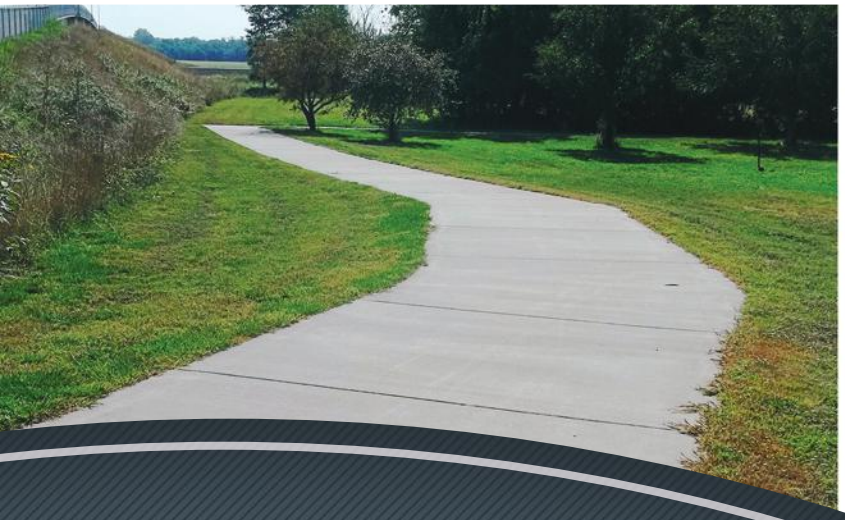

Hickman Trail Master Plan

City of Hickman, Nebraska
May 2016

OLSSON ASSOCIATES®

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It takes the efforts of many to make a community a better place to live. A special thanks to the City leaders and the steering committee for providing important leadership and valuable feedback throughout the process of the creation of this document.

City Leadership

Doug Hanson
Mayor

Phil Goering
City Council President

Steve Noren
City Council
(Steering Committee Member)

Dave Dykmann
City Council

Doug Wagner
City Council

Richard Harms
City Council

Tina Ziemann
City Council

Mike Myers
City Administrator
(Steering Committee Member)

Kelly Oelke
Clerk/Finance Director

Heidi Hoglund
Director of Permits, Zoning, and Codes Enforcement
(Steering Committee Member)

Bob Lovorn
Public Works Director

Trent Georgiana
Parks and Recreation Director
(Steering Committee Member)

I. INTRODUCTION

The desire for public trails within and around communities in the region continues to grow among the population. A trail system that is interconnected, well designed, and properly maintained provides walkers, joggers, in-line skaters, and bicyclists with the ability to access public amenities and enjoy scenery with improved safety due to separation from vehicular traffic. A good trail system improves the quality of life in a community by encouraging active lifestyles, promoting use of public spaces, raising awareness of the environment, and ensuring the safety of its users.

The City of Hickman, located in southern Lancaster County, has a current estimated population of 1,972. Within the city limits of Hickman exist open civic spaces, restaurants, retail, and residential neighborhoods that have some internal connectivity from the existing trail system and sidewalks. The trail system is very important to the members of the community. This was very evident from feedback received during the comprehensive plan update process that was occurring concurrently with this master plan process. The goal of this master plan is to outline expansions to this existing system which will best serve to connect these destinations within the City.

The community has the geographic benefit of being situated in a locale that is rich in destinations that provide purpose and advantage to a trail system that would connect them. Specific points of interest near Hickman include Nebraska Game and Parks recreation areas, the Norris School District, the adjacent community of Roca with its berry farm tourist destination, and Homestead Trail leading to a national historic landmark. All of these destinations are close enough to the City that a regional trail system to provide for both short recreational outings and day-long excursions is practical and desirable.

This master plan aims to guide the City in maintaining and expanding its trail system by establishing proposed trail alignments, guiding the process of future development, and providing design guidelines for safe, cost effective, and environmentally friendly trails. It also seeks to establish itself as an invaluable tool in applying for funding for trail projects.

The plan is intended to grow and change through time as projects are completed, development occurs, and conditions in the community change. It is recommended that the City establish a regular schedule for keeping this document up-to-date.

A. History of Trail Planning for Hickman

Trail master planning is not a new concept for the City of Hickman. In fact, it has been a focus for the City over the years to guide the trail construction in and around the city. A trails plan was completed in 2002, and a regional trail system master plan was completed in 2009. These documents have served the community well to get trail spaces incorporated within new developments and to extend the existing trail network within the City. This master plan will continue to serve the community for years to come.

B. Existing Trail System

The City of Hickman currently has just under four miles of trails. Much of the existing trail system is a direct result of the planning that the City has completed over the years. This planning has led to funding opportunities to complete trails such as utilizing Federal Transportation Enhancement funds to complete the Hickman Road East link trail. This trail is a 10-foot wide concrete trail along Hickman Road that connects to an existing trail on the east end and extends to the west edge of the City. Construction is anticipated to be started in 2016.

II. THE PLANNING PROCESS

The planning process started with a kickoff meeting with the steering committee. During this meeting, the previous master plan was reviewed to determine projects that had been completed and to determine areas that required changes/additions to the plan. The overall vision and goals of the master plan were also discussed.

A. Proposed Trail System Concept

The goals of the trail system outlined in this document are:

- To connect neighborhoods, businesses, and public amenities
- To allow for recreational activities and promote active lifestyles

This master plan seeks to accomplish these goals by using a "wheels-and-spokes" paradigm. This system consists of a town center that is surrounded by concentric rings, or "wheels", and out from which radial "spokes" emanate. The spokes provide primary interconnectivity, while the wheels provide circular routes that are more suited to use for recreation. Obviously there are many factors in a community that dictate where trails can and should be installed, and this paradigm is an idealistic one. Actual conditions in the community and locations of amenities drive where trails are located. It is important to note that while the trail system described in this document may not appear at first glance to consist of these "wheels" and "spokes", the location and connectivity of these trails provides the same functionality, while also working around limitations and serving the specific needs of the City of Hickman. It is important that this paradigm is considered when updating the master plan or when planning a new trail.

It is important to note that any community trail system is complemented by a well-maintained sidewalk system. Trail users will use sidewalks to access the trails, so trails do not need to reach every possible destination in the community. Instead, trails should be used where a reasonable volume of mixed modes of non-motorized transportation is expected, and the entire system of trails and sidewalks should work together to meet the needs of the City's residents and visitors.

B. Trail Design Considerations

The trail master planning process does not stop at the "wheels-and-spokes" concept. Each proposed trail needs to consider a variety of design variables.

1. Standards

   Federal and State requirements, should be taken into account for trail planning and design. Agencies such as the Federal Highway Administration (FHWA) (www.fhwa.dot.gov) and the United States Access Board (www.access-board.gov) contain a wealth of additional information regarding planning and design of trails.

Some of the standards and guidance documents considered during the planning process include:

- The Americans with Disabilities Act (ADA)
- United States Access Board Special Report: Accessible Public Rights-of-Way Planning and Design for Alterations
- United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way
- FHWA Designing Sidewalks and Trails for Access
- FHWA Manual of Uniform Traffic Control Devices (MUTCD)

2. Trail Type

Multiple types of users are considered for the trails shown in this master plan. Pedestrians, cyclists, skaters, and hikers are just a few of the users that are expected to use the trails. To meet the needs of multiple trail users, all trails are considered to be a shared-use path.

3. Trail Width

Current trail design guidance recommends a 10-foot trail width for a shared-use path. In places where fitting a 10-foot trail width is difficult due to limited space and where the volume of users will be limited, an 8-foot trail width may be used. It is also recommended that a 2-foot shoulder width is incorporated on either side of every trail.

4. Trail Surfacing

Concrete trails are recommended because they provide a superior walking and riding surface. Concrete trails also require less maintenance than other alternatives. While asphalt can be cheaper in the short-term, maintenance costs will typically be higher for this type of trails. Aggregate surfacing can be a viable option for the longer, regional trails.

5. Street Crossing

There are various types of crossings that might be encountered along a trail alignment.

- Intersection
- Midblock
- Overpass
- Underpass

Safety is a primary concern at crossings, and the costs of different types of crossings varies dramatically. Overpasses and underpasses provide complete separation of trail and roadway traffic, maximizing safety, but they also have the greatest cost. At-grade crossings can occur at signalized or otherwise-controlled intersections, or at dedicated midblock crossing locations. Dedicated crossings can consist of overhead traffic signals, roadside warning lights, or simple signage. For a given crossing, traffic volume, trail usage, and cost should all be weighed together to determine the right type of crossing for the situation.

Factors to consider when designing a crossing include:

- Visibility and stopping sight distance of vehicles. Crossings should not be placed on curves or other places with poor visibility.
- Traffic speed.
- Traffic patterns. A crossing near a busy intersection or driveway can be more dangerous if drivers are not aware of the crossing.
- Proper identification of crossing with lights, signage, and markings.

