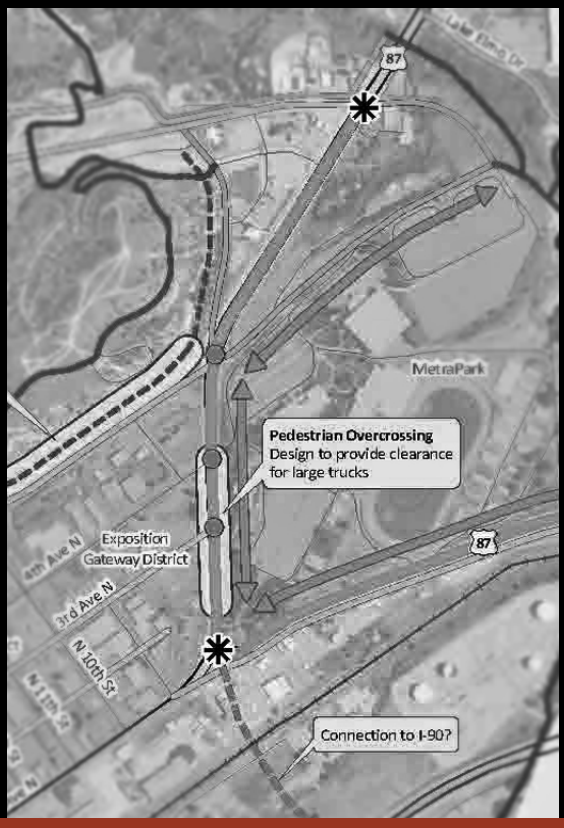
August 2013




City of
# Billings

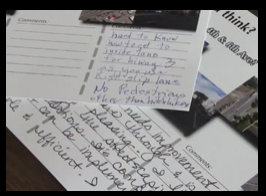
# Hospitality Corridor Planning Study

## Study Appendix









FEHR PEERS

# Appendix

1. Expo Gateway Stakeholder Meeting Notes
   *(December 2012)*

2. Hospitality Corridor Context Report
   *(March 2013)*

3. Corridor Options Memo
   *(April 2013)*

4. MDT Contact Summary
   *(July 2013)*

FEHR PEERS

# MEMORANDUM

Date: December 12, 2012

To: Lora Mattox, City of Billings and Mark Hinshaw, LMN Architects

From: Kendra Breiland, Fehr & Peers

**Subject: 12/5 Exposition Gateway Stakeholder Meeting Recap - Transportation**

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Fehr & Peers participated in the December 5, 2012 stakeholder meeting for the Exposition Gateway project. Our role was to introduce the upcoming Hospitality Corridor Planning Study effort and solicit feedback from Exposition Gateway plan stakeholders to ensure that the two projects complement one another to the highest degree possible. This memo summarizes the feedback received from participants and indicates the next steps in moving forward with each study.

## Participant Feedback

Overall, the stakeholder meetings were both upbeat and productive. Because the participants were mainly property owners within the Exposition Gateway planning area or representatives of governing bodies (City of Billings staff, County Commissioners, Metra Park Staff), there was a high level of familiarity with the transportation challenges and opportunities within the Hospitality Corridor study area. Below, we provide a summary of the high-level issues raised during the stakeholder meeting, which are also illustrated in the accompanying figure.

- **Access into Exposition Gateway from Exposition Drive:** Stakeholders indicated openness to providing fewer access points than are shown on the Exposition Gateway concept diagrams, but stressed that any access provided should be highly visible and intuitive.

- **Bicycle and pedestrian circulation:** Participants agreed that the transportation system for biking and walking should be more complete. There was overall agreement that Exposition Drive may not be the best facility to accommodate these modes. Roadways within Exposition Gateway, a new trail system through Metra Park (including wider easements on the edges of Metra's property), and an overcrossing of Exposition Drive (somewhere between 4th Street and 2nd Street) were all discussed.
- **Treatments along Exposition Drive:** participants described a number of potential ideas for improving the current corridor. Among these ideas were streetscape concepts to improve aesthetic appeal, construction of a roundabout or other dramatic enhancement of the 1st Avenue/Exposition Drive intersection, grade separation at the 4th Avenue/Exposition Drive intersection, and capacity enhancements to the Exposition Drive/Airport Road intersection. There was general agreement that meeting with the Montana Department of Transportation would be the logical next step to better understand what is planned and what MDT will accept.

## Next Steps

Below, we indicate specific next steps for each study.

### Exposition Gateway

- Identify the critical access points along Exposition Drive and 1st Avenue that are necessary to make the district accessible and marketable to proposed development.
- If possible, eliminate the district access shown for 2nd Avenue and 9th Street, as these access points are considered to be too close to the 1st Avenue/Exposition Drive intersection. If elimination is not possible, consider designing these driveways to be right-in only, as this would minimize the impact on traffic operations.
- Show pedestrian link between Exposition Gateway and Metra Park as located somewhere between 4th and 2nd Avenues. The final location of this pedestrian overcrossing will be contingent on a variety of factors, including the placement of land uses on either side

of Exposition Drive and the potential construction of a fly-over at 4th Avenue.

- Identify how a pedestrian overcrossing might be funded. Examples of success from other cities, like Spokane, WA may be informative.

**Hospitality Corridor**

- Synthesize studies and plans for all modes of transportation within the study area. Develop a list of "potential ideas" for accommodating bicycle, pedestrian, and vehicular traffic within the study area (loosely defined by Airport Drive to the north, 10th Street to the west, 1st Avenue to the south, and the Yellowstone River to the east). Per the December 10, 2012 Yellowstone County Commissioner's Meeting, we understand this may also include incorporating developing plans for access to Metra Park.
- Meet with Brian Smith of the Washington State DOT's Strategic Planning Division to discuss context-sensitive solutions, such as roundabouts, for urban highways.
- Meet with Stefen Streeter at MDT to understand plans for key intersections (like 1st Avenue and 4th Avenue), as well as what the agency may or may not accept from a streetscape perspective. If appropriate, facilitate an idea-sharing session between Brian Smith and MDT staff.

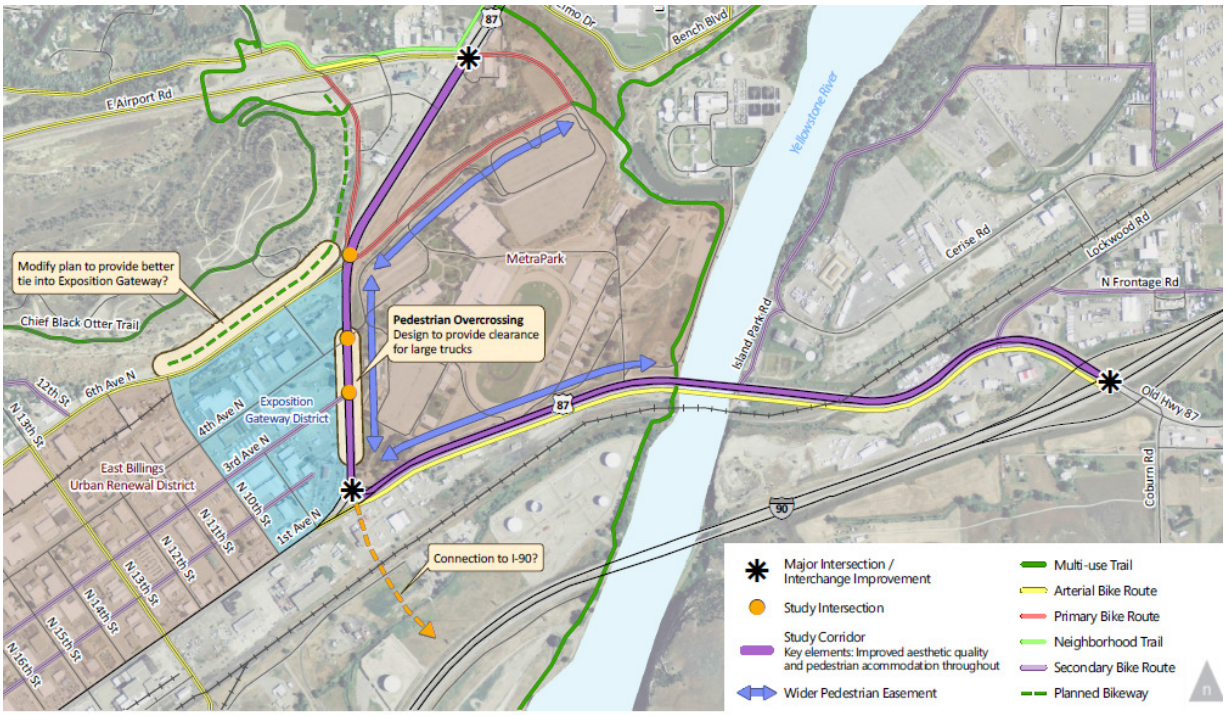
Once the above planning synthesis and coordinate tasks have been completed, our team will be in a position to begin development of the Hospitality Corridor Planning Study, including a streetscape plan, in earnest. These efforts will likely take place after the February 13, 2013 adoption of the Exposition Gateway plan.

