CHAPTER 7

ROUTE DETAILS AND SEQUENCING

THIS CHAPTER CONSIDERS EACH OF THE POTENTIAL ROUTES IN THE PROPOSED GRAND ISLAND AREA NETWORK IN DETAIL AND ALSO PRESENTS A DEVELOPMENT PLAN FOR THE TRAIL SYSTEM. It provides guidance on the proposed concept for each significant segment of each route. Finally, it presents methods for staging the system over time.

ROUTE DETAILS AND SEQUENCING

This chapter divides the network grid into north-south and east-west components. Each route displays a strip map illustrating each street or pathway segment, key destinations along the way, and intersecting routes. These maps are divided into keyed segments, corresponding to key dividing points, milestones, or changes in infrastructure treatment. The number key for each segment corresponds to a row in the accompanying table.

The tables display:

- The endpoints and length of each segment.
- The nature of the existing facility. Information also includes number of lanes and approximate width of the street channel, aerial photography, and field measurements.
- Sidewalk coverage. Streets included in the active network should provide sidewalk continuity on at least one side.
- Recommended infrastructure. This presents the recommended infrastructure treatment and other ideas for adapting a segment for safer and more comfortable bicycle and pedestrian use. On-street treatments like marked routes and bicycle boulevards typically use pavement markings and signage. In some cases, path or trail segments fill gaps in continuity. All recommendations are preliminary and may change with detailed design. Projects should be reviewed and approved by the City Engineer when funding becomes available and may require additional engineering evaluation, including traffic studies where relevant.
- Planning level opinions of probable costs. While these are not based on detailed design, they give an idea of relative costs for planning purposes. Cost factors used for these estimates are shown in Table 7.1. These costs do not include right-of-way, contingencies, design and engineering fees, major drainage structures, or extraordinary grading expenses.

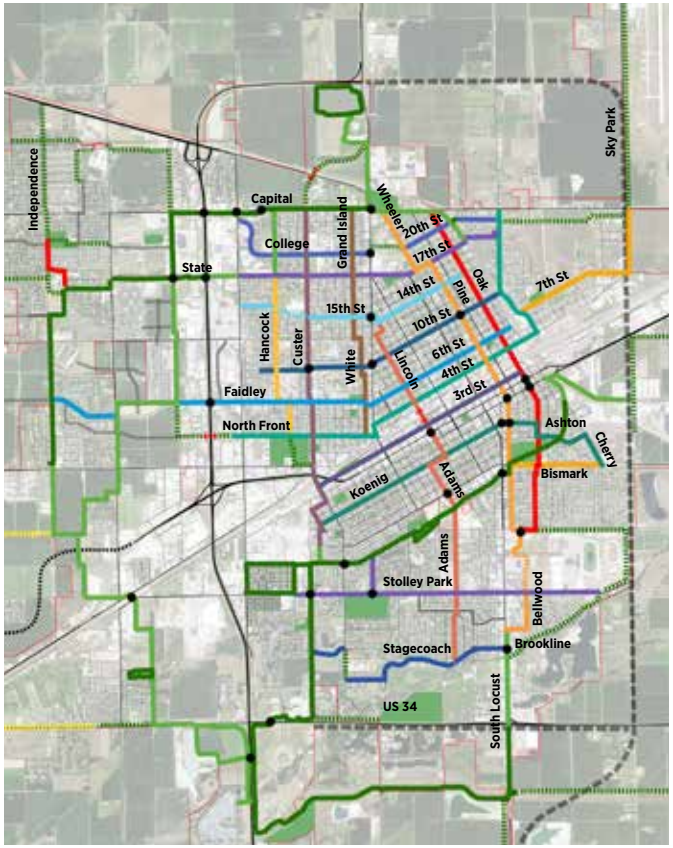
These recommendations should be refined further as individual projects are implemented. However, they provide a starting point for the more detailed design process, and provide guidance in determining priorities and costs of various improvements.

The chapter continues with a phasing and capital implementation program that includes:

- Criteria for determining priorities.
- An initial network that serves all parts of the city with strategic routes and path segments. This program includes statements of probable cost, based on current (2018) construction costs. The basic network is divided into two phases to be developed as resources are available. The first phase of the basic network would be developed over a ten year period, with the second phase completed during an additional ten years.
- An ultimate network, which may be realized within an additional ten years, again given availability of resources. These schedules may be accelerated and subsequent opportunities, such as imminent development, may move some projects forward.

Table 7.1: Probable cost factors by facility type

INFRASTRUCTURE TYPE	COST/MILE	TYPICAL FEATURES
Marked and signed route	$17,000	Signage, shared lane markings
Bicycle boulevard	$60,000	Signage, shared lane markings, routine intersection enhancements such as crosswalks, stop control modifications, occasional traffic calming features
Multi-use shoulders	$60,000	Signage, single white line dividing shoulder from travel lane
Bicycle boulevard with multi-use shoulders.	$80,000	Bicycle boulevards that also include multi-use shoulders or advisory bike lanes, appropriate on wider streets
Conventional bike lanes	$102,000	Lanes defined by white lines in both directions on a street
Protected bike lanes	$64,000 one-way $115,200 two way	Painted bike lanes with cross-hatched buffer area between bike lane and travel lane.
Sidepath	$316,800	10 foot paved roadside shared use path without major earthwork or modifications
Trails (or shared use paths)	Type 1: $396,000 Type 2: $448,800 Type 3: $554,400	10-foot paved path on right-of-way separate from roadways. Range reflects various levels of construction complexity. Higher cost reflects more complicated construction, such as additional grading and sitework.
Trails (gravel)	$200,000	Gravel on separated right-of-way or parallel to a roadway
Intersections or Barriers (Generic cost points)		
Type A: Major Intersection Construction	$350,000	Major projects such as protected intersections. If used in the Grand Island system, these would typically address bicycle/pedestrian facilities on one side of the street only to accommodate a sidepath or single-sided shared use path
Type B: Arterial Crossing	$200,000	Major intersections but requiring less capital work than protected intersections. May include improved signalization, improved crosswalks, bumpouts, minor construction
Type C: Median with HAWK	$150,000	Crossing refuge median with hybrid beacon
Type D: Median with flashing beacon	$75,000	Crossing refuge median with flashing warning beacons in place of positive red stop signal
Type E: Enhanced	$50,000	High visibility crosswalks, minor construction but normally without signalization



NOTE: Cost factors are planning level estimates based on regional experience, do not include right-of-way, contingencies, design and engineering fees, major drainage structures, or extraordinary grading expenses.

NORTH-SOUTH

OAK BICYCLE BOULEVARD

North

CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE / WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Oak, Capital to 4th	1.25	2-lane local street/36 feet	Both sides with some 1/2 block gaps	Bicycle boulevard, with possible striped parking shoulders	$75,000
2	Oak, 4th to 3rd	0.20	2-lane local street/48 feet	Both sides. No walkway definition across UPRR	Multi-use shoulders	$12,000
3	Oak, 3rd to Koenig	0.43	2-lane local, 36 feet	Both sides	Bicycle boulevard, enhanced bike/ped intersection at 1st and 2nd	$25,800
4	Oak, Koenig to Fonner Park Rd	0,87	2-lane local, 36 feet	Both sides	Bicycle boulevard, with possible striped parking shoulders. Mark intersection jogs at Bismark and Oklahoma	$52,200
5	Fonner Park, Oak to Sycamore	0.12	2-lane minor arterial, 45 feet	Both sides	Sidepath segment	$30,000
Total		**2.87**				**$195,000**

NORTH-SOUTH

PINE BICYCLE BOULEVARD

North

CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Wheeler, Capital to 17th	0.55	2-lane major collector/30 feet	Both sides	Bicycle boulevard. Short sidepath connection on south side of Capital to Broadwell intersection	$33,000
2	17th, Wheeler to Pine	0.13	2-lane major collector/30 feet	Both sides	Bicycle boulevard	$7,800
3	Pine, 17th to 4th	0.90	2-lane local/36 feet; 50 feet south of 8th	Both sides with frequent interruptions	Bicycle boulevard. Multi-use shoulders south of 8th Street	$72,000
4	Pine, 4th to 1st	0.35	2-lane local/50 feet	Both sides.	Multi-use shoulders. Defined pedestrian path with paint across UPRR	$28,000
5	Pine, 1st to Fonner Park	1.10	2-lane local/30-36 feet	Both sides	Bicycle boulevard; enhanced pedestrian crossing at 1st; .07 mile sidepath on Fonner Park between Pine and Sycamore	$66,000
6	Sycamore, Fonner Park to Hedde	0.25	2-lane local/24 feet	No sidewalks	Advisory bike lanes through Island Oasis	$15,000
7	Park site, Hedde to Stolley Park	0.38	Fonner Park campus	NA	Multi-use path	$150,480
8	Bellwood/Brookline, Stolley Park to Locust	0.46	Bellwood: 2-lane local/36 feet Brookline: 2-lane, unpaved	No sidewalks	Shared road; Brookline block should be considered for hard-surfacing.	$7,820
9	Locust, Brookline to Hwy 34	0.75	5-lane arterial	Both sides	Upgrade east side sidewalk to sidepath; modification of US 34 intersection for path crossing	$237,600
Total		**4.87**				**$617,700**

NORTH-SOUTH

LINCOLN/ADAMS BIKEWAY

North

CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Greenwich/ Lincoln, 15th to 4th	0.88	2-lane local/36 feet	Both sides	Bicycle boulevard, route uses 13th to connect Lincoln and Greenwich	$52,800
2	Lincoln, 4th to Koenig	0.50	2-lane local/36 feet	Both sides with interruptions between 4th and UP	Bicycle boulevard, defined path across railroad with painted multi-use shoulder; connection along Koenig to Adams	$40,000
3	Adams, Koenig to Brownell Trail	0.41	2-lane collector, 36 feet	Both sides with some gaps north of Anna; one side south of Anna	Bicycle boulevard. Multi-use shoulders without parking between Anna and Beltline Trail	$32,800
4	Adams, Beltline to Stolley Park	0.66	2-lane collector, 24 feet	No parking	Sidepath	$209,088
5	Cottonwood, Stolley Park to Stagecoach	0.50	2-lane local/28 feet widening to divided residential boulevard/50 feet with median	Both sides	Bicycle boulevard	$30,000
Total		**2.95**				**$364,688**

NORTH-SOUTH

GRAND ISLAND/ WHITE BICYCLE BOULEVARD

North

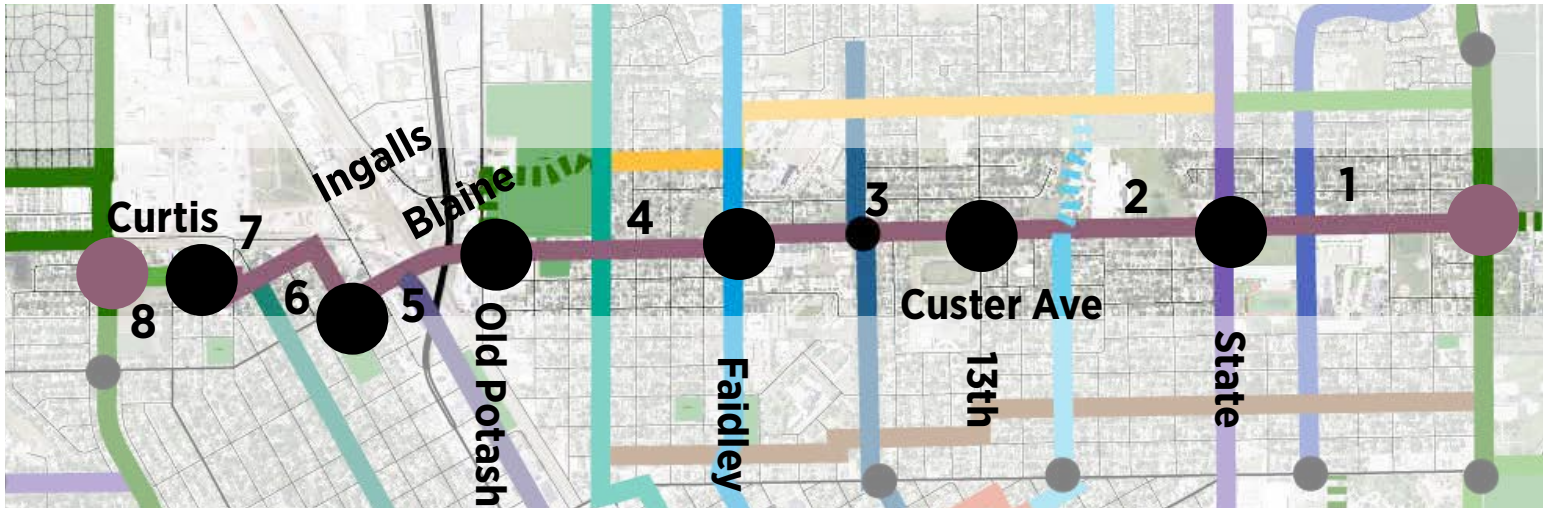
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Grand Island, Capital to 13th	0.55	Divided local residential boulevard/70 feet with 30 foot median	Both sides	Bicycle boulevard, connects to White Ave via 13th	$33,000
2	White, 13th to 9th	0.30	2-lane local/35 feet	No sidewalks	Bicycle boulevard, sidewalk completion on one side of street; enhanced crosswalk at 10th	$18,000
3	White, 9th to North Front	0.54	2-lane local/36 feet	Intermittent on both sides.	Bicycle boulevard, sidewalk completion on one side of street; enhanced crosswalk at Faidley	$32,400
Total		**1.39**				**$83,400**