6. Location of Trails

Trails should be located within existing rights-of-way or in dedicated outlots when possible. Placement of trails in easements can cause problems with coordination or result in conflict with landowners. In general, it is desirable for trails to be located behind lots or in green spaces, rather than along roadways, because it provides for a safer and more enjoyable environment. When trails are located behind lots, it is important to consider access to the trail. In a new development, outlots should be dedicated at some interval between lots to allow for short trail segments connecting the main trail to the sidewalk.

An ideal location for trails within a community is along drainage channels because this land usually cannot be developed, easements or outlots are usually already present for trunk sewers, and a meandering alignment through trees and vegetation provides a more enjoyable experience for users.

For trails along a roadway, a separation of five feet between the trail and the edge of the roadway is desirable. For trails located in green space or an outlot, a minimum clearance of 10 feet to the property line or obstructions is recommended.

7. Trail Signage, Amenities, and other Features

   Thought should be given to signage and amenities during the design process of a trail. Items that should be considered during the design of a trail include:
   - Directional and regulatory signage to inform users of proper etiquette and rules
   - Informational signage that provides historical, environmental, and cultural information
   - Safety and security features including lighting and physical separation between the trail and adjacent facilities
   - Amenities such as benches, restrooms, and garbage bins

C. Public Involvement

It is essential that the planning process involve the public, therefore opportunities for public involvement were provided during the process of the creation of this trail master plan. The first opportunity was the annual Trick or Treat on the Trail. Olsson Associates operated a booth as part of this fundraising event that the City conducts annually to raise money for the trails. A draft master plan was on display to provide the opportunity for the public to comment on the proposed trail alignments. The comments received were very supportive of expanding the trail network.

The next opportunity was a town hall meeting that was held as part of the process of updating the City's Comprehensive Plan being completed by another consultant. Information on the update of the trail master plan was also included in this meeting, and public feedback was gathered. The public comments included:

- Ensure that trails are built in outlots and not easements
- A desire to connect to the Homestead Trail via an alignment along Hickman Road to provide connectivity to a longer trail alignment
- A desire to connect to Wagontrain and Stagecoach recreation areas
- Locating trails within green space to create a better overall experience
- Prioritizing safety at crossings, with a focus on those of Hickman Road and 68th Street.
- Safe connections to all four quadrants of the City
- Provide a copy of the trail map online

Yet another opportunity for public input was a parks/recreation focus group meeting that was also held as part of the comprehensive plan update. Comments related to the trail master plan from this meeting included:

- Making connection to the Homestead Trail a priority
- Installing lights on trails as they are built
- Installing benches along existing and new trails
- Resurfacing the existing asphalt trail that runs adjacent to the RR tracks
- Installing water fountains along trails
- Planting trees along existing trails and ensuring they are part of the design of new trails
- Making a trail connection to the proposed skate park to open possibilities for its funding

D. Planning Guidance

This trail master plan is an invaluable tool as the City grows and developers plat additional properties. It should be referenced during the planning of developments to ensure those developments are meeting the City's trail system goals.

III. CITY OF HICKMAN PROPOSED TRAILS

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City Trails
Trail Master Plan, Hickman, NE

Exhibit 1

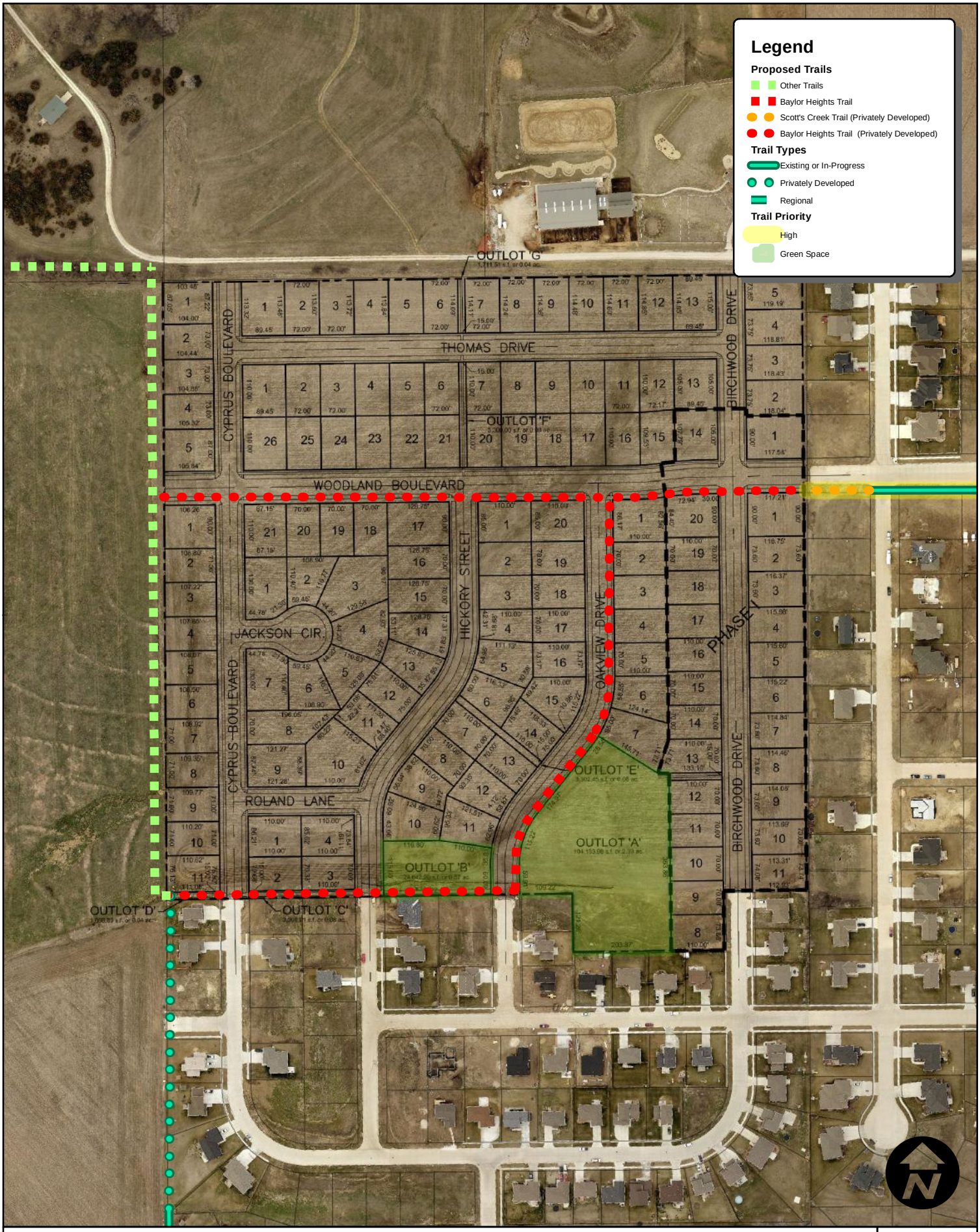
A. Baylor Heights Trail

The proposed Baylor Heights Trail would run from the edge of the Baylor Heights development at Woodland Boulevard, where it connects to the Woodland Boulevard Trail, west to Oakview Drive. It would then split off into two branches. One branch would continue west along Woodland Boulevard to the west edge of the development for a future connection to development to the west. The other branch would follow Oakview Drive to the south connecting to a planned City park area. This branch would continue through outlots along the south edge of the development and connect to an in-progress privately developed trail and a potential future trail. This majority of this trail is privately developed with the exception of a cost share for the extra width of sidewalk in front and along the side of lots.

1. Benefits
   - Connection to park areas and green space within this new subdivision
   - Connection to commercial area along Woodland Boulevard
   - Provides another section to create a trail loop within the City
   - Privately funded

2. Challenges
   - Completion of trail occurs as homes are built

3. Opinion of Cost
   - No direct cost to the City; cost for additional width in front and along the side of lots is deducted from the Infrastructure Fee that is required with each building permit



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OLSSON ASSOCIATES

Baylor Heights Trail
Master Trail Plan, Hickman, NE

Exhibit

2

B. Harlan Reservoir Trail

The proposed Harlan Reservoir Trail would run from the intersection of Woodland Boulevard and 68th Street east through a potential future development. The trail then loops north around Harlan Reservoir and back south, where it connects to a potential future trail running to the northeast and the proposed Prairie View to Terrace View Connector trail.