## Planning Context

This study provides the City of Billings, Yellowstone County, and the Montana Department of Transportation (MDT) with a unique opportunity to re-envision the US Highway 87 (Main Street) as a gateway into central Billings. The timing of this study is fortuitous, as it is following on the heels of the Exposition Gateway Master Plan, which is evaluating ways to revitalize the land uses surrounding the corridor, including creating better linkages between the East Billings Urban Renewal District (EBURD) and MetraPark.

This white paper provides the context for the Hospitality Corridor Planning Study, including our knowledge of existing conditions at each of the key intersections along the corridor, as well as what has been proposed in the near term and the long term. The document starts by summarizing our assessment of intersection operations from a vehicular perspective, followed by an assessment of non-motorized connectivity needs. The goal of the Hospitality Corridor Planning Study is to weave these disparate studies together to provide a cohesive vision for the corridor that provides safe and comfortable travel for a variety of modes and supports the City's overall vision of revitalizing the Exposition Gateway District and supporting the uses at MetraPark.

The below figure provides an overview of the corridor (which extends from Airport Road to the Lockwood Interchange), including the surrounding land use context, study intersections, and a few key mobility-related concepts identified by surrounding land owners.




**Hospitality Corridor Planning Study – Transportation Concepts**

## Airport Road/Main Street

**Aerial View (Google Images, 2013); on the ground view of the intersection.**

This intersection has a large footprint, with a seven lane north-south cross-section and a sweeping southbound right-turn onto Airport Road. The Airport Road intersection has been analyzed in many related studies, most recently in the *6th Avenue North/Bench Boulevard Traffic Report* (December 2012). Although it wasn't one of the primary study intersections, it was included in all of the operations analyses completed for that project. For this study, we have taken a deeper look at near-term and long-term options to improve intersection operations.

- **Near Term Findings.** In the near term, the Main Street approaches will continue to operate at LOS D or better, while the eastbound and westbound minor approaches operate at LOS F during peak commute times.

- **Long Term Findings.** Over the next few decades, it is anticipated that traffic volumes would grow until the Billings Bypass is constructed. Associated with this growth, delays would increase at this intersection. If the Billings Bypass were not constructed by 2033 (the horizon year of the 6th Avenue North/Bench Boulevard Traffic Report), this intersection would eventually become over-capacity during the peak commute hours (LOS F). Construction of the Billings Bypass would divert sufficient volumes for this intersection to continue operating very similarly to the conditions seen today.

**Potential Recommendation for Hospitality Corridor Study**

Because the Billings Bypass is anticipated to move forward and the intersection is already "built-out" with multiple through lanes on all approaches, there is no reasonable short-term, low-cost solution for this intersection. We recommend that it be left as-is from a capacity standpoint and further evaluated after the Bypass is constructed. If Main Street volumes do continue to increase in the future, the most logical improvement at this intersection will involve grade separation.

However, grade separation would require future study to ensure another more substantial bottleneck is not created. To support the goal of a cohesive Hospitality Corridor, the project team will consider aesthetic improvements to enhance the visual appeal of this intersection and recognize its status as a gateway between Downtown Billings and the Heights.

## 6th Avenue/Bench /Main Street and 4th Avenue/Exposition Drive


**Aerial View (Google Images, 2013); on the ground view of the 4th Avenue entrance to MetraPark.**

4th and 6th Avenues create a one-way couplet through the Exposition Gateway District. Given the couplet configuration, these two intersections operate as a system (4th Avenue runs eastbound, 6th Avenue runs westbound). As arterials, both 4th and 6th Avenues feature full access, signalized intersections with Exposition Drive. These intersections were a focus in the *6th Avenue North/Bench Boulevard Traffic Report* (December 2012).

- **Near Term Findings.** Eastbound traffic on 4th Avenue carries experiences substantial queuing and delays (LOS F) in the evening peak period. Given the high volumes along Exposition Drive, particularly northbound during the evening commute, there are no simple fixes to provide additional green time to 4th Avenue without creating delays for Exposition Drive. The 6th Avenue/Bench Boulevard intersection operates more smoothly (LOS C or better) during the peak commute period, largely due to the uncontrolled, sweeping movement from southbound Exposition Drive/Main Street to westbound 6th

Avenue. By accommodating this movement separately, the signal is able to efficiently control other movements. Despite substantial delays on 4th Avenue, no feasible improvements have been identified in the near term.

- **Long Term Findings.** The 6th Avenue/Bench Boulevard traffic study included a long term recommendation to provide a flyover to connect 4th Avenue to northbound Exposition Drive without conflicting with traffic on Exposition Drive or 6th Avenue. While this improvement would remove the conflict between eastbound and northbound/southbound traffic, it is a very expensive fix and has identified challenges relating to noise, views, and consistency with the Exposition Gateway District Plan.

**Potential Recommendation for Hospitality Corridor Study**

Because this system of intersections is already "built-out", there is no reasonable short-term, low-cost solution to address the traffic congestion issues. Our team will be meeting with MDT to discuss future improvements at this intersection, including grade separation.

It should be noted a study of MetraPark access is currently underway. This study is evaluating ways to make ingress/egress from events more efficient. In particular, the study has noted that 4th Avenue (which currently serves as Metra's front door) might also serve an exit after events, a change that would add a westbound movement to this intersection, which could increase delays and degrade LOS. Findings from this study should be incorporated into any plan addressing the 4th Avenue and 6th Avenue/Bench Boulevard intersections.

## 3rd Avenue /Exposition Drive

**Aerial View (Google Images, 2013); On the ground view of 3rd Avenue intersection.**

This is a T-intersection, whereby 3rd Avenue can only be accessed by southbound Exposition Drive due to the raised median. No crosswalk is provided, as pedestrians are expected to use the signalized crossing at 4th Avenue. Our team observed operations at this intersection in December 2012.

- **Near Term Findings.** Limited access and low volumes along 3rd Avenue maintain smooth operations at this intersection. Vehicle and pedestrian volumes are not expected to increase substantially until the Exposition Gateway District develops.

- **Long Term Findings.** The *Exposition Gateway Plan* (February 2013) designates 3rd Avenue as a signature street, with one-lane of traffic in each direction, bike lanes, and wide sidewalks. Despite these infrastructure enhancements along 3rd Avenue, the study recommended that the intersection remain right-in/right-out only with no at-grade pedestrian/bicycle crossing opportunities.

**Potential Recommendation for Hospitality Corridor Study**

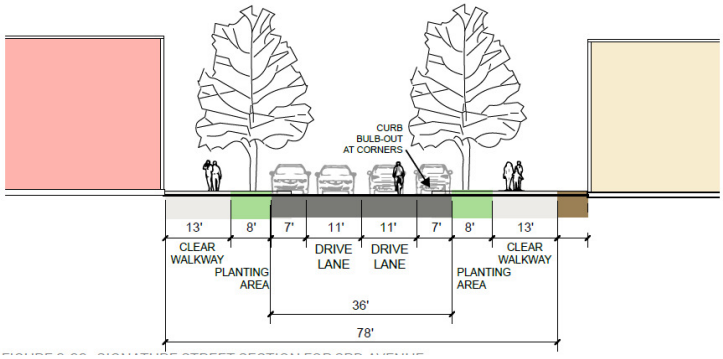
The images on the following page show the Exposition Gateway Plan's vision for 3rd Avenue. To be consistent with this enhanced vision for 3rd Avenue, this plan will explore treatments to the intersection to increase its aesthetic appeal and function for bicycles and pedestrians.

It is also important to note that the Exposition Gateway Plan identified 3rd Avenue as a potential location for a pedestrian overcrossing that would link the signature street and retail uses of the Exposition Gateway with MetraPark.