NORTH-SOUTH

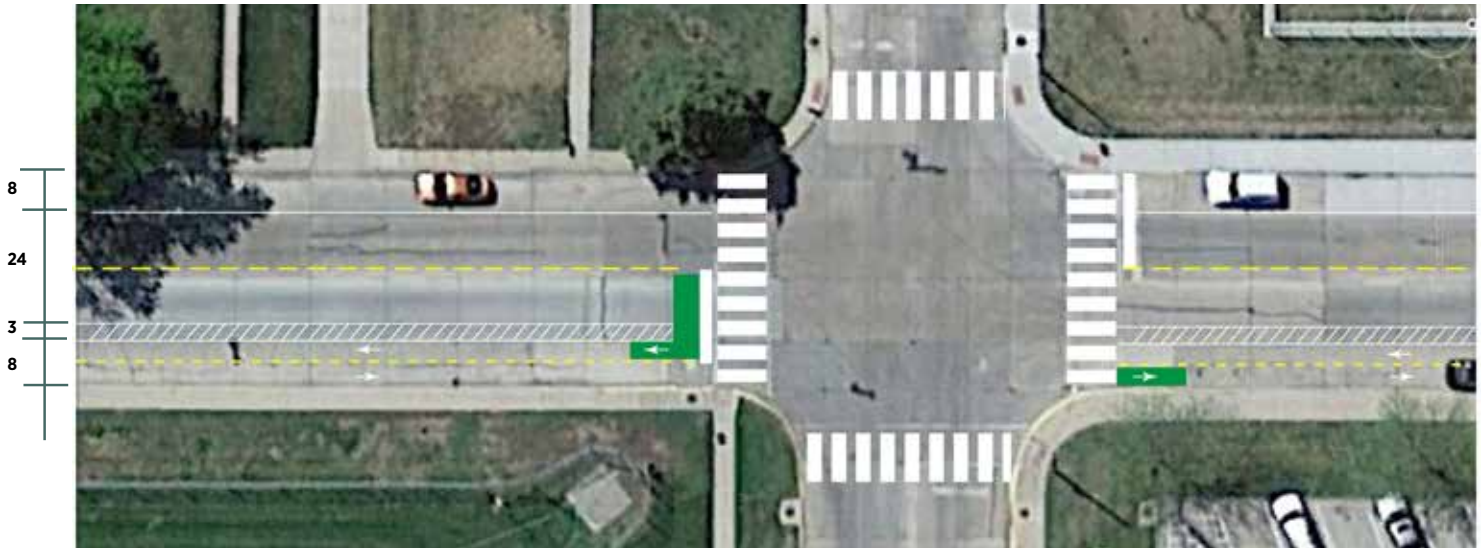
CUSTER BIKEWAY

North



CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Custer, Capital to State	0.50	2-lane major collector, 42-44 feet	Both sides	Two-way protected bike lane on east side, with parking on west side. Two stage crossing at State	$57,600
2	Custer, State to 13th	0.77	2-lane major collector/44 feet	Both sides	Sidepath on west side. Two stage crossing to east side at 13th	$243,936
3	Custer, 13th to Faidley	0.50	2-lane major collector/45 feet	Both sides	Two-way protected bike lane on east side, with parking on west side. Two stage crossing at State	$57,600
4	Custer, Faidley to Old Potash	0.50	2-lane major collector/45 feet	One side north of George, no sidewalks south	Multi-use shoulders. Multi-use trail alternative on east edge of Ryder Park. Sidewalk completion on one side.	$30,000
5	Blaine, Old Potash to 1st Street	0.30	2-lane arterial, 45 feet to 2nd St, narrowing to 36 feet south of 2nd	One side (east)	Two-way protected bike lane west side from Old Potash to 2nd, transitioning to sidepath on west side between 2nd and 1st	$34,560
6	1st/Ingalls/Louis, Blaine to Curtis	0.34	2 lane local streets, 36-40 feet	Both sides	Shared marked routes	$5,780
7	Curtis, Louise to Anna	0.13	2 lane local, 36 feet	One-side (east) continuity	Shared marked route adjacent to Gates Elementary	$2,210
8	Walkway, Anna to John Brownell Trail	0.13	Walkway parallel to Curtis	NA	Upgrade to multi-use trail standard	$51,480
Total		**3.17**				**$483,166**



Custer and College

Possible protected bike lane at Custer and College. The buffered lane is on the east side of the street, and is used on blocks where on-street parking should be unnecessary because of adjacent parking lots, open fields, or houses oriented to intersecting residential streets rather than Custer.

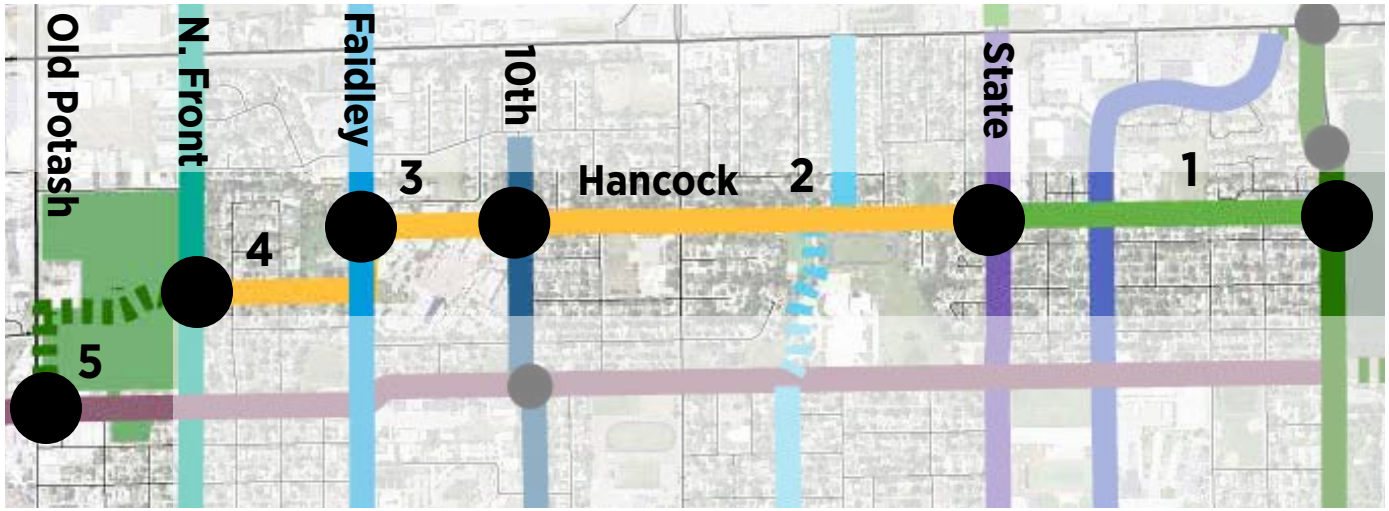
Custer and State

Houses oriented to Custer south of State may require on-street parking at their front door. Here, the bikeway shifts to a two-way off-street sidepath at the high school. The illustration shows how the crossing is made in two stages to the high school sidepath. This is reversed at 13th Street.

NORTH-SOUTH

HANCOCK BIKEWAY

North

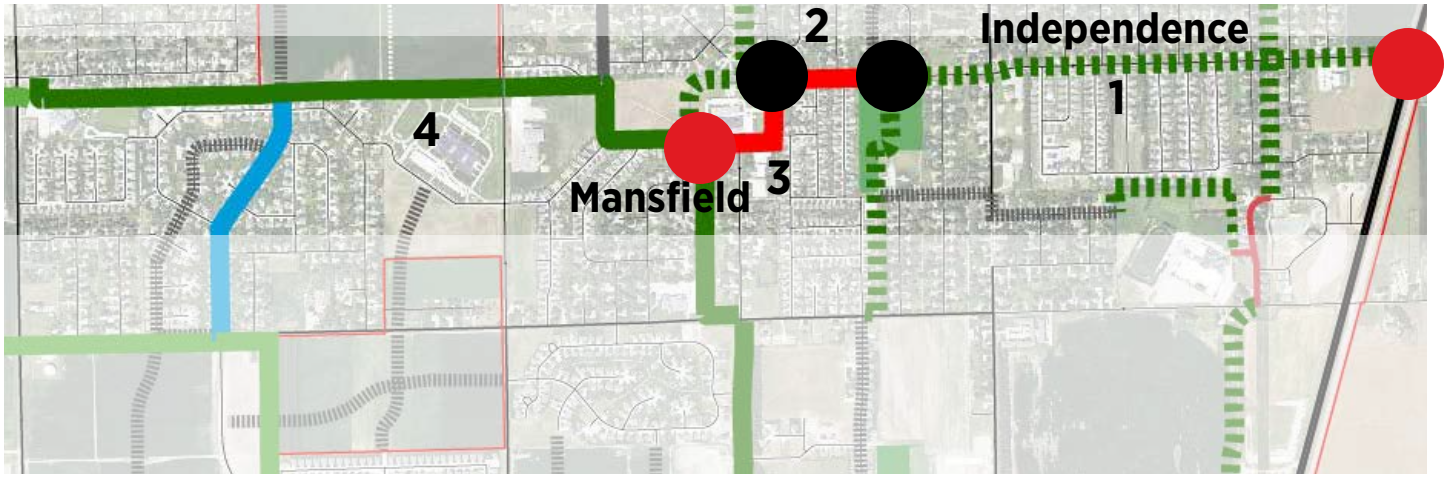


CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Easement, Capital to State	0.50	Walkway and utility easement	Two segments north and south of West Lawn Elementary School	Multi-use trail, partially on edge of elementary school. Enhanced crosswalk at State	$224,400
2	Hancock, State to 10th	0.75	2-lane collector/36 feet	Both sides	Bicycle boulevard	$45,000
3	St Francis campus and ring drive, 10th to Faidley	0.25	NA	No sidewalks	Multi-use trail on line of Hancock Ave, providing pedestrian accommodation to offices along ring drive. Uses proposed Faidley sidepath to Sherman	$99,000
4	Sherman, Faidley to N. Front/Ryder Park	0.27	2-lane local/36 feet	Both sides	Shared marked route	$4,590
5	Ryder Park paths and Old Potash to Custer	0.40	Park path	Existing paths	Upgrade path to multi-use trail, continue as sidepath along Old Potash to Custer. Connects with Custer Ave bikeway	$158,400
Total		**2.17**				**$531,390**

NORTH-SOUTH

INDEPENDENCE BIKEWAY



North

CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Independence, Highway 2 to George Park	1.20	2-lane rural section collector/25 feet	No sidewalks, except east side south of Norseman	Sidepath with eventual reconstruction of Independence Ave. May be incorporated into future street project	$380,160
2	Independence, George Park to Mansfield	0.23	2-lane collector/36 feet	One-side (east) sidewalk	Sidepath on west side, with pedestrian crossing of Independence at park	$72,864
3	Engelman School campus	0.25	NA	One side around campus periphery	Multi-use trail connection to Shoemaker Trail with three options: sidepath parallel to Manchester and Mansfield; straight alignment along edge of school property to existing trail at Shanna St; continuation of Independence alignment south and east to current trail turn south of Engelman building.	$99,000
4	Shoemaker Trail	0.84	Existing trail	NA	Existing trail	0
Total		**2.52**				**$552,024**