1. Benefits
   - Connection to potential future park at Harlan Reservoir
   - Scenic route through green space and along drainage ways
   - Continuation of trail system to create a loop around the City
   - Connection from Terrace View Subdivision to Woodland Subdivision

2. Challenges
   - Timing of development around Harlan Reservoir
   - Land acquisition north of the reservoir along drainage way
   - Drainage crossings

3. Opinion of Cost
   - $463,000

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OLSSON ASSOCIATES

Harlan Reservoir Trail
Master Trail Plan, Hickman, NE

Exhibit
3

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Harlan Reservoir Trail

Trail Length	4,210
Trail Width	10
ROW Width	30

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	4210	$ 2.00	$ 8,420.00
Subgrade Preparation	SY	4678	$ 2.00	$ 9,356.00
6" Concrete Trail	SY	4678	$ 45.00	$ 210,510.00
Drainage Crossing	LS	1	$ 25,000.00	$ 25,000.00
Roadway Crossing Upgrade	EA	1	$ 7,500.00	$ 7,500.00
Seeding	AC	1	$ 5,000.00	$ 5,000.00
			Construction Subtotal	$ 265,800.00
			Mobilization 8%	$ 21,300.00
			Construction Contingency 25%	$ 66,450.00
			Total Estimated Construction	**$ 353,550.00**
Other Costs				
Land Acquisition	**126,300**	**SF @**	**$ 0.25**	$ 31,575.00
			Preliminary Engineering 10%	$ 35,355.00
			Construction Engineering 12%	$ 42,426.00
			Subtotal	**$ 109,356.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 463,000.00**
Funding Request				
			Federal Funding 80%	$ 370,400.00
			Local Funds 20%	$ 92,600.00

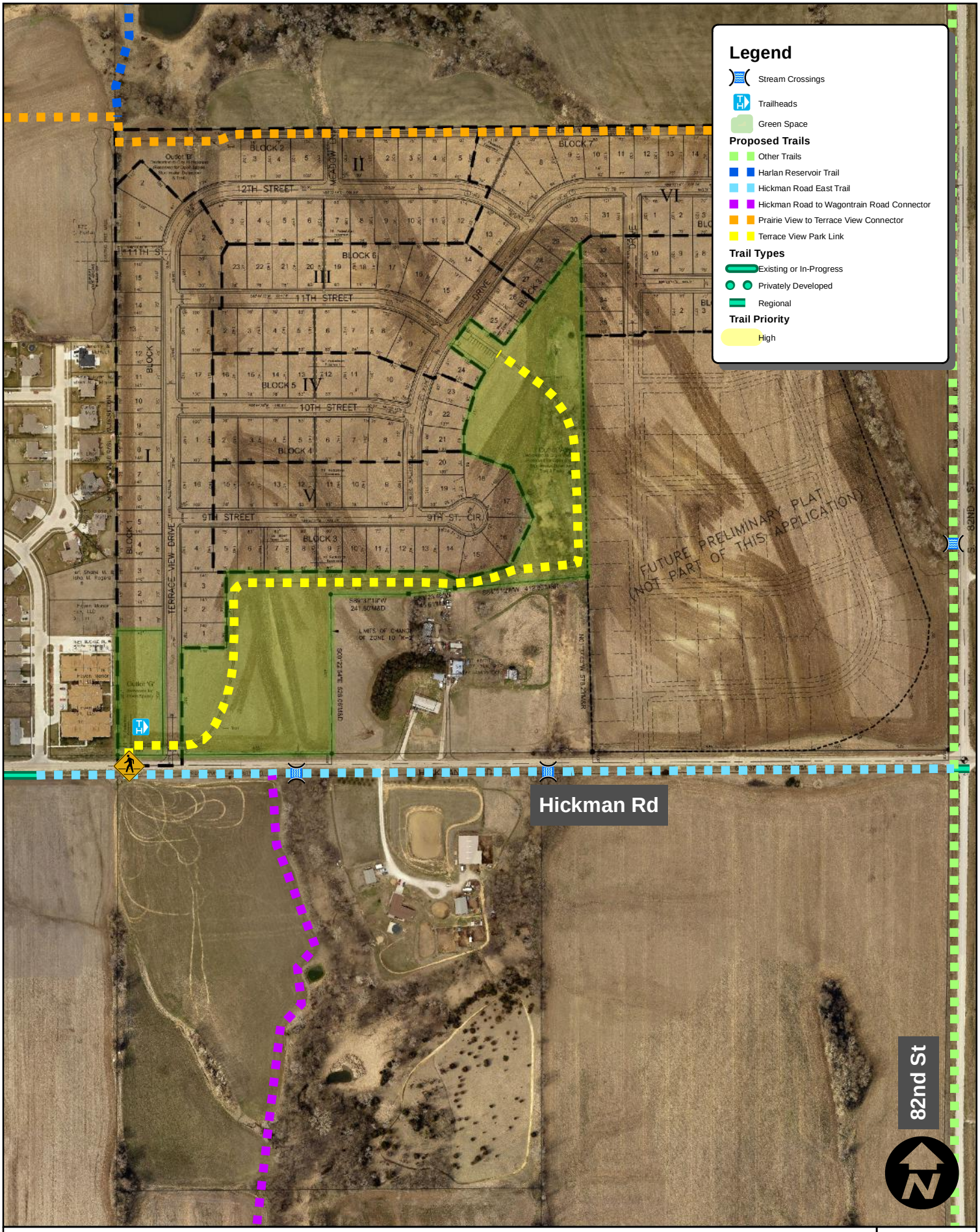
C. Hickman Road East Trail

The proposed Hickman Road East Trail is a continuation of the soon-to-be-completed Hickman Road Trail. It begins on the south side of Hickman Rd, near the intersection of Hickman Road and Larkspur Drive, where it would connect to the Terrace View Park Link trail and continue east to 82nd St, where it would connect to a potential future trail along 82nd Street and a potential future regional trail to Wagontrain Lake.

1. Benefits
   - Extension of soon-to-be-completed Hickman Road Trail
   - Connection to potential future regional trail to Wagontrain Lake
   - Connection to Terrace View Park Link Trail

2. Challenges
   - Two drainage crossings
   - Timing should coincide with development of adjacent property or with improvements to Hickman Road

3. Opinion of Cost
   - $327,000



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OLSSON ASSOCIATES

Hickman Road East Trail
Master Trail Plan, Hickman, NE

Exhibit

5

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Hickman Road East Trail

Trail Length	2,850
Trail Width	10
ROW Width	30

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	2850	$ 2.00	$ 5,700.00
Large Tree Removal	SY	1167	$ 5.00	$ 5,835.00
Subgrade Preparation	SY	3167	$ 2.00	$ 6,334.00
6" Concrete Trail	SY	3167	$ 45.00	$ 142,515.00
Storm Sewer Pipe	LF	200	$ 100.00	$ 20,000.00
Roadway Crossing Upgrade	EA	1	$ 7,500.00	$ 7,500.00
Seeding	AC	0.7	$ 5,000.00	$ 3,500.00
			Construction Subtotal	$ 191,400.00
			Mobilization 8%	$ 15,300.00
			Construction Contingency 25%	$ 47,850.00
			Total Estimated Construction	**$ 254,550.00**
Other Costs				
Land Acquisition	**85,500**	**SF @**	**$ 0.25**	$ 21,375.00
			Preliminary Engineering 8%	$ 20,364.00
			Construction Engineering 12%	$ 30,546.00
			Subtotal	**$ 72,285.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 327,000.00**
Funding Request				
			Federal Funding 80%	$ 261,600.00
			Local Funds 20%	$ 65,400.00

In providing opinions of probable construction cost, it is recognized that neither the Client nor Olsson has control over the costs of labor, equipment or materials, or over the contractor's methods of determining prices or bidding. The opinion of probable construction costs is based on Olsson's reasonable professional judgment and experience and does not constitute a warranty, express or implied, that the contractor's bids or the negotiated price of the work on the Project(s) will not vary from the Client's budget or from any opinion of probable cost prepared by Olsson.

