



Evaluation Criteria for 2 and 4-Lane Alternatives

Criteria	Scoring System				
	5	4	3	2	1
Cost	Lowest cost alternative	< 5% higher than lowest cost alternative	5-10% higher than lowest cost alternative	11-15% higher than lowest cost alternative	> 15% higher than lowest cost alternative
Right-of-Way (ROW)	No additional ROW required	< 0.5 acres of additional ROW required	0.5-1.0 acres of additional ROW required	1.1-1.5 acres of additional ROW required	> 1.5 acres of additional ROW required
Total Buildings Required	No relocations required	1 building required	2 buildings required	3 buildings required	> 4 buildings required or > 6 commercial tenants
Traffic Operations	All intersections have LOS A, B, C, or D for individual movements	Individual movement LOS E at one or more intersections	Individual movement LOS F at one or more intersections	Overall intersection LOS E at one or more intersections	Overall intersection LOS F at one or more intersections
Vehicular Safety	> 40% crash reduction	31-40% crash reduction	21-30% crash reduction	11-20% crash reduction	0-10% crash reduction
Pedestrian Safety	2 through lanes and primarily has a grass terrace of at least 6'	2 through lanes and primarily has a grass terrace of less than 6'	4 through lanes and primarily has a grass terrace of at least 6'	4 through lanes and primarily has a grass terrace of less than 6'	Does not include a grass terrace
Bicycle Safety	Buffered bike lanes throughout the entire alternative	Buffered bike lanes for a portion of the alternative and bike lanes throughout	Bike lanes present for a portion of the alternative	Urban shoulder present	No bicycle accommodation
Emergency Services	20' of curb-to-curb width and no raised median	N/A	20' of curb-to-curb width and raised median	N/A	N/A
Access Control	Includes raised median	> 20 access points removed	10-20 access points removed	< 10 access points removed	No access points removed
Hazardous Materials	No impacts to properties with known hazardous materials	Impacts 1 property with known hazardous materials	Impacts 2 properties with known hazardous materials	Impacts 3 or more properties with known hazardous materials	Requires the full acquisition of a property with known hazardous materials
Historic Districts	No impacts to properties within a historic district	Impacts 1-2 properties within a historic district	Impacts 3-4 properties within a historic district	Impacts 5-6 properties within a historic district	Requires a relocation or impacts > 7 properties within a historic district
Aesthetics	6' grass terrace, grass median, and roadway narrowed	6' grass terrace and grass median	6' grass terrace	No change from existing	Terrace narrowed
Stormwater	Reduces the amount of impervious area by > 10%	Reduces the amount of impervious area by 6-10%	Reduces the amount of impervious area by 1-5%	Reduces the amount of impervious area by < 1%	Increases the amount of impervious area
Consistency with City Plans*	This alternative best aligns with the visions outlined in city plans	N/A	This alternative aligns with visions outlined in city plans, but other alternatives better align	N/A	The alternative does not align with the majority of visions outlined in city plans
Public Support	Support for this alternative was overwhelmingly positive	Support for this alternative was mixed, however more people expressed support for this alternative than others being considered	This alternative is the only feasible and prudent alternative being proposed for this area	Support for this alternative was mixed, however fewer people expressed support for this alternative than others being considered	Support for this alternative was overwhelmingly negative

* Comparison of alternatives to city plans is documented in *Development and Evaluation of Alternatives Report (DRAFT)*.