NORTH-SOUTH/EAST-WEST

ST. PAUL/4TH BIKEWAY

North

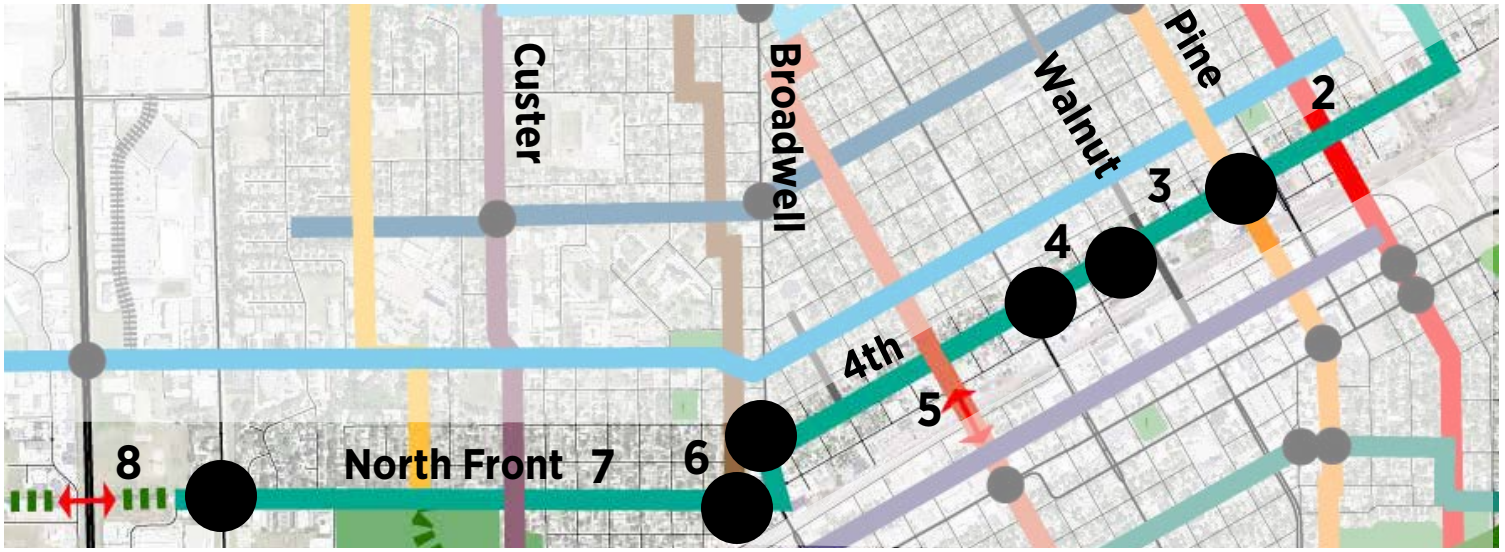
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	St. Paul, Capital to 4th	1.0	2-lane minor arterial, 44 feet	Both sides from 11th to 5th, poor coverage elsewhere	Striped parking shoulder; continuous one-side walkway between 4th and 5th and 11th and 20th. Connects with 4th Street route	$60,000
2	4th, St. Paul to Pine	0.77	2-lane minor arterial/50 feet	Both sides with some interruptions on industrial use sites	Multi-use shoulders	$46,200
3	4th, Pine to Cedar	0.25	2-lane minor arterial/50-53 feet	Both sides, some at downtown scale	Marked shared route, with painted parking lane on south side (EB). Diagonal parking retained on north side	$4,250
4	4th, Cedar to Eddy	0.20	2-lane minor arterial/50 feet	Both sides, one block interruption on south side	Multi-use shoulders	$12,000
5	4th, Eddy to Broadwell	0.55	2-lane minor arterial, 38 feet	Both sides with some interruptions	Striped parking shoulders	$33,000
6	4th-Broadwell to North Front-Broadwell	0.09	3-lane minor arterial, 40 feet	One side (west)	Enhanced crossing at 4th Street, sidepath along Broadwell to North Front. Ultimate solution will be grade separation of Broadwell over UPRR. Design should accommodate bike/ped connection under the structure to link 4th and North Front.	$28,512

EAST-WEST

ST. PAUL/4TH BIKEWAY

North

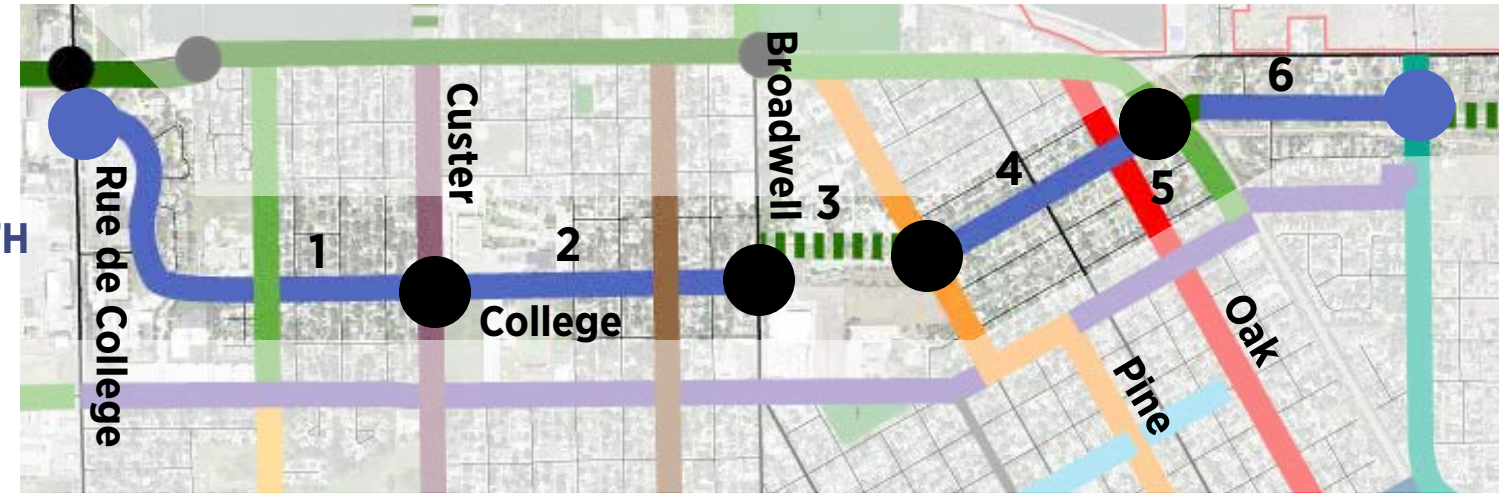


SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
7	North Front, Broadwell to Webb	1.0	2-lane major collector, 41 feet	Both sides	Striped parking shoulders	$60,000
8	North Front alignment west of Webb	0.20	NA	NA	Future trail to proposed ped/bike overpass over Highway 281.	$79,200
Total		**4.06**				**$323,162**

EAST-WEST

COLLEGE/20TH BICYCLE BOULEAVRD

North

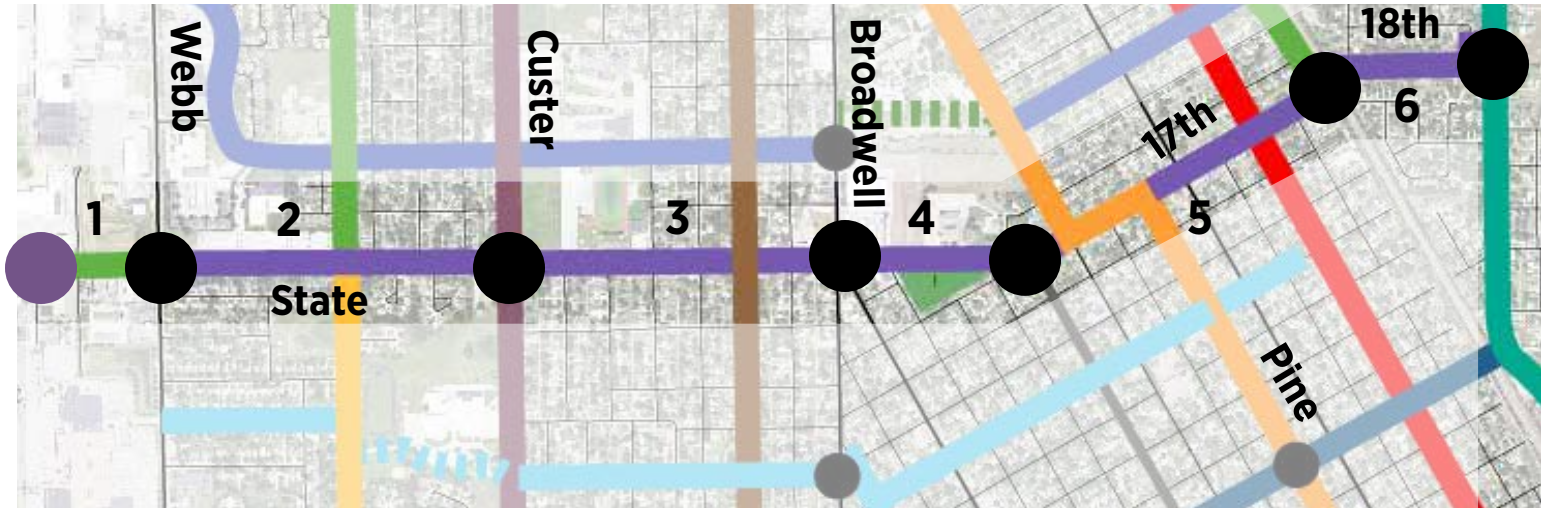


CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Rue de College/College Ave, Webb to Custer	0.75	2-lane collector/36-38 feet	Both sides	Striped parking shoulders, with connection to Capital Sidepath	$45,000
2	College, Custer to Broadwell	0.50	2-lane local/41 feet from Custer to Lafayette, 36 feet Lafayette to Broadwell	Both sides	Striped parking shoulders, with enhanced pedestrian crossing at Broadwell	$30,000
3	VA campus, Broadwell to Wheeler	0.25	NA	NA	Multi-use path adjacent to VA south parking lots	$112,200
4	20th, Wheeler to BNSF	0.43	2-lane local/32 feet	Both sides	Shared, marked route. Connects to path and tunnel under BNSF main line	$25,800
5	Walkway and ped tunnel under BNSF	0.14	NA	Existing path	Widen path to 6 foot minimum, maintain existing tunnel width	$55,440
6	20th, BNSF to St Paul	0.27	2-lane local/32 feet	Both sides	Shared, marked route	$16,200
Total		**2.34**				**$284,640**

EAST-WEST

STATE/17TH BIKEWAY



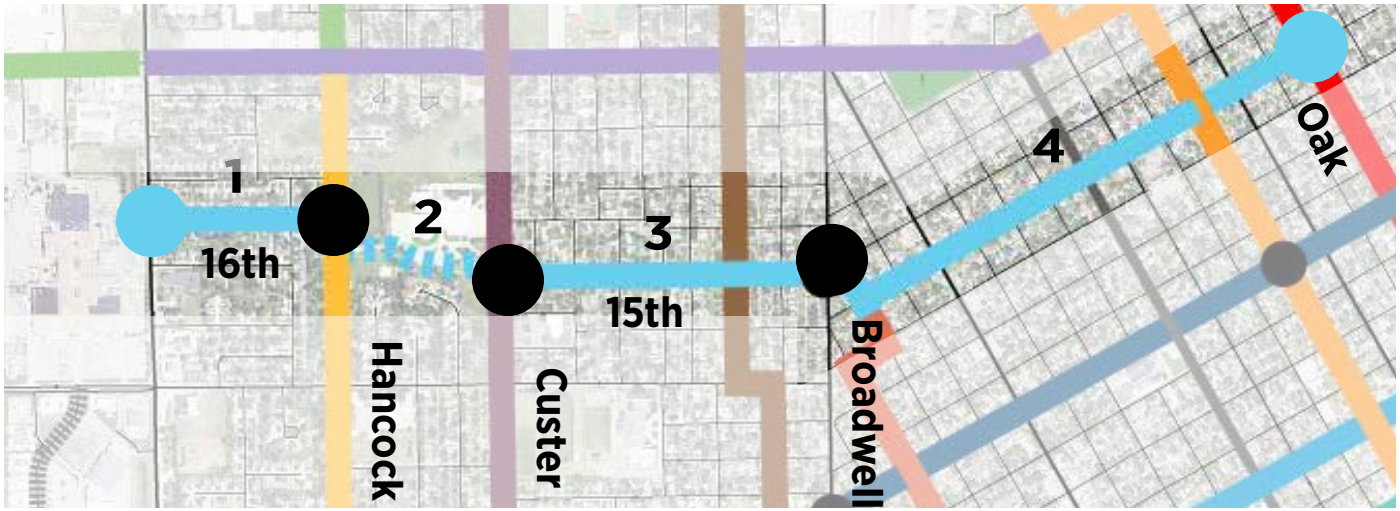
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	State, Hwy 281 to Webb	0.25	5-lane major collector/62 feet	Both sides	Extend existing half-block sidepath east of 281 to Webb, Connects to State Trail on west side of highway. Enhanced multi-modal crossing at State and 281	$79,200
2	State, Webb to Custer	0.54	2-lane major collector/40-42 feet	Both sides	Bicycle boulevard with striped parking shoulders	$32,400
3	State, Custer to Broadwell	0.50	2-lane major collector/34-36 feet	Both sides	Bicycle boulevard. Enhanced pedestrian crossing at Five Points intersection	$30,000
4	State, Broadwell to 17th	0.43	2-lane collector/50-62 feet. Wide portion has north side diagonal parking	Both sides	Bicycle boulevard with striped parking shoulders	$25,800
5	17th, State intersection to Plum	0.50	2-lane major collector to Sycamore, local to Plum/36 feet	Both sides	Bicycle boulevard. Connection via Plum to 18th Street underpass at BNSF main line	$40,000
6	18th, Plum to St Paul	0.27	2-lane local/36 feet	Both sides	Bicycle boulevard	$4,590
Total		**2.49**				**$211,990**