D. Hickman Road to Wagontrain Road Connector

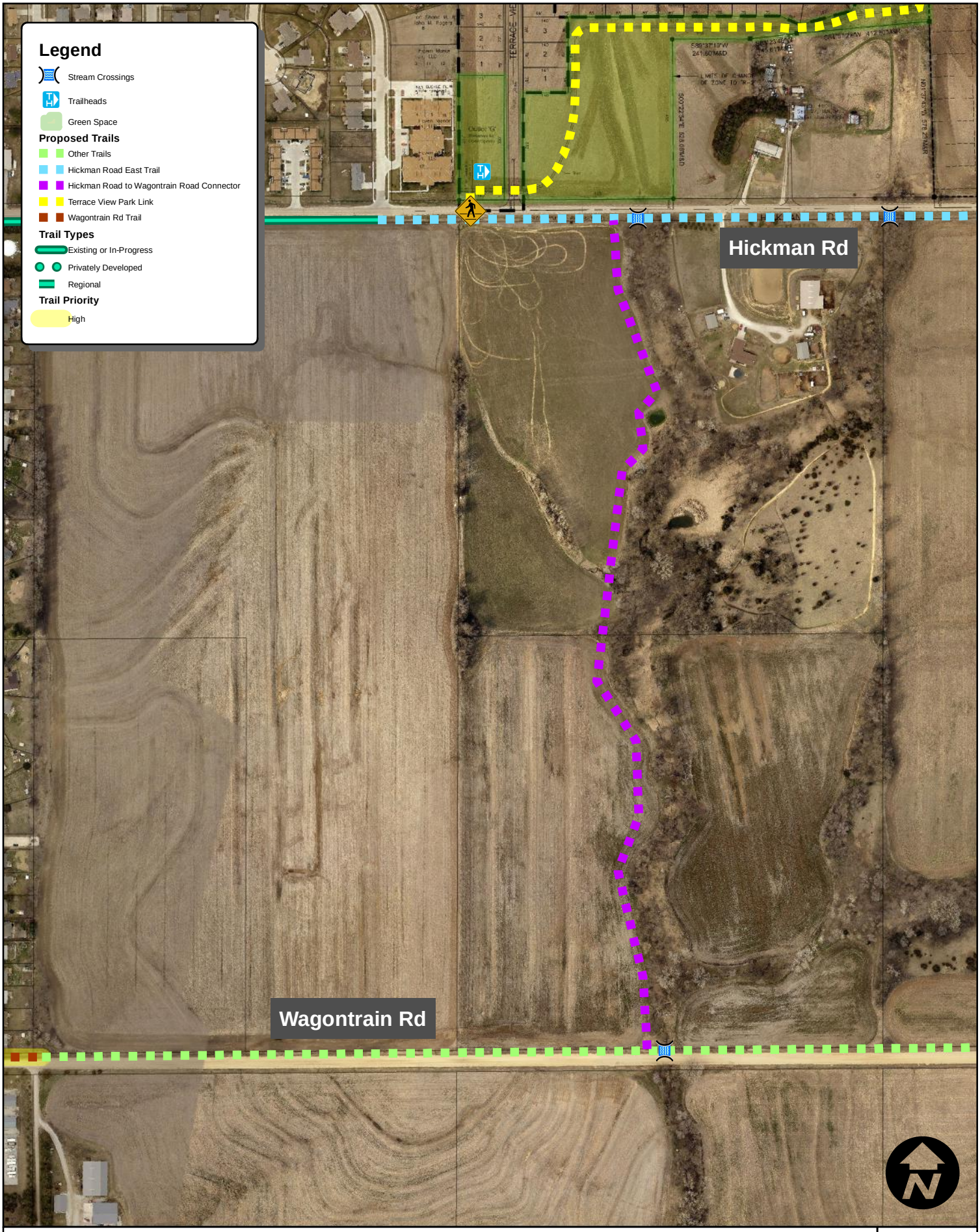
The proposed Hickman Road to Wagontrain Road Connector trail would run from a point on the Hickman Road East Trail south to Wagontrain Road. The trail winds along the west edge of a drainage way.

This trail is important as it would serve as a trail connection between Hickman Road and Wagontrain Road. An alignment along 68th Street was considered as part of a study on widening 68th Street to a three-lane urban section, and it was determined that constructing a trail in that corridor would not be feasible. However, normal 4' sidewalks on each side of 68th Street will allow pedestrians to safely travel along that corridor to access trails in the trail system.

1. Benefits
   - Major connection between north and south halves of City
   - Scenic route along drainage way and possible future green space

2. Challenges
   - Placement of trail and timing of development
   - Connection to Wagontrain Road Trail

3. Opinion of Cost
   - $259,000



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Hickman - Wagontrain Rd Connector
Master Trail Plan, Hickman, NE

Exhibit
4

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Hickman Road to Wagontrain Road Connector

Trail Length	2,705
Trail Width	10
ROW Width	30

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	2705	$ 2.00	$ 5,410.00
Subgrade Preparation	SY	3006	$ 2.00	$ 6,012.00
6" Concrete Trail	SY	3006	$ 45.00	$ 135,270.00
Seeding	AC	0.6	$ 5,000.00	$ 3,000.00
			Construction Subtotal	$ 149,700.00
			Mobilization 8%	$ 12,000.00
			Construction Contingency 25%	$ 37,425.00
			Total Estimated Construction	**$ 199,125.00**
Other Costs				
Land Acquisition	**81,150**	**SF @**	**$ 0.25**	$ 20,287.50
			Preliminary Engineering 8%	$ 15,930.00
			Construction Engineering 12%	$ 23,895.00
			Subtotal	**$ 60,112.50**
Total Estimated Project Costs				
			Total Estimated Project	**$ 259,000.00**
Funding Request				
			Federal Funding 80%	$ 207,200.00
			Local Funds 20%	$ 51,800.00

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E. Prairie View Park Link

The proposed Prairie View Park Link trail begins at the intersection of 68th Street & Hickman Rd, where it would connect to the soon-to-be-completed Hickman Road Trail. It would then cross Hickman Rd, heading north along the east side of 68th Street to Prairie View Lane. At this point, a crossing is proposed across 68th Street, which would connect this trail to Scott's Creek Trail. The trail then turns east and runs along Prairie View Lane, then north and east again along Scott's Creek. Finally, the trail connects to the Prairie View to Terrace View Connector trail, follows the south bank of the detention cell in Prairie View Park, and ties into the existing trail near the existing tennis court.

The alignment along the south side of the existing detention cell was chosen for a couple of reasons. An eight-foot wide bike path easement does exist on the north and east sides of the detention cell. This width is not sufficient for construction of a trail. In addition, the entire area is now developed and there is significant slopes along the edges of the detention cell.

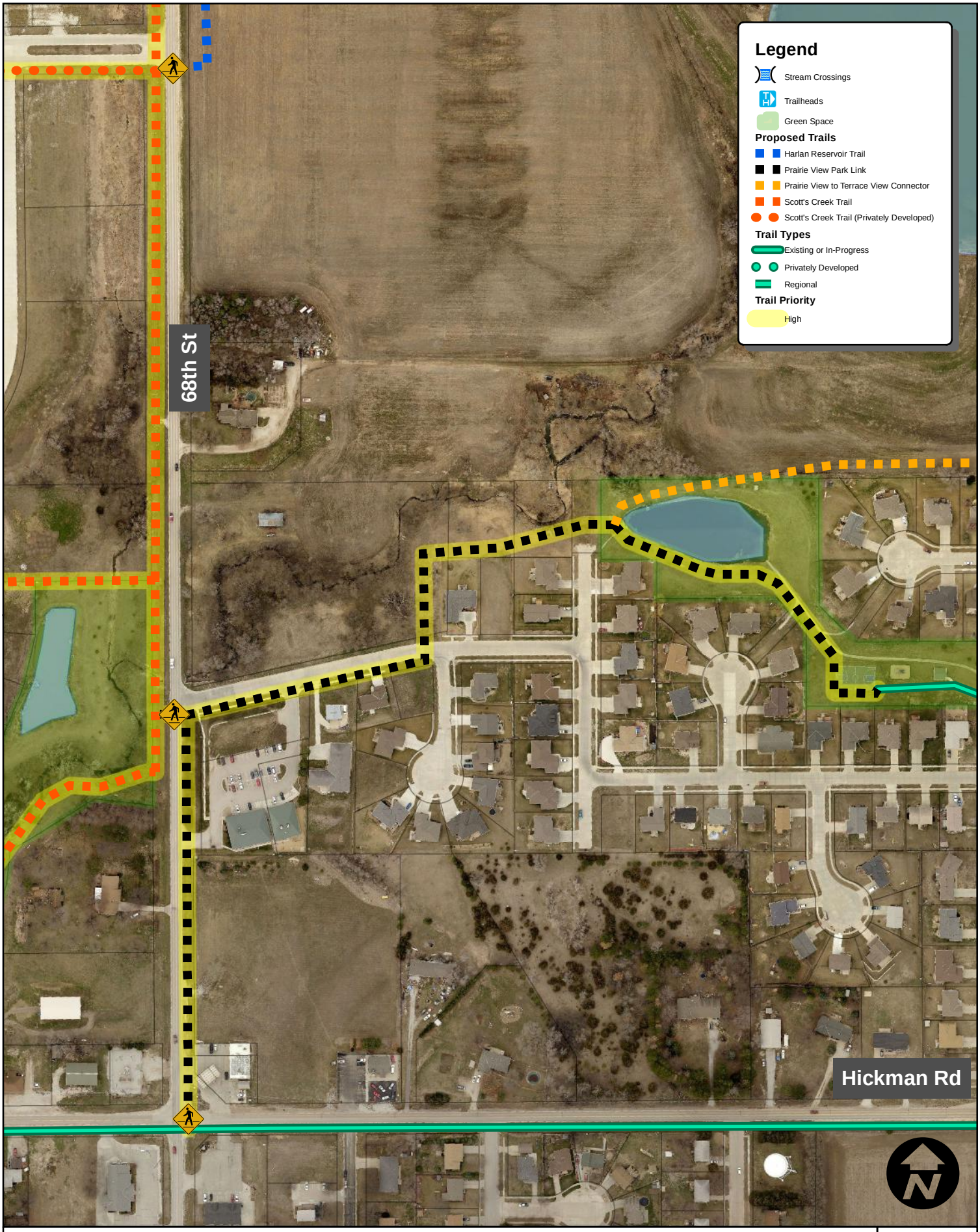
It is anticipated that the intersection of 68th Street & Hickman Road will be signalized at some point in the future, at which time the City should work with the signal designers to provide a pedestrian signal phase to increase crossing safety.

Because this trail provides access to businesses along 68th St, connects to other important trails in the system, and provides a scenic path to an existing park, the City has designated this trail as being a high priority.

