

# BONNEVILLE SHORELINE TRAIL ALIGNMENT STUDY

December 2024

Prepared for:

Cache County Development Services

The Trails Cache

179 North Main St. Suite 305

Logan, UT 84321

(435) 755-1646

Prepared by:

Sunrise Engineering

2100 North Main Street

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Scott Archibald, P.E.  
Principle Engineer



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Scott Archibald, P.E.  
Principle Engineer



## EXECUTIVE SUMMARY

The 2024 Bonneville Shoreline Trail (BST) Alignment Study examines the existing and future alignment of the BST through Cache Valley, Utah between North Logan City and Smithfield City. Cache Valley offers a blend of natural beauty, adventure, and a welcoming local culture, making it a hotspot for all varieties of recreators. Many of these visitors, as well as Cache Valley locals, engage in recreational activities such as walking, hiking, running, biking, and rock climbing, matching the key demographic for the Bonneville Shoreline Trail. The purpose of this study, is to provide a document for planning out the future of the BST, integrating trail design, technical analysis, community involvement, and funding.

This alignment would interconnect 4.2-miles of existing trail by the addition of 7.4-miles of new trail. In total, this would create 11.6-miles of uninterrupted travel for the Bonneville Shoreline Trail. With 175-miles of the BST complete throughout the State of Utah, this alignment would interconnect 6.6% of this state-wide trail, benefiting both Cache Valley, and the State as a whole.

One of the focuses of this study is introducing and coordinating the alignment of the BST through the 28 different properties needed to connect this alignment. Out of these property owners, Sunrise Engineering has, as of the date this report was written, recorded 13 supportive, 5 undecided, 5 which were unable to be contacted, and 5 opposed. Given the differing levels of support given by each property owner, the BST has been separated into 2 Phases:

- **Phase 1a – Hyde Park City– 2025**  
Phase 1a will expand the existing section of BST in Hyde Park City, connecting to 300 South in Smithfield City.
- **Phase 1b – North Logan City – 2025**  
This phase extends the existing North Logan BST sections from Green Canyon to the northern city limits.
- **Phase 2 – Smithfield City – 2026**  
This final phase will continue from 300 South, heading north through Birch Canyon, ultimately connecting to Smithfield Canyon. This phase also connects the Hyde Park section of BST to Phase 1b.

Table i Study Summary				
	<u>Estimated Cost</u>	<u>Proposed Trailheads</u>	<u>Physical Barriers</u>	<u>Estimated Length</u>
Phase 1a	\$580,000	<i>Dry Canyon</i>	N/A	<i>2.0-miles</i>
Phase 1b	\$765,000	<i>Meadow Lark Lane</i>	<i>PB 1, 2, 3, 4, 5, 6</i>	<i>1.9-miles</i>
Phase 2	\$1,215,000	<i>Birch Canyon, Bogus Hollow</i>	<i>PB 7, 8, 9, 10</i>	<i>3.5-miles</i>
<b>Total</b>	<b>\$2,560,000</b>	<b>4 Trailheads</b>	<b>10 Physical Barriers</b>	<b>7.4-miles</b>

It is important to clarify this is a study document with the goal of providing a preferred alignment for the BST and is in no way intended to be utilized as a construction document. As the State of Utah, along with Cache Valley, grows and adjusts to fit the needs and demands of its growing and ever-changing population, the preferred alignment for this segment of BST has the potential to change in the years following this study. This document is intended, however, to be utilized for guidance moving forward. The included appendices for this document include several signed Memorandum of Understandings (MOUs) from participating property owners, the Engineer's Opinion of Probable Cost (EOPC), the StreamStats Culvert Sizing Calculations, and detailed maps and exhibits to support the alignment outlined in this study.

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## 1.0 PROJECT DETAILS

## 1.1 Project Overview

The 2024 Bonneville Shoreline Trail (BST) Alignment Study examines the expansion of the existing sections of BST in Cache Valley, Utah between North Logan City and Smithfield City. The proposed alignment is situated in an area that offers exceptional scenic views, highlighting the natural beauty of Cache Valley. The purpose of this study, is to provide a document for planning out the future of the BST, integrating trail design, technical analysis, community involvement, and funding research. This study identifies a preferred alignment for this segment of the Bonneville Shoreline Trail. Along this alignment, this study considers ideal locations for proposed trailheads, analysis of geographical physical barriers such as ravines, streams, and slopes, and coordination with the affected property owners. This segment of the BST is located in Region 1 of the Utah Outdoor Recreation Initiative Regions, see Figure 1 below.

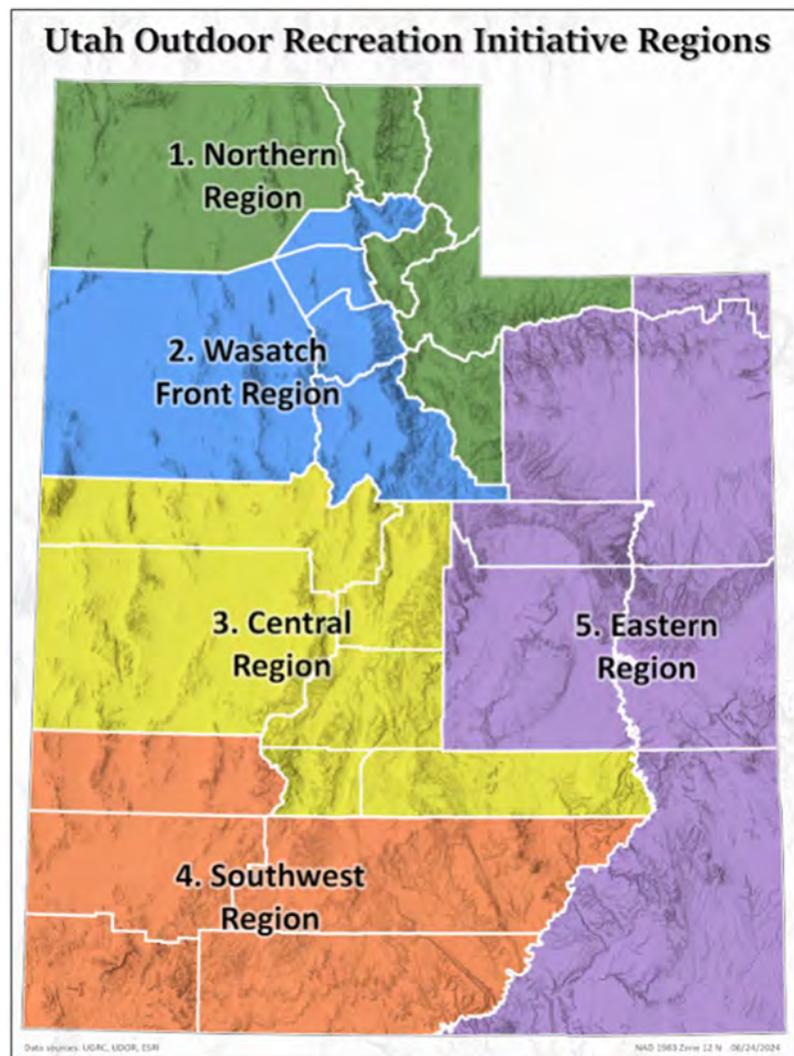
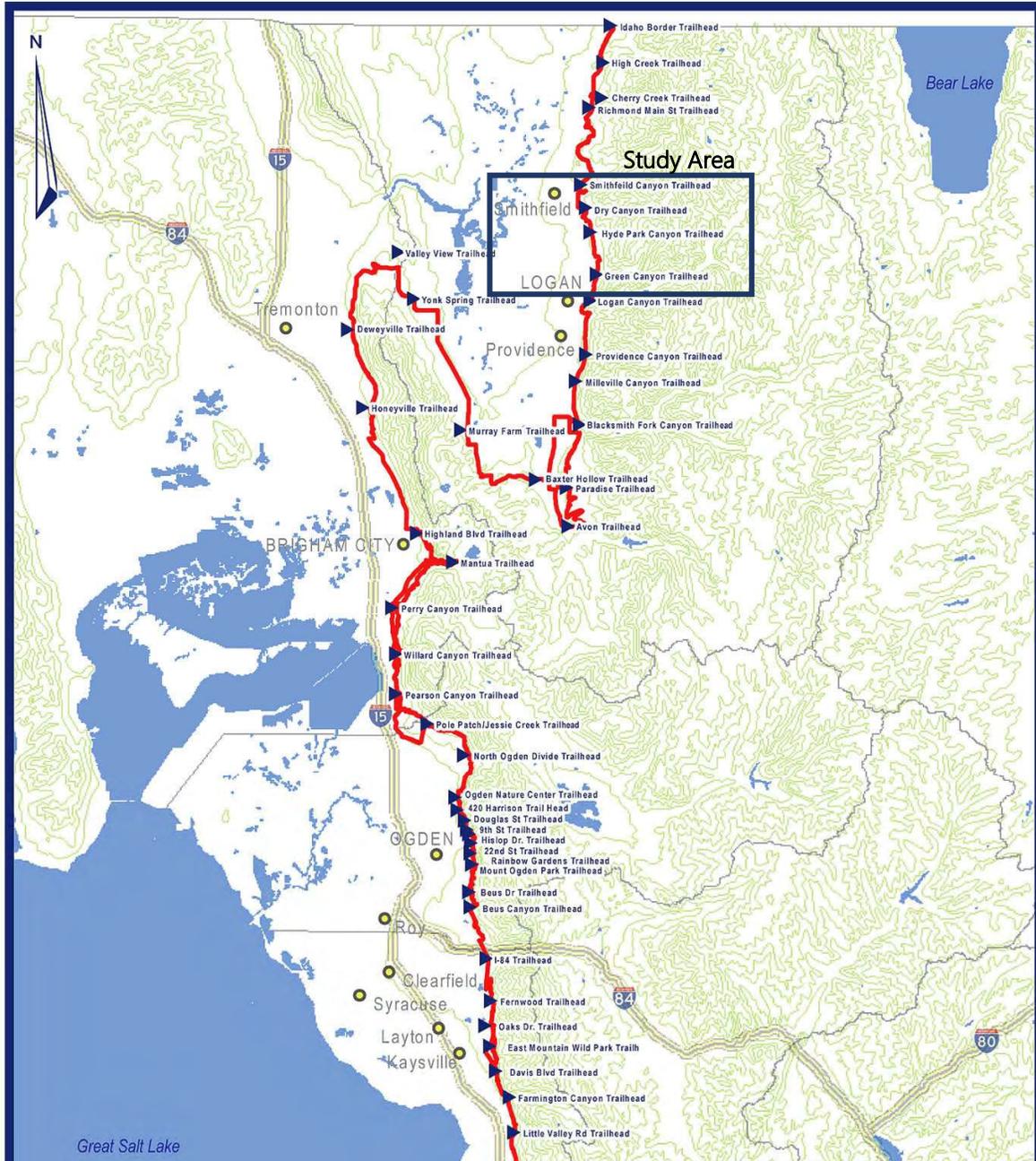


Figure 1 Region Map

The area under study in the 2024 BST Alignment Study is between Green Canyon in North Logan City, Utah to Smithfield Canyon near Smithfield City, Utah. Within this area, there are 2.2-miles of existing BST sections within Hyde Park City and North Logan City. Green Canyon is also the location of where another existing 2.0-mile continuous section of BST through Logan City terminates. By implementing the alignment proposed in this study, this combined 4.2-miles of existing trail would be connected through 7.4-miles of proposed trail, forming 11.6-miles of continuous travel along the BST. There are currently ~175-miles of BST constructed within the State of Utah, meaning this alignment would interconnect 6.6% of this State-wide trail from Logan City to Smithfield City. See Figure 2 below, showing the full proposed trail map for the Bonneville Shoreline Trail.