EAST-WEST

15TH STREET BICYCLE BOULEVARD

North



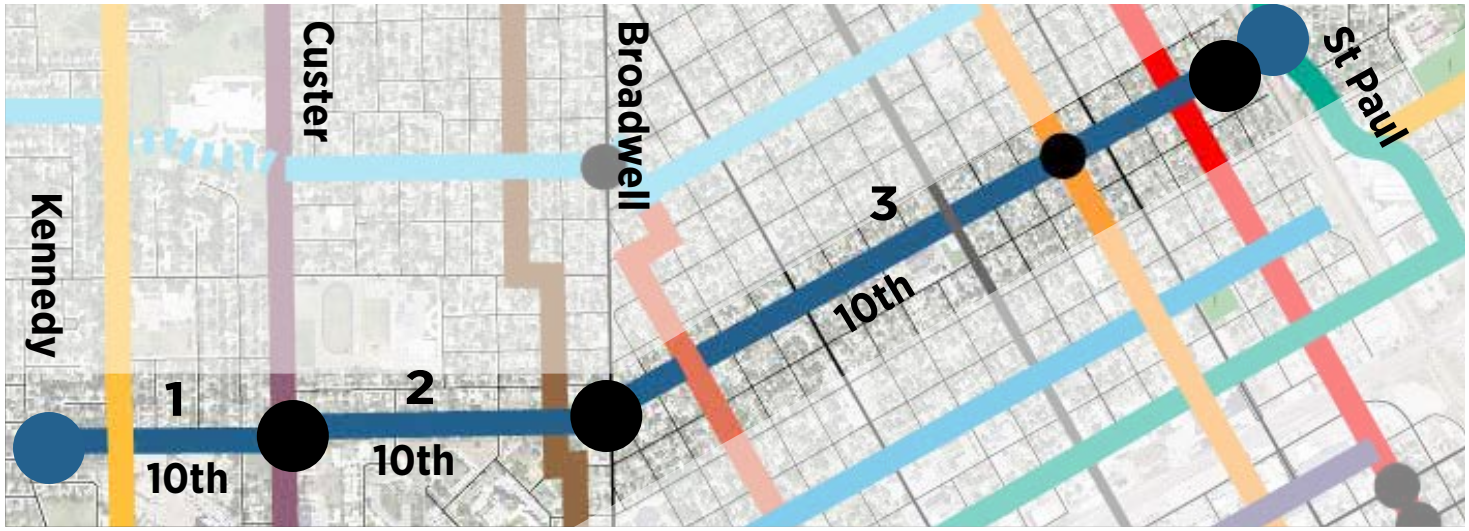
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	16th, Webb to Hancock	0.28	2-lane local/34 feet	Both sides	Bicycle boulevard. Connects to main Conestoga Mall entrance	$16,800
2	Walnut Middle School campus, Hancock to Custer	0.31	NA	NA	Multi-use path on periphery of site, south of main parking lot	$122,760
3	15th, Custer to Broadwell	0.50	2-lane local, 36 feet	Both sides	Bicycle boulevard. Enhanced ped crossing at Broadwell with short sidepath to negotiate offset intersection	$61,680
4	15th, Broadwell to Oak	0.80	2-lane local/34 feet	Both sides	Bicycle boulevard. Use Oak and Pine to connect to 17th St. Enhanced crosswalk at Eddy	$48,000
Total		**2.00**				**$249,240**

EAST-WEST

10TH STREET BIKEWAY

North



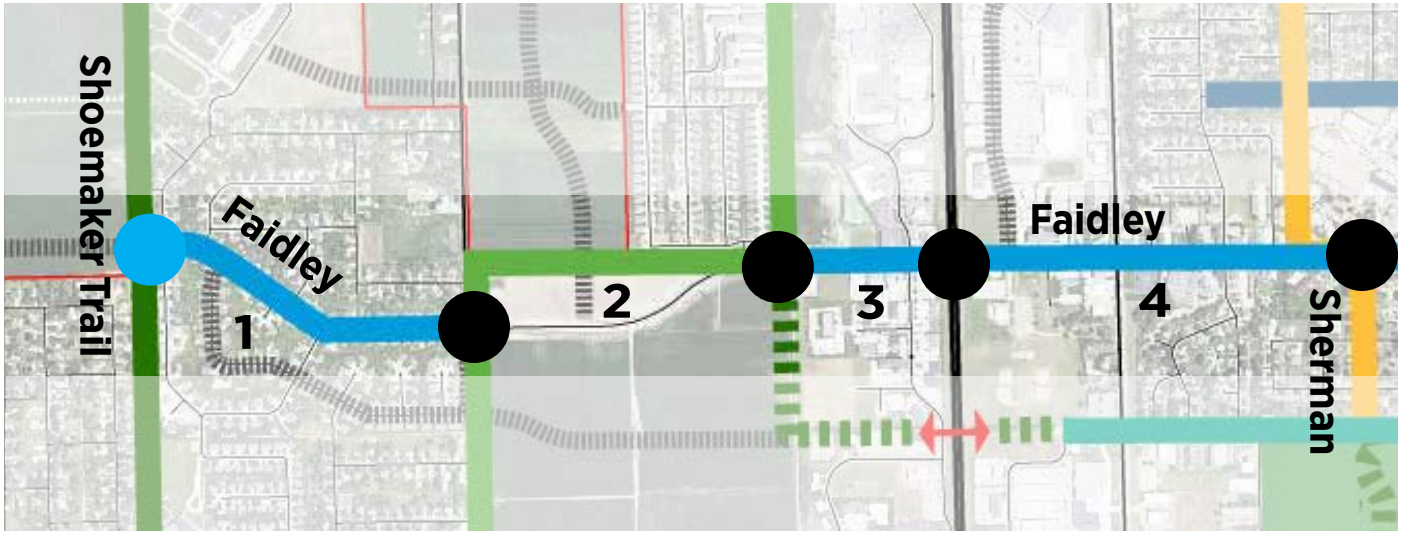
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	10th, Kennedy to Custer	0.40	2-lane local/36 feet	Both sides	Striped parking shoulders. Jog at Custer will use protected bike lane to connect two legs of 10th St	$32,000
2	10th, Custer to Broadwell	0.50	2-lane local/36 feet	Both sides	Striped parking shoulders. Enhanced crossing at Broadwell with curbs cut into Adams Street cul-de-sac from Broadwell crossing and into 10th Street eastbound	$90,000
3	15th, Broadwell to St. Paul	1.20	2-lane major collector/ 36 feet	Both sides	Striped parking shoulders. Street passes under BNSF viaduct. Traffic calming treatment in vicinity of Howard Elementary School	$72,000
Total		**2.10**				**$194,000**

EAST-WEST

FAIDLEY/6TH BIKEWAY (WEST)

North



CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Faidley, Shoemaker Trail to North Rd	0.54	2-lane major collector/40 feet	Both sides	Multi-use shoulders. Enhanced crossing at North Rd	$32,400
2	Drainage corridor parallel to Faidley, North to Ridgewood	0.50	NA	NA	Multi-use trail on east and south side of drainage	$224,400
3	Faidley, Ridgewood to Highway 281	0.50	3-lane major collector, 40 feet, widening to 5-lane at 281 intersection	Both sides	Sidepath on north side with enhanced crossing at Highway 281. Connection with proposed Westside Collector Trail	$158,400
4	Faidley, Highway 281 to Sherman	0.37	3-lane major collector, 40-42 feet	Both sides	Sidepath on north side with enhanced crossing of Webb Road	$117,216

Faidley sidepath concept. In this segment, new sidepath is located adjacent to the existing back of curb sidewalk, using the existing facility as a buffer from the travel lanes. High visibility crosswalks are used to mark street and major driveway interruptions.

EAST-WEST

FAIDLEY/6TH BIKEWAY (WEST)

North

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
5	Faidley,Sherman to Custer	0.17	3-lane major collector/ 40 feet	Both sides	Sidepath on north side. Improve crossing visibility at St. Francis entrance drive and Custer	$53,856
6	Faidley, Custer to Broadwell	0.66	3-lane major collector,/40 feet	Both sides. Some discontinuity at corners on south side	Sidepath on north side. Move path away from drop-off areas	$209,088
7	6th, Broadwell to Plum	1.25	2-lane local/36 feet	Both sides; discontinuities and poor sections east of Walnut	Bicycle boulevard with gap closing and replacement of dirt or deteriorating sections. Terminus at historic Burlington depot.	$75,000
Total		**3.99**				**$870,360**

EAST-WEST

3RD STREET BIKEWAY

North

CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	3rd, Blaine to Broadwell	0.60	2-lane local/36 feet, 50 feet between Garfield and Blaine	Both sides with substantial breaks on both sides	Multi-use shoulders between Blaine and Garfield; striped parking shoulders Garfield to Blaine	$36,000
2	3rd, Broadwell to Lincoln	0.40	2-lane local/36 feet	Both sides with some gaps	Striped parking shoulders	$24,000
3	3rd, Lincoln to Elm	0.30	2-lane urban collector/ 50 feet	Both sides	Multi-use shoulders	$18,000
4	3rd, Elm to Sycamore	0.40	2-lane urban local/ 50 feet with diagonal parking on south side	Both sides	No bike-related improvements on 3rd. Transition on shared route on Elm to south alley paralleling 3rd. Provide markings to define alley as a bikeway, taking advantage of existing raised and enhanced midblock ped crossings at alleys. Incorporate yellow diamond bike/ped signage on cross streets, add midblock crossing treatment at Cedar and Walnut. Transition back to 3rd Street on Sycamore. Possible conversion of west side on-street parking lane adjacent to public parking lot to short, two way protected bike lane.	$100,000

EAST-WEST

3RD STREET BIKEWAY

North

Multi-purpose shoulder concept plan. Width of 3rd Street changes at Lincoln Street as illustrated at right. East of Lincoln, shoulder is wide enough to accommodate both bikes and parked cars. Typical street width between white lines should be limited to 24 feet maximum.

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
5	3rd, Sycamore to Oak	0.13	2-lane urban local/50 feet, diagonal parking on south side immediately east of Sycamore	Both sides	Multi-use shoulders. Possible path extension to Plum and proposed Beltline Trail extension. However this requires crossing of 1st and 2nd dealing with relatively high speed traffic.	$7,800
Total		**1.83**				**$185,800**

EAST-WEST

KOENIG BICYCLE BOULEVARD

North

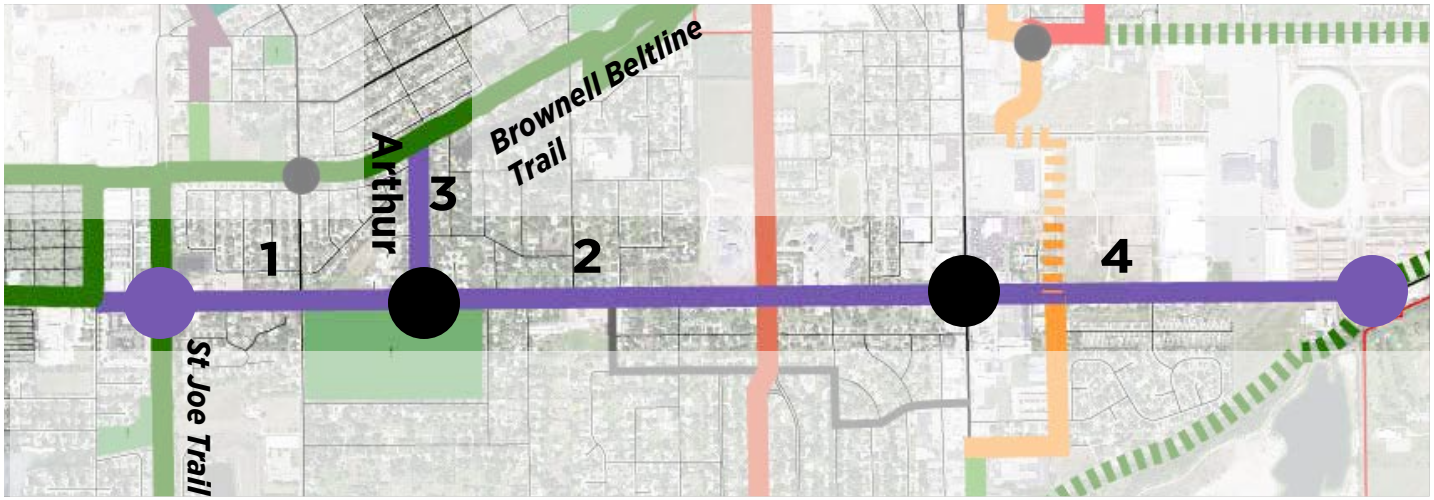
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	Koenig, Ingalls to Blaine	0.13	2-lane local/36 feet	Both sides	Bicycle boulevard	$7,800
2	Koenig, Blaine to Walnut	1.43	2-lane major collector/36 feet	Both sides with some gaps	Bicycle boulevard	$85,800
3	Koenig, Walnut to Locust	0.07	2-lane major collector/36 feet	Both sides	Enhanced crossings of both Walnut and Locust. Crossing of multi-lane Walnut presents greatest difficulty because of width and traffic volume. Traffic control should be studied	$70,000
4	Koenig, Locust to Oak	0.28	2-lane major collector/30-32 feet	Both sides	Bicycle boulevard. Route turns south along Oak Bicycle Boulevard to Ashton	$22,400
5	Ashton/Memorial Drive, Oak to Cherry	0.40	2-lane local/34 feet on Ashton, transitioning to divided residential boulevard, 51 to 125 feet with wide median	Both sides	Bicycle boulevard	$32,000
6	Cherry, Ashton to Bismark	0.26	2-lane major collector/36 feet	One side (west),	Striped parking shoulders	$15,600
7	Bismark Connection, Cherry to Pine	0.73	2-lane major collector/44 feet	Both sides	Striped parking shoulders	$58,400
Total		**3.30**				**$292,000**