Evaluation Criteria for Intersection Options

Criteria	Scoring System				
	5	4	3	2	1
Cost	Lowest cost alternative	< 5% higher than lowest cost alternative	5-10% higher than lowest cost alternative	11-15% higher than lowest cost alternative	> 15% higher than lowest cost alternative
Right-of-Way (ROW)	No additional ROW required	< 0.5 acres of additional ROW required	0.5-1.0 acres of additional ROW required	1.1-1.5 acres of additional ROW required	> 1.5 acres of additional ROW required
Total Buildings Required	No relocations required	1 building required	2 buildings required	3 buildings required	> 4 buildings required or > 6 commercial tenants
Traffic Operations	LOS A, B, C, or D for all individual movements and better aligns the road network	LOS A, B, C, or D for all individual movements	Has an individual movement with LOS E or F	Overall intersection LOS E	Overall intersection LOS F
Vehicular Safety	> 40% crash reduction	31-40% crash reduction	21-30% crash reduction	11-20% crash reduction	0-10% crash reduction
Pedestrian and Bicycle Safety	(+1) Converts from an uncontrolled crossing to a controlled crossing				
	(+1) Provides a pedestrian refuge island				
	(+1) Slows vehicular speeds through the intersection				
	(+1) Better aligns pedestrian or bicycle network				
Emergency Services	(+1) Better aligns road network				
	(+1) Shortens queue lengths				
	(+1) Allows for inclusion of Emergency Vehicle Preemption (EVP) technology at an existing signal				
Hazardous Materials	No impacts to properties with known hazardous materials	Impacts 1 property with known hazardous materials	Impacts 2 properties with known hazardous materials	Impacts 3 or more properties with known hazardous materials	Requires the full acquisition of a property with known hazardous materials
Historic Districts	No impacts to properties within a historic district	Impacts 1-2 properties within a historic district	Impacts 3-5 properties within a historic district	Impacts > 5 properties within a historic district	Requires the full acquisition of a property within a historic district
Aesthetics	Provides location for aesthetic improvements	N/A	Does not provide location for aesthetic improvements	N/A	N/A
Consistency with City Plans*	This alternative best aligns with the visions outlined in city plans	N/A	This alternative aligns with visions outlined in city plans, but other alternatives better align	N/A	The alternative does not align with the majority of visions outlined in city plans
Public Support	Support for this alternative was overwhelmingly positive	Support for this alternative was mixed, however more people expressed support for this alternative than others being considered	This alternative is the only feasible and prudent alternative being proposed for this area	Support for this alternative was mixed, however fewer people expressed support for this alternative than others being considered	Support for this alternative was overwhelmingly negative

* Comparison of alternatives to city plans is documented in *Development and Evaluation of Alternatives Report (DRAFT)*.



South Segment 2 and 4-Lane Alternatives Evaluation

Criteria	South City Limit to Michigan Avenue	
	2-Lane with Two-Way-Left-Turn-Lane	4-Lane with Raised Median
Cost	5	1
	The estimated cost for the 2-lane alternative is \$16 million vs. \$19.1 million for the 4-lane alternative. Both estimates include a 2-lane alternative from Michigan Avenue to Patch Street. The 4-lane alternative is 18% more expensive.	
Right-of-Way (ROW)	4	1
	The 2-lane alternative requires 0.3 acres of ROW. The 4-lane alternative requires 1.7 acres of ROW. Both estimates account for a 2-lane alternative from Michigan Avenue to Patch Street.	
Total Buildings Required	5	3
	The 2-lane alternative requires no buildings. The 4-lane alternative requires 2 buildings on the west side of Business 51 just south of Nebel Street.	
Traffic Operations	5	5
	All intersections for both alternatives have LOS A, B, C, or D for individual movements.	
Vehicular Safety	4	4
	Both alternatives are anticipated to reduce crashes by 31-40%.	
Pedestrian Safety	5	3
	Both alternatives feature a 6' grass terrace to separate pedestrians from the roadway. However, the 2-lane alternative has fewer lanes of traffic for pedestrians to cross.	
Bicycle Safety	2	3
	The 2-lane alternative features a 4' urban shoulder. The 4-lane alternative features a 5' bike lane.	
Emergency Services	5	3
	The 2-lane alternative features 20' of curb-to-curb width and no raised median. The 4-lane alternative features 20' of curb-to-curb width and a raised median.	
Access Control	4	5
	The 4-lane alternative includes a raised median and removes 35 access points. The 2-lane alternative removes 36 access points. Both estimates account for a 2-lane alternative from Michigan Avenue to Patch Street.	
Hazardous Materials	2	2
	The 2-lane alternative impacts 4 properties with known hazardous materials. The 4-lane alternative impacts 5 properties with known hazardous materials. Both estimates account for a 2-lane alternative from Michigan Avenue to Patch Street.	
Historic Districts	5	5
	No historic districts present.	
Aesthetics	3	4
	The 2-lane alternative only includes a grass terrace. The 4-lane alternative includes a grass terrace and a grass median.	
Stormwater	3	1
	The existing road has approximately 54' of impervious surface within it's typical section (travel lanes and sidewalks). The 2-lane proposes 52' (travel lanes, TWLTL, urban shoulders, sidewalks), a 4% reduction. The 4-lane proposes 62' (travel lanes, bicycle lanes, sidewalks), a 15% increase.	
Consistency with City Plans	5	5
	Both alternatives fully align with visions outlined in city plans.	
Public Support	2	4
	Per the March 2021 online comment form, 60% of respondents indicated preference for the 4-lane alternative. 35% of respondents indicated preference for the 2-lane alternative. 5% of respondents did not indicate a preference.	
Total Points	59	49