-Figure Continues to next Page-

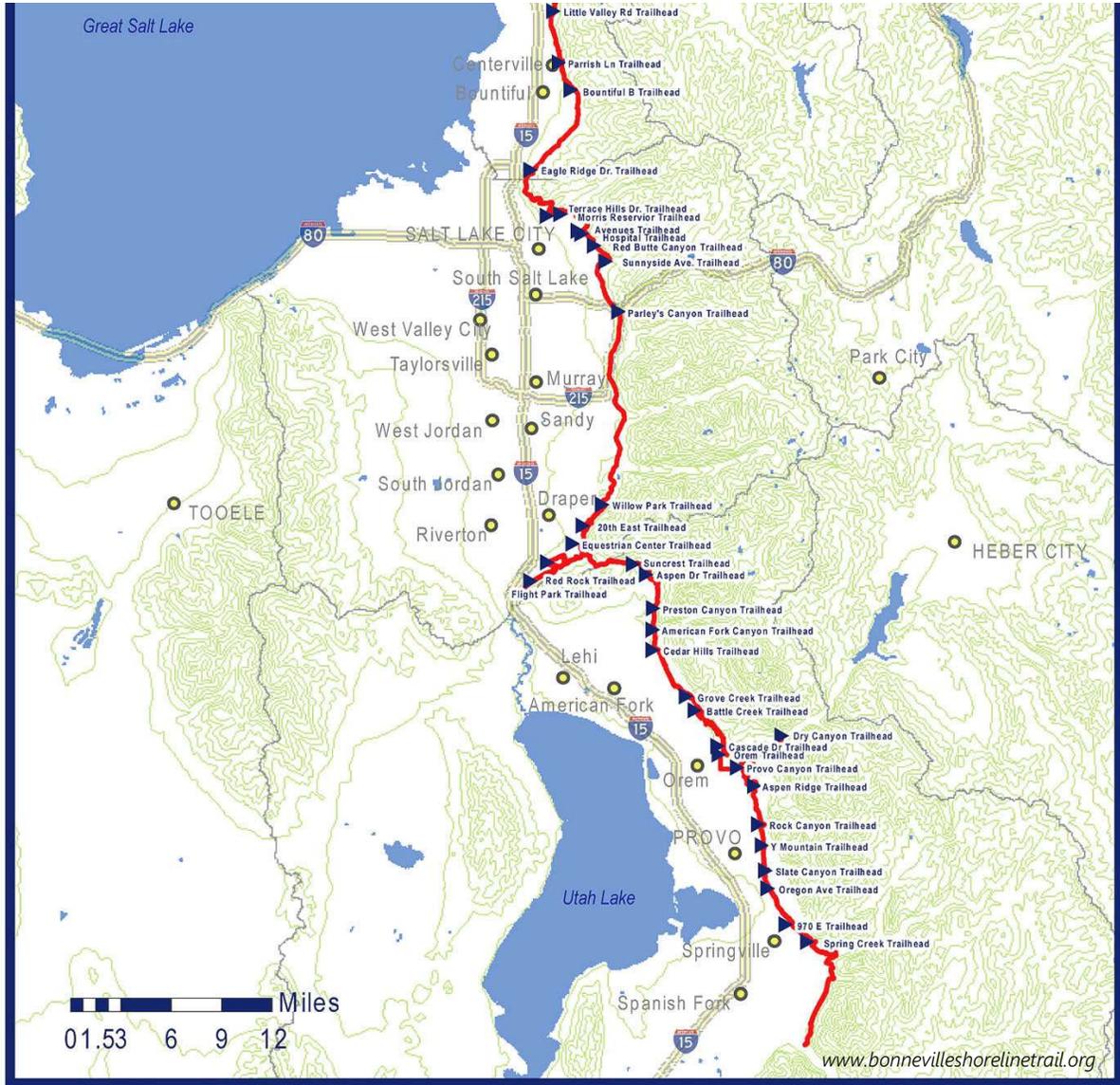


Figure 2 Total Proposed Bonneville Shoreline Trail Map

1.2 Project Need and Benefits to Local Utah Residents

Cache Valley offers a blend of natural beauty, adventure, and a welcoming local culture, making it a hotspot for all varieties of recreators throughout the State. Many of these visitors, as well as Cache Valley locals, engage in recreational activities such as walking, hiking, running, biking, and rock climbing, matching the key demographic for the Bonneville Shoreline Trail. Expanding the BST in this area of the State ensures every mile of the trail would be utilized to its fullest, especially as the population continues to expand. Since 2020, the population of Cache County has increased by 8.3%, see Table 1 and Figure 3 below. As the existing recreational infrastructure serving the local population continues to get more crowded, the need for expansion of these facilities grows each year.

Table 1 Population of Cache County			
Year	Population	Growth	Growth Rate
2024	144,677 (Est.)	2,284 (Est.)	1.60% (Est.)
2023	142,393	2,248	1.60%
2022	140,145	2,687	1.95%
2021	137,458	3,827	2.86%
2020	133,631	-	-

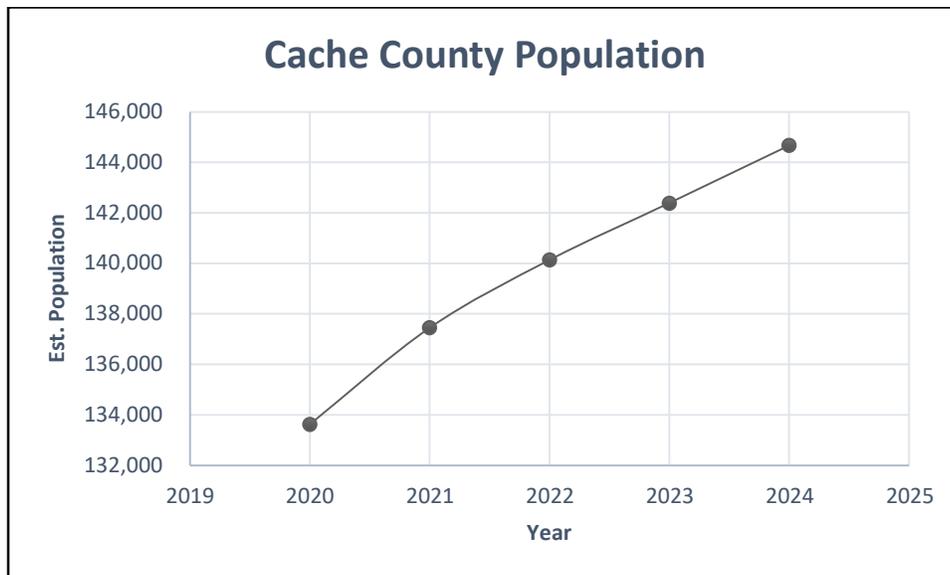


Figure 3 Cache County Population Growth Since 2020

Data taken from the United States Census Bureau

Trails can provide numerous benefits for residents, fostering a healthier, more connected community. Trails offer accessible, safe spaces for physical activities such as walking, running, cycling, and nature observation, promoting both physical and mental well-being. In addition to health benefits, trails create opportunities for social interaction and community engagement, helping to strengthen local ties. They also provide educational and recreational opportunities, allowing residents to learn about the local environment and enjoy the natural beauty of their area, see Figure 4.



**Figure 4** View from the Existing Hyde Park Section of BST

Furthermore, trails can enhance property values, support local businesses by increasing foot traffic, and attract eco-tourism, contributing to the area's economic vitality. By offering a sustainable means of transportation and recreation, trails can play an essential role in improving the quality of life for residents while preserving the area's natural resources.

Table 2 Property Owner Support	
Involved Parcel	Level of Support
<i>North Logan City</i>	
05-004-0004	<i>Supportive</i>
05-004-0002	<i>Unable to Contact</i>
05-004-0011	<i>Unable to Contact</i>
18-006-0004	<i>Unable to Contact</i>
18-006-0005	<i>Supportive</i>
18-006-0001	<i>Supportive</i>
18-006-0003	<i>Undecided</i>
04-050-0049	<i>Undecided</i>
04-049-0008	<i>Supportive</i>
04-049-0007	<i>Supportive</i>
<i>Hyde Park City</i>	
04-049-0004	<i>Undecided</i>
04-001-0002	<i>Supportive</i>
04-001-0001	<i>Supportive</i>
<i>Smithfield City</i>	
08-207-0012	<i>Opposed</i>
08-048-0014	<i>Unable to Contact</i>
08-048-0010	<i>Unable to Contact</i>
08-048-0001	<i>Supportive</i>
<i>Cache County</i>	
04-049-0003	<i>Opposed</i>
08-124-0007	<i>Supportive</i>
08-124-0002	<i>Supportive</i>
08-124-0004	<i>Supportive</i>
08-047-0003	<i>Opposed</i>
08-047-0006	<i>Opposed</i>
08-048-0011	<i>Undecided</i>
08-048-0022	<i>Supportive</i>
08-047-0001	<i>Undecided</i>
08-049-0008	<i>Opposed</i>
08-045-0016	<i>Supportive</i>

### 1.3 Potential Partnerships

Due to the large scope of this study, coordination efforts have subsequently required cross-jurisdictional coordination between Cache County, North Logan City, Hyde Park City, and Smithfield City. The County and these three Cities have come together in a concerted effort to work with property owners to design an alignment for this trail. A key goal of this alignment study has been to avoid impeding the developability of any properties, ensuring that landowners retain the full potential for the future use of their land.

By utilizing an open dialogue and shared planning sessions, the separate involved entities established a cooperative approach that respects property boundaries while maximizing the trail's recreational and community value. This partnership emphasizes the importance of balancing public access with private landowner rights, creating an alignment which is thoughtfully integrated into the landscape. By engaging directly with property owners, these Cities and County can foster mutual trust and transparency, allowing for adjustments and considerations that align with local needs and preserve the character of the surrounding areas.