EAST-WEST

STOLLEY PARK BIKEWAY

North



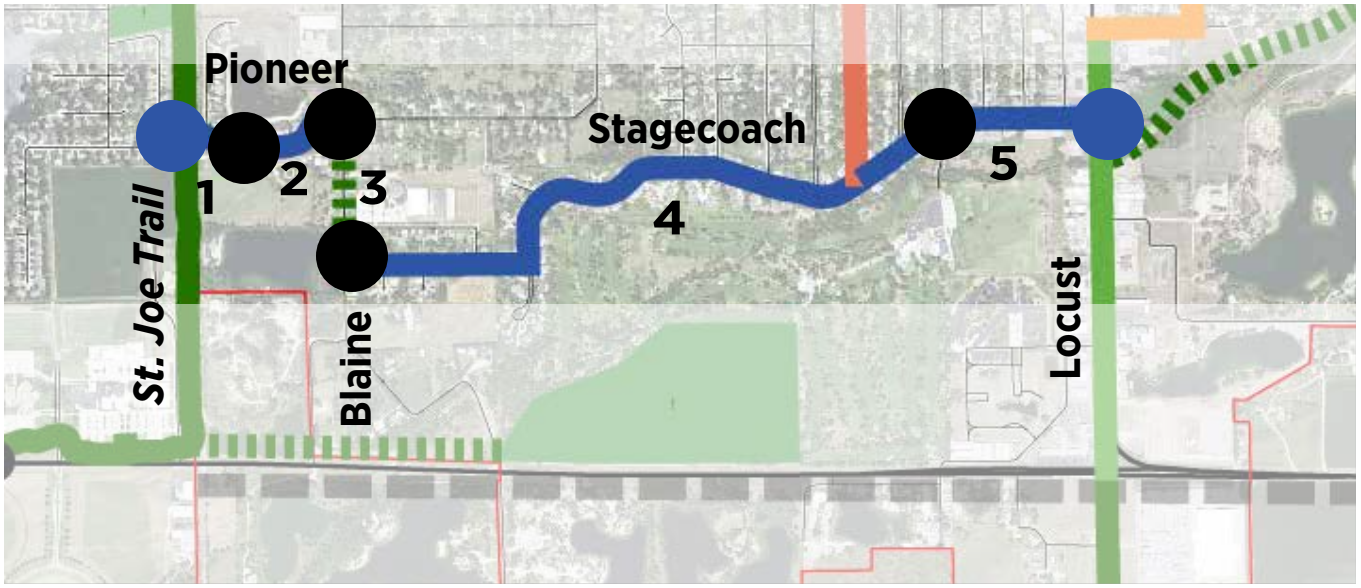
CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	St Joe Trail crossing	NA	In 2018, 3-lane minor arterial/50 feet	Trail crossing	Enhanced crossing. Consideration should be given to pedestrian refuge median, high visibility crosswalk, advance warning, and possible HAWK	Included in barriers
2	Stolley Park Rd, Trail to Locust	1.50	In 2018, 3-lane minor arterial/45 feet with multi-use shoulders	Both sides	Multi-use shoulders provide adequate bike accommodations. Enhanced crossing at Arthur Street into Stolley Park	Included in 2018 project
3	Arthur, Beltline Trail to Stolley Park	0.33	2-lane local/39 feet	Both sides but lacking on Del Mar to Stolley Park block	Shared and marked roadway with completion of sidewalk on southern block. Enhanced pedestrian crossing to link trail to park	$5,610
4	Stolley Park, Locust to Wood River	1.0	3-lane minor collector, narrowing east of Kingswood/36-24 feet	Sidewalks only on first block east of Locust	Sidepath on Fonner Park side, addressing lack of sidewalks	$316,800
Total		**2.83**				**$322,410**

EAST-WEST

STAGECOACH BICYCLE BOULEVARD

North



CONCEPTUAL TREATMENTS

SEGMENT KEY	SEGMENT	LENGTH (MILES)	STREET TYPE /WIDTH	SIDEWALK CONDITION	INFRASTRUCTURE	PROBABLE COST
1	St. Joe Trail to Pioneer Blvd	0.07	NA	NA	Trail connection to local street from regional trail, requiring a crossing of a low-use railroad branch line	$31,416
2	Pioneer Blvd, Wicklow Drive to Blaine	0.23	2-lane local/30 feet	One side	Shared and marked roadway	$3,910
3	Blaine, Pioneer to Stagecoach	0.25	2-lane major collector/24 feet rural section	Sidewalk only on Evangelical Free Church frontage	Sidepath; enhanced crossing at Blain and Pioneer intersection	$79,200
4	Stagecoach Rd, Blaine to Riverside	1.15	Local with varying sections: 2-lane/36 feet to divided 2-lane/50 feet	Both sides	Bicycle boulevard	$69,000
5	Stagecoach Rd, Riverside to Locust	0.25	2-lane local/36 feet	Both sides	Bicycle boulevard; Enhanced crossing at Locust	$15,000
Total		**1.95**				**$198,526**

PRIORITIES AND IMPLEMENTATION

The proposed Grand Island area bikeways network will be implemented in phases, and will almost certainly evolve over time. However, this plan establishes both an initial phase that guides activity during the next ten years, and a concept for how the network emerges more comprehensively from that foundation. The sequencing of phases and specific trails and routes proposed here follows these criteria and principles:

- **Response to demands.** In every phase, high priority routes should address existing demand patterns, and serve destinations that are valuable to users and appropriate endpoints for bicycle transportation. The survey results summarized in Chapter 2 provide valuable information on the importance of various destinations.
- **Route integrity.** High priority routes and projects should provide continuity between valid endpoints such as destinations and trails. When developed incrementally, routes should not leave users at loose ends.
- **Extensions of existing facilities.** Projects that make use of and extend the reach of key existing facilities that need attention,.
- **Gaps.** Small projects that fill gaps in current facilities or tie relatively remote neighborhoods to the overall system can be especially useful at early stages n the system's development. However, two very large projects are proposed in the high priority system in response to community preferences: the Faidley and Custer corridors.
- **Opportunities.** The implementation sequence should take advantage of street projects, resurfacing and street rehabilitation projects, and other infrastructure projects
- **Safety enhancement.** High priority projects should increase safety and reduce user discomfort for people of all ages.
- **Demographic equity.** Projects should provide bicycle and pedestrian access to underserved populations and connect people and households without access to a motor vehicle to destinations important to their lives and livelihood.

Table 7.2: Probable Costs for Proposed Trails

NAME : PRIORITY	LENGTH (mi)	TRAIL TYPE (See Table 7.1)	OPINION OF PROBABLE COST
Shoemaker Trail extension	.50	1	$198,000
Westside Connector extension	1.00	2	$448,800
Cedar Hills Trail	1.80	3	$997,920
South Locust Trail	0.75	Sidepath	Included in Route
Belt Line Trail Extension	0.90	3	$498,960
Capital Trail East	0.68	Sidepath/Type 2 trail	$215,424
Eagle Scout Trail	0.75	1	$297,000
Moore Creek Trail	1.50	2	$673,200
Southwest Trail	1.65	3	$914,760
Priority Trails Total	**9.53**		**$4,244,064**

NAME: LATER PHASE	LENGTH (mi)	TRAIL TYPE (See Table 7.1)	OPINION OF PROBABLE COST
Veterans Legacy Trail/Overpass	0.8	1	$1,859,040 (includes RR overpass)
Sky Park Trail	2.05	2	$689,040
Seedling Mile Trail	2.07	3	$655,776
Wood River Trail	1.2	Sidepath	$665,280
Riverway Trail Extension	3	3	$1,346,400
Mormon Island/(S. Locust) Trail	4.9	Sidepath/Type 2 trail	$2,699,120 (includes channel bridge)
Stagecoach Connection Trail	0.07	1	Included in route
Northwest Trail	1.65	2	$740,520
L.E. Ray Park Connector	0.55	Sidepath	$174,240
Alda/Cornhusker Trail	5.75	Gravel	$1,150,000
Alda/ Husker Highway Trail	5.63	Gravel	$1,126,000
Future Trails Total	**27.67**		**$11,105,416**
GRAND TOTAL	**37.20**		**$15,349,480**

Table 7.3: Probable Budgets for Barrier Removal Projects

NAME	ASSOCIATED ROUTE	BARRIER TYPE (See Table 7.1)	OPINION OF PROBABLE COST
Capital-281	Capital Trail	A	$350,000
State-281	State St Trail	A	$350,000
Faidley-281	Faidley	B	$200,000
North Rd/RR	Moore Creek Trail	E	$50,000
Westside Trail-State	State St Trail	D	$75,000
Stuhr-Cedar Hills 281 Underpass	Stuhr/Cedar Hills Tr		Included in route cost
St Joe Tr/Stolley Park	St Joe Trail	C	$150,000
Beltline/Blaine	Beltline Trail	D	$75,000
Stuhr Tr/Husker	Stuhr Trail	C	$150,000
Capital/Webb	Capital Trail	C	$150,000
Capital Tr east of Webb	Capital Trail	C	$150,000
Capital/Broadwell	Capital Trail/Pine	D	$100,000
20-Broadwell	20th/College	D	$100,000
15-Broadwell	15th Bike Blvd	D	$100,000
10-Broadwell	10th Bike Blvd	D	$100,000
Koenig-Locust/Walnut	Koenig Bike Blvd	D	$200,000
Lincoln-2nd	Lincoln/Adams	C	$200,000
Beltline/Locust	Beltline Trail	E	$50,000
1st Pine	Pine Bike Blvd	C	$150,000
North Front 281 Overpass	Network	bridge	$1,500,000
Lincoln RR Overpass	Lincoln/Adams	bridge	$1,500,000
Stagecoach/Locust	Stagecoach/Locust	D	$75,000
Highway 34/Locust	S. Locust/Pine	B	$200,000

- **Service to key destinations.** These include parks, schools, the library, and similar destinations.
- **Relative ease of development.** It is important that the a useful system be established relatively quickly and at comparatively low cost. Routes that require major capital cost or lead to neighborhood controversy should be deferred to later phases, when precedents are established and the network becomes part of Grand Island's urban landscape. Developability helps determine priorities. The initial system should serve major destinations and provide good connectivity while minimizing large scale projects.

Clearly economics and available resources are extremely important and facilities that meet user demands and preferences are frequently relatively expensive because they require a greater degree of separation from motor vehicles. Table 7.1 identifies typical costs per mile for the different types of on-street facilities anticipated for the Grand Island network. The subsequent detailed route tables apply these cost factors to the individual on-street components of the active network. Tables 7.2 and 7.3 display opinions of probable cost the other two key components of the network: trails and barrier removal projects. Table 7.3 should not be taken to prescribe a specific solution but rather is designed to establish an optimal budget for project types that could substantially reduce the impact of these barrier conditions.

SEQUENCING

The Sequencing illustrates these guiding criteria to identify a basic network that would provide a high level of service to the community even if no further progress is made. The sequence design divided into a basic network, which must stand alone even if no further progress is made; and an ultimate network that provides comprehensive coverage of the city and rural parts of the metropolitan area. The basic system is further divided into two implementation phases, which may be viewed as five to seven-year capital programs. This overall Basic Network implemented over 20 years translates into a proposed investment of about $10.3 million, or slightly over $500,000 annually in 2018 dollars over a 20 year period. Clearly implementation depends on availability of funding and some large projects or overall efforts could receive federal and state funds that could advance certain projects. This implementation sequence represents a suggested scenario that may change over time.