1. Benefits
   - Connection to retail along 68th Street
   - Connection to Prairie View Park
   - Middle section serves as part of a loop around the City

2. Challenges
   - Timing of construction with planned widening of 68th Street
   - Coordination with businesses along 68th Street
   - Crossing of 68th Street. Because of the grades in the area, a safe undercrossing would be difficult to construct without significantly raising the profile of 68th Street at this location.

3. Opinion of Cost
   - $284,000



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Prairie View Park Link
Master Trail Plan, Hickman, NE

Exhibit
6

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Prairie View Park Link

Trail Length	2,780
Trail Width	10
ROW Width	0

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	2780	$ 2.00	$ 5,560.00
Subgrade Preparation	SY	3089	$ 2.00	$ 6,178.00
6" Concrete Trail	SY	3089	$ 45.00	$ 139,005.00
4" Concrete Sidewalk	SY	20	$ 55.00	$ 1,100.00
Detectable Warning Panels	SF	20	$ 35.00	$ 700.00
Storm Sewer Pipe	LF	75	$ 100.00	$ 7,500.00
Roadway Crossing Upgrade	EA	2	$ 7,500.00	$ 15,000.00
Seeding	AC	0.6	$ 5,000.00	$ 3,000.00
			Construction Subtotal	$ 178,000.00
			Mobilization 8%	$ 14,200.00
			Construction Contingency 25%	$ 44,500.00
			Total Estimated Construction	**$ 236,700.00**
Other Costs				
Land Acquisition	**0**	**SF @**	**$ 0.25**	$ -
			Preliminary Engineering 8%	$ 18,936.00
			Construction Engineering 12%	$ 28,404.00
			Subtotal	**$ 47,340.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 284,000.00**
Funding Request				
			Federal Funding 80%	$ 227,200.00
			Local Funds 20%	$ 56,800.00

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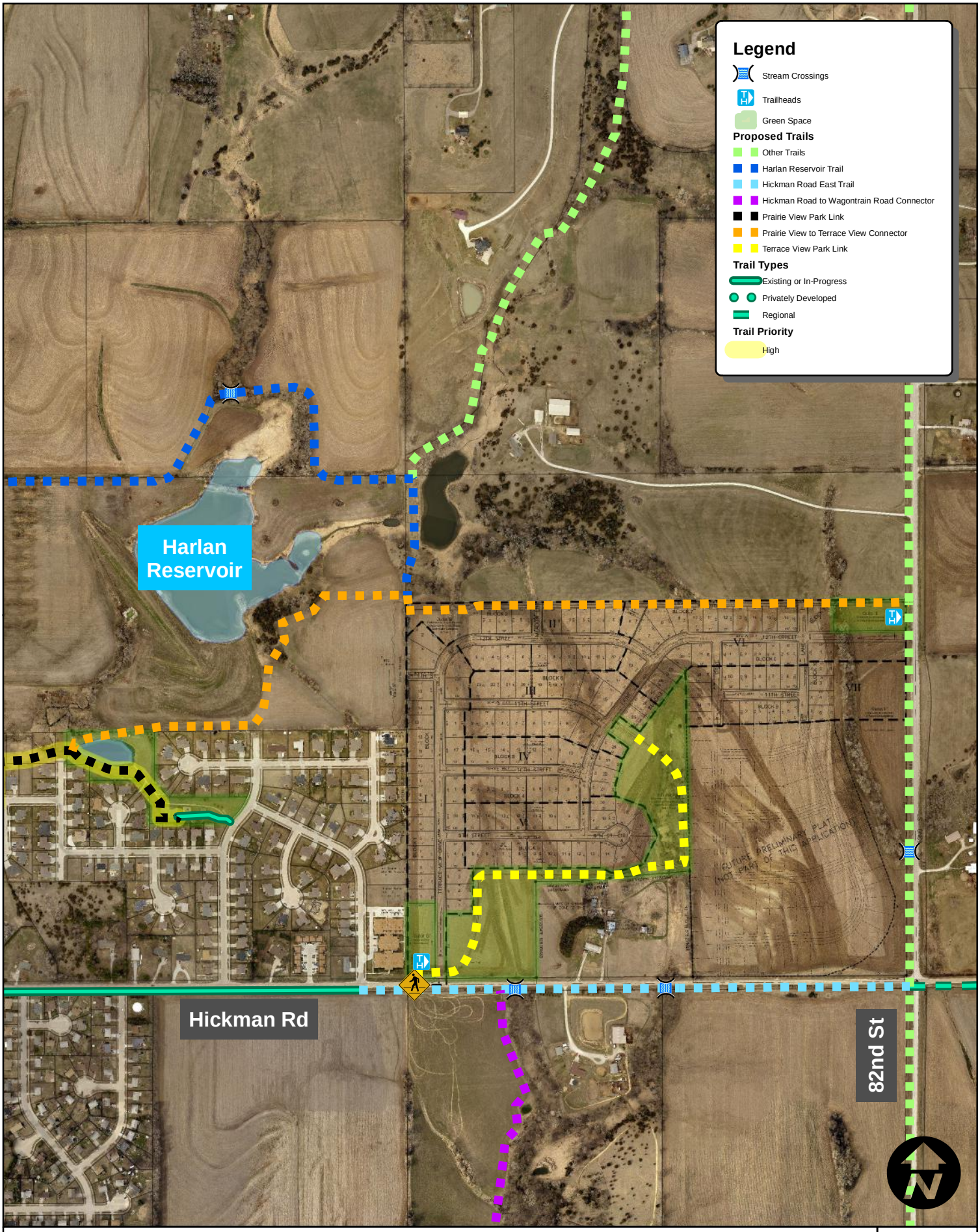
F. Prairie View to Terrace View Connector

The proposed Prairie View to Terrace View Connector trail begins on the west end of the detention cell in Prairie View Park, where it connects to the Prairie View Park Link trail. It then proceeds east along the north bank of the cell, and then behind the lots to the north of Primrose Lane. It then turns north at Sunflower Drive, runs along the edge of a wooded area, turns east, and connects to the Harlan Reservoir Trail. It then runs along the north edge of the Terrace View development until it reaches 82nd Street.

1. Benefits
   - Scenic route through green space behind lots
   - Proposed trailhead at the east end
   - Connection to Prairie View Park Link, which connects to trails leading to downtown area
   - Connection to Harlan Reservoir Trail

2. Challenges
   - Coordination with Terrace View development. A preliminary plat of the development does show a planned outlot for this trail along the north edge of the development. Access to the trail should also be accommodated with trails or sidewalks either within outlots or along proposed roadways.

3. Opinion of Cost
   - $458,000



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Prairie View to Terrace View Connector
Master Trail Plan, Hickman, NE

Exhibit
7

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Prairie View to Terrace View Connector

Trail Length	4,930
Trail Width	10
ROW Width	0

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	4930	$ 2.00	$ 9,860.00
Subgrade Preparation	SY	5478	$ 2.00	$ 10,956.00
6" Concrete Trail	SY	5478	$ 45.00	$ 246,510.00
Trailhead Development	SY	278	$ 50.00	$ 13,900.00
Seeding	AC	1.1	$ 5,000.00	$ 5,500.00
			Construction Subtotal	$ 286,700.00
			Mobilization 8%	$ 22,900.00
			Construction Contingency 25%	$ 71,675.00
			Total Estimated Construction	**$ 381,275.00**
Other Costs				
Land Acquisition	**0**	**SF @**	**$ 0.25**	$ -
			Preliminary Engineering 8%	$ 30,502.00
			Construction Engineering 12%	$ 45,753.00
			Subtotal	**$ 76,255.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 458,000.00**
Funding Request				
			Federal Funding 80%	$ 366,400.00
			Local Funds 20%	$ 91,600.00