To facilitate a positive cooperation with the involved 28 properties moving forward, each was asked if they would be willing to sign a Memorandum of Understanding (MOU) to show their willingness to work with the County and/or Cities moving forward. All signed MOUs have been included in the attached Appendix A. As of the date this document was written, Sunrise Engineering has recorded 13 properties as supportive, 5 undecided, 5 which were unable to be contacted, and 5 opposed, as shown in Table 2 to the left and Figure 5 below. Given the differing levels of support provided by each of the property owners, it is proposed this alignment is broken down into 2 phases beginning with where the most support was shown.

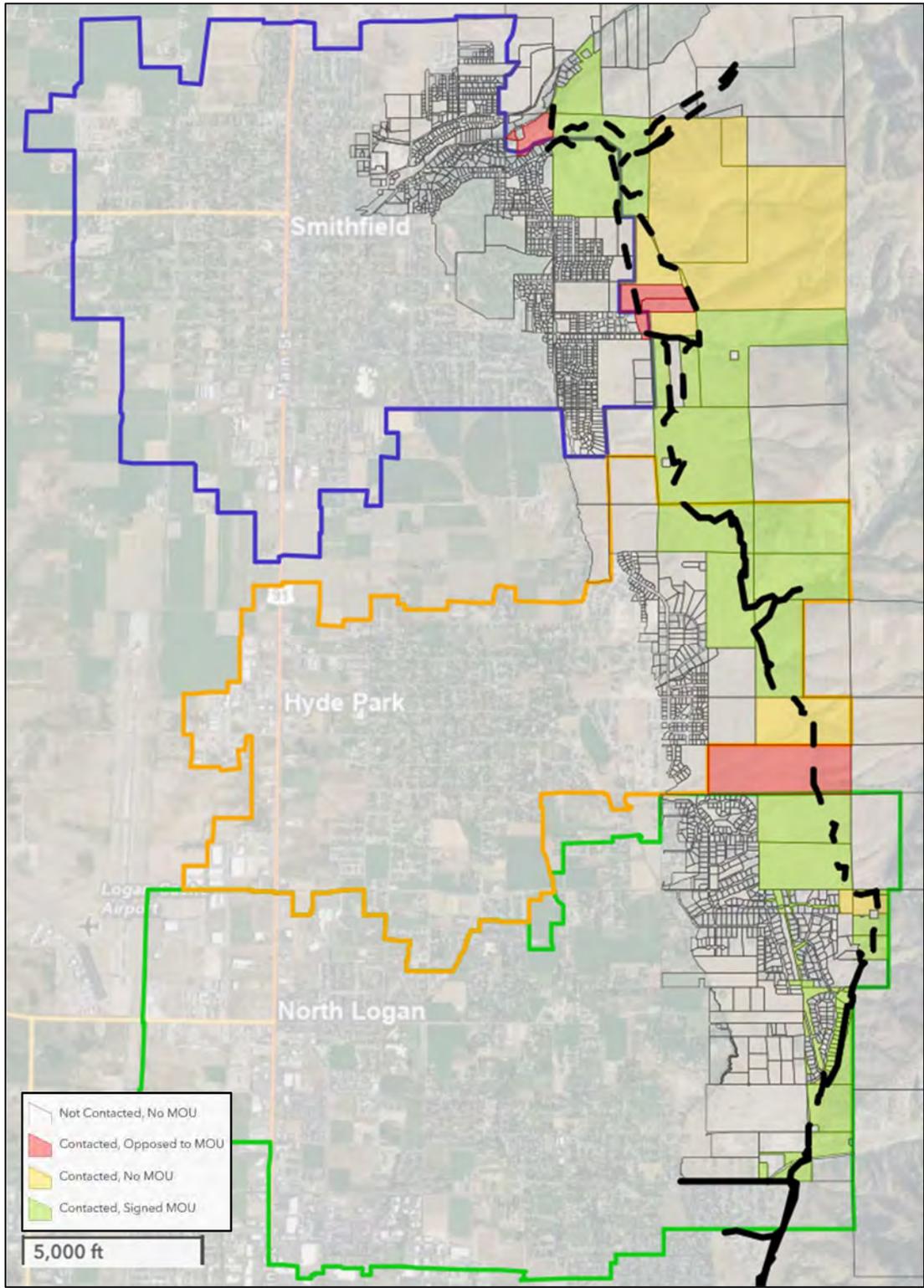


Figure 5 Map of Property Owner Support

#### 1.4 Project Timeline

The 2024 BST Alignment Study proposes splitting the construction of this alignment into 2 Phases. Hyde Park City was selected for Phase 1A due to the high level of support given by property owners and due to the existing section of BST already constructed in this segment of the alignment. Due to the construction of master planned trails being required for developers in North Logan City by ordinance, the overall support for the trail in this area, and due to the existing sections of BST already constructed in this segment of the alignment, North Logan City was selected for Phase 1B. Finally, Smithfield City was selected for Phase 2 given the undecided level of support from the property owners and due to the higher complexity of this segment of the alignment. See Figure 6 below for a map of this project's phases, and Figures 7 through 9 for an expanded view of each phase.

This Phasing Plan proposes each phase consists of the following:

- **Phase 1a – Hyde Park City– 2025**  
Phase 1a will expand the existing section of BST in Hyde Park City, connecting to 300 South in Smithfield City.
- **Phase 1b – North Logan City – 2025**  
This phase extends the existing North Logan BST sections from Green Canyon to the northern city limits.
- **Phase 2 – Smithfield City – 2026**  
This final phase will continue from 300 South, heading north through Birch Canyon, ultimately connecting to Smithfield Canyon. This phase also connects the Hyde Park section of BST to Phase 1b.

