smart Transportation Planning* on this project, balancing competing interests and needs against various options for improvement. The foundation of this balance was a commitment to the process, which was strengthened and supported by past visions for the area (e.g. Downtown Eagle Plan) and an open, honest, and transparent decision-making public involvement process.

Benefits were realized, most notably through the extensive and continuous feedback received throughout the course of the project. In total, well over 100 different people provided input to guide the recommendations of the project. The project recommendations were informed by both the implementation of *Smart Transportation Planning* and the stakeholder and public feedback. Evidence of this is demonstrated through the fact the PMT and SC were able to develop solutions beyond the Eagle Road/State Street intersection itself.

The context of the Eagle/State Intersection Concept Study was initially described through the various components of the *Smart Transportation Planning* Ideal as outlined in the graphic. Each component’s relevance to the project context is summarized below.



*Source: Smart Transportation Planning Guidebook (Reference 1)*

- **Financial**
  - One of the primary needs of this study was to establish transportation priorities within downtown Eagle to work toward programming and funding improvement projects.
- **Community**
  - From the Downtown Eagle Plan, the community desired solutions promoting a mix of land uses, walkability, and active streets.
- **Land Use**
  - Many of the properties in the vicinity of the Eagle Road/State Street intersection are vacant or underdeveloped and have yet to realize the full potential of the land use vision for downtown Eagle.
  - Future land use plans for significant development to the north of downtown will create increasing demand on the downtown transportation system.
- **Transportation**
  - The aspects of mobility, safety, and access at and within the vicinity of the Eagle/State intersection must each be addressed and prioritized.
- **Environment**
  - The desire for a welcoming, pedestrian- and bicycle-friendly downtown competes directly with providing mobility on Eagle Road and State Street.

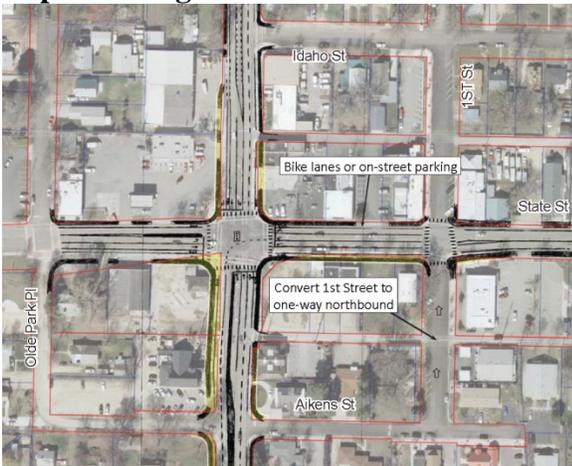
## Intersection Alternatives

Intersection evaluation criteria were established through the ideal of the *Smart Transportation Planning* process early on in the project in collaboration with the PMT and SC. Members of the

PMT and SC ranked the importance of the evaluation criteria from one to six as follows: 1) Safety, 2) Physical Impacts, 3) Land Use Compatibility, 4) Traffic Operations, 5) Non-Motorized Travel, and 6) Implementation. The ranking of the criteria helped frame decisions moving forward and distinguish those alternatives with better assessments under the higher priority criteria.

Five intersection alternatives were developed at a sketch-level and evaluated in conjunction with input from the citizens of Eagle, the SC, the PMT, Eagle City Council, and the ACHD Commission. The alternatives included the **No-Build Alternative (not illustrated)** and the following:

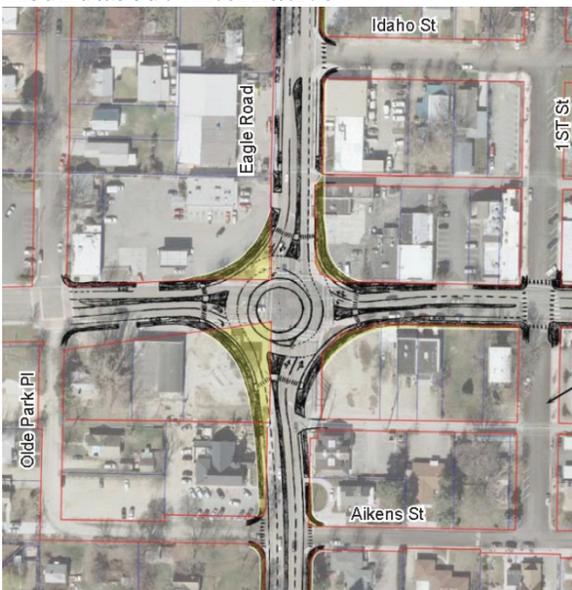
### Expanded Signal Alternative



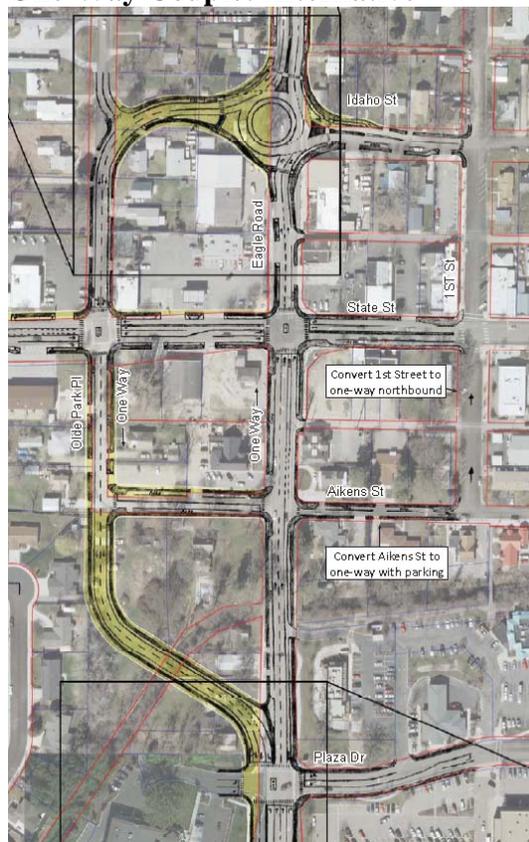
### Quadrant Alternative



### Roundabout Alternative



### One-Way Couplet Alternative



Each alternative was assessed qualitatively relative to the six intersection evaluation criteria on a “good,” “fair,” or “poor” basis, as summarized in Table 1. A preliminary cost estimate, also shown in Table 1, was developed for each alternative.

**Table 1: Intersection Alternatives Evaluation Summary**

Evaluation Criteria	No-Build	Expanded Signal	Quadrant	Roundabout	One-Way Couplet
Land Use Compatibility	Fair	Fair	Good	Fair	Good
Traffic Operations	Poor	Fair	Fair	Good	Fair
Safety	Fair	Fair	Fair	Good	Good
Non-Motorized Travel	Fair	Fair	Fair	Fair	Good
Physical Impacts	Good	Fair	Good	Fair	Poor
Implementation	Good	Fair	Fair	Poor	Poor
Cost Estimates	N/A	\$3.5M - \$4.6M	\$2.9M - \$3.8M	\$3.6M - \$4.6M	\$5.8M - \$7.6M

The following were identified when comparing the evaluation of intersection alternatives:

- **Land Use Compatibility** - The quadrant and one-way couplet best support the land use vision for downtown Eagle.
- **Traffic Operations** - All four build alternatives improve traffic operations compared to the no-build alternative. The roundabout results in the best overall traffic operations for the intersection and minimizes vehicle spill back to other nearby intersections.
- **Safety** - The roundabout and one-way couplet are expected to provide the best overall safety performance of the five alternatives.
- **Non-Motorized Travel** - The one-way couplet is projected to provide the best environment for pedestrian and bicycle travel.
- **Physical Impacts** - The no-build and quadrant alternative have the least significant physical impacts.
- **Implementation** - Of the four build alternatives, the expanded signal and quadrant are expected to be the easiest to implement and construct.

**Public Feedback on Intersection Alternatives**

Public feedback played a significant role in the project, guiding the development and refinement of alternatives. At a property owner and tenant meeting and public open house, the general public and stakeholders were asked to rank alternatives for the Eagle Road/State Street intersection in order of most preferred (rank of 1) to least preferred (rank of 5) and provide comments towards their rankings. The rankings were used to calculate a weighted average rank, with the lowest average being the most supported alternative. Table 2 provides a summary of all of the rankings received from general public.