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G. Scott's Creek Trail

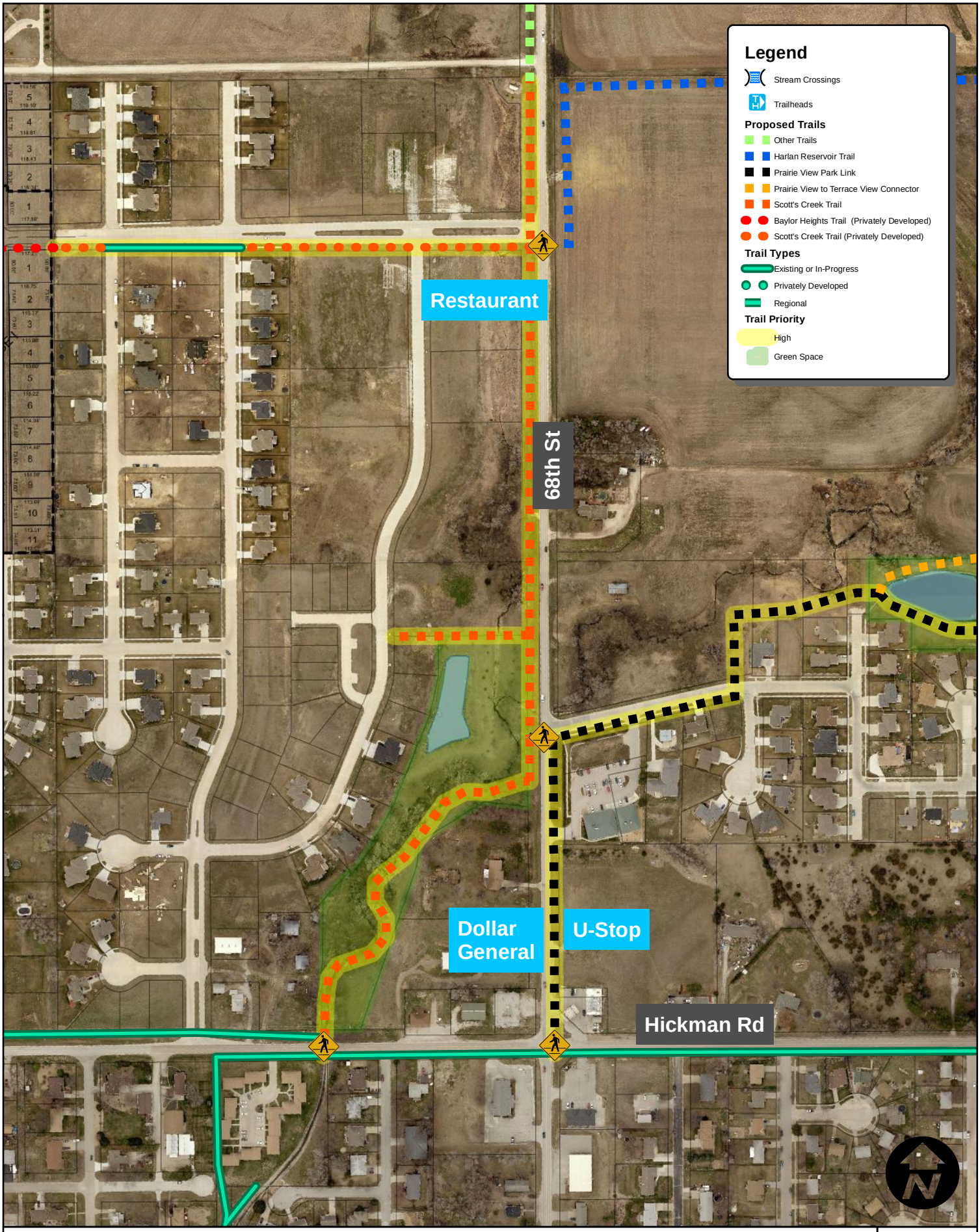
The proposed Scott's Creek Trail begins at Hickman Road just east of Scott's Creek, west of 68th Street. From there, it winds north through the wooded area on the east side of Scott's Creek. When it meets 68th Street just south of Prairie View Lane it connects to an 8' sidewalk that runs south along the west side of 68th Street to Hickman Road, providing access to Dollar General. The trail turns north, connects to the Prairie View Park Link at its crossing of 68th Street, and continues across Scott's Creek. A branch of the trail turns west, over a stream crossing, towards Park Drive. The main trail alignment continues north along the west side of 68th Street to the City welcome sign north of Woodland Boulevard. At the intersection of 68th Street Woodland Boulevard, the trail connects to the Harlan Reservoir Trail, and a branch of the trail goes west along the south side of Woodland Boulevard to connect with the Baylor Heights Trail (this branch will be privately developed, and a portion of it is already complete).

Because of the scenic route of this trail, the fact that it provides a crucial link in the proposed trail system, and because it is a continuation of an existing trail, this trail was designated as a high priority by City staff.

1. Benefits
   - Scenic route through green space along Scott's Creek, with opportunity for future park just north of Scott's Creek west of 68th Street
   - Continues existing trail along Scott's Creek which connects north half of City to downtown
   - Connects to soon-to-be-completed Hickman Road Trail, Prairie View Park Link, Woodland Boulevard Trail, and Harlan Reservoir Trail
   - Provides access to new restaurant, future retail along 68th Street, and Dollar General (via an 8' sidewalk extending south along 68th Street to Hickman Road)

2. Challenges
   - Extension of existing box culvert under 68th Street required
   - Timing with planned widening of 68th Street
   - Coordination with future businesses along 68th Street

3. Opinion of Cost
   - $650,000



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OLSSON ASSOCIATES

Scott's Creek Trail
Master Trail Plan, Hickman, NE

Exhibit
8

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Scott's Creek Trail

Trail Length	4,230
Trail Width	10
ROW Width	0

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	4230	$ 2.00	$ 8,460.00
Subgrade Preparation	SY	4700	$ 2.00	$ 9,400.00
6" Concrete Trail	SY	4700	$ 45.00	$ 211,500.00
Storm Sewer Pipe	LF	100	$ 75.00	$ 7,500.00
Drainage Channel Mitigation	LF	150	$ 200.00	$ 30,000.00
CBC Extension	LF	25	$ 1,000.00	$ 25,000.00
Bridge (12' x 40')	SF	480	$ 200.00	$ 96,000.00
Roadway Crossing Upgrade	EA	1	$ 7,500.00	$ 7,500.00
Seeding	AC	1	$ 5,000.00	$ 5,000.00
			Construction Subtotal	$ 400,400.00
			Mobilization 8%	$ 32,000.00
			Construction Contingency 25%	$ 100,100.00
			Total Estimated Construction	**$ 532,500.00**
Other Costs				
Land Acquisition	**0**	**SF @**	**$ 0.25**	$ -
			Preliminary Engineering 10%	$ 53,250.00
			Construction Engineering 12%	$ 63,900.00
			Subtotal	**$ 117,150.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 650,000.00**
Funding Request				
			Federal Funding 80%	$ 520,000.00
			Local Funds 20%	$ 130,000.00

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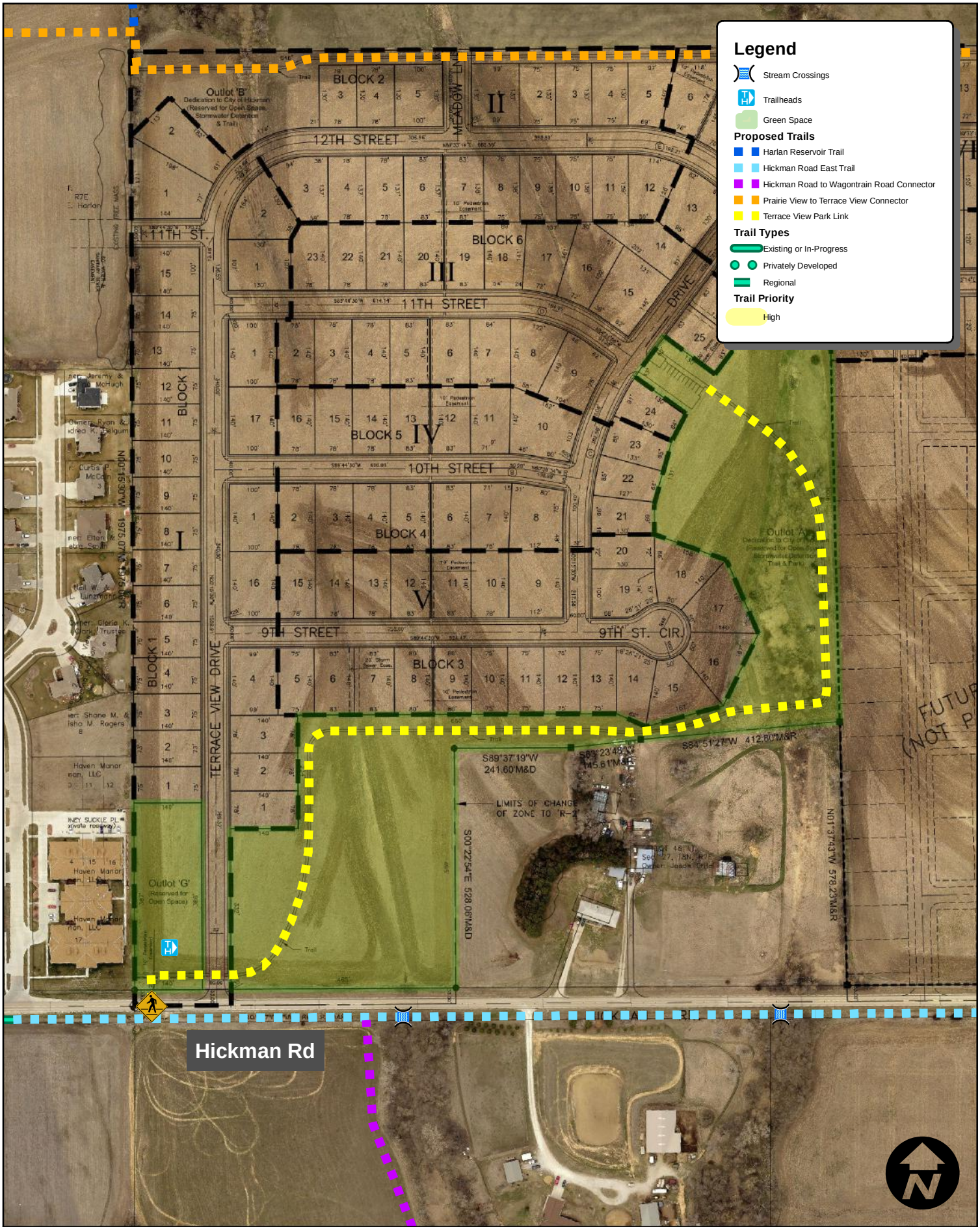
H. Terrace View Park Link

The proposed Terrace View Park Link trail begins west of the intersection of Hickman Road & Terrace View Drive, where it crosses Hickman Road to a planned outlot, where a trailhead is proposed. The trail then turns east and winds through Terrace View Park.