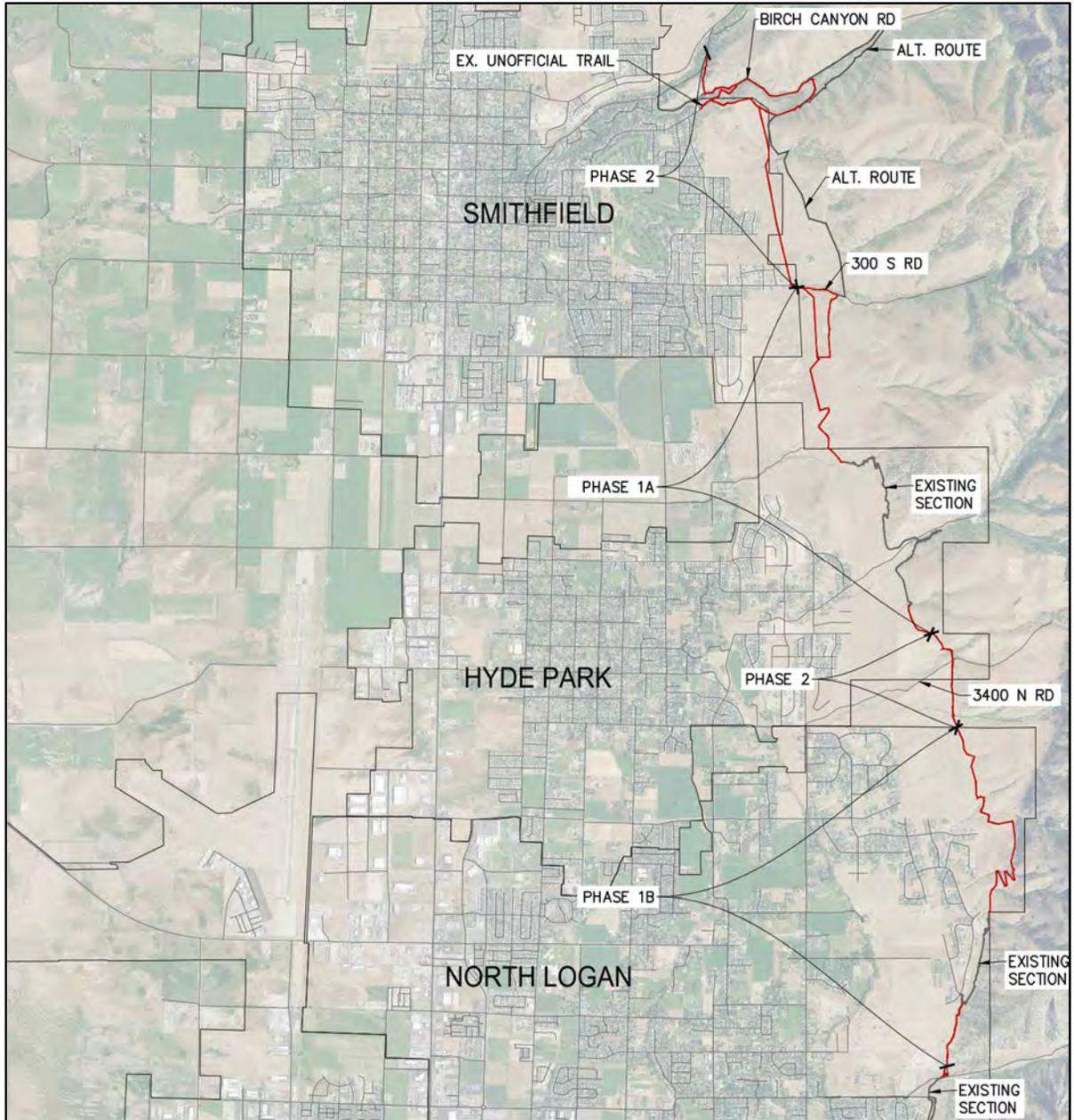


Figure 6 Phasing Plan

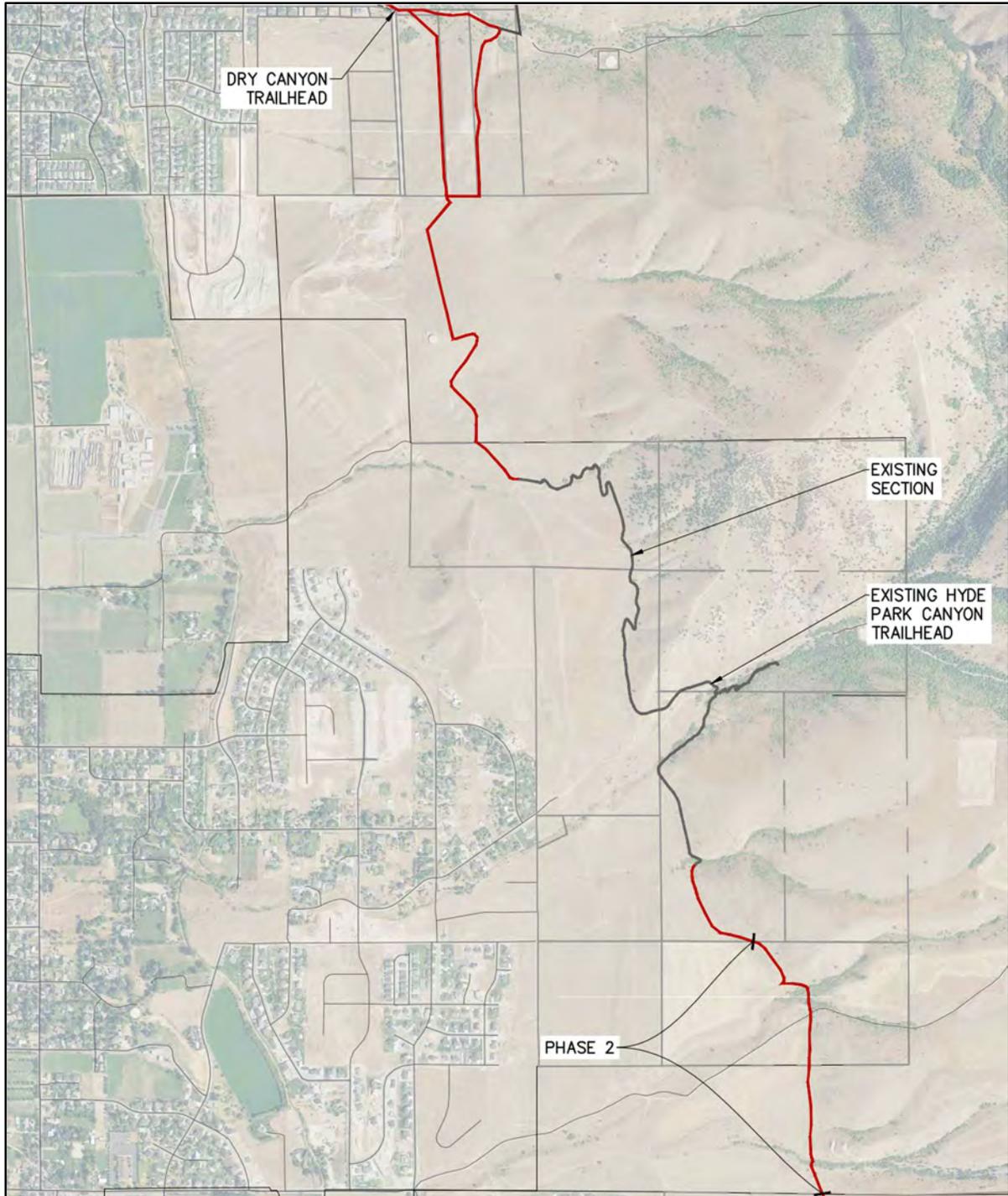


Figure 7 Phase 1A – Hyde Park City (2025)

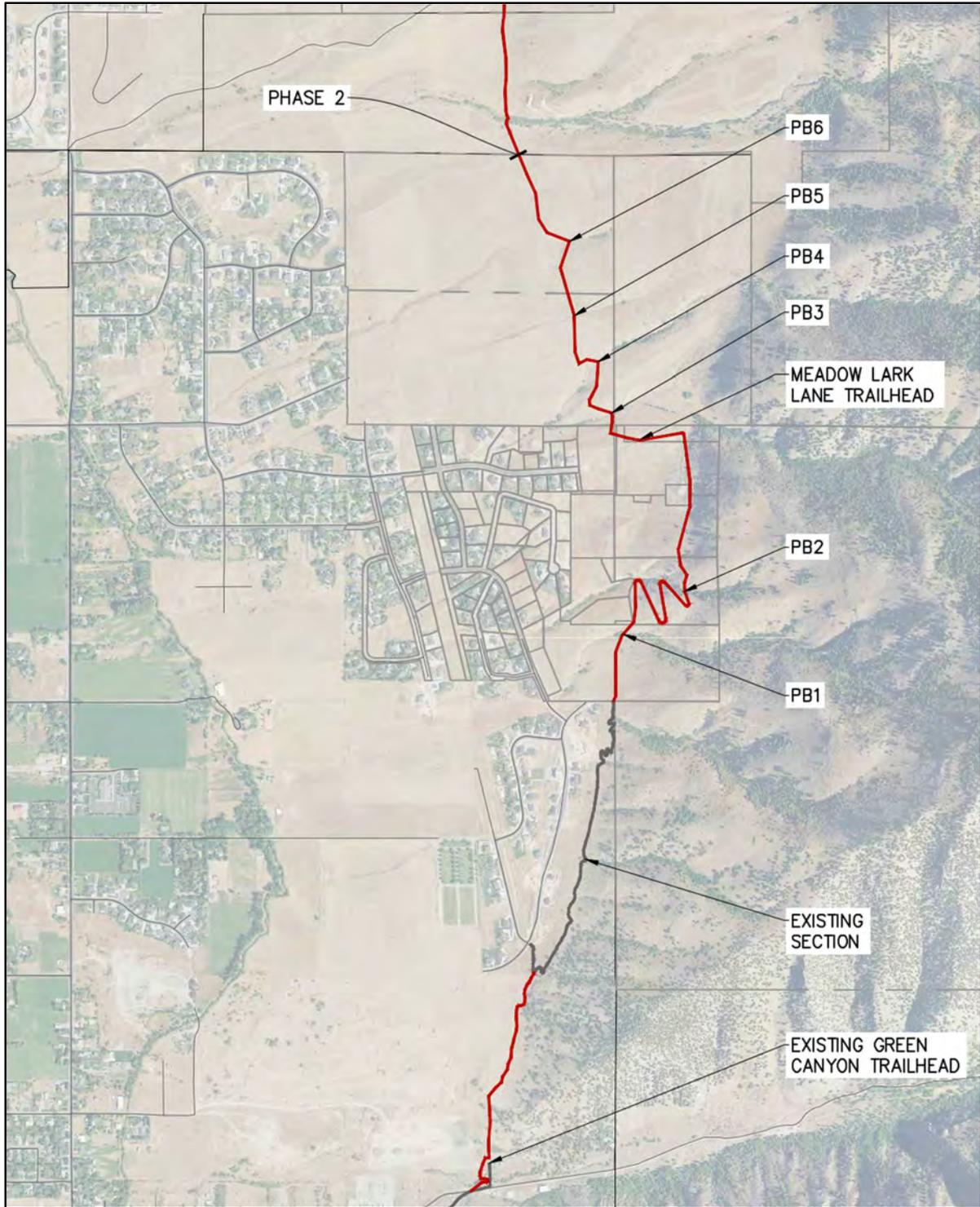


Figure 8 Phase 1B – North Logan City (2025)

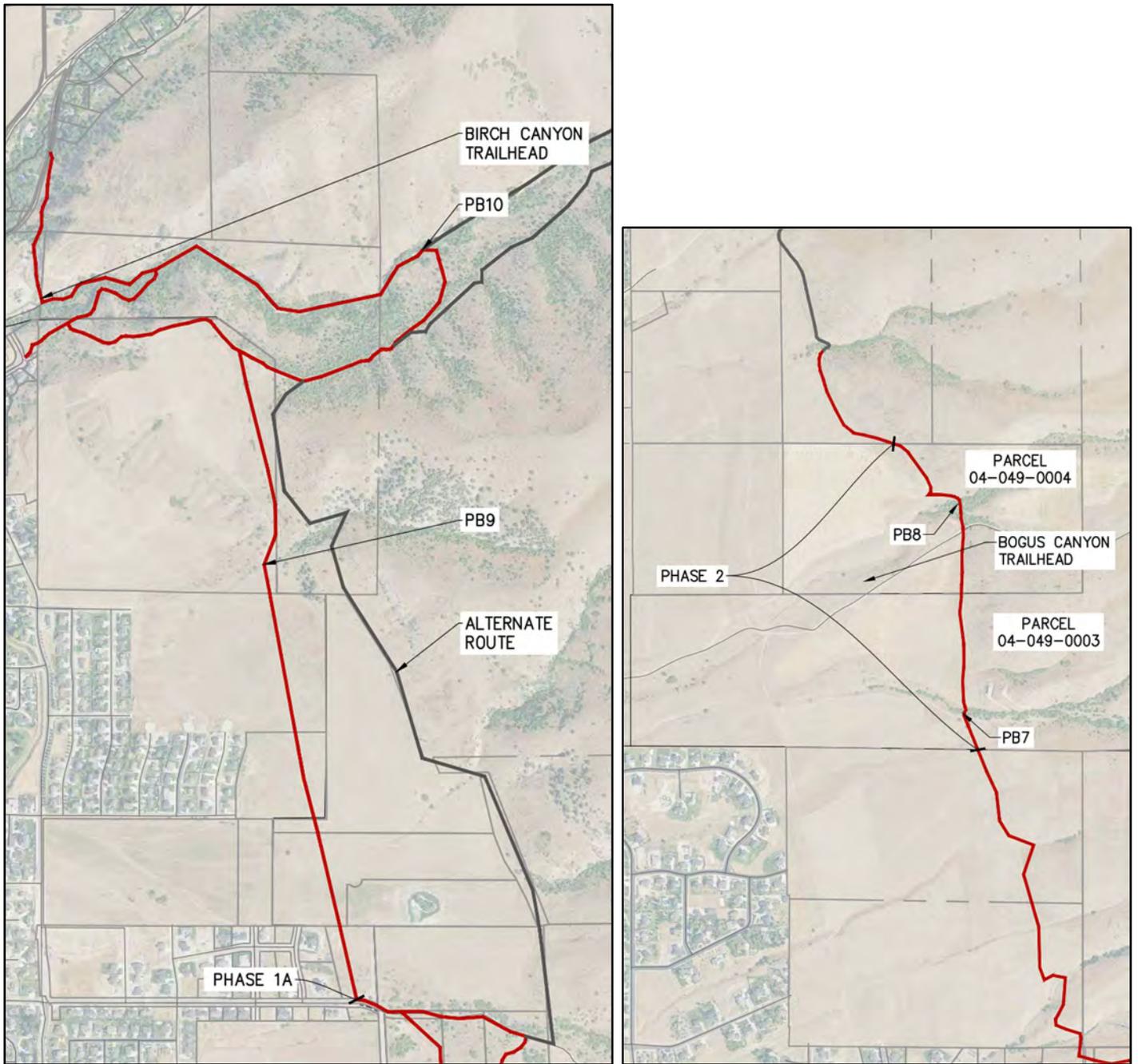


Figure 9 Phase 2 – Smithfield City (2026)

## 2.0 PROJECT BUDGET

### 2.1 Project Cost

The cost for this alignment is detailed by phase, each of which includes unique physical barriers and designated trailheads. For cost estimation, each phase is divided into approximately 2,000-foot segments, allowing for slope calculations relevant to construction. The cross-slopes of each segment of the alignment were then measured using LiDAR data to determine its average slope. Refer to Figure 10 below for the breakdown of the anticipated cross slope intensities along the proposed alignment. Higher slope gradients are projected to increase construction costs.

For the purpose of estimating the cost of acquiring land for the BST, approximate market value data for each affected parcel was collected. The estimated length of BST through each parcel was then multiplied by 20-ft to approximate the required area for the BST corridor. Due to the high-level nature of this report, the full value of the affected land was utilized. See Table 3 for a land acquisition cost summary.