BASIC SYSTEM: THE STARTING POINT

While the City and the user community will help to determine the order of projects within each phase, the system must start to emerge with some specific routes and route segments. This pilot system establishes the foundation of the ultimate network, and should provide maximum impact, link all parts of the city, and serve proven destinations and traffic patterns.

Phase One

Phase One, encompassing development envisioned for the next ten years, includes the following key elements:

- Completion of three major street-related corridors: Faidley, Custer, and the Pine/South Locust corridors. Faidley and Custer both involve separated facilities, including sidepaths and protected bike lanes. The importance of these corridors suggests accelerating their development.
- A new midtown east-west route, using 15th Street connecting to the State Street route at both east and

Figure 7.4: Basic Network: Phase 1 Diagram

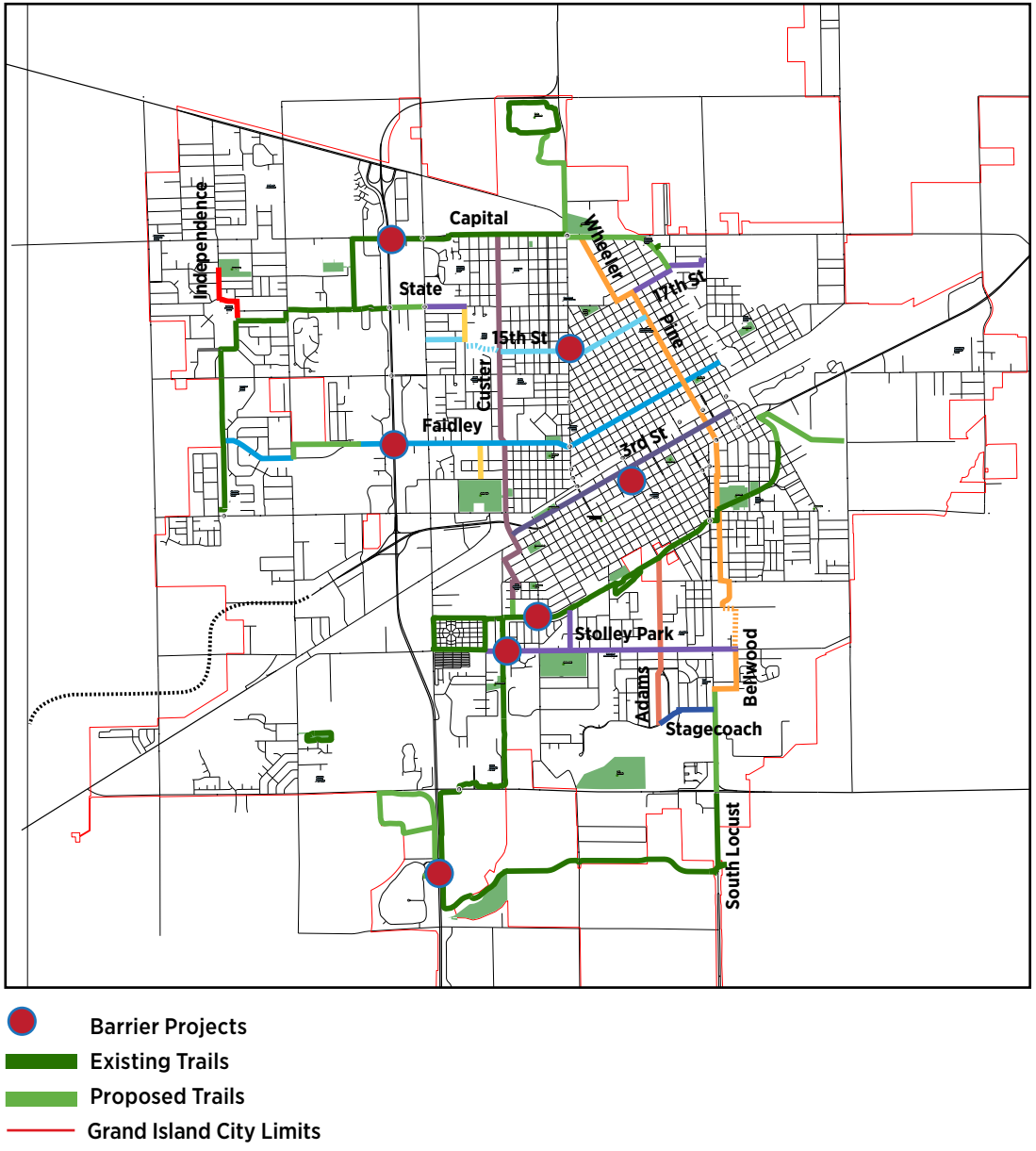
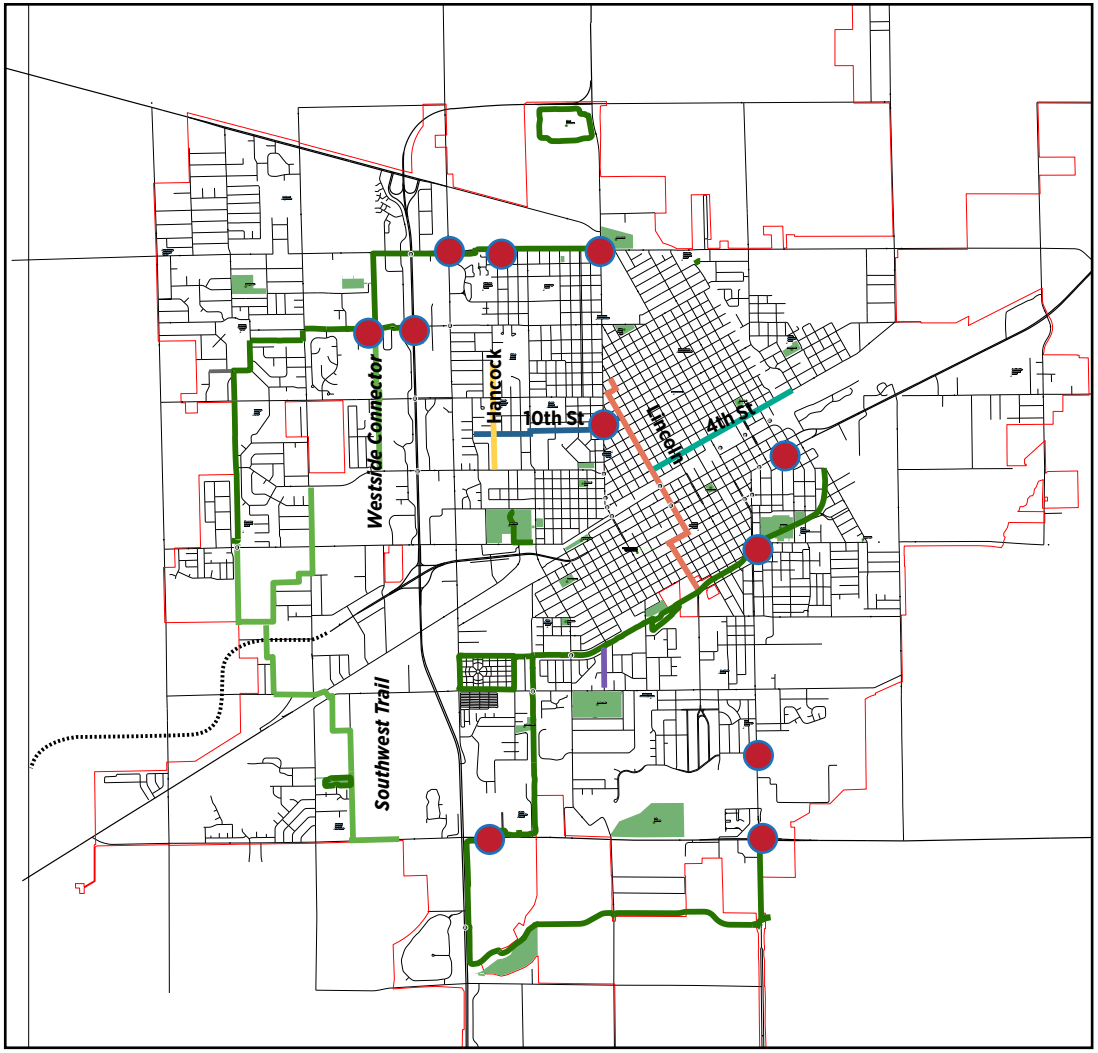


Figure 7.5: Basic Network: Phase 2 Diagram



west ends. This fills the void between the Capital Trail and Faidley/6th Street Bikeways.

- A new sidepath along Adams, connecting the Beltline Trail to new schools along Adams Street.
- A shared use path connection between the State Street Trail and George Park.

Phase 1 of the Basic System also extends several important trails designed to fill gaps or create strategic new connections, including

- A connection between the Capital Trail and Eagle Scout Park.
- An extension of the Capital Trail to the east side of the BNSF tracks using 20th and 18th Street underpasses.
- Extension of the Beltline Trail to the JBS plant at Stuhr Road.
- Connection of the new hospital/mixed use development's trail loop to the Stuhr Trail under US 281, using an existing bridge over a drainage swale.

Phase 1 of the Basic System envisions addressing seven key barrier points:

- The Capital/US 281 intersection.
- The Faidley/US 281 intersection.
- 15th and Broadwell intersection.
- Lincoln Street crossing of 2nd Street at the Library.
- Beltline Trail crossing of Blaine Street.
- St Joe Trail crossing of Stolley Park Road.
- US 281 undercrossing from the Stuhr Trail to the new hospital site.

Phase Two

Phase 2 expands the on-street transportation improvements of Phase 1, but focuses more heavily on longer distance trails. Its major on-steet components include:

- Completion of the Lincoln/Adams bicycle boulevard, completing a north-south quiet street corridor through the residential center of the city.

- Enhancing 4th Street through the growing north downtown international district and connecting to the east side of town.
- Implementing the 10th Street bicycle boulevard, complementing the busier Faidley corridor and providing an enhanced connection across Broadwell.

Phase 2 features significant trail projects, including completing the major loop around the southwestern part of the city. This project will develop in conjunction with or after the relocation of US 30. Major trail components include:

- Extension of the Westside Connector from State to Faidley, linking up with that primary east-west bikeway.
- The Shoemaker and Moore Creek Trails, connecting the current end of the Shoemaker Trail with Cedar Hills Park, the new hospital, and the Stuhr Trail and rest of the central trail system.

Significant barrier improvement projects primarily address intersections and upgrades to existing trail crossings. These include the:

- State and US 281 intersection.
- Existing State/Capital Connector crossing west of the highway.
- Existing Stuhr Trail crossing of US 34 at College Park.
- Existing Capital Trail crossing east of Webb Road.
- Capital and Broadwell intersection
- 10th and Broadwell
- Minor enhancements of the Beltline Trail crossing of Locust Street.
- 1st and Pine, the unsignalized intersection of the Pine Street crossings.
- South Locust crossings at Stagecoach and US 34.