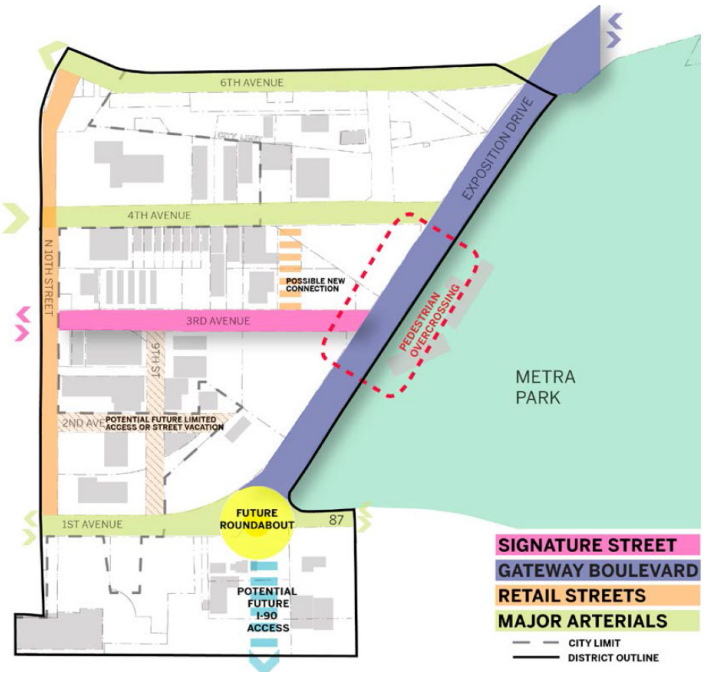
**Excerpt from the Exposition Gateway Plan:**

*"Third Avenue should be completely re-purposed as a special kind of street that serves as the central spine for the Exposition Gateway Area. It would be narrowed to one lane each direction, with bicycle lanes and parallel parking on each side. As is currently the case today, the intersection with Exposition Drive should be right turn in / right turn out. The sidewalks should be expanded in width and fitted with trees and rain gardens. Walking surfaces should be treated with distinctive, textured paving.*

FIGURE 2-21 SPECIAL STREETSCAPE AMENITIES




*Additionally, special pedestrian-scale lighting should be installed. Third would serve as a quiet, landscaped promenade, linking the EBURD with MetraPark. Depending on the nature of redevelopment, the eastern end could have branches that connect between buildings and lead to other destinations to the north and south. Third might also incorporate unusual lighting such as catenary lighting overhead, to give it a "festival street" ambiance. (See photo images that depict this idea.)"*



## 1st Avenue/Exposition Drive

**Aerial View (Google Images, 2013); On the ground view of 1st Avenue intersection**

This three-legged intersection serves as the confluence between 1st Avenue that connects with downtown, Exposition Drive that connects with MetraPark and the Heights, and US 87's east leg that connects to the I-90 Lockwood interchange. With large sweeping turns, this intersection has a large footprint to accommodate trucks and fast-moving vehicles. While sidewalks are provided, pedestrian crossings are not accommodated at the intersection. At present, the nearest pedestrian crossings are provided at 13th Street (to the west) and 4th Avenue (to the north). Both of these adjacent crossing locations are more than 2,000 feet away, which would add about 10 minutes of walking time to cross the street. This intersection has been analyzed in many related studies, most recently in the *6th Avenue North/Bench Boulevard Traffic Report* (December 2012). This intersection has also been a focus of the *Exposition Gateway Plan* (February 2013).

- **Near Term Findings.** The 6th/Bench study did not identify any near-term need to improve this intersection from an operations standpoint, since peak hour operations are LOS C or better. The study did identify the opportunity to provide a westbound-to-northbound right turn bypass lane, which would only improve vehicular operations. The Exposition Gateway project identifies this intersection as an opportunity site for a "grand roundabout" that would serve as a landmark for the corridor and help attract attention to the Exposition Gateway District and MetraPark.

- **Long Term Findings.** The 6th/Bench study identified a roundabout as a potential operational enhancement for this intersection in the future. The Exposition Gateway Plan also identified the potential for a future connection I-90 from this intersection, but the timeline for such a connection is likely 50 years or more.

**Potential Recommendation for Hospitality Corridor Study**

While this intersection would continue to operate acceptably for a number of years, installation of a roundabout provides a number of benefits, from simplifying intersection geometrics and minimizing vehicle idling to providing the corridor with a landmark feature. The roundabout also has long-term viability in terms of maintaining adequate intersection operations and accommodating truck movements. Given these multiple benefits, the project team recommends that installation of a roundabout at this location be considered as a near-term (5-10 year) improvement. The project team will explore this option with MDT.

## I-90 Lockwood Interchange

**Aerial View (Google Images, 2013); on the ground view of the interchange.**

The I-90 Lockwood interchange has a diamond configuration. Both on-ramps have a single lane, as does the westbound off-ramp. The eastbound off-ramp includes two lanes. Existing and future year operations, including improvement concepts, were analyzed as part of the *Lockwood Transportation Study* (2007) and re-examined as a part of this study.

- **Near Term Findings.** Due to the queuing seen today, the Lockwood Transportation Study recommended a redesign of the eastbound off-ramp approach to US 87, including a dedicated left-turn lane, a shared through/left-turn lane, and a dedicated right-turn lane. With these proposed lane configurations in place, there would be significant reserve capacity in the near term. The project team's re-evaluation confirmed this finding.

- **Long Term Findings.** The Lockwood Transportation Study recommended a single point urban interchange (SPUI) as the ultimate configuration for this interchange. It should be noted, however, that the study's future forecasts did not account for the potential volume reductions along US 87 that would be associated with the planned Billings Bypass project. The project team updated this analysis to include consideration of the Billings Bypass. With the bypass assumed, volumes at the interchange could be accommodated with the eastbound off-ramp widening recommended in the near term.

**Potential Recommendation for Hospitality Corridor Study**

Widening the eastbound off-ramp to three lanes as described above and modifying signal timing and phasing accordingly should be sufficient to accommodate volumes in both the near and long term, assuming the Billings Bypass is constructed.

To be supportive of the goal to develop a cohesive Hospitality Corridor, the team will explore aesthetic treatments to enhance the visual appeal of this interchange and recognize its status as a gateway between central Billings and the Lockwood district.

## Bicycle and Pedestrian Concepts

**Existing sidewalks between 6th Avenue and 1st Avenue.**

**View of the Jim Dutcher Trail behind MetraPark; US-87 crossing the Yellowstone River**

As an old highway corridor, there are relatively few bicycle and pedestrian accommodations today. Between Airport Road and 6th Avenue, Main Street has a steep grade and no separated bike facilities (a sidewalk is provided on both sides of the road). Between 6th and 1st Avenues (the section that cuts between MetraPark and Exposition Gateway District), sidewalks are present, but are directly adjacent to the seven-lane, high speed Exposition Drive – something that many pedestrians may find inhospitable. Between Exposition and the Lockwood interchange, bicycle and pedestrian facilities are substandard, with a narrow sidewalk on the north side of the road and shoulders on both sides.

Surrounding the corridor, there are a number of amenities for bicycles and pedestrians. The Heritage Trail system is a regional scenic amenity, a portion of which runs behind MetraPark, adjacent to the Yellowstone River. The recent Bench Boulevard improvements included upgraded sidewalks and trail connections that provide a nice connection with the Hospitality Corridor. Moreover, the City is planning a number of trails, bike lanes, and bike boulevards that crisscross the area, including through the Exposition Gateway district.