It is expected that as the trail alignment joins on to existing roadway alignments, the trail will follow along the existing road shoulder or sidewalk, therefore these sections of trail were excluded from cost estimations. Figures 11 through 14 illustrate the trailhead concepts used for cost estimation, and Figure 15 displays the typical trail cross-section utilized for quantity calculations. All trailheads follow a similar layout, with the exception of the Birch Creek Trailhead Concept. This trailhead is expected to have a restroom and fencing installed around its parking area, offsetting it from the other proposed trailheads.

Each physical barrier the trail alignment encountered was transferred over to StreamStats for the sizing of each culvert. From the U.S. Geological Survey (USGS) website, "StreamStats is a USGS web application that provides streamflow statistics, such as the 1-percent annual exceedance probability peak flow, the mean flow, and the 7-day, 10-year low flow, to the public through a map-based user interface". See Appendix C for culvert sizing calculations, given the minimum allowed culvert size used is 18". A diagram showing a typical physical barrier crossing can be seen below in Figure 16. For Physical Barrier 10 - Birch Creek Crossing, it is proposed to utilize a pedestrian bridge to cross over given the potential for high flows in Birch Creek, please see Appendix C.

Table 3 Property Acquisition Cost Summary							
Location	Acreage	Parcel	Estimated Market Value	\$/Ac	Length (lf)	Area (ac)	Price
HPC	160.00	04-001-0002	\$327,000	\$3,000	1200	0.54	\$ 2,000
HPC	80.00	04-001-0001	\$164,000	\$3,000	600	0.27	\$ 1,000
CC	158.87	08-124-0007	\$649,000	\$5,000	3600	1.65	\$ 9,000
CC	22.50	08-124-0004	\$97,000	\$5,000	1900	0.87	\$ 5,000
CC	19.60	08-124-0002	\$100,000	\$6,000	2200	0.96	\$ 6,000
						Subtotal	\$ 23,000
						Contingency (12%)	\$ 3,000
						<b>Phase 1A Subtotal</b>	<b>\$ 26,000</b>
NLC	0.00	05-004-0004	\$0	\$0	400	0.18	\$ -
NLC	3.01	05-004-0002	\$377,000	\$126,000	200	0.06	\$ 9,000
NLC	2.58	05-004-0011	\$323,000	\$126,000	300	0.12	\$ 15,000
NLC	28.25	18-006-0004	\$674,000	\$24,000	1100	0.46	\$ 12,000
NLC	15.23	18-006-0005	\$285,000	\$19,000	700	0.32	\$ 7,000
NLC	15.38	18-006-0001	\$270,000	\$18,000	700	0.31	\$ 6,000
NLC	9.29	18-006-0003	\$259,000	\$28,000	700	0.32	\$ 9,000
NLC	5.47	04-050-0049	\$575,000	\$106,000	200	0.06	\$ 7,000
NLC	75.03	04-049-0008	\$2,627,000	\$36,000	1700	0.77	\$ 28,000
NLC	78.84	04-049-0007	\$2,760,000	\$36,000	1600	0.72	\$ 27,000
						Subtotal	\$ 120,000
						Contingency (12%)	\$ 15,000
						<b>Phase 1B Subtotal</b>	<b>\$ 135,000</b>
CC	120.00	04-049-0003	\$481,000	\$5,000	1500	0.64	\$ 4,000
HPC	80.00	04-049-0004	\$245,000	\$4,000	1700	0.78	\$ 4,000
SC	4.85	08-207-0012	\$122,000	\$26,000	600	0.27	\$ 7,000
CC	20.24	08-047-0006	\$98,000	\$5,000	800	0.35	\$ 2,000
CC	31.83	08-048-0011	\$137,000	\$5,000	200	0.05	\$ 1,000
SC	9.78	08-048-0014	\$1,467,000	\$150,000	700	0.32	\$ 49,000
SC	11.13	08-048-0010	\$1,002,000	\$91,000	1200	0.51	\$ 47,000
SC	85.97	08-048-0001	\$3,898,000	\$46,000	4200	1.92	\$ 89,000
CC	74.03	08-048-0022	\$318,000	\$5,000	1800	0.82	\$ 5,000
CC	40.40	08-045-0016	\$303,000	\$8,000	700	0.29	\$ 3,000
CC	215.57	08-047-0001	\$396,000	\$2,000	1200	0.53	\$ 2,000
NLC=North Logan City; CC=Cache County; HPC=Hyde Park City; SC=Smithfield City						Subtotal	\$ 213,000
NOTE: All numbers listed above are approximations only for the purposes of estimating cost within this study. These numbers are subject to change in the years following this study and are not intended to be used for or during easement and land purchase negotiations.						Contingency (12%)	\$ 26,000
						<b>Phase 2 Subtotal</b>	<b>\$239,000</b>
						<b>Project Total</b>	<b>\$400,000</b>