**Table 2: Summary of the General Public’s Alternatives Ranking**

Alternative	Ranking of Alternative					Number of Rankings	Weighted Average Rank	Rank
	#1	#2	#3	#4	#5			
One-Way Couplet	20	9	7	7	9	52	2.5	1
Roundabout	17	7	3	13	10	50	2.8	2
Expanded Signal	8	13	6	14	4	45	2.8	2
No-Build	21	6	5	1	23	56	3.0	4
Quadrant	2	10	19	6	6	43	3.1	5

As shown in Table 2, the weighted average rank of all the alternatives was very close, with the difference between the most preferred alternative and the least preferred alternative being only 0.6 (2.5 to 3.1). Following the general public meetings, the SC was asked to rank the intersection alternatives in the same manner as the general public. Table 3 provides a summary of the SC rankings.

**Table 3: Summary of the Stakeholder Committee Alternatives Ranking**

Alternative	Ranking of Alternative					Number of Rankings	Weighted Average Rank	Rank
	#1	#2	#3	#4	#5			
Roundabout	8	0	0	1	1	10	1.7	1
Quadrant	1	6	2	0	0	9	2.1	2
One-Way Couplet	1	3	2	4	0	10	2.9	3
Expanded Signal	0	0	4	4	1	9	3.7	4
No-Build	0	1	1	1	7	10	4.4	5

As summarized in Table 3, the roundabout alternative was the most preferred intersection alternative (eight #1 rankings) among the SC members.

### Downtown Circulation Alternatives

One of the primary objectives of the Eagle/State Intersection Concept Study was to explore circulation improvements within downtown that may extend the lifespan the Eagle Road/State Street intersection, address safety performance, and/or address gaps in the pedestrian and bicycle facilities. The Downtown Eagle Plan provided the basis for different circulation alternatives explored as a part of this study.

Members of the general public were asked to choose their top three circulation improvements from the Downtown Eagle Plan and provide feedback on their choices. Table 4 summarizes the number of votes each circulation improvement received.

**Table 4: Summary of Public Feedback on Downtown Circulation Improvements**

Improvements	Number of Votes
A) Plaza Drive Extension	31
C) Palmetto Avenue Extension across State Highway 44	22
D) Idaho Street Extension	18
B) Stierman Way Extension (Parkway)	17
G) Aikens Street Extension	16
E) 1st Street Pedestrian Mall	16
F) Promote the creation/preservation of an urban grid	10

Based on the public feedback, discussions with the SC, and Eagle City Council and ACHD Commission support, the following projects were further developed as a part of this study:

- Plaza Drive Extension
- Aikens Street (East of Eagle Road) Extension
- Aikens Street (West of Eagle Road) and Olde Park Place (South of State Street) Widening/Streetscape
- Olde Park Place (North of State Street) Widening/Streetscape and Idaho Street extension from Eagle Road to Olde Park Place

## Project Adoption Process

Following the Eagle/State Intersection Concept Study's technical analysis, property owner and tenant meeting, public open house, and the last SC meeting, the PMT recommended the Eagle City Council and ACHD Commission endorse the roundabout alternative and the circulation projects developed as a part of the study. The Eagle City Council advertised and conducted the first public hearing on the project. At the public hearing the City Council heard a wide variety of input from the public and unanimously voted in favor of the circulation projects and the no-build alternative at the Eagle/State intersection. Following the City Council's decision on the project, the Eagle Transportation Committee prepared multiple letters to the City stating the Committee's unanimous support for the roundabout alternative and addressed some of the perceived concerns with a roundabout. Given this new information, Eagle City Council held another public hearing on the project and modified their recommendation to support the roundabout alternative rather than the no-build alternative (3-2 vote). This change upset some of the City's citizens, adjacent businesses, and adjacent landowners because they were comfortable with the previous no-build alternative recommendation and felt the second public hearing was not fully advertised to the public.