South Segment Intersection Options Evaluation

Criteria	Rice Street Intersection		Patch Street Intersection		
	Option 1: No Realignment	Option 2: Realignment	Option 1: No Realignment	Option 2: Realignment	Option 3: Realignment
Cost	5	2	5	2	3
	The estimated cost for Option 1 is included in the cost estimate for both the 2 and 4-lane alternatives. Option 2 would cost an additional \$2 million. The additional cost for Option 2 is 11-13% the cost of each of the 2 and 4-lane alternatives.		The estimated cost for Option 1 is included in the cost estimate for both the 2 and 4-lane alternatives. Option 2 would cost an additional \$2.3 million. Option 3 would cost an additional \$1.1 million. Option 2 is 12-14% the cost of each of the 2 and 4-lane alternatives. Option 3 is 6-7% the cost of each of the 2 and 4-lane alternatives.		
Right-of-Way (ROW)	5	1	5	2	4
	The ROW required for Option 1 is included with the 2 and 4-lane alternatives. Option 2 would require an additional 1.6 acres of ROW.		The ROW required for Option 1 is included with the 2 and 4-lane alternatives. Option 2 would require an additional 1.5 acres of ROW. Option 3 would require an additional 0.4 acres of ROW.		
Total Buildings Required	5	4	5	1	3
	Option 1 would require no buildings. Option 2 would require 1 building.		Option 1 would require no buildings. Option 2 would require 1 building (8 commercial tenants). Option 3 would require 2 buildings (1 commercial and 1 residential).		
Traffic Operations	4	5	4	5	5
	Options 1 and 2 both have LOS A, B, C, or D for all individual movements at Rice Street. Option 2 also improves the operations at Whiting Avenue due to the new, signalized Rice Street/Whiting Avenue intersection.		Options 1, 2, and 3 all have LOS A, B, C, or D for all individual movements at Patch Street. Options 2 and 3 also improve the operations at Francis Street due to it becoming signalized as it is realigned with Patch Street.		
Vehicular Safety	1	2	1	3	3
	Option 1 is anticipated to reduce crashes by less than 10%. Option 2 is anticipated to reduce crashes by 15%.		Option 1 is anticipated to reduce crashes by less than 10%. Options 2 and 3 are anticipated to reduce crashes by 25%.		
Pedestrian and Bicycle Safety	0	3	2	3	3
	Option 2 receives 1 point for converting to a controlled crossing, 1 point for slowing vehicle speeds through the intersection, and 1 point for better aligning the road network.		Options 1, 2, and 3 each receive 1 point for converting to a controlled crossing and 1 point for slowing vehicle speeds through the intersection. Options 2 and 3 each receive an additional point for better aligning the road network.		
Emergency Services	0	1	0	1	1
	Option 1 offers no improvements for emergency services. Option 2 receives 1 point for better aligning the road network.		Option 1 offers no improvements for emergency services. Options 2 and 3 each receive 1 point for better aligning the road network.		
Hazardous Materials	5	1	4	1	3
	Option 1 does not impact properties with known hazardous materials. Option 2 requires the full acquisition of a property with known hazardous materials.		Option 1 impacts 1 property with known hazardous materials. Option 2 requires the full acquisition of a property with known hazardous materials. Option 3 impacts 2 properties with known hazardous materials.		
Historic Districts	5	5	5	5	5
	No historic districts present.		No historic districts present.		
Aesthetics	3	3	3	3	3
	No opportunity for aesthetic improvements.		No opportunity for aesthetic improvements.		
Consistency with City Plans	1	5	1	5	5
	Option 1 does not align with the pedestrian goals outlined in city plans. Option 2 fully aligns with the visions.		Option 1 does not align with city staff's vision for this intersection. Options 2 and 3 fully align with visions outlined in city plans.		
Public Support	2	4	4	4	4
	Per the Mach 2021 online comment form, 25% of respondents indicated preference for Option 1 and 40% of respondents indicated preference for Option 2. 35% of respondents did not indicate a preference.		Per the Mach 2021 online comment form, respondents indicated equal preference between Options 1 and 2. Option 3 was created in April 2021 and was assigned the same score as the other options.		
Total Points	36	36	39	35	42