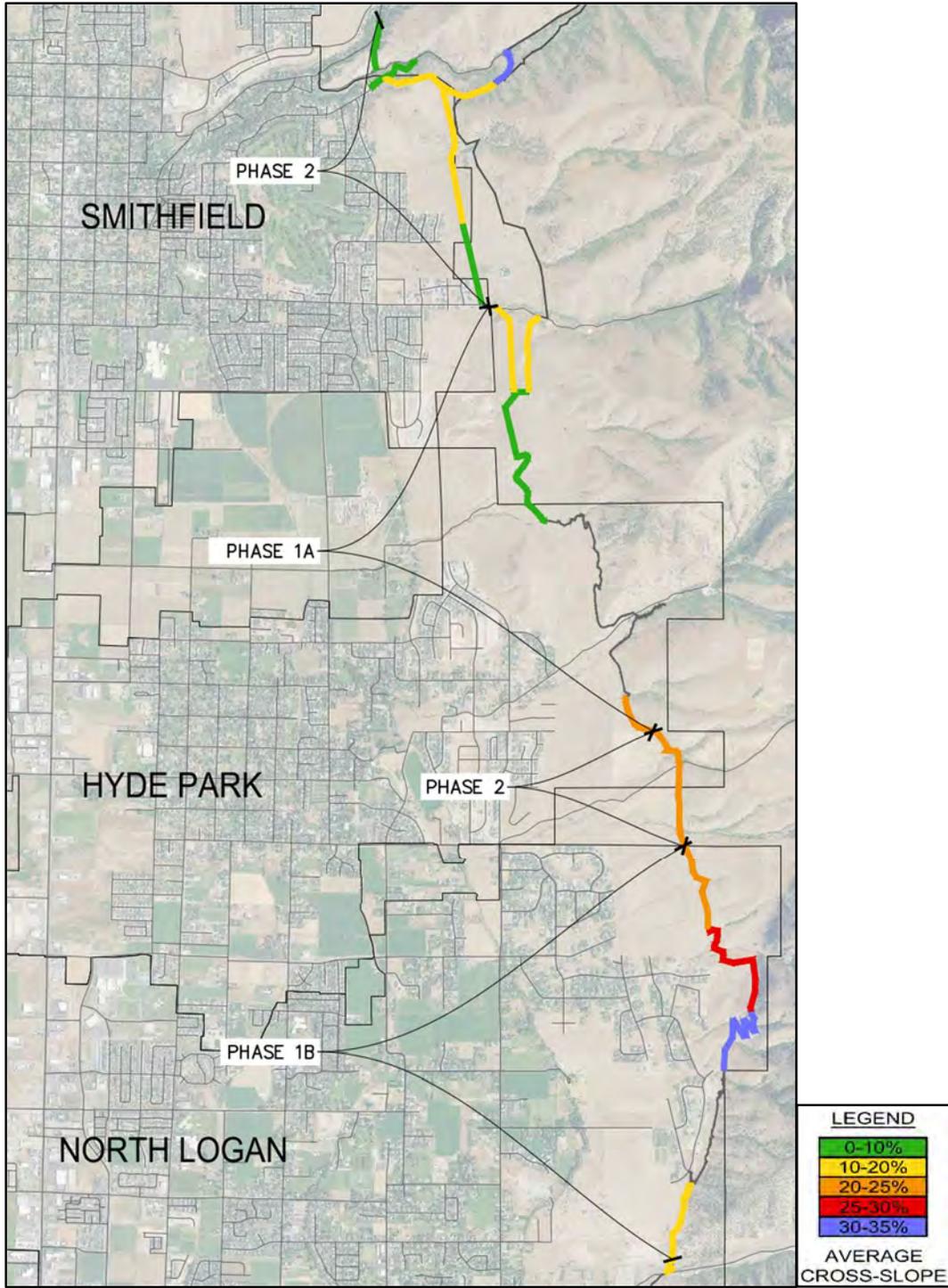


Figure 10 Cross Slope Intensity Map

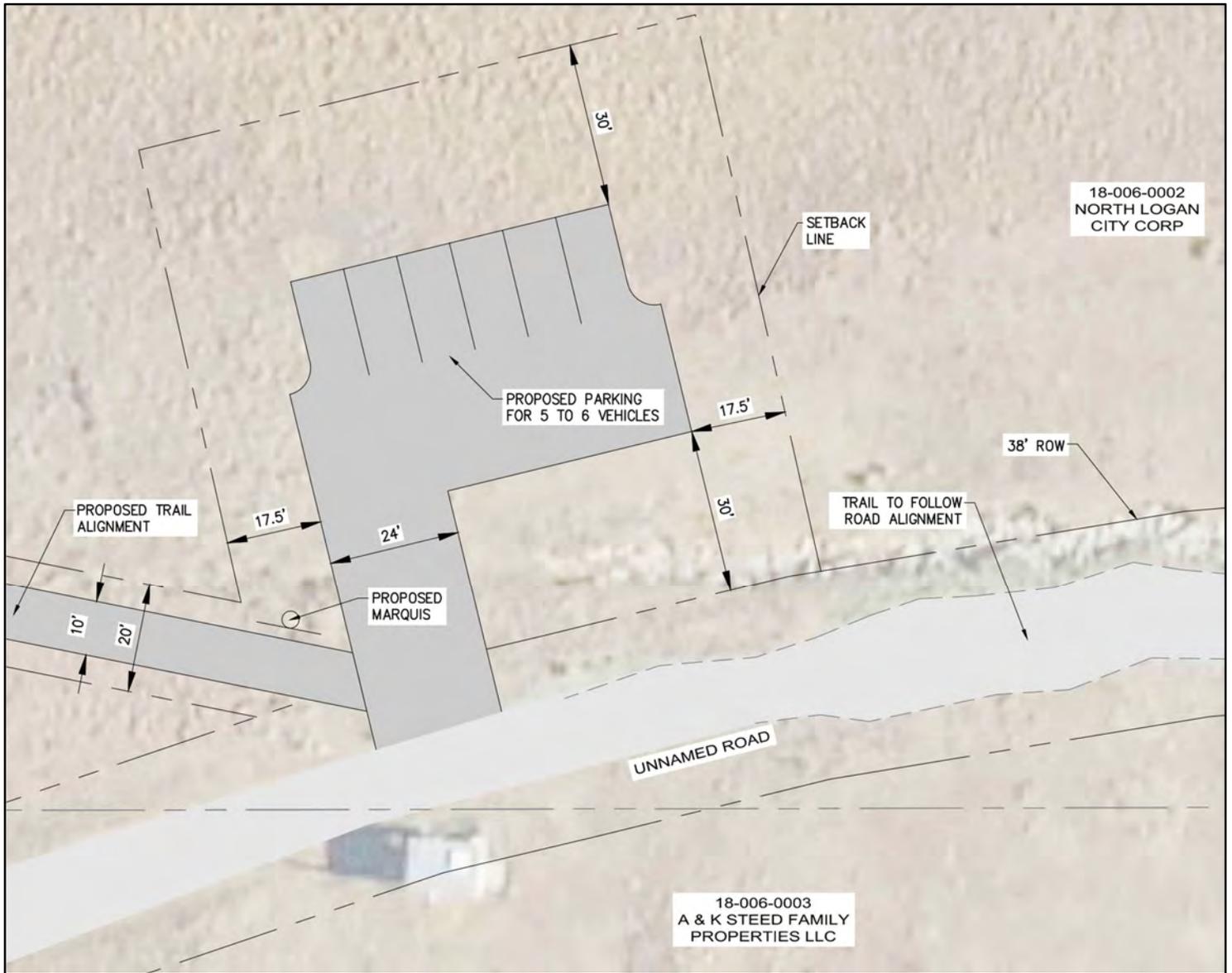


Figure 11 Meadow Lark Lane Trailhead Concept



Figure 12 Bogus Canyon Trailhead Concept

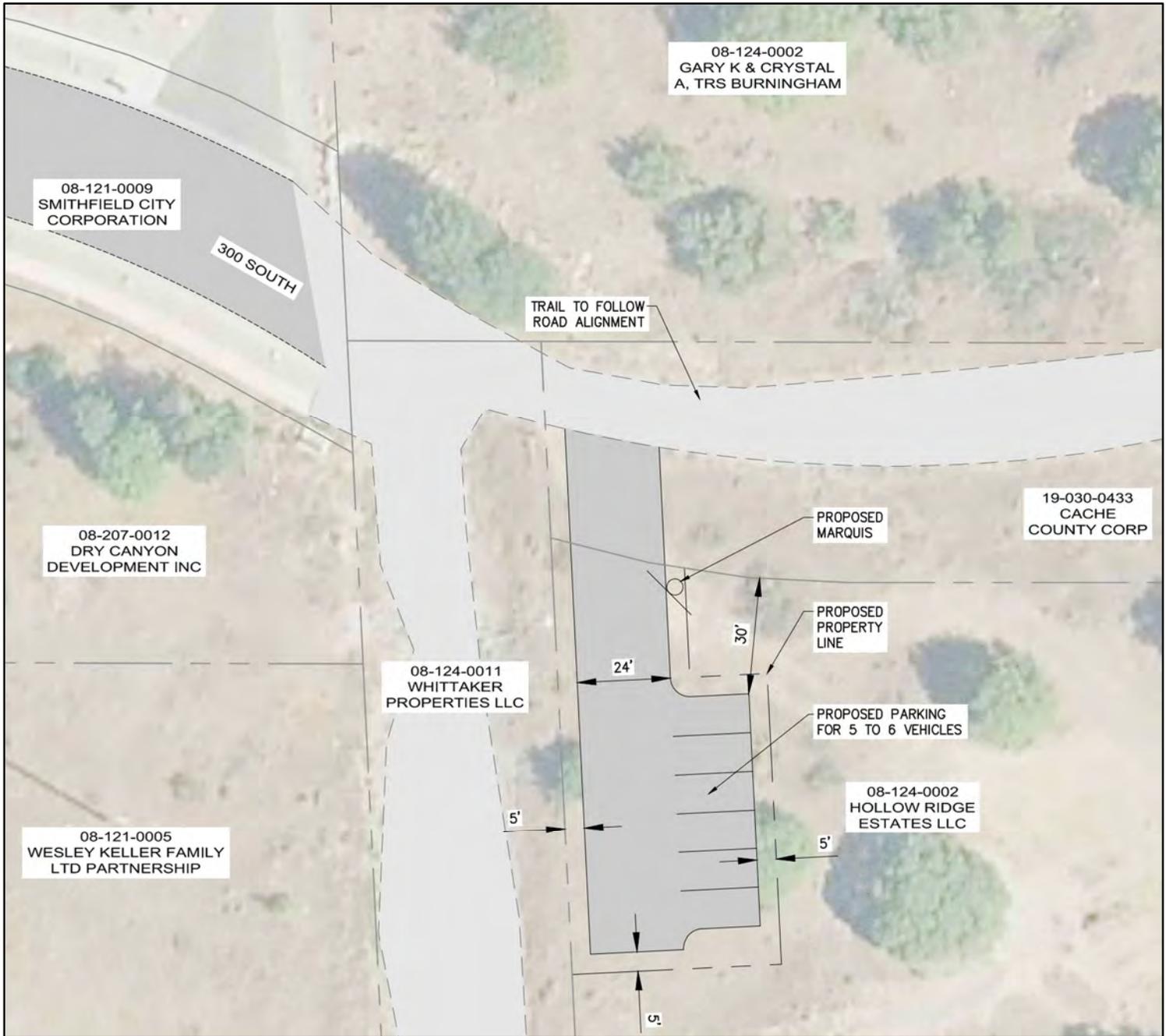


Figure 13 Dry Canyon Trailhead Concept

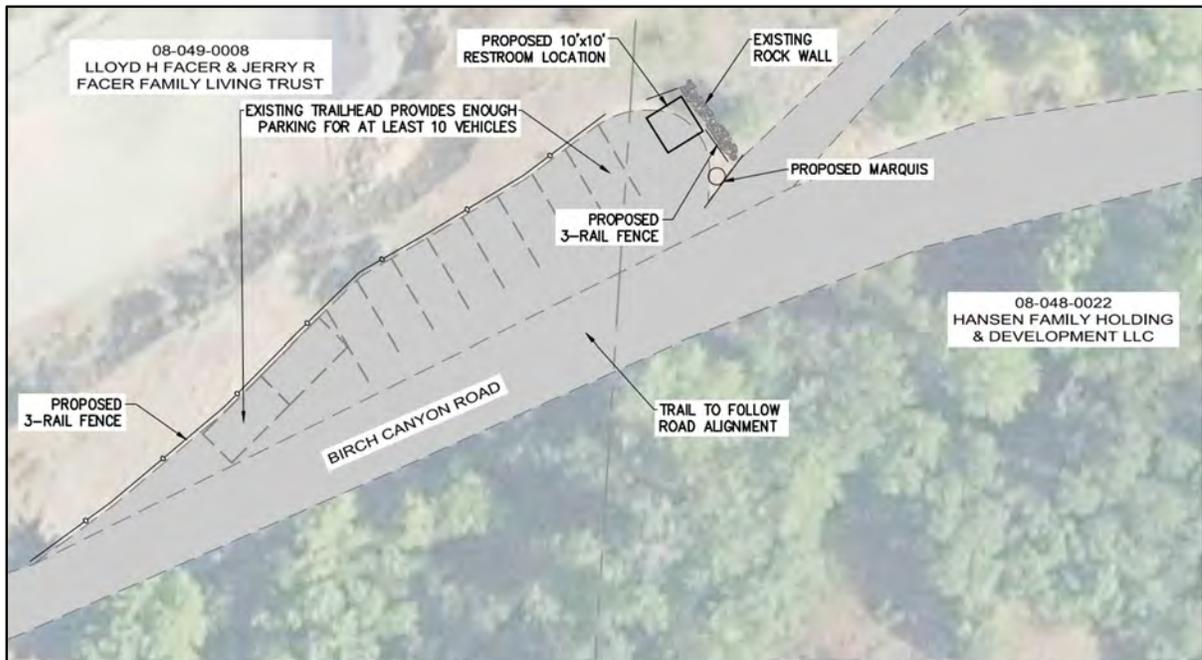


Figure 14 Birch Canyon Trailhead Concept

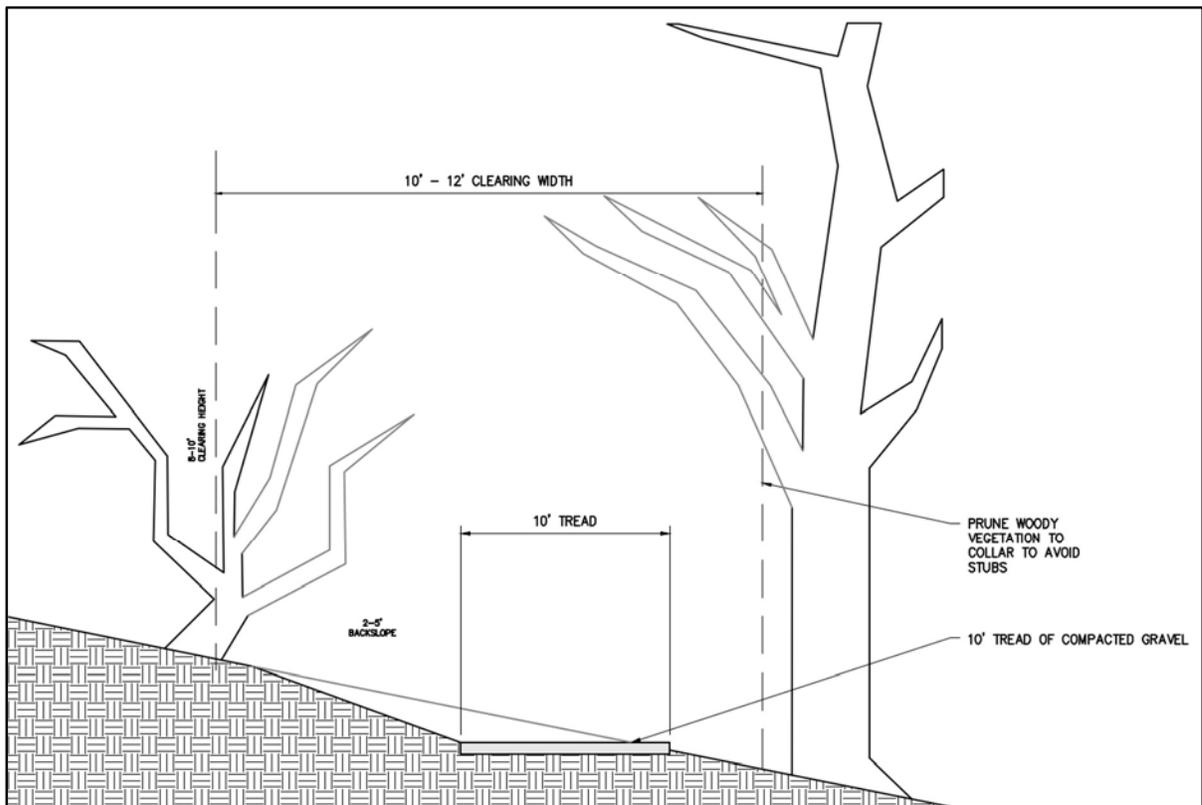


Figure 15 Typical Trail Cross-Section (20' Corridor)

