

Cushman and Barnette Two-Way Traffic Study

FMATS Technical Committee

May 12, 2010



Purpose of the Study

- Provide a second opinion/confirm the traffic findings from the Vision Fairbanks Downtown Plan (VFDP) and recent study by Kinney Engineering of Alternative 3.
- Compare the traffic growth assumptions with the most recent modeling for the LRTP.
- Help the City and FMATS answer the following key questions:
 - *Are there any fatal flaws or significant constraints that result from the one-way bridge configuration combined with the two-way street conversions?*
 - *Will the “target” average daily traffic (ADT) for Cushman Street southbound, still be achieved, as proposed in VFDP?*
 - *Will Barnette Street function as a “Mobility Street”, as proposed in the VFDP, if northbound traffic is forced to travel onto 1st Avenue then turn left (north) onto the Cushman Street Bridge?*
 - *What are the impacts of this proposed street configuration on the east-west streets planned for two-way conversion, specifically on 1st Avenue?*



Study Alternatives

- Alternative 1: Two-Way Cushman & Barnette
 - *Based on the Vision Fairbanks Downtown Plan (VFDP)*
 - *Cushman: Single lane in each direction with on-street parking*
 - *Barnette: Single lane in each direction with center turn lane*
 - *Roundabout at the Illinois Street intersection*
- Alternative 2: One-Way Cushman & Barnette
 - *Based on the Illinois Street Reconstruction Project with street amenities similar to Alternative 1.*
 - *Cushman: Two lanes northbound with on-street parking*
 - *Barnette: Two-four lanes southbound*
 - *Signalized intersection at Illinois Street/Terminal Street*
- Alternative 3: Two-Way Cushman and Barnette with One-Way Bridges
 - *South of 1st Avenue, Cushman and Barnette are the same as Alternative 1*
 - *North of 1st Avenue, Cushman and Barnette at the same as Alternative 2*



Evaluation Criteria

- › Traffic Operations: LOS and Queuing/Congestion
- › Target ADT Traffic Level for a “Signature Street”
 - *Approximately 10,000 ADT is recommended*
- › Pedestrian Environment
 - *Cross-sectional elements were held constant across the alternatives*
 - *Auto-pedestrian conflict potential was reviewed*
- › Storefront Exposure
 - *Balanced exposure for businesses in varying locations*
- › Access to Businesses
 - *Travel distance and ease of circulation pattern*



General Review Observations

- › The 2025 Traffic Forecasts in the VFDP are similar in magnitude to the level of growth being projected for the 2035 LRTP update.
- › Cushman Street has a greater percentage of “through” traffic than Barnette Street during the p.m. peak hour.
- › The east-west streets have relatively low volumes under all the alternatives.
- › Gaffney Road is a significant cut-through route traffic from Airport Way that heads northbound to avoid the Cushman Street/Airport Way intersection.



Study Findings: Alternative 1 (Two-Way)

› Benefits:

- *Greatest flexibility for traffic to distribute between Cushman Street and Barnette Street*
- *Best traffic pattern for business exposure and accessibility*

› Potential Issues

- *Requires an additional lane on the Barnette Bridge (4 lanes of width) to operate acceptably*
- *Cushman Street still requires two northbound lanes between Airport Way and 10th Avenue*
- *The Terminal Street right-in, right-out is too close to the proposed roundabout. Terminal Street will need to come into the roundabout or further north on Illinois Street.*
- *A traffic signal instead of a roundabout could be designed to operate acceptably*



Study Findings: Alternative 2 (One-Way)

› Benefits:

- *Greatest overall capacity*
- *Fewest conflicts between autos and pedestrians*

› Potential Issues

- *Not as good for business exposure*
- *Lower level of accessibility for businesses*
- *May require more effort to manage travel speeds during off-peak times*
- *Greatest impact on the Cushman Street/Airport Way intersection if Gaffney Road is closed between Cushman Street and Barnette Street*



Study Findings: Alternative 3 (Two-Way/One-Way Bridges)

› Benefits:

- *Can maintain the design of the signalized intersection at Illinois Street/Terminal Street as proposed in the Illinois Street Reconstruction Project*

› Potential Issues

- *Does not meet the goals of the VFPD:*
 - Not as good for business accessibility
 - Difficult to understand and navigate for visitors
 - Not as good for pedestrians in the vicinity of 1st Avenue and 2nd Avenue
- *Significantly reduces corridor mobility*
 - The “zig-zag” increases delay in the area around 1st and 2nd Avenue.
 - Creates a worse situation than the current Cushman-Barnette traffic pattern at 1st Avenue
- *Creates significant congestion at the 1st Avenue/Barnette intersection*
 - Possible Mitigation: Extend the one-way section of Barnette Street southbound to 2nd Avenue and force northbound Barnette Street traffic onto 2nd Avenue



Summary of Key Findings: General

- › Alternative 1 provides the simplest street network for downtown and will have little or no influence on business location decisions.
- › Alternative 2 provides the best vehicular mobility but has the potential to influence business location decisions.
- › Alternative 3 creates the highest levels of congestion, a more confusing street network for motorists to navigate, and will influence business location decisions to a greater extent than Alternative 1.
- › All the east-west streets will operate acceptably as two-way and should be converted where it makes sense from a right-of-way and cost perspective.
- › A traffic signal at the Illinois Street intersection could operate acceptably with Alternative 1 but would require a redesign and possibly more right-of-way than the signal anticipated in Alternatives 2 and 3.