Central Segment 2-Lane Alternatives Evaluation

Criteria	Ellis Street to College Avenue	
	2-Lane with No Raised Median	2-Lane with Raised Median
Cost	5	5
	The estimated cost for both alternatives is \$19.2 million. This estimate is the cost of the entire alternative between Patch Street and Fourth Avenue.	
Right-of-Way (ROW)	2	2
	The 2-lane alternative without a median requires 1.2 acres of ROW. The 2-lane alternative with a median requires 1.3 acres of ROW. ROW estimates include the entire Central Segment between Patch Street to Fourth Avenue.	
Total Buildings Required	3	3
	Both alternatives would require relocating the same 2 buildings (multi-family homes) on the southwest side of the College Avenue intersection.	
Traffic Operations	5	5
	All intersections for both alternatives have LOS A, B, C, or D for individual movements.	
Vehicular Safety	5	5
	Both alternatives are anticipated to reduce crashes by 50-60 percent. The 2-lane alternative with a median also prevents vehicles from making left-turns into driveways in this congested area.	
Pedestrian Safety	1	5
	The 2-lane alternative without a median does not include a grass terrace separating pedestrians from the roadway. The 2-lane alternative with a median provides a 6' grass terrace throughout most of this area.	
Bicycle Safety	1	1
	Neither alternative includes bicycle accommodations.	
Emergency Services	5	3
	The 2-lane alternative without a median includes 20' of curb-to-curb width. The 2-lane alternative with a median also includes 20' of curb-to-curb width.	
Access Control	1	5
	Neither alternative removes access points, but the 2-lane raised median alternative controls access by adding a raised median.	
Hazardous Materials	5	5
	No hazardous material impacts.	
Historic Districts	3	1
	The 2-lane alternative without a median impacts 4 properties in the Clark-Main Historic District. The 2-lane alternative with a median impacts 9 properties in the Clark-Main Historic District.	
Aesthetics	1	3
	The 2-lane alternative without a median removes the existing terrace. The 2-lane alternative with a median allows for aesthetic improvements within the grass terrace.	
Stormwater	1	1
	The existing road has 50' of impervious surface within it's typical section (travel lanes and sidewalks). Both alternatives propose 55' (travel lanes, sidewalks, median), a 10% increase.	
Consistency with City Plans	3	5
	The 2-lane alternative without a median aligns less with visions outlined in city plans because it does not improve the pedestrian environment. However, the 2-lane alternative with a median does improve the pedestrian environment and therefore best aligns with visions outlined in city plans.	
Public Support	4	2
	Per the March 2021 online comment form, 45% of respondents indicated preference for the 2-lane alternative without a median. 40% of respondents indicated preference for the 2-lane alternative with a median. 15% of respondents did not indicate a preference.	
Total Points	45	51