This study will identify how amenities like the Heritage Trail system and planned bike facilities can be tied into the corridor plan to provide overall mobility for all modes. Concepts that will be developed further include:

- Developing a multimodal trail around the perimeter of MetraPark to provide connections between the corridor, Exposition Gateway, and the Yellowstone River
- Identify an overcrossing location of Exposition Drive between 2nd Avenue and 4th Avenue, to facilitate interactions between Exposition Gateway and MetraPark
- Explore providing an improved bicycle/pedestrian facility between Exposition Drive and the Lockwood Interchange along US 87
- Identify a trail route connecting Airport Drive with 6th Avenue

## Bringing It All Together: Streetscape

This study will recommend streetscapes that accomplish the following:

- Accommodate the travel modes that currently use the corridor
- Tie sensibly with area bicycle and pedestrian facilities
- Integrate with the near-term and long-term intersection concepts described above
- Provide aesthetic appeal
- Provide landmark/gateway features at key locations

This study will recommend streetscape concepts for the Hospitality Corridor in three main segments:

- **Airport Road to 6th Avenue/Bench –** This segment serves as a gateway between the Heights and Central Billings. It has a steep grade as it transitions from the Heights to the valley below with few uses directly accessing the corridor. Minor aesthetic treatments should be considered to provide drivers with visual cues that they are entering a more urban district.
- **6th Avenue/Bench to 1st Avenue –** This segment traverses the Exposition Gateway/MetraPark District, which expects to see a transition in uses from industrial to hospitality and retail in the coming decades. While the corridor will continue to carry regional traffic volumes between the Heights and Central Billings, this portion of the corridor also needs to accommodate increased cross-movement related to the Exposition Gateway/MetraPark development. It is also envisioned that this segment will incorporate streetscape elements (such as a roundabout, landmarks, or a gateway feature) that provide character for this more urban district.
- **1st Avenue to I-90 Lockwood Interchange –** This segment connects MetraPark with the I-90 Lockwood interchange. This segment traverses the Yellowstone River into the more rural Lockwood area. Streetscape elements in this segment are expected to be more modest, but the segment should be upgraded to provide adequate bicycle and pedestrian connectivity.

**MDT Design Standards**

Our team evaluated MDT's design standards for urban facilities. This section of Exposition Drive/US 87 is classified as a Principal Arterial. The relevant design details that will affect the design of our corridor are:

- 12 foot outside and 11 foot inside lanes
- 12 foot left turn lane (if identified)
- 4 foot minimum raised median width
- No clear zone requirement for curbed street
- Landscaping is to be considered in all designs reviewed by MDT

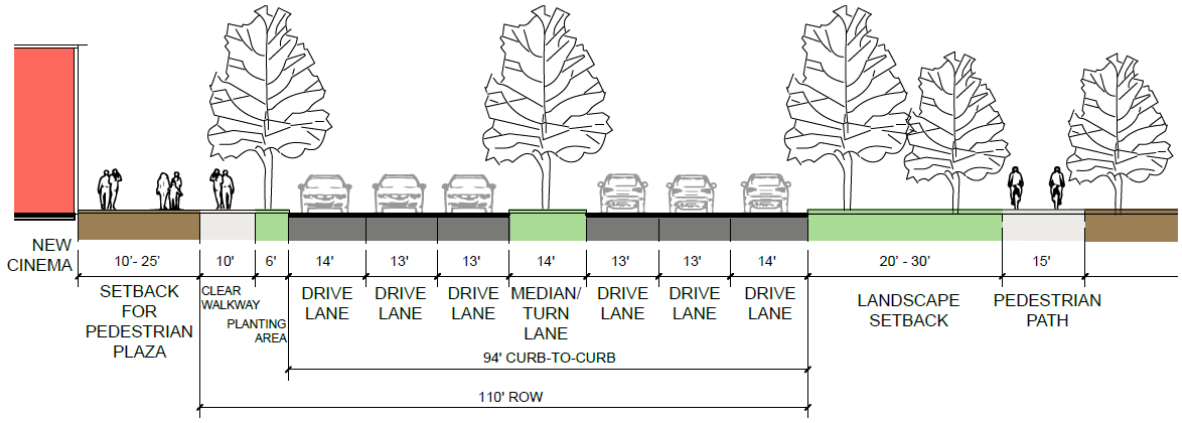
*Example of an urban MDT facility in Helena*

Based on these standards, the following concept for the corridor (between 6th Avenue and 1st Avenue) developed:

*"The segment of Exposition Drive between 1st and 6th Avenues North has the potential of becoming a unique boulevard with qualities associated with a parkway. Already, the east side is heavily planted with mature trees and lawn area that lines the edge of MetraPark. Currently, this green corridor is cut off from public use because of a tall fence topped with barbed wire. We recommend that this fence be moved 20-30 feet to the east, which will still provide security and admissions control during ticketed events. The resulting wide corridor can then allow for a meandering, multi-purpose trail. The trail would allow people walking and using bicycles to connect from the Exposition Gateway Area to the Yellowstone River or the Rims with only one major street crossing.*

*Additionally, the median in the middle of Exposition Drive could be rebuilt to incorporate substantial planting so that a complete boulevard treatment can be created. Given the speeds involved in that corridor, there is sufficient room to install trees within the median, as well as understory.*
*The design of the boulevard could reflect a "Gateway" treatment, with special signage, artwork, and lighting as has been done in similar situations throughout the country.*

*As development occurs on the west side, the edge along Exposition Drive should include trees, planting and other features to extend and complement the boulevard. Since it is unlikely that the frontage along the State route will allow curb cuts, this edge can be relatively continuous planting. Site and building design guidelines should be adopted to ensure a consistent combination of elements."*



FEHR PEERS

# MEMORANDUM

Date: April 4, 2013

To: Lora Mattox, City of Billings

From: Kendra Breiland, Jeff Pierson, and Chris Breiland, Fehr & Peers

**Subject: Hospitality Corridor Options**

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We are providing a status update on our current planning concepts for the Hospitality Corridor. This memo summarizes work performed in the past month. We believe it would be beneficial to have City staff review and provide feedback on the current direction and next steps.

## EXPOSITION GATEWAY ACCESS EVALUATION

We have developed trip generation and distribution assumptions based on the Exposition Gateway Concept Plan. As shown in the table on the following page, the project would generate approximately 12,500 daily trips, including 1,100 trips during the evening peak hour.

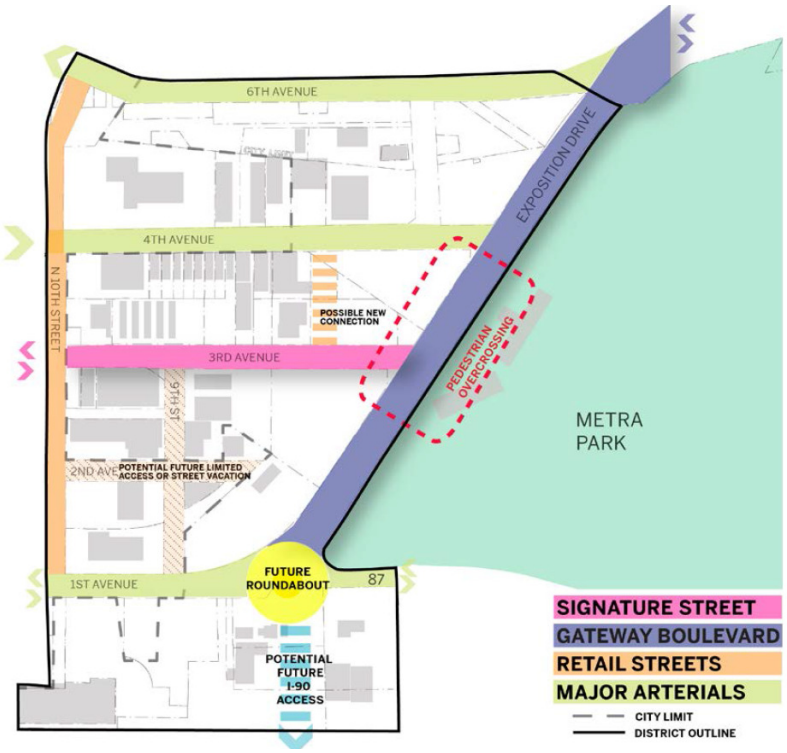
Given that this additional traffic should be accommodated by the Hospitality Corridor Plan, Fehr & Peers and Sanderson Stewart tested how Exposition Gateway traffic would influence operations along the Hospitality Corridor, as well as key access points to the Exposition Gateway district. Since the district would evolve over time, potentially adding uses to what is already there, we measured the effect of adding these new trips to existing and long-range forecast traffic volumes.

The map on the following page shows how access is envisioned within the Exposition Gateway Concept Plan. Specifically, 6th Avenue, 4th Avenue, and 10th Street would be primary access points. 3rd Avenue would provide limited right in/right out access. Additional access would be provided directly to the west – although this would be a more permeable edge, as there are a number of local streets that flow into the remainder of the East Billings Urban Renewal District.

**TRIP GENERATION**

| Land Use | ITE Code | Amount | AM Peak Hour | PM Peak Hour | Daily |
|---|---|---|---|---|---|
| Adaptive Re-Use Retail | 820 | 2 ksf | 2 | 7 | 85 |
| Adaptive Re-Use Restaurant | 931 | 2 ksf | 2 | 15 | 180 |
| Hotel | 310 | 180 rooms | 101 | 108 | 1,606 |
| Outlet Retail | 820 | 200 ksf | 200 | 742 | 8,540 |
| Movie Theater | 445 | 40 ksf | 0 | 196 | 1,964 |
| **TOTAL TRIPS** | **-** | **-** | **305** | **1,068** | **12,375** |

Source: Fehr & Peers.