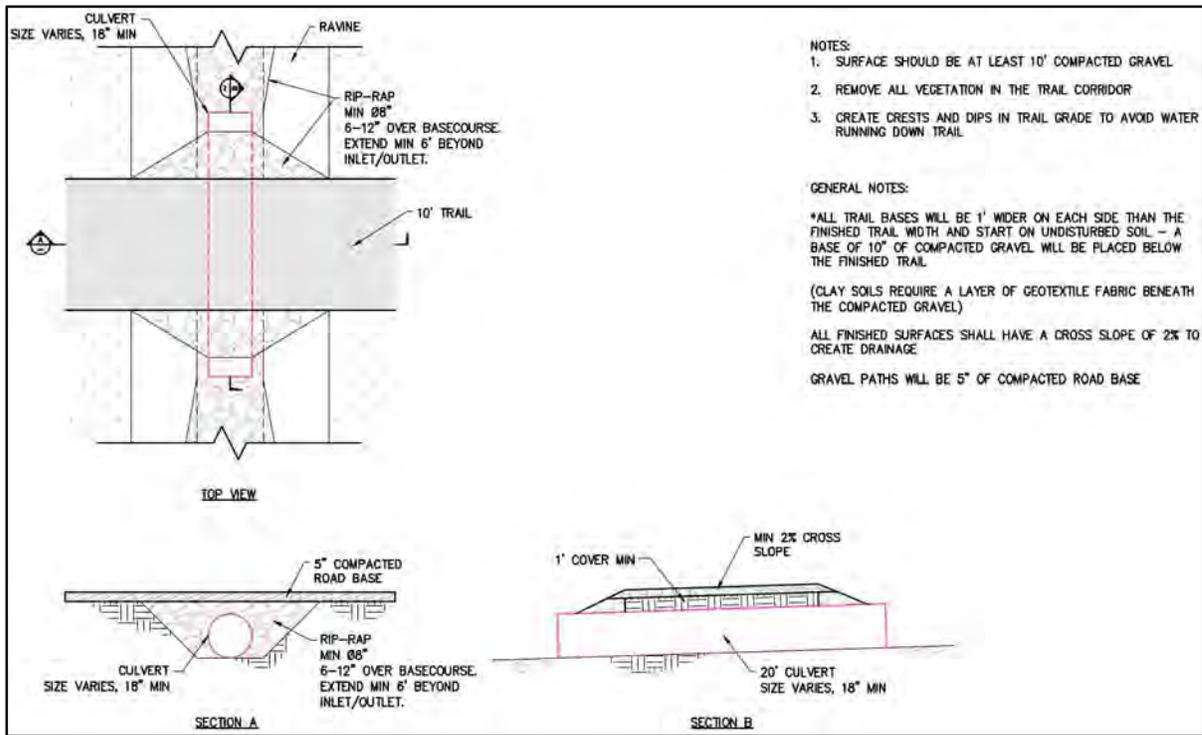


Figure 16 Typical Physical Barrier Crossing Detail

Table 4 below shows the cost summary for this study, and Table 5 presents the costs covered by alternate funding sources. Cache County is funding the cost of this alignment study and expects to cover the expenses related to easement and property acquisition through an Open Space Bond. The County, in conjunction with the associated Cities, is seeking funding to cover potential water line improvements requested through coordination with the property owners affected by the alignment, which would benefit both the property owners and the associated municipalities. The complete Engineer’s Opinion of Probable Cost (EOPC) is provided in Appendix B.

Table 4 Cost Summary	
	<b>EOPC</b>
Phase 1A	\$580,000
Phase 1B	\$765,000
Phase 2	\$1,215,000
<b>Total Project Cost</b>	<b>\$2,560,000</b>

Table 5 Other Funding Sources	
	<b>Realized Costs</b>
Completed North Logan BST Work	\$455,000
Completed Hyde Park BST Work	\$384,000
Completed BST Alignment Study 2024	\$50,000
	<b>EOPC</b>
Hyde Park Water Line Relocation	\$330,000
Smithfield Water Line Extension	\$290,000
Land/Easement Acquisition	\$400,000
<b>Other Sources Total</b>	<b>\$1,509,000</b>

### 3.0 CONCLUDING REMARKS

#### 3.1 Conclusion

The 2024 Bonneville Shoreline Trail Alignment Study establishes a recommended alignment for the BST that not only capitalizes on the scenic potential of Cache Valley but also addresses practical considerations for future development. The proposed alignment reflects the current vision for the trail; however, as Utah continues to grow, adjustments may be necessary to align with shifting population needs and land use changes. This document should serve as a strategic guide for planners, leading them through the following steps. The attached appendices provide additional context and resources, including the Memorandum of Understandings (MOUs) from participating property owners, the Engineer's Opinion of Probable Cost (EOPC), the StreamStats Culvert Sizing Calculations, and detailed maps and exhibits to support the alignment outlined in this study.

Appendix A  
Signed Memorandum of Understandings



Cache Valley Office  
2100 North Main Street, North Logan, Utah 84341 | TEL 435.563.3734

### Memorandum of Understanding

Between:  
John W & Suzanne P Winn  
Parcel: 08-045-0016, Located in Cache County, Utah

And:  
Cache County  
Development Services  
179 N Main St #305, Logan, UT 84321

#### I. PURPOSE

This Memorandum of Understanding (MOU) is between John W & Suzanne P Winn (hereinafter referred to as the "Property Owner") and Cache County (hereinafter referred to as the "County") to establish a cooperative relationship that supports the County's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

#### II. BACKGROUND

Cache County is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the County. As part of this initiative, the County is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

#### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the County in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the County, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

#### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

John W & Suzanne P Winn  
Property Owner

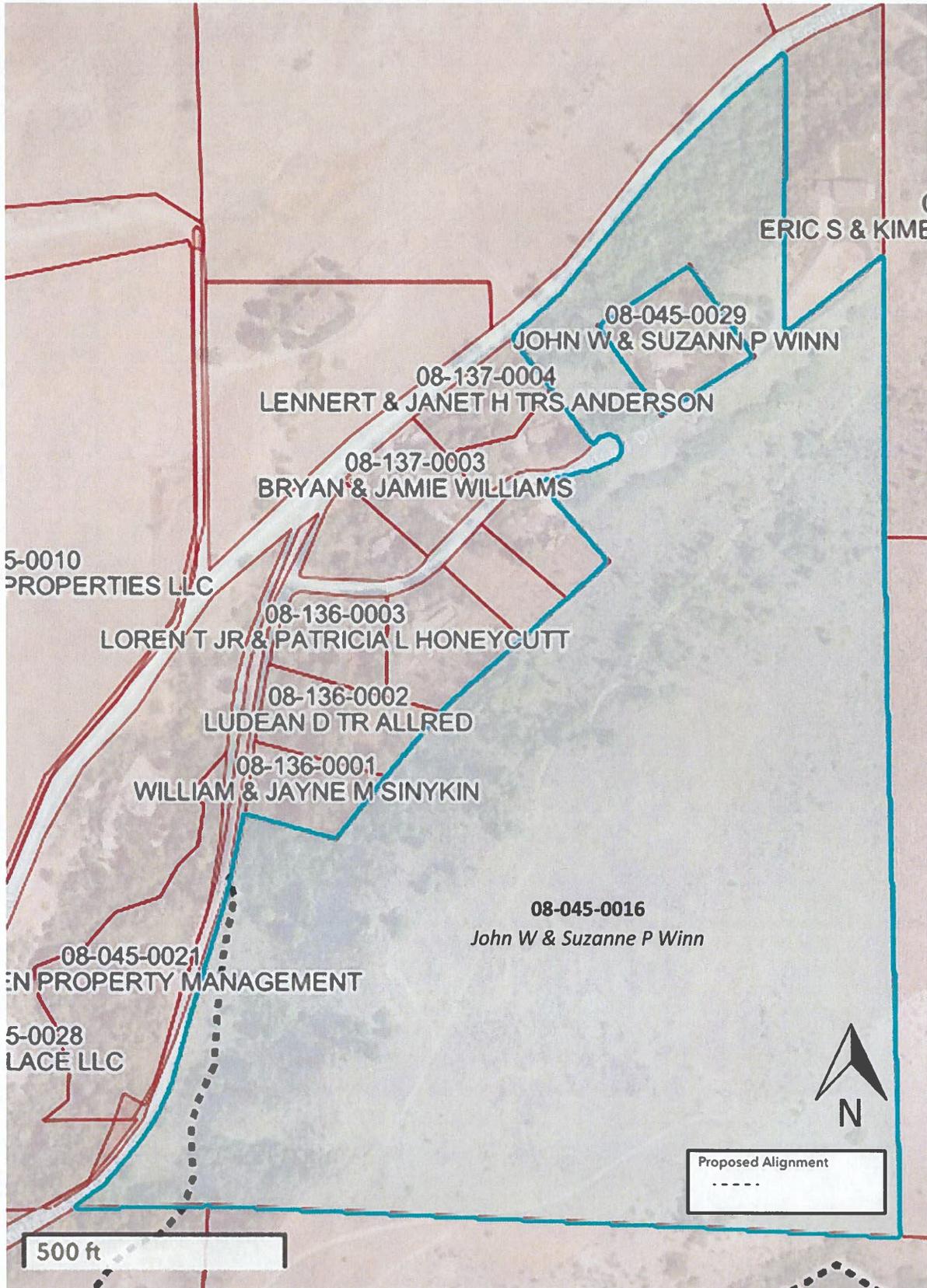
Scott Archibald, P.E.  
Authorized Cache County Representative,  
Sunrise Engineering  
10/1/2024

Date: 10-16-2024

Print Name: John W. Winn

Signature: [Handwritten Signature]

[Handwritten Signature]





## Memorandum of Understanding

Between:

Hansen Family Holding & Development, LLC  
Parcel: 08-048-0001, Located in Smithfield, Utah

And:

Smithfield City  
96 S Main, Smithfield, Utah

### I. PURPOSE

This Memorandum of Understanding (MOU) is between Hansen Family Holding & Development, LLC (hereinafter referred to as the "Property Owner") and Smithfield City (hereinafter referred to as the "City") to establish a cooperative relationship that supports the City's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

### II. BACKGROUND

Smithfield City is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the City. As part of this initiative, the City is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the City in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the City, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

Hansen Family Holding & Development, LLC  
Property Owner

Scott Archibald, P.E.  
Authorized Smithfield City  
Representative,  
Sunrise Engineering  
10/2/2024

Date: 11/2/24  
Print Name: Vincent Hansen

Signature: [Handwritten Signature]

[Handwritten Signature]



### Memorandum of Understanding

Between:

And:

Print Name: Sportsmen For Fish & Wildlife

Cache County  
Development Services  
179 N Main St #305, Logan, UT 84321

Parcel(s): 08-124-0004 08-124-0005  
Located in Cache County, Utah

#### I. PURPOSE

This Memorandum of Understanding (MOU) is between the above listed landowner (hereinafter referred to as the "Property Owner") and Cache County (hereinafter referred to as the "County") to establish a cooperative relationship that supports the County's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

#### II. BACKGROUND

Cache County is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the County. As part of this initiative, the County is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

#### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the County in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the County, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

#### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

Property Owner

Scott Archibald, P.E.  
Authorized Cache County Representative,  
Sunrise Engineering  
10/15/2024

Date: 11/05/2024

Signature: [Handwritten Signature]

[Handwritten Signature]

**LETTER OF SUPPORT: BONNEVILLE SHORELINE TRAIL THROUGH SPORTSMAN FOR FISH AND WILDLIFE PROPERTY, SMITHFIELD, UT**

---

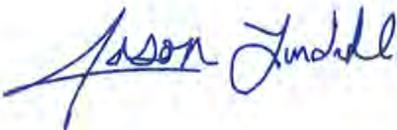
To Whom it May Concern,

Sportsmen for Fish and Wildlife own and manage 22 acres at the mouth of Smithfield Dry Canyon, utilized as elk wintering habitat and an informal shooting range and trailhead. We are committed to working with Smithfield City and the Trails Cache to permit an easement for the Bonneville Shoreline Trail on our property, provided the easement recognizes seasonal closures to promote winter habitat for deer and elk.