1. Benefits
   - Proposed trailhead in outlot at Hickman Road & Terrace View Lane
   - Scenic route through Terrace View Park

2. Challenges
   - Coordination with Terrace View development. A preliminary plat of the development does show a trail in the location shown in this master plan.

3. Opinion of Cost
   - $272,000



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OLSSON ASSOCIATES

Terrace View Park Link
Master Trail Plan, Hickman, NE

Exhibit

9

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Terrace View Park Link

Trail Length	2,640
Trail Width	10
ROW Width	0

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	2640	$ 2.00	$ 5,280.00
Subgrade Preparation	SY	2933	$ 2.00	$ 5,866.00
6" Concrete Trail	SY	2933	$ 45.00	$ 131,985.00
Trailhead Development	SY	600	$ 50.00	$ 30,000.00
Seeding	AC	0.6	$ 5,000.00	$ 3,000.00
			Construction Subtotal	$ 176,100.00
			Mobilization 8%	$ 14,100.00
			Construction Contingency 25%	$ 44,025.00
			Total Estimated Construction	**$ 234,225.00**
Other Costs				
Land Acquisition	**0**	**SF @**	**$ 0.25**	$ -
			Preliminary Engineering 8%	$ 18,738.00
			Construction Engineering 8%	$ 18,738.00
			Subtotal	**$ 37,476.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 272,000.00**
Funding Request				
			Federal Funding 80%	$ 217,600.00
			Local Funds 20%	$ 54,400.00

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I. Wagontrain Road Trail

The proposed Wagontrain Road Trail begins at the intersection of 68th Street & Wagontrain Road, where it connects to an existing trail. It then continues east along the north side of Wagontrain Road until it reaches the city limits.

Two options for crossing 68th Street are shown. Considerations for the 68th Street crossing include:

- Site distance and speed of traffic coming over the viaduct may require moving it to a location where traffic along 68th Street will be moving at a lower speed.
- The cost of extending the box culvert under Wagontrain Road.

Because this trail connects to an existing trail which leads to the downtown area and a potential future regional trail that would lead to Norris Public School, and because pedestrian and bike traffic is frequently observed on this section of roadway and no sidewalk or shoulder is present, this trail is designated by the City as being a high priority.

1. Benefits
   - Increased safety for pedestrians and cyclists who currently have no sidewalk or shoulder on which to travel
   - Connection to existing trails leading downtown and eventually to Norris Public School

2. Challenges
   - Purchase of land and design for proposed mini-park/trailhead
   - Storm drain modifications along Wagontrain Road

3. Opinion of Cost
   - $251,000

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OLSSON ASSOCIATES

Wagontrain Rd Trail
Master Trail Plan, Hickman, NE

Exhibit
10

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Wagontrain Road Trail

Trail Length	1,670
Trail Width	10
ROW Width	0

Item	Unit	Qty	Unit Cost	Total
Clearing and Grubbing	LF	1670	$ 2.00	$ 3,340.00
Subgrade Preparation	SY	1856	$ 2.00	$ 3,712.00
6" Concrete Trail	SY	1856	$ 45.00	$ 83,520.00
4" Concrete Sidewalk	SY	60	$ 55.00	$ 3,300.00
Detectable Warning Panels	SF	140	$ 35.00	$ 4,900.00
Storm Sewer Pipe	LF	100	$ 100.00	$ 10,000.00
Storm Inlets	EA	4	$ 3,500.00	$ 14,000.00
CBC Extension	LF	1000	$ 25.00	$ 25,000.00
Roadway Crossing Upgrade	EA	1	$ 7,500.00	$ 7,500.00
Seeding	AC	0.4	$ 5,000.00	$ 2,000.00
			Construction Subtotal	$ 157,300.00
			Mobilization 8%	$ 12,600.00
			Construction Contingency 25%	$ 39,325.00
			Total Estimated Construction	**$ 209,225.00**
Other Costs				
Land Acquisition	**0**	**SF @**	**$ 0.25**	$ -
			Preliminary Engineering 8%	$ 16,738.00
			Construction Engineering 12%	$ 25,107.00
			Subtotal	**$ 41,845.00**
Total Estimated Project Costs				
			Total Estimated Project	**$ 251,000.00**
Funding Request				
			Federal Funding 80%	$ 200,800.00
			Local Funds 20%	$ 50,200.00

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J. Future Conceptual Trails

Beyond the trails described in the preceding pages, some additional conceptual trail alignments are shown on the map in light green. These are highly conceptual, but indicate the desired connectivity and general location of trails that are consistent with this master plan's vision for the City's trail system.

As trail projects are completed, and as developments are planned and built, these trails will need to be adjusted accordingly, keeping the design criteria and objectives of this master plan in mind. Section II.B.6 on Page 5 of this report outlines some of the criteria to be considered when choosing an alignment for a trail. The City's Comprehensive Plan should also be referenced to determine future growth areas so that trail connectivity to these areas can be accommodated.

IV. PROPOSED REGIONAL TRAILS

Hickman is located in close proximity to many amenities and attractions. Homestead Trail, Wagon Train Lake, Stagecoach Lake, Norris Public School, and Roca are all within a few miles of the City. A regional trail system would be a natural extension of the City's trail system, and would provide access to the aforementioned attractions.

Future improvements to the corridors where regional trails are located influence the timing and steps required to complete these trails. For example, when Lancaster County plans improvements to roadway corridors, it is essential the City consider if a regional trail within the same corridor should be considered into the roadway improvements.

Consideration should be given to the ownership and maintenance responsibilities for regional trails. The regional trails may require significant maintenance activities throughout the life of the trail and this needs to be considered during the planning process. The nearby Homestead Trail is owned and maintained by the Lower Platte South Natural Resource District (LPSNRD). When planning new regional trails, the City should inquire with the Natural Resource District about potential partnerships for ownership and maintenance of regional trails.

A map of potential regional trails was prepared as a part of this master plan. All regional trails are planned to be a 10-foot wide, aggregate surfaced trail.

A. Homestead Trail Regional Connector

The previous master plan included a regional trail located along 54th Street, traveling through the Village of Roca to connect to the Homestead Trail. This trail alignment includes significant challenges of a railroad crossing, a stream crossing, and traveling through the Village of Roca. These challenges will add significant cost so an alternate connection to the Homestead Trail was determined.

This alternate would run along Hickman Road from the west edge of the City to halfway between 25th and 38th Streets, where it turns north to connect to the existing Homestead Trail and eliminate an additional stream crossing. This alignment is shorter than the previous alignment along 54th Street which reduces the potential cost. The planning of this trail should be timed to coincide with potential future improvements to Hickman Road west of the City in order to streamline right-of-way acquisition and potentially reduce cost.