Access Concepts from Exposition Gateway Concept Plan (February 2013 Draft)

Our access evaluation yielded the following findings:

- Once trips are dispersed onto the network, trips associated with Exposition Gateway will not have a substantive influence on transportation infrastructure needs outside of the district. Roadway infrastructure improvements within the district (as shown the Concept Plan) and to the intersection of 1st Avenue and 10th Street (the southern entrance to the district) are the most pressing needs.
- An evaluation of the intersection of 10th Street/1st Avenue indicates that it would operate acceptably for a decade or more without a traffic signal. We would recommend the following access control at this intersection: left-in and right-in from 1st Avenue, but right-out only from 10th Street onto first. The 10th Street leg could be designed with a raised median to prohibit left egress movements.
- Anticipating a higher level of pedestrian activity, we found that controlled pedestrian movements should be provided at the following locations without substantially impacting vehicular operations:
    - 10th Street – provide a HAWK signal[1] for crossing 1st Avenue. The pedestrian crossing should be provided on the east side of the intersections to avoid conflicts with left-turning vehicles.
    - 3rd Avenue – in the short run, provide a HAWK signal for crossing Exposition Drive. This will facilitate pedestrian connections between Exposition Gateway and METRA. In the long-term, replace this at-grade crossing with a grade-separated pedestrian connection, such as an overcrossing that connects between two buildings on opposing sides of Exposition Drive.
    - Exposition Drive/1st Avenue – Consider adding marked crosswalks and actuated pedestrian crossing phases to the existing intersection.
    - US 87 midblock – depending on the selected treatment at Exposition Drive/1st Avenue, provide a HAWK signal for crossing US 87 south of METRA.

[1] A HAWK beacon (High-Intensity Activated crossWalK beacon) is a traffic signal used to stop road traffic and allow pedestrians to cross safely. It is officially known as a "pedestrian hybrid beacon". The purpose of a HAWK beacon is to allow protected pedestrian crossings, stopping road traffic only as needed. Research has shown motorists' compliance with the HAWK beacon at up to 97%, higher than with traditional un-signaled crossings.


**HAWK At-Grade Pedestrian Crossing**

**Signal with Pedestrian Phase**

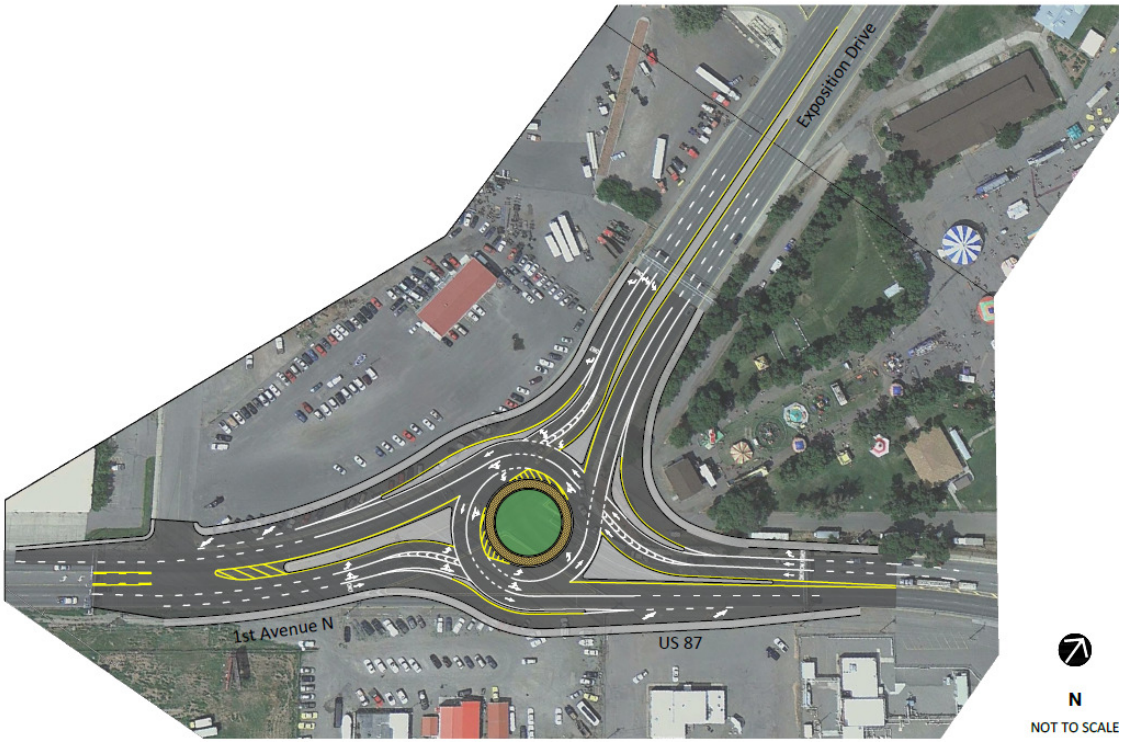
**Pedestrian Overcrossing**

## 1ST AVENUE/EXPOSITION DRIVE INTERSECTION

Given the importance of this intersection in setting the tone for the Hospitality Corridor, we took a hard look at operational needs at this intersection. Our evaluation yielded the following findings:

- Similar to the findings in Sanderson Stewart's 6th Avenue/Bench Boulevard study, the intersection could continue to operate acceptably (LOS D or better) for a long time into the future.
- A roundabout would provide an aesthetic benefit to the corridor, but would need to be a very large size (200 foot diameter with bypass lanes on all sides and multiple circulating lanes) to provide similar operations in the future. This size of roundabout would require substantial capital investment and additional right of way. Moreover, providing pedestrian accommodations at the roundabout would not be recommended given the amount and speed of circulating traffic.
- An alternative would be maintaining the current signalized intersection configuration, but adding pedestrian and aesthetic enhancements. These improvements could include adding street trees to buffer sidewalks, adding planting within the triangular median on the south side of the intersection, striping crosswalks, and adding pedestrian push-buttons and phases to the existing signal. We feel this option would achieve a variety objectives related to multimodal accommodation, vehicular operations, and aesthetic appeal, while fitting within financial constraints.

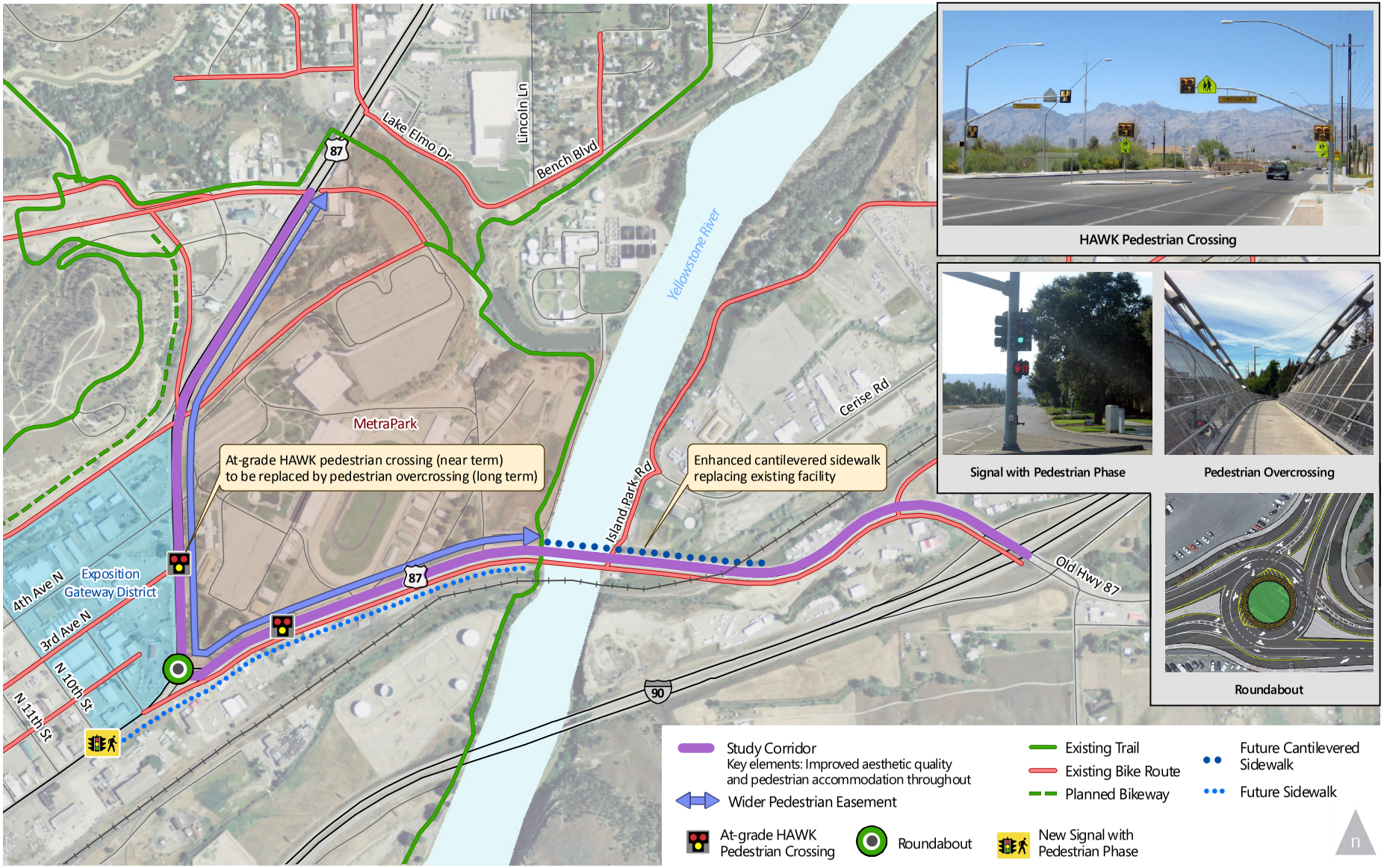
Below, we include an illustration of the necessary geometrics for a roundabout at 1st Avenue/Exposition Drive. If the City is interested in considering the more modest upgrades to this intersection, as described above, we can develop a concept.