The Bonneville Shoreline Trail, aside from providing excellent health and recreation benefits to the community at large, will directly benefit our property by providing connections for outdoorsmen to connect to canyons to the north and south, as well as providing incentive for public/private partnerships to improve our property's parking, maintenance and beautiful trail network that will eventually connect to additional opportunities in Logan Canyon, Green Canyon, Birch Canyon, and beyond.

The attached map indicates our property's location in relation to the prioritized Bonneville Shoreline Trail as planned between Green Canyon and Birch Canyon. I hope that my neighbors along this bench will see the inherent value in committing to this trail, and welcome any questions that you may have for me on this project.

Sincerely,



**Jason Lundahl**

Logan Chapter Chairman, Sportsmen for Fish and Wildlife

435.994.1935

[jason@lundahlbuilding.com](mailto:jason@lundahlbuilding.com)

*Page 1 of 1*



## Memorandum of Understanding

Between:

Joseph Dewain & Barbara F Berger Family Living Trust  
Parcel: 08-124-0007, Located in Cache County, Utah

And:

Cache County  
Development Services  
179 N Main St #305, Logan, UT 84321

### I. PURPOSE

This Memorandum of Understanding (MOU) is between Joseph Dewain & Barbara F Berger Family Living Trust (hereinafter referred to as the "Property Owner") and Cache County (hereinafter referred to as the "County") to establish a cooperative relationship that supports the County's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

### II. BACKGROUND

Cache County is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the County. As part of this initiative, the County is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the County in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the County, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

Joseph Dewain & Barbara F Berger  
Family Living Trust  
Property Owner

Scott Archibald, P.E.  
Authorized Cache County Representative,  
Sunrise Engineering  
10/1/2024

Date: 10-14-2024

Print Name: Gary D. Berger

Signature: Gary D. Berger

Sunrise Engineering: Consulting

Dry farm public access trail proposal above Hyde Park. Parcel: 08-124-0007

As we have stated there are some concerns and we do have some reservations about allowing the public onto the property.

1. Trespass off the trail
2. Liability off the trail
3. ATV and motorcycle activity
4. Seasonal closure associated with the deer hunting season
5. Livestock access needs to be restricted
6. Unleashed pets chasing wildlife
7. Ability to reconfigure/move the trail to facilitate future development of roads, infrastructure and building lots outside of the electrical corridor. Or
8. Accommodations for trail/public crossing roads that may cross that electrical corridor in the future
9. Support for future annexation into Hyde Park and Smithfield City

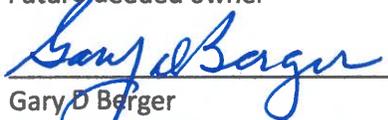
This can be discussed more in the future.

For now the MOU is signed to help with your application for the grant.



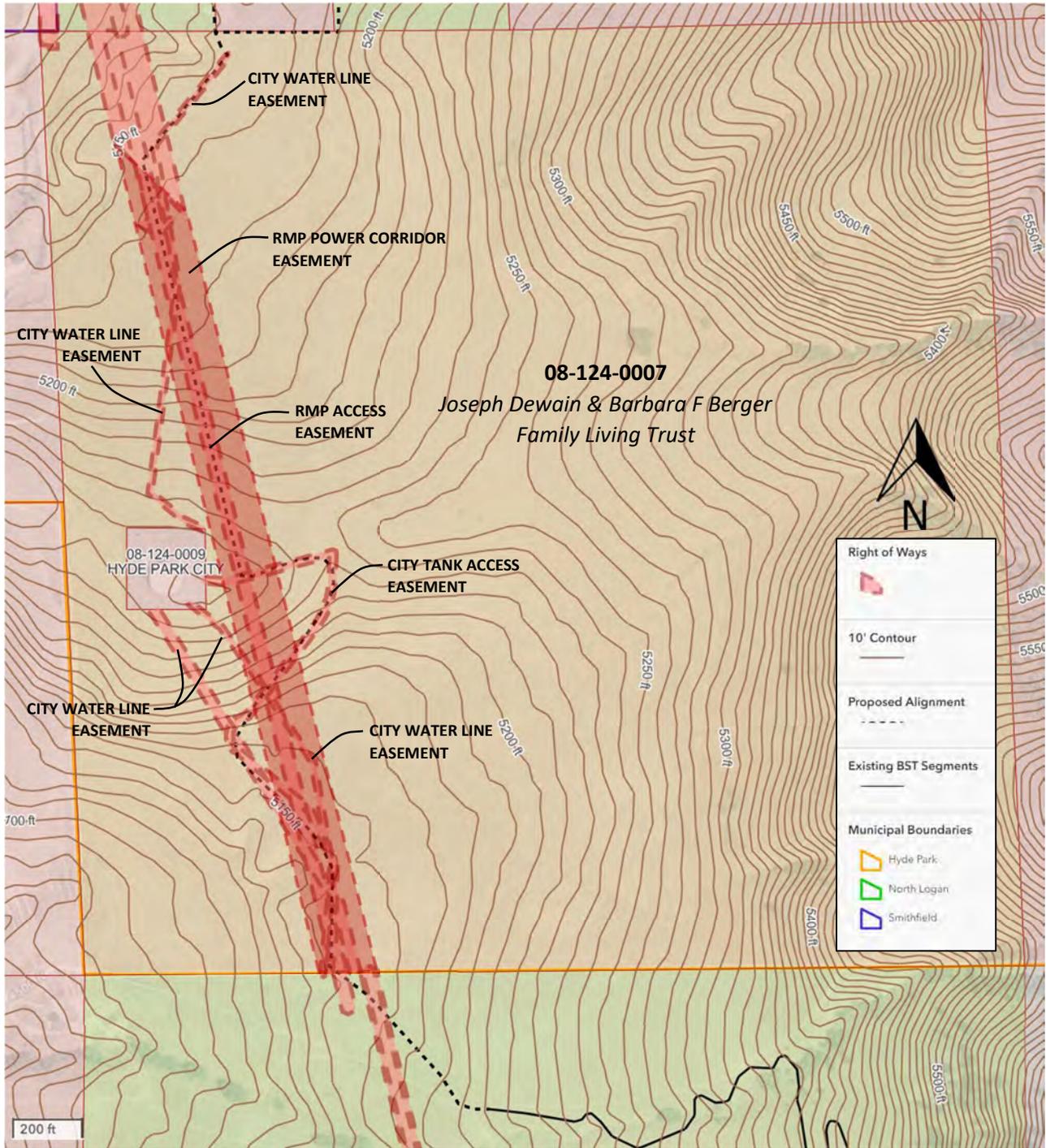
Date 10-14-2024

Randy F Berger  
Future deeded owner



Date 10-14-2024

Gary D Berger  
Successor trustee





## Memorandum of Understanding

**Between:**

Trigger Enterprises, LLC  
Parcels: 04-001-0001 & 04-001-0002,  
Located in Hyde Park, Utah

**And:**

Hyde Park City  
113 E Center St, Hyde Park, Utah

### I. PURPOSE

This Memorandum of Understanding (MOU) is between Trigger Enterprises, LLC (hereinafter referred to as the "Property Owner") and Hyde Park City (hereinafter referred to as the "City") to establish a cooperative relationship that supports the City's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

### II. BACKGROUND

Hyde Park City is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the City. As part of this initiative, the City is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the City in their objective to establish a trails easement on their property. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the City, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

Trigger Enterprises, LLC  
Property Owner

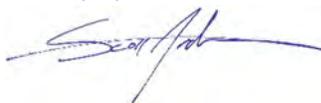
Date: 10/15/2024

Print Name: Alex Bearson

Signature: 

Scott Archibald, P.E.  
Authorized Hyde Park City Representative,  
Sunrise Engineering

10/15/2024



## **DEVELOPMENT SERVICES AGREEMENT**

THIS DEVELOPMENT SERVICES AGREEMENT (“Agreement”) is made and entered into this 29 day of March, 2023, by and between TRIGGER ENTERPRISES, LLC, a Utah limited liability Developer, whose principal place of business is \_\_\_\_\_ (hereinafter referred to as “Developer”) and HYDE PARK CITY, a Utah municipal corporation (hereinafter referred to as “City”) and is based upon the following.

### **RECITALS:**

A. Developer is organized under the laws of the State of Utah and is engaged in the ownership and development of real property, the ‘Trigger-Nixon’ development including, but not limited to the property identified as parcels 08-123-0003, 04-003-0001, 08-123-0004, 04-003-0002, 04-001-0001, 04-001-0002, 04-001-0005, and 04-001-0002 (the “Development”).

B. City is desirous of receiving title to property, within the Development, for a parking area (of approximately .4 acres) and a designated walking/hiking/biking trail (the “Trail”). Both the parking area and the Trail are to be improved by or under the direction of the City, for the designated purposes.

C. The City has received or anticipates the receipt of approximately \$70,000.00 from the State of Utah for the development of Trail.

D. The City and Developer have agreed to cooperate with each other in regards to the Development, the parking area, and the Trail.

NOW, THEREFORE, in consideration of the mutual promises hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Developer and the City agree as follows:

### **ARTICLE I.**

#### **DUTIES AND OBLIGATIONS OF THE PARTIES**

1.01. **The Developer.** The Developer agrees as follows:

A. Developer shall dedicate and transfer to City fee title for the parking area and the Trail, as agreed;

B. Developer shall coordinate with the City and manage the improvement of the Trail; and

C. Developer shall grant public easements to allow for the public to access the Trail and parking area, in concert with the development and improvement of the Development