B. Wagontrain Regional Connector

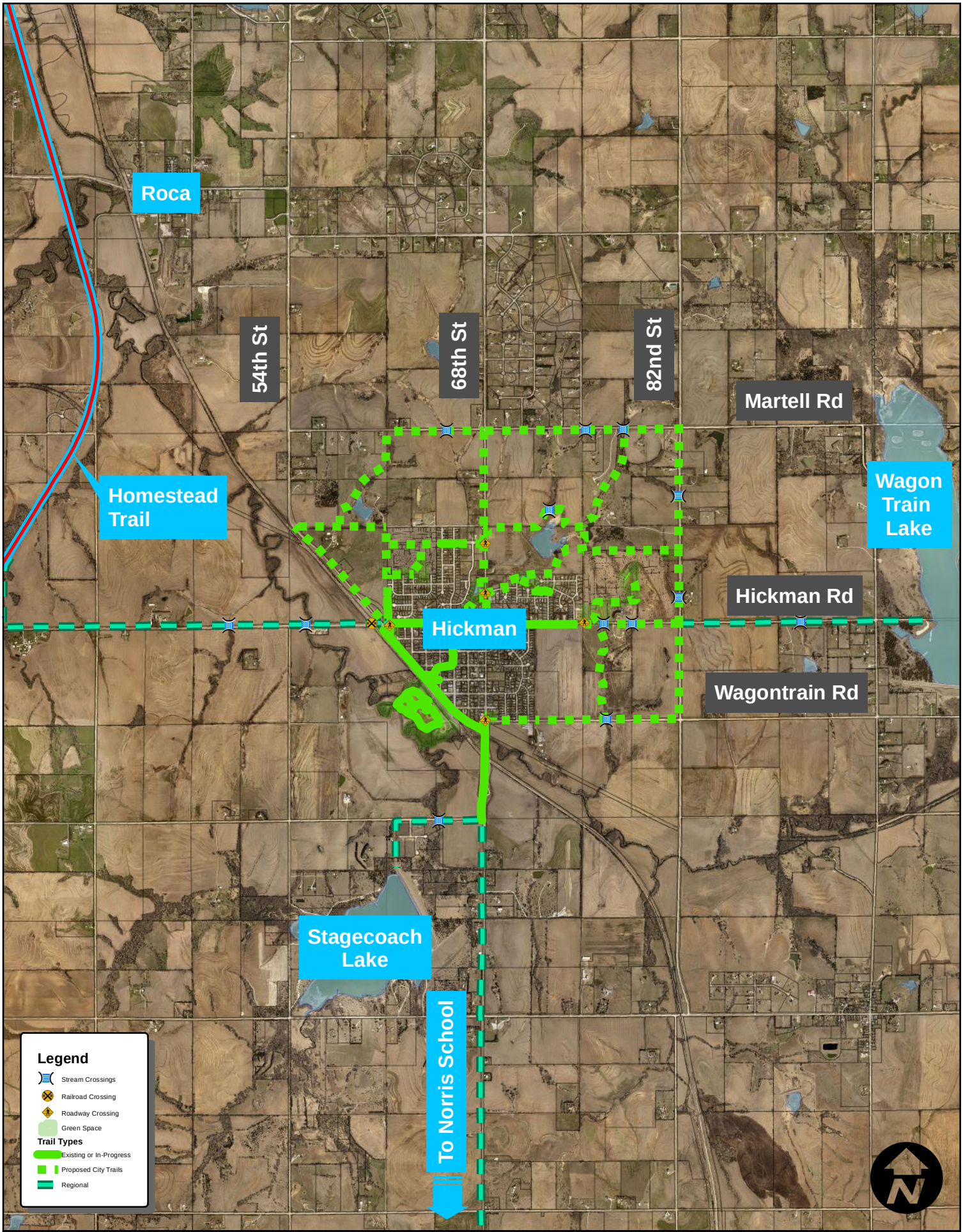
This regional trail would run east along the southern right-of-way of Hickman Road to the Wagontrain Lake State Recreation Area.

C. Stagecoach Regional Connector

This regional trail would connect to the existing trail over the 68th Street viaduct. It then runs west along southern right-of-way of Stagecoach Road and turns south to connect to Stagecoach Lake State Recreation Area.

D. Norris Regional Connector

This regional trail would connect to the existing trail over the 68th Street viaduct and continue south along the western right-of-way of 68th Street to Norris Public School.



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OLSSON ASSOCIATES

Regional Trails
Trail Master Plan, Hickman, NE

Exhibit
11

Hickman Trail Master Plan
May 2016
OA Project No. 015-2256

Regional Trail Project	Length (ft)	Width (ft)	Drainage/RR Crossing Cost	Trail Cost (per LF)	Total Construction Cost	Engineering @ 20%	Contingency @ 25%	Total Land Acquisition	Total Project Cost
Norris Connector	16000	10	$ -	$ 40.00	$ 776,000.00	$ 155,200.00	$ 194,000.00	$ 136,000.00	$ 1,261,000.00
Stagecoach Connector	3610	10	$ 50,000.00	$ 40.00	$ 225,085.00	$ 45,017.00	$ 56,271.25	$ 30,685.00	$ 357,000.00
Homestead Trail Connector	11415	10	$ 305,000.00	$ 40.00	$ 858,627.50	$ 171,725.50	$ 214,656.88	$ 97,027.50	$ 1,342,000.00
Wagontrain Connector	9700	10	$ 45,000.00	$ 40.00	$ 515,450.00	$ 103,090.00	$ 128,862.50	$ 82,450.00	$ 830,000.00
									$ 3,790,000.00

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V. MAINTENANCE AND MISCELLANEOUS PROJECTS

A. Bridge Replacement

In the spring of 2015, the Hickman area experienced flood events that damaged a variety of assets throughout the community. One of those assets is a wooden pedestrian bridge that spans an unnamed tributary to the Hickman Branch Tributary of Salt Creek, which was subsequently closed. An inspection of this structure in June 2015 showed that the substructure had failed which caused the bridge deck to move laterally and drop downward. Recommendations were included in the inspection report that ranged from repair of the damaged area to full replacement of the bridge.

This bridge is a very important link for the City's trail system. The public is very supportive of keeping this asset to the trail system. Replacement of this bridge could cost as much as $200,000 for a prefabricated weathered steel truss bridge that would clear span the tributary. Maintenance of this type of structure is very minimal and it typically provides approximately 75 years of service. Other options that may be viable would be a concrete box culvert or even pipe culverts at the crossing. A hydraulic analysis would need to be completed to determine if these options would be feasible.

B. Maintenance of Trails

Maintenance is an important part of a good trail system. It is important that the City budget for regular maintenance tasks such as mowing and weed removal, replacing cracked concrete panels, and re-grading uneven areas on aggregate trails. In addition to setting aside budget for maintenance of the existing trail system, the City should consider the added maintenance cost of new trails before they are built.

VI. FINANCING

The total cost of all the proposed city trails included in the master plan is $2,964,000. There are simply not enough financial resources to accomplish everything on the plan at once. Prioritization and financing are two key items that were considered during the master planning process.

The steering committee considered various factors when prioritizing proposed trail projects. Among the factors were:

- Safety
- Ownership of property to construct trails
- Connectivity
- Project Cost

A. Funding Opportunities

To accomplish the projects included in this master plan and to meet the desire of the community to enhance the existing trail system, financing is a key consideration. There is not a single source of financing to accomplish these goals, but rather partnerships and various sources of financing are needed.

1. Partnerships

   Partnerships are a key component of accomplishing a big goal such as a trail project or executing a trail master plan. Key organizations to consider for partnerships include:

   - Lower Platte South Natural Resources District (LPSNRD)
   - Nebraska Department of Roads (NDOR)
   - Nebraska Game and Parks Commission (NGPC)
   - Lancaster County

2. Federal and State Funding

   There are sources of federal funding that are managed by state agencies. The following is a list of those funding opportunities.

   - Transportation Alternatives Program (TAP)

     TAP is a competitive grant offered periodically. TAP is funded by FHWA and administered by the (NDOR). Federal assistance up to 80% for TAP is allowed to match a project's cost. Project may include trail development and sidewalk improvements depending on the nature of the project. NDOR should be consulted prior to any grant application to determine project eligibility. Federal funds come with various requirements and mandates that may increase project cost, scope of work, or timeline.

- Recreational Trails Program (RTP)
  RTP is a competitive grant offered annually. RTP is funded by the FHWA and administered by the NGPC. Federal assistance up to 80% from the RTP is allowed to match a project's cost or up to $250,000. NGPC should be consulted prior to any grant application to determine project eligibility. Federal funds come with various requirements and mandates that may increase project cost, scope of work, or timeline.

- Land and Water Conservation Funds (LWCF)
  LWCF is a competitive matching grant offered periodically. LWCF is administered by NGPC and are federal funds allocated from the National Parks Service (NPS). These federal funds are available for municipal owned outdoor recreation projects. The Statewide Comprehensive Outdoor Recreational Plan (SCORP) identifies priority project for the NGPC for a given timeframe. Fairbury could utilize this funding source for priority projects in the park area. The funding amount is not set but a 50% match is required and grant awards are typically less than $200,000. NGPC should be consulted prior to any grant application to determine project eligibility. Federal funds come with various requirements and mandates that may increase project cost, scope of work, or timeline.

3. Local Funding
   Through proper planning and budgeting, local sources of funding could also be utilized for trail projects. One method could be the City budgeting a certain amount on an annual basis for a set timeframe to use for a trail project. Another method could be the County budgeting an amount for a trail to be included as part of a county roadway improvement.

4. Private Funding
   Local organizations, private foundations, and individuals are all sources of potential funding for trails. If the goals of a trail project match with the goals of a private funding source, they may be willing to contribute to the project. This master plan can serve as a starting point to seek out private funding by communicating the goals of the community with the trail system.

B. Next Steps

Listed below is an outline of steps the City can take in order to realize the priorities set forth in this master plan.

Short term (0-5 years)

- Construct the Hickman Road East-West Trail (anticipated to start in 2016)
- Replace flood damaged pedestrian bridge with a new bridge or culverts
- Select the next trail project to apply for TAP funding
- Budget the 20% cost share and apply to the TAP
- Start discussions with the county, NRD, and NGPC regarding regional trails
- Construct trail along 68th Street in conjunction with roadway improvements

Intermediate Term (5-10 years)

- Select the next trail project to apply for federal funding and budget the required cost share
- Design and construct a regional trail

Long Term (10-20 years)

- Update the trail master plan to reflect completed projects and plan for future trails
- Select the next trail project to apply for federal funding and budget the required cost share
- Have a trail loop in place