**Roundabout Concept at 1st Avenue/Exposition Drive**

## CORRIDOR CONCEPTS

On the following pages, we include two options for Hospitality Corridor concepts. Both concepts focus on enhancing the environment for multimodal travel. The concepts differ primarily in the treatment at 1st Street/Exposition Drive.




# Hospitality Corridor Planning Study
# Pedestrian/Bicycle Amenities - Option A

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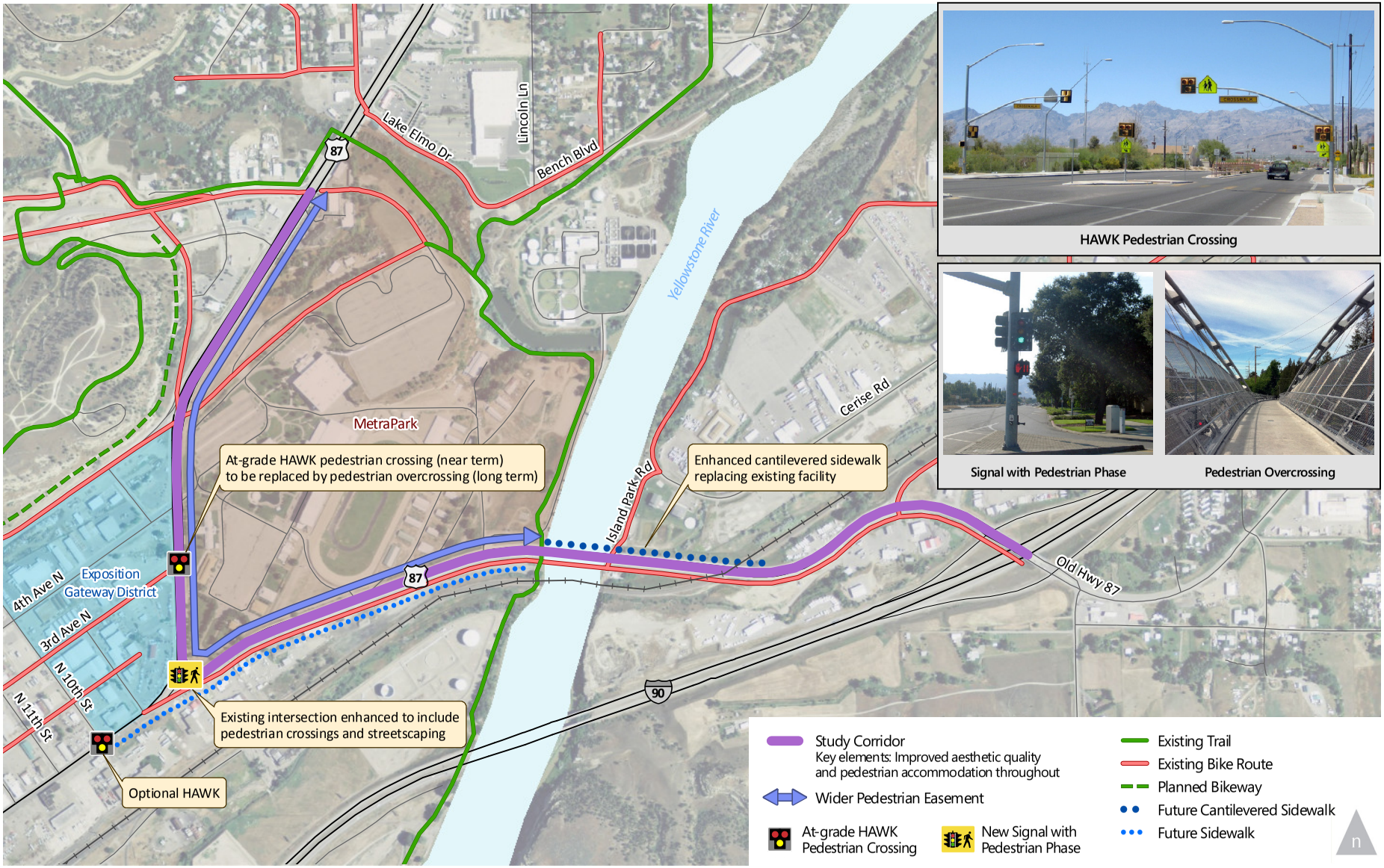
FEHR PEERS




## Hospitality Corridor Planning Study
## Pedestrian/Bicycle Amenities - Option B

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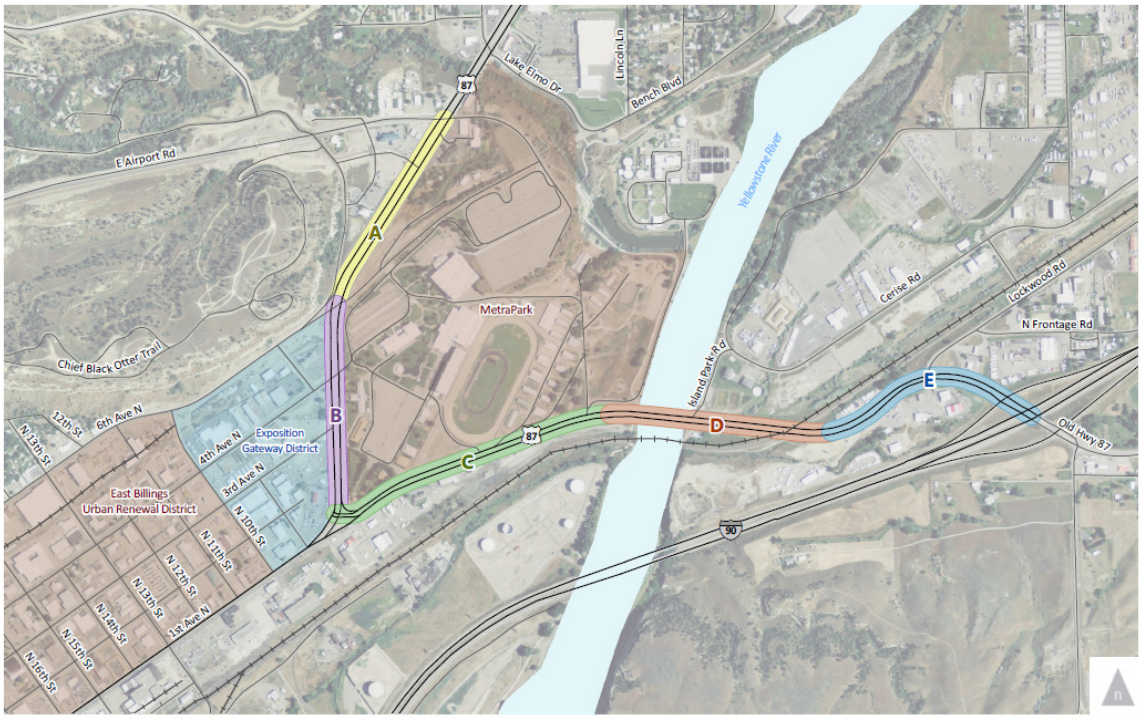
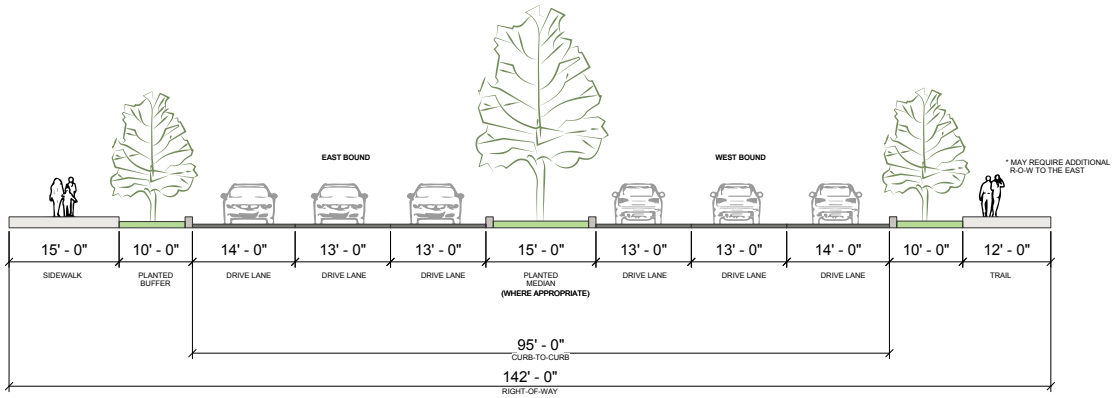
## CROSS-SECTIONS