Figure 7.6: Completed Basic Network

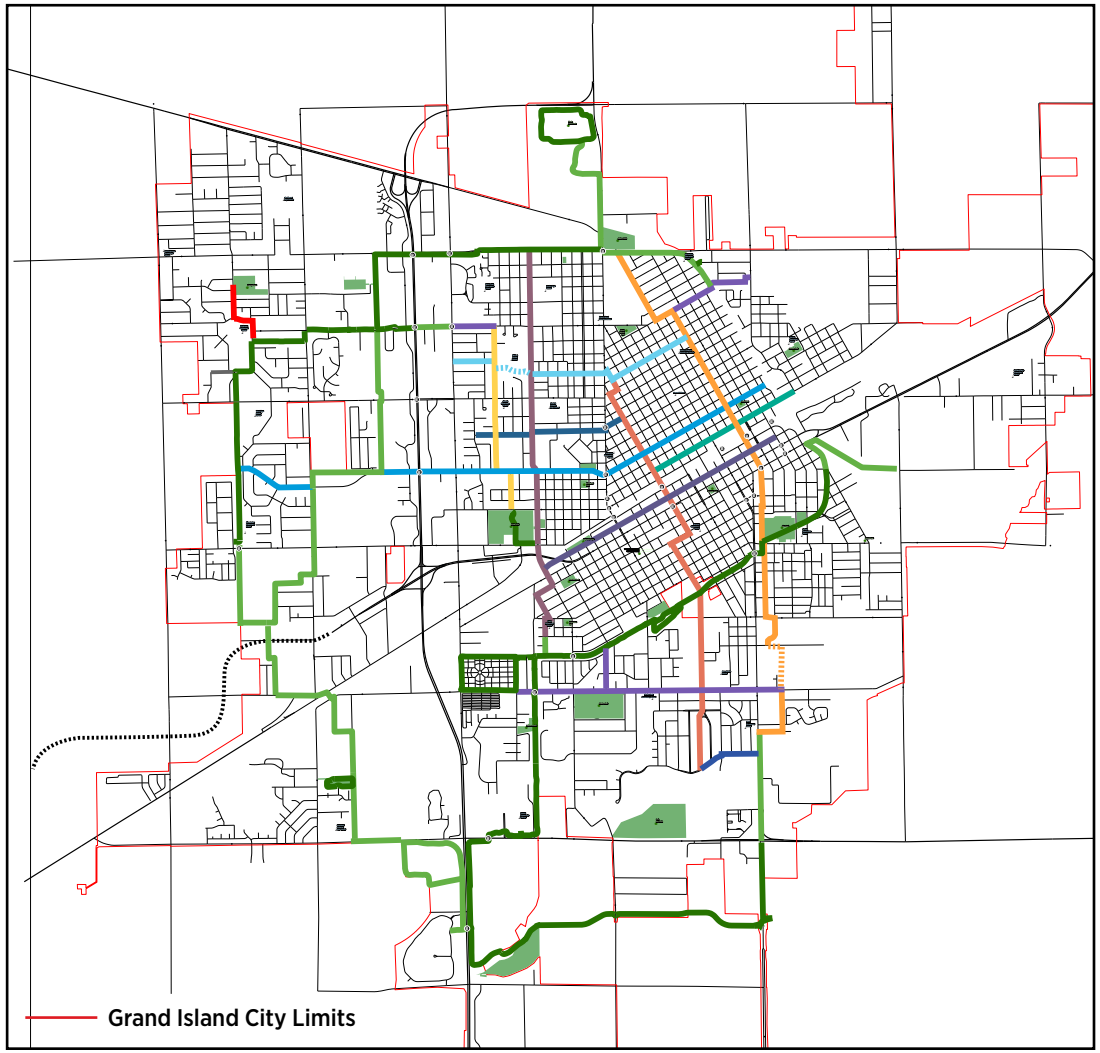
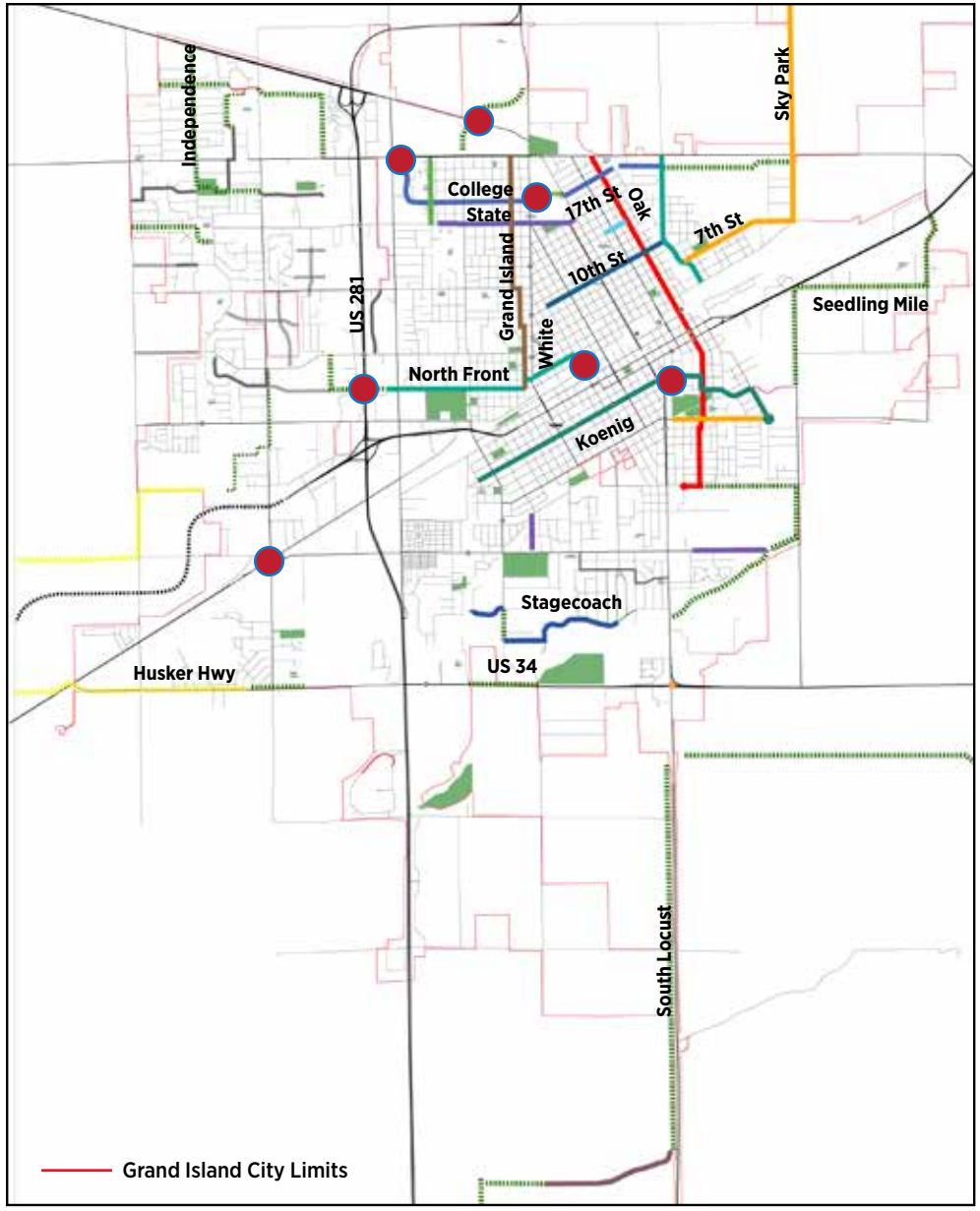


Figure 7.7: Ultimate Network Completion (Phase Three): Project



Ultimate Network Completion (Phase Three)

An ultimate network phase completes the on-street grid with significant east-west routes and expands the trail system into peripheral areas outside the city, including connections to Alda, Mormon Island, and Shady Bend.

Major on-street additions include:

- North-south routes the include the Oak Street bicycle boulevard, paralleling the earlier Pine Street route and Grand Island/White Avenue parallel to Broadwell.
- Completing east-west bike boulevard corridors along 20th/College, 17th/State, 10th, Koenig, and Stagecoach with a southern connection to the St. Joe Trail.
- Extending the 4th Street route to North Front, with the connection occurring under a proposed Broadwell grade separation over the Union Pacific
- Eventual improvement of north Independence Avenue including a sidepath in a major road construction project.
- Extensions of 7th Street and Sky Park Road to the airport and developing industrial areas. A study of a potential US 281 northeast bypass may clarify active transportation opportunities in this sector.
- Collector street connections with pedestrian and bicycle accommodations in developing subdivisions.

Long distance regional trails in the periphery of the metropolitan area are an important part of this ultimate phase. As a result, several projects are high cost and may be spread out over a longer time. These projects include trails to:

- Mormon Island State Recreation Area
- Alda and the Cornhusker Plant
- Veterans Legacy development, including a potential trail overpass over the BNSF.
- Trails in the northwest part of the city, incuding access to Northwest High School and the Independence corridor
- Paving of the Riverway Trail to N-2.
- Shady Bend area via Seedling Mile Road.

Barrier crossings are an important part of the ultimate phase, Several of these propose crossings are fairly routine, relating to bicycle boulevard crossings of Broadwell and Locust. However, three major projects involve substantial advance planning and financing. These aspirational projects include:

- A grade separated pedestrian/bike crossing over US 281 on the alignment of North Front. This increases connectivity between the east and west sides of the city.
- A grade separated pedestrian/bike crossing of the UPRR at or around Lincoln Street. This may occur in conjunction with a grade separation project of the Broadwell crossing. Such a project may require elimination of existing grade crossing(s). A pedestrian crossing is essential between Eddy and Broadwell, and the Lincoln site is particularly important for its access to the Public Library and the Adams Street educational corridor.
- A possible trail overpass developed as part of the Veterans Legacy project.

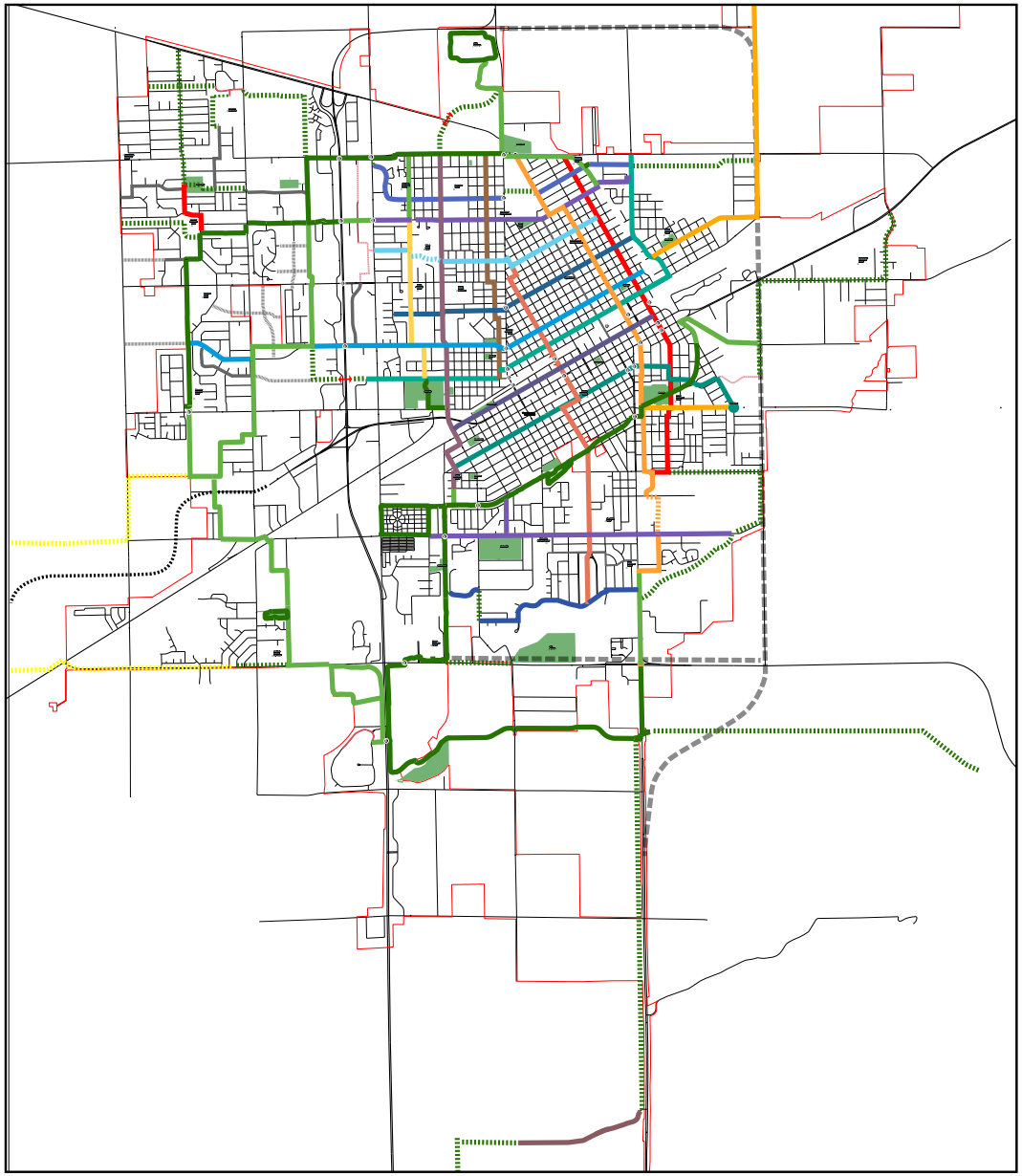
OPINION OF PROBABLE COST

Tables 7.9 through 7.12 on the following pages summarize probable planning level costs for the metropolitan area's proposed active network. It is clear that the area is unlikely to implement the entire system, even over a long period. For example, trails in the ultimate phase of the program (beyond 10 to 15 years) account for about 40% of the total projected cost. However, these calculations and concepts provide decision-makers with information that can help select specific future projects that most appropriately meet community needs.

FUNDING

Given the multi-year nature of this active transportation program, identifying and sustaining funding sources is critical. Many projects involving on-street routes could be incorporated into normal maintenance activities - thus the marginal cost of activities such as painting and maintaining multi-use shoulders may be significantly lower than the

Figure 7.8: Complete Ultimate Network



cost factors incorporated here. Bicycle boulevards and routes could be implemented through relatively inexpensive wayfinding or street signs as well. But some projects involve substantial capital cost. Highest among these are those projects that users like best – those that offer separation from motor vehicles.