Central Segment Intersection Options Evaluation

Criteria	Fourth Avenue Intersection	
	Option 1: Signalized	Option 2: Roundabout
Cost	5	4
	The estimated cost for the signalized intersection is included in the cost estimate for both the 2 and 4-lane alternatives. Converting Fourth Avenue to a roundabout would cost an additional \$0.1 million. The additional cost for a roundabout is less than 1% of the cost of each of the 2 and 4-lane alternatives.	
Right-of-Way (ROW)	5	4
	The ROW required for the signalized intersection is included with the 2 and 4-lane alternatives. Converting Fourth Avenue to a roundabout would require an additional 0.05 acres of ROW.	
Total Buildings Required	3	3
	Both options would require relocating the same 2 buildings (1 commercial, 1 multi-family) on the south side of the Fourth Avenue intersection.	
Traffic Operations	4	4
	Both options have LOS A, B, C, or D for all individual movements. The roundabout option would result in less delay and shorter queue lengths.	
Vehicular Safety	5	5
	Both options are anticipated to reduce crashes by 45 percent.	
Pedestrian and Bicycle Safety	0	2
	The roundabout option receives 1 point for providing pedestrian refuge islands and 1 point for slowing speeds through the intersection.	
Emergency Services	1	1
	The signalized option receives 1 point because it allows for the inclusion of Emergency Vehicle Preemption technology. The roundabout option receives 1 point because it is expected to have shorter queue lengths than the signalized intersection.	
Hazardous Materials	1	1
	Both options require the full acquisition of a property with known hazardous materials.	
Historic Districts	5	5
	No historic districts present.	
Aesthetics	3	5
	The roundabout option does not allow for aesthetic improvements within the central island. The signalized option does not all of aesthetic improvements.	
Consistency with City Plans	3	5
	Option 1 aligns less with visions outlined in city plans because it does not improve the pedestrian environment as much as Option 2. However, Option 2 does improve the pedestrian environment and therefore best aligns with visions outlined in city plans.	
Public Support	4	4
	Per the March 2021 online comment form, respondents indicated equal preference between the two options.	
Total Points	39	43



North Segment 2 and 4-Lane Alternatives Evaluation

Criteria	Fourth Avenue to North Point Drive	
	2-Lane with Raised Median	4-Lane with Raised Median
Cost	5	3
	The estimated cost for the 2-lane alternative is \$10.1 million vs. \$10.8 million for the 4-lane alternative. The 4-lane alternative is 7% more expensive than the 2-lane alternative.	
Right-of-Way (ROW)	4	4
	Both alternatives require 0.2 acres of ROW near signalized intersections.	
Total Buildings Required	5	5
	Neither alternative requires relocations.	
Traffic Operations	5	5
	All intersections for both alternatives have LOS A, B, C, or D for individual movements.	
Vehicular Safety	3	3
	Both alternatives are anticipated to reduce crashes by 21-30 percent.	
Pedestrian Safety	5	3
	The 2-lane alternative features an 8' grass terrace to separate pedestrians from the roadway. The 4-lane alternative features a 6' grass terrace. In addition, the 2-lane alternative results in fewer lanes of traffic for pedestrians to cross.	
Bicycle Safety	5	4
	The 2-lane alternative includes buffered, on-street bike lanes throughout the North Segment. The 4-lane alternative includes bike lanes, but they do not become buffered until north of Maria Drive.	
Emergency Services	3	3
	Both alternatives include 20' of curb-to-curb width and a raised median throughout.	
Access Control	5	5
	Both alternatives include a raised median to better control access and remove 18 access points each.	
Hazardous Materials	3	3
	Both alternatives impact 2 properties with known hazardous materials.	
Historic Districts	5	5
	No historic districts present.	
Aesthetics	5	5
	Both alternatives allow for aesthetic improvements in the grass median and the grass terrace. Both alternatives also reduce the existing roadway width.	
Stormwater	5	3
	The existing road from Fourth Avenue to Maria Drive has approximately 73.5' of impervious surface within its typical section (travel lanes, TWLTL, sidewalks). The 2-lane proposes 56' (travel lanes, buffered bicycle lanes, sidewalks), a 24% reduction. The 4-lane proposes 62' (travel lanes, bicycle lanes, sidewalk), a 16% reduction. The existing road from Maria Drive to North Point Drive has approximately 68' of impervious surface within its typical section (travel lanes, shoulders, sidewalks). The 2-lane proposes 56' (travel lanes, buffered bicycle lanes, sidewalks), an 18% reduction. The 4-lane proposes 74' (travel lanes, buffered bicycle lanes, sidewalks), a 9% increase. The 2-lane alternative averages a 21% reduction vs. a 4% reduction for the 4-lane alternative.	
Consistency with City Plans	3	5
	The Division Street Targeted Area Master Plan indicated a preference for 4-lanes on this portion of Business 51.	
Public Support	2	4
	Per the March 2021 online comment form, 55% of respondents indicated preference for the 4-lane alternative. 30% of respondents indicated preference for the 2-lane alternative. 15% of respondents did not indicate a preference.	
Total Points	63	60