Tying together the corridor concepts above, Fehr & Peers and LMN staff developed cross-sections appropriate to discrete segments along the Hospitality Corridor. Segments within the corridor were identified based on characteristics such as surrounding land uses and physical constraints. Below, we provide a key to the segments, for which cross-sections are shown on the following page.

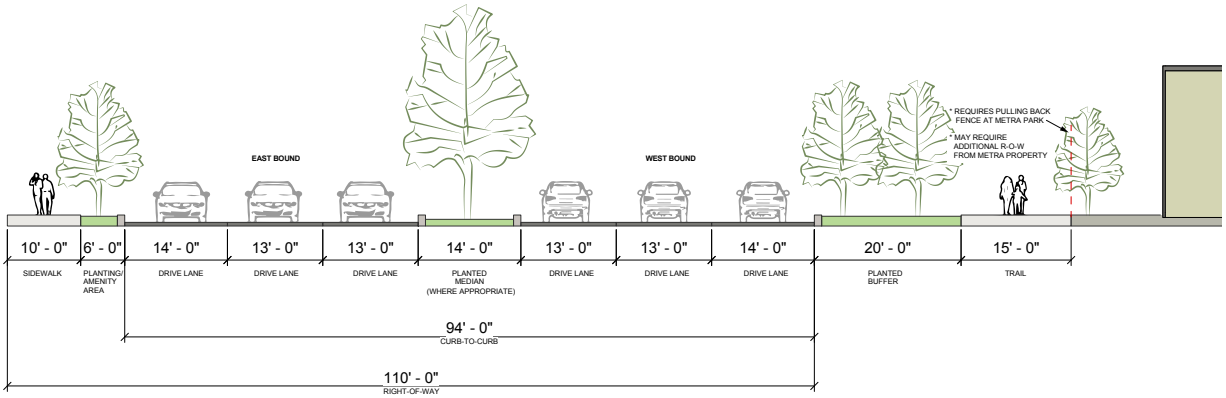



**Hospitality Corridor Cross-Section Planning Segments**

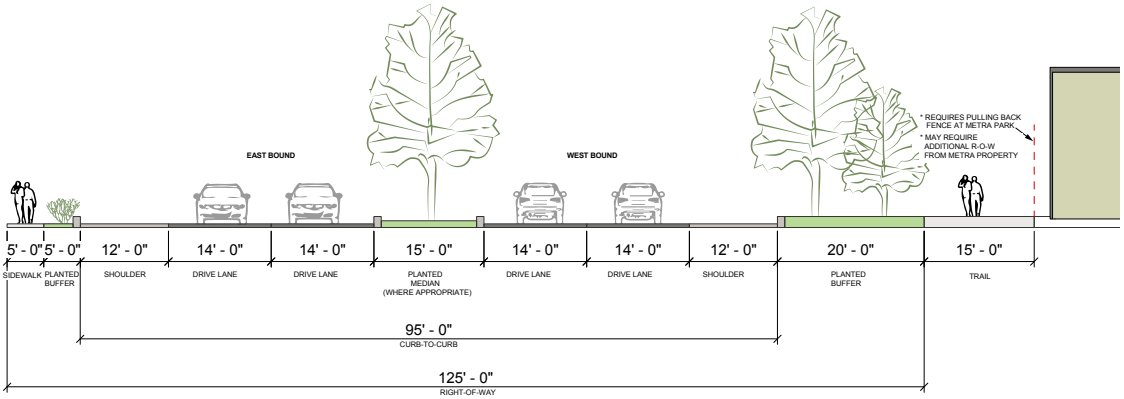
## A


EAST BOUND
WEST BOUND
* MAY REQUIRE ADDITIONAL R-O-W TO THE EAST
15' - 0"
SIDEWALK
10' - 0"
PLANTED BUFFER
14' - 0"
DRIVE LANE
13' - 0"
DRIVE LANE
13' - 0"
DRIVE LANE
15' - 0"
PLANTED MEDIAN (WHERE APPROPRIATE)
13' - 0"
DRIVE LANE
13' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
10' - 0"
12' - 0"
TRAIL
95' - 0"
CURB-TO-CURB
142' - 0"
RIGHT-OF-WAY

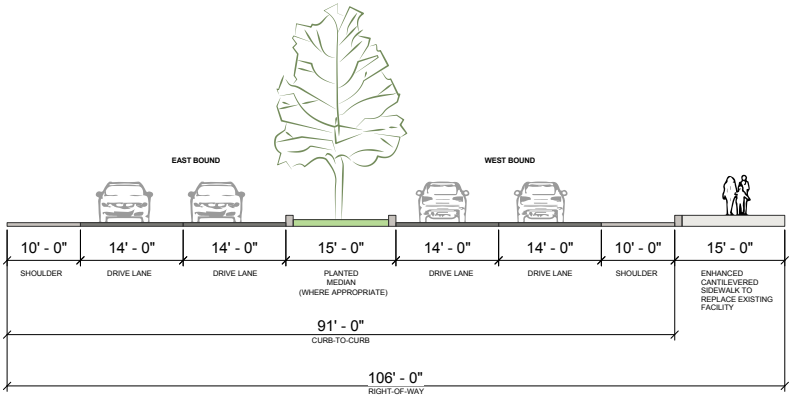
## B


EAST BOUND
WEST BOUND
* REQUIRES PULLING BACK FENCE AT METRA PARK
* MAY REQUIRE ADDITIONAL R-O-W FROM METRA PROPERTY
10' - 0"
SIDEWALK
6' - 0"
PLANTING/ AMENITY AREA
14' - 0"
DRIVE LANE
13' - 0"
DRIVE LANE
13' - 0"
DRIVE LANE
14' - 0"
PLANTED MEDIAN (WHERE APPROPRIATE)
13' - 0"
DRIVE LANE
13' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
20' - 0"
PLANTED BUFFER
15' - 0"
TRAIL
94' - 0"
CURB-TO-CURB
110' - 0"
RIGHT-OF-WAY