*Elected Officials were able to address comments and questions after going through the Smart Transportation Planning Process (Source: KTVB News)*

The ACHD Commission held a public hearing to consider adoption of the study following the City Council's recommendation in favor of a roundabout. Similar to previous hearings, the public provided a mix of opinions ranging from full endorsement of a roundabout to complete opposition to the roundabout. Minimal comments were provided on the circulation projects as most people



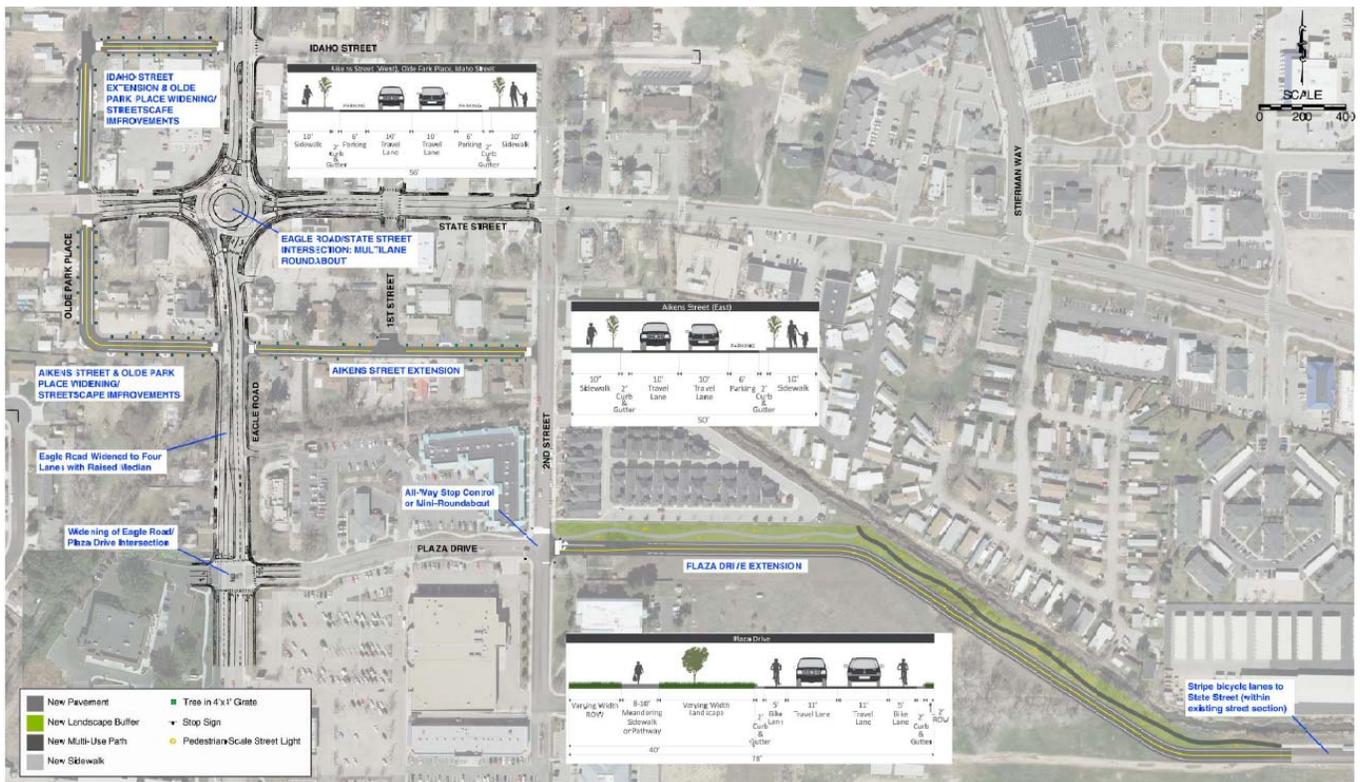
*Citizens opposed to the roundabout alternative coordinated bright yellow shirts that read, "SAFETY FIRST" (Source: KBOI News)*

were in support of them. The Commission adopted the Concept Study with a recommendation to move forward with the roundabout alternative (3-2 vote). Following the Commission's adoption of the study, a request for reconsideration was filed on the project by a newly formed citizen group - Eagle Citizens & Businesses Against the Downtown Roundabout. Their primary concerns were in regard to the safety of bicyclists and visually-impaired pedestrians. The ACHD Commission heard their request but did not make a motion to reconsider the adoption of the Concept Study.