Many cities set aside a certain annual allocation for alternative transportation projects and the Grand Island metropolitan area should also consider this approach. The basic network's cost of about $10 million would require about $750,000 annually over a fifteen year implementation period. But many financing programs exist that can fund specific projects and greatly accelerate realization of this network. Many of these programs involve Federal transportation and recreational funding assistance which may be uncertain in the future. The following discussion identifies sources available as of adoption.

FEDERAL TRANSPORTATION ACT PROGRAMS

FAST Act

The FAST (Fixing America's Surface Transportation) Act became law in 2015 and remains at present the primary source of transportation assistance.

FAST programs include:

- The Surface Transportation Pro-

Table 7.9: Opinion of Probable Cost: On-Street Network by Phase

ROUTES	OPINION OF PROBABLE COST			
ON-STREET NETWORK	Total	Basic Phase 1	Basic Phase 2	Ultimate
Oak Bicycle Boulevard	$195,000			$195,000
Pine Bicycle Boulevard	$617,700	$617,700		
Lincoln/Adams Bikeway	$364,688	$239,088	$125,600	
Grand Island/White Bicycle Boulevard	$83,400			$83,400
Custer Bikeway	$483,166	$483,166		
Hancock Bikeway	$531,390	$30,000	$276,990	$224,400
Independence Bikeway	$552,024	$171,864		$380,160
St Paul/4th Bikeway	$323,162		$62,450	$260,712
College/20th Bicycle Boulevard	$284,640			$284,640
State/17th Bikeway	$211,990	$156,190		$55,800
15th Street Bicycle Boulevard	$249,240	$249,240		
10th Street Bikeway	$194,000		$122,000	$72,000
Faidley/6th Street Bikeway	$870,360	$870,360		
3rd Street Bikeway	$185,800	$185,800		
Koenig Bicycle Boulevard	$292,000			$292,000
Stolley Park Road Bikeway	$322,410	$5,610		$316,800
Stagecoach Bicycle Bouleavrd	$198,526	$15,000		$183,526
TOTAL	**$5,959,496**	**$3,024,018**	**$587,040**	**$2,348,438**

Table 7.10: Opinion of Probable Cost: Trails Network by Phase

ROUTES	OPINION OF PROBABLE COST			
PRIORITY TRAILS	Total	Basic Phase 1	Basic Phase 2	Ultimate
Shoemaker Extension	$198,000		$198,000	
Westside Connector	$448,800		$448,800	
Cedar Hills	$997,920	$498,960	$498,960	
South Locust	Included in Pine Route	Included in Pine Route		
Beltline Extension	$498,960	$498,960		
Capital Trail	$215,424	$215,424		
Eagle Scout	$297,000	$297,000		
Moore Creek	$673,200		$673,200	
Southwest	$914,760		$914,760	
FUTURE TRAILS	Total	Basic Phase 1	Basic Phase 2	Ultimate
Veterans Legacy Trail/Overpass	$1,859,040			$1,859,040
Sky Park Trail	$689,040			$689,040
Seedling Mile Trail	$655,776			$655,776
Wood River Trail	$665,280			$665,280
Riverway Trail Extension	$1,346,400			$1,346,400
Mormon Island/(S. Locust) Trail	$2,699,120			$2,699,120
Stagecoach Connection Trail	In Stagecoach Route			
Northwest Trail	$740,520			$740,520
L.E. Ray Park Connector	$174,240			$174,240
Alda/Cornhusker Trail	$1,150,000			$1,150,000
Alda/ Husker Highway Trail	$1,126,000			$1,126,000
TOTAL	**$15,349,480**	**$1,510,344**	**$2,733,720**	**$11,105,416**

gram (STP). This is the primary source of funding urban road construction projects but can also be used for bicycle and pedestrian infrastructure. STP funds are frequently used for facilities like sidepaths that are developed in combination with street projects.

- Surface Transportation Block Grant for transportation alternatives. This program incorporated the pre-existing Transportation Enhancement, Safe Routes to Schools, and National Scenic Byways Program. In Nebraska, TAP funding, administered by the Nebraska Department of Transportation, have been the primary source of local trails funding in many cities, and Grand Island has used this program in the past.

- Highway Safety Improvement Program (HSIP). This program funds projects consistent with the state's Strategic Highway Safety Plan. Within the context of this plan, it is most useful for helping to fund specific safety infrastructure improvement projects.

TIGER Discretionary Grants

TIGER (Transportation Investment Generating Economic Recovery) originated as part of the American Recovery and Reinvestment Act and has focused on funding for innovative livability, sustainability, and safety proj-

ects. Nebraska has not made extensive use of this program receiving only one grant for Omaha's Bus Rapid Transit line. An innovative project such as the Custer Bikeway could be a competitive TIGER project.

National Recreational Trails

Administered by Nebraska Game and Parks, this venerable program was originally established in 1991 and provides funding assistance for recreational projects, such as park trails. This contrasts with TAP funds that must be used for projects with a significant transportation component.

LOCAL FUNDING SOURCES

Given uncertainties over Federal funds, local funding emerges as the most reliable option for multi-year programs. Grand Island's Capital Improvement Program can provide a local match for federal funds. The Food and Beverage Tax is used to help finance trail projects for the Parks Department. The current national administration has proposed a match program that would provide a limited % of federal funding (possibly 20% of project cost) as seed money for local or private funds. An annual allocation could be financed through a local option sales tax, as permitted by LB 840, or general obligation bonds.

PRIVATE FINANCING AND PHILANTHROPY

Table 7.11: Opinion of Probable Cost: Barrier Projects Network by Phase

BARRIERS	OPINION OF PROBABLE COST			
PROJECT	Total	Basic Phase 1	Basic Phase 2	Ultimate
Capital-281	$350,000	$350,000		
State-281	$350,000		$350,000	
Faidley-281	$200,000	$200,000		
North Rd/RR	$50,000			$50,000
Westside Trail-State	$75,000		$75,000	
Stuhr-Cedar Hills 281 Underpass	Included in trail			
St Joe Tr/Stolley Park	$150,000	$150,000		
Beltline/Blaine	$75,000	$75,000		
Stuhr Tr/Husker	$150,000		$150,000	
Capital/Webb	$150,000			$150,000
Capital Tr east of Webb	$150,000		$150,000	
Capital/Broadwell	$100,000		$100,000	
20-Broadwell	$100,000			$100,000
15-Broadwell	$100,000	$100,000		
10-Broadwell	$100,000		$100,000	
Koenig-Locust/Walnut	$200,000			$200,000
Lincoln-2nd	$200,000	$200,000		
Beltline/Locust	$50,000		$50,000	
1st Pine	$150,000		$150,000	
North Front 281 Overpass	$1,500,000			$1,500,000
Lincoln RR Overpass	$1,500,000			$1,500,000
Stagecoach/Locust	$75,000		$75,000	
Highway 34/Locust	$200,000		$200,000	
Total	**$5,975,000**	**$1,075,000**	**$1,400,000**	**$3,500,000**

Table 7.12: Opinion of Probable Cost: Recap by Phase

ROUTES	OPINION OF PROBABLE COST			
	Total	Basic Phase 1	Basic Phase 2	Ultimate
ON-STREET NETWORK	$ 5,959,496	$ 3,024,018	$ 587,040	$ 2,348,438
TRAIL NETWORK	$ 15,349,480	$ 1,510,344	$ 2,733,720	$ 11,105,416
BARRIERS	$ 5,975,000	$ 1,075,000	$ 1,400,000	$ 3,500,000
TOTAL	**$27,283,976**	**$5,609,362**	**$4,720,760**	**$16,953,854**

Private organizations and philanthropic giving can be a significant source of financing assistance. In some cases, communities have raised money for popular trail segments through foundations, avoiding the delays and processes that typically come attached to private grants. An example of this on a large scale is Omaha's South Omaha Trail. Health-related enterprises such as insurance organizations and hospitals have funded active transportation initiatives and are also involved in the organizational phases of the Grand Island program. Major industries such as JBS may see the direct benefit to them in a project like the Beltline Trail extension. Other significant trail and active projects have been funded by community contributors through fund-raising drives and even naming rights.

Foundations can also be a significant source of local support. The Nebraska Trails Foundation (NTF) provides funding for trail projects in both urban and rural settings. The Grand Island Community Foundation both administers funds and channels resources into specific fields of interest, including health, and may be helpful in setting up a specific fund around active transportation implementation. State and national foundations with substantial local interest (such as the Peter Kiewit Foundation and Union Pacific Foundation) also have funded related improvements in the past.

DEVELOPMENT FINANCING

Active transportation may also be integrated into new development and redevelopment projects. The implementation phase maps and overall network plan identify future collector street corridors in potential growth areas. Integrating infrastructure to support active transportation, such as adequate width for bike lanes or multi-use shoulders, traffic calming features, proposed trail routes, and pedestrian paths and connectivity is extremely helpful and should be part of the financing package for the project. The new hospital and mixed use project proposed at US 281 and 34 is incorporating part of the trail network into its project design. In redevelopment areas, tax increment financing can also be used to finance active transportation facilities that in turn increase project quality.

SIDEWALK FINANCING

Funding for sidewalk improvements or gap filling projects can be very challenging. The typical method of financing, sidewalks uses City Assessment Districts, where sidewalk costs are repaid through special assessments on properties within the district. Various other mechanisms may be considered for maintaining sidewalk continuity on the pedestrian system. These include:

APPROACHES TO SIDEWALK FINANCE

SOME APPROACHES TO SIDEWALK FINANCE

Ann Arbor, MI. *In November of 2011, voters approved a 1/8-% increase to the Street Reconstruction Millage for the purpose of repairing sidewalks in the public right-of-way. Prior to the passage of this millage, property owners were required to repair or replace deficient sidewalks that adjoined their property. Beginning in 2012, the City assumed responsibility for the repair of the sidewalk system, which will be performed through this project over the course of the next five years.*

Missoula, MT *spreads a large percentage of the cost of installing sidewalks to the whole community by using an insurance model. There will be a premium, deductible, co-pay, out of pocket maximum, and city payment cap. The program establishes a deductible of $300. The city co-pays 70 % while the property owner pays 30 %. The maximum out-of-pocket for the homeowner is $2,000 and the city caps out at $15,000. The owner would pay any amount over the city's cap. The premium is the increment in general taxes necessary to finance the program.*

Manchester NH *provides a 50-50 match to property owners for sidewalk and/or curb construction. If the construction of a sidewalk necessitates the construction of a retaining wall, the homeowner is responsible for the cost and construction of said wall before construction on the sidewalk will commence. The retaining wall is to be constructed such that no part of said wall is within the city's right of way.*

- Two common funding approaches to generating revenue for financing sidewalk improvements include (1) special bond issues, (2) dedications of a portion of local sales taxes.
- Intersection ramps. The City of Grand Island has an annual program of installing intersection ramps for access by people with disabilities, funded through the Public Works Department's Capital Improvement Program.
- Street Improvement. As major infrastructure projects are completed in city right-of-way or curb-replacement projects are completed, intersections should be brought to current ADA standards. For streets with higher traffic volumes, new standards should provide for sidewalks separated from the curb by a tree lawn or parkway strip. This provides a safer environment, a more attractive street, and a place to plow snow that does not block pedestrian access.
- New Subdivisions. Construction of sidewalks should occur in all new subdivisions on both sides of the street as part of the city's subdivision regulations. Grand Island's subdivision regulations do require use of pedestrian ways to provide access through long blocks. Pedestrian paths that provide the same level of service as traditional sidewalks should be permitted as a substitute. Pedestrian facilities should be integrated into the development financing structure of the project.

MAINTENANCE COSTS

Like any transportation improvement, active transportation projects need to be maintained through their life cycle and will have an impact on operating budgets. Paint must remain visible to continue to function as planned and capital improvements like paths and trails require repairs to continue to serve their users. Maintenance costs may also vary from year to year, depending on factor such as weather and level of use. Table 7.13 presents approximate costs for maintenance of different types of facilities, based on current experience. They can be used as a guide for allocation of resources and do not include staff time.

Table 7.13: Opinion of Probable Cost: Recap by Phase

FACILITY TYPE	ANNUALIZED COST/MILE	TYPICAL MAINTENANCE TASKS
Shared use trail	$10,000	Sweeping, trash removal, mowing, weed abatement, snow removal, crack seal, sign repair
Sidepath	$2,500	Sweeping, trash removal, mowing, weed abatement, snow removal, crack seal, sign repair
Bike lanes, multi-use shoulders and advisory bike lanes	$2,500	Repainting, debris removal/sweeping, snow removal, signage replacement
Bicycle boulevard and shared routes	$1,500	Sign and shared lane marking stencil replacement

Source: Alta Planning + Design