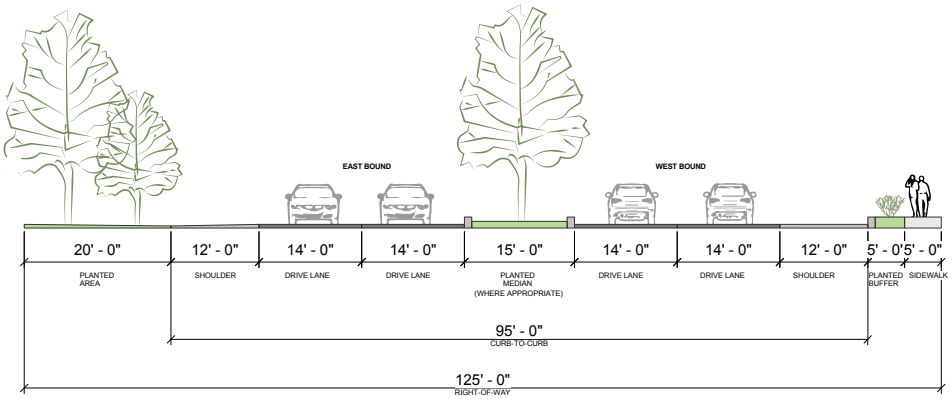
## C


EAST BOUND
WEST BOUND
* REQUIRES PULLING BACK FENCE AT METRA PARK
* MAY REQUIRE ADDITIONAL R-O-W FROM METRA PROPERTY
5' - 0"
SIDEWALK
5' - 0"
PLANTED BUFFER
12' - 0"
SHOULDER
14' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
15' - 0"
PLANTED MEDIAN (WHERE APPROPRIATE)
14' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
12' - 0"
SHOULDER
20' - 0"
PLANTED BUFFER
15' - 0"
TRAIL
95' - 0"
CURB-TO-CURB
125' - 0"
RIGHT-OF-WAY

## D


EAST BOUND
WEST BOUND
10' - 0"
SHOULDER
14' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
15' - 0"
PLANTED MEDIAN (WHERE APPROPRIATE)
14' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
10' - 0"
SHOULDER
15' - 0"
ENHANCED CANTILEVERED SIDEWALK TO REPLACE EXISTING FACILITY
91' - 0"
CURB-TO-CURB
106' - 0"
RIGHT-OF-WAY

## E


EAST BOUND
WEST BOUND
20' - 0"
PLANTED AREA
12' - 0"
SHOULDER
14' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
15' - 0"
PLANTED MEDIAN (WHERE APPROPRIATE)
14' - 0"
DRIVE LANE
14' - 0"
DRIVE LANE
12' - 0"
SHOULDER
5' - 0"
PLANTED BUFFER
5' - 0"
SIDEWALK
95' - 0"
CURB-TO-CURB
125' - 0"
RIGHT-OF-WAY

FEHR PEERS

# MEMORANDUM

Date: July 9, 2013

To: Lora Mattox and Scott Walker, City of Billings

From: Kendra Breiland, Fehr & Peers

**Subject: Hospitality Corridor – Discussions with MDT**

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As part of the Hospitality Corridor Planning Study, our team has had several touch points with the Montana Department of Transportation (MDT). Below, we describe the contacts that we have had with MDT, as well as the findings from these meetings.

## Contacts with MDT

Below is a summary of the contacts with MDT over the course of this project:

- **Advisory Committee Kick Off:** Stan Jonutis of MDT was included on the Hospitality Corridor Advisory Committee. The group's kick off meeting was held on November 20, 2012. During this meeting, participants were given the opportunity to comment on the proposed project scope and work plan.
- **Exposition Gateway Stakeholders Meeting:** Fehr & Peers presented at the December 5, 2012 stakeholders meeting and invited comments on the Hospitality Corridor Planning Study. Stan Jonutis from MDT attended the meeting.
- **Big Picture Concepts Call:** On March 4th, 2013, several MDT staff (Gary Neville, Stefan Streeter, Rodney Nelson, and Stan Jonutis) participated in a call with Fehr & Peers and City staff.
- **Advisory Committee Meeting 2:** Stan Jonutis, as a member of the Advisory Committee, was invited to the April 30, 2013 meeting to discuss initial concepts for the corridor. While Stan was not able to join, he did review and provide input on the concepts, which were provided after the meeting.

- **Refined Concepts Call:** On June 3rd, 2013, Stan Jonutis participated in a call with Fehr & Peers staff to discuss his comments on corridor concepts developed to date.
- **Plan Open House:** On June 26th, 2013, several representatives from MDT, including Carol Strizich and Katie Potts from MDT Planning and Stan Jonutis, participated in an open house that presented the findings of the study and corridor options. Staff were invited to provide feedback to the consultant team, as well as City staff in attendance.

## Findings to Date

Through these conversations, we understand that MDT's primary concern is maintaining vehicular operations through the corridor, which includes both US 87 and Business 90. MDT has expressed openness to streetscape enhancements such as bike lanes, trails, breakaway trees, and low plantings so long as they do not pose safety risks to motorists. MDT is not supportive of signage or other fixed objects in medians.

Below, we list the resolutions to date on specific components of the corridor:

- **Airport Road/Main Street** –
  - **Initial Concept:** Minor aesthetic gateway treatments. MDT has expressed that they are very open to streetscape enhancements such as bike lanes, trails, breakaway trees, and low plantings.
  - **Long Term:** MDT does not currently have any plans, but periodically reviews signal timing options. Stan noted that they concur with our analysis that long term fixes for this intersection are limited, aside from major grade-separation efforts, which have upstream and downstream implications. In the long term, construction of the Billings Bypass would reduce volumes through this intersection.
- **4th and 6th/Exposition Drive**–
  - **Initial Concept:** Work with MetraPark to modify recommendations of recent access study (Marvin and Associates, spring 2013) including revisions to proposed

access at 4th Avenue. MDT seems to be fairly open to concepts proposed to date.

- **Long Term:** MDT has previously proposed a flyover at 4th Avenue to minimize conflicts at the intersection. This project could substantially improve vehicle operations, but is expensive and may not be fully compatible with the Exposition Gateway District Plan. Stan did not indicate that other solutions are currently being considered.

- **3rd Avenue/Exposition Drive** –
  - **Initial Concept:** No change.
  - **Long Term:** Provide a grade-separated pedestrian crossing, could be an under or overcrossing. MDT indicated that they preferred an undercrossing, as it doesn't conflict with over height vehicles, but that it would have to be carefully designed to avoid drainage issues.
- **1st Avenue/Exposition Drive** –
  - **Initial Concept:** We shared with MDT the initial concept of modifying the signal to include pedestrian phasing and marking pedestrian crossings at the intersection. The biggest concern was how these improvements would impact vehicular operations. We have provided MDT with the technical analysis showing that modifying the existing signal would have little impact on vehicular operations. Moreover, these minor impacts could be offset by providing a channelized right-turn lane serving the westbound-to-northbound movement.
  - **Long Term:** We shared the long-term vision of providing a large, truck accommodating, multi-lane roundabout at the intersection. MDT is not opposed to the concept, but would like to see an independent review of the roundabout if this design is to move forward. MDT staff also note that the necessary size of the roundabout makes it both costly and pedestrian hostile. Fehr & Peers staff share the same concerns, but recognize that pedestrian and bicycle movements can be accommodated on other facilities, such as a signal at 1st/10th and/or a grade-separated crossing at Expo Drive/3rd.
- **1st Avenue/10th Street** –
  - **Initial Concept:** No change.

- **Long Term:** We shared the long-term vision of potentially providing a signal in the future, which would be designed to prohibit left-out access from 10th Street, recognizing the operational needs of 1st Avenue. MDT staff indicated that they would not be very excited about a signal at this location, but would revisit the issue should it become necessary for accessing the Exposition Gateway District. Fehr & Peers' analysis suggested that any need for a signal is very long-term contingent on both implementation of the roundabout at 1st and Exposition, as well as substantial development of the Exposition Gateway.

- **Lockwood Interchange** –
  - **Initial Concept:** Minor aesthetic gateway treatments. MDT has expressed that they are very open to streetscape enhancements such as bike lanes, trails, breakaway trees, and low plantings.
  - **Long Term:** MDT has reviewed a number of options in past planning efforts. These include reconstructing the eastbound off-ramp to include three lanes and rebuilding the entire interchange as a single point urban interchange (SPUI). MDT notes that the bridge over the Yellowstone River is likely to be a bottleneck that could lessen the effectiveness of major interchange improvements. In the meantime, MDT continues to review signal timing modifications to improve the efficiency of the interchange. Construction of the Billings Bypass would reduce volumes along US 87 between the Lockwood interchange and Exposition Drive. FHWA approval is required for all modifications to existing interchanges.

*Additional project support from:*

LMN Architecture Urban Design Interiors

HIGH PLAINS ARCHITECTS

Studio Cascade Community Planning & Design

SANDERSON STEWART