The Eagle/State Intersection Concept Study adoption process highlights some of the benefits and challenges of employing the principles of *Smart Transportation Planning*. The project team was able to effectively work with, learn from, and educate a large number of stakeholders, the general public, and elected officials. However, everyone involved and impacted is not happy with the decision, and in particular with the roundabout alternative. As a result of the project a new community organization has developed, and the City of Eagle and ACHD regularly receive comments and questions regarding the roundabout concept.

## Project Summary

The figure below provides a high-level illustration of the adopted roundabout alternative at the Eagle/State intersection and the circulation projects.



Implementation of the downtown circulation projects, in conjunction with the roundabout alternative, supports the following goals within the Downtown Eagle Plan (Reference 2):

- Preserve, design, develop, and promote downtown Eagle as the “Heart of Eagle”;
- Make downtown easy to get to for all modes of transportation and all generations – seek to expand and develop an interconnected street and pathway system; and,
- Maintain downtown Eagle as the heart of the community...with pedestrian-friendly streetscapes and ample parking.

The downtown circulation projects also align with the three points of focus in transportation planning within the Downtown Eagle Plan (Reference 2):

- Emphasize and enhance downtown as a destination;
- Give priority to pedestrians, bicyclists, and future transit; and,
- Improve connectivity between downtown Eagle and the rest of the City and surrounding area.

The following benefits are expected with implementation of the downtown circulation projects:

- Small reductions in traffic through the Eagle Road/State Street intersection;
- Improved network connectivity for multiple modes of travel;
- Separated facilities for vehicles and pedestrians, and in some cases bicyclists;
- Alternate routes and/or improved connections for emergency services response;
- An increase in economic development within downtown Eagle with better access to existing businesses and undeveloped or underdeveloped land.

The following benefits are expected with implementation of the roundabout alternative:

- Adequate traffic flow and mobility through the Eagle Road/State Street intersection and reductions in the blocking of nearby intersections;
- Improved safety at the intersection based on national research statistics (Reference 3);
- Improved aesthetics and furthering of a sense of place within downtown Eagle;
- Safety benefits in the vicinity of the intersection due to increased access management reducing the number of conflict points.

## Conclusions

The Eagle/State Intersection Concept Study accomplished its primary purpose of identifying and prioritizing recommendations for the Eagle Road/State Street intersection and the City of Eagle downtown core. The recommended roundabout alternative for the Eagle/State intersection is expected to provide safety benefits for all modes of travel, improve traffic operations, and enhance the character of downtown Eagle. Programming of the roundabout alternative in ACHD's Capital Improvement Plan and Integrated Five-Year Work Program (IFYWP) is expected to occur in the near future, which will allow for design, right-of-way acquisition, and construction funding to be applied toward the project.

The recommended downtown circulation projects provide improved network connectivity, street and sidewalk facilities for multiple modes, and support economic development in downtown. The Plaza Drive Extension and Aikens Street (East of Eagle Road) Extension projects have already been programmed within the Economic Development Program in ACHD's IFYWP. The Economic Development Program is a new addition to ACHD's IFYWP, allowing funding to be allocated toward projects not normally built through other programs (i.e., roadways, intersections, and community programs), but deemed by ACHD and its partner agencies to provide a positive contribution to both the transportation system and the local economy. The Economic Development program allows for innovative transportation investment in Ada County's communities to create or directly contribute to a 'Sense-of-Place', coordinate previous investments or current commitments, demonstrate effective partnerships for "non transportation" elements of the project, support business growth, expansion and vitality, and create foundations for future community investments according to adopted plans, codes and policies (Reference 4). Through the recommendations of this study, the City of Eagle will also be able to submit applications for the other recommended downtown circulation projects, which would have relied solely on private development funding without ACHD's new Economic Development Program.

## References

1. New Jersey Department of Transportation & Pennsylvania Department of Transportation. *Smart Transportation Guidebook*. March 2008.
2. City of Eagle. *Downtown Eagle Plan*. Addendum A – Section 6.8.13 of the 2011 Eagle Comprehensive Plan. Adopted through Resolution No. 11-02. February 3, 2011.
3. Transportation Research Board. *NCHRP Report 672: Roundabouts: An Informational Guide*, 2nd ed., Washington, D.C., 2010.
4. Ada County Highway District. *Integrated Five-Year Work Plan 2014-2018*. Adopted October 23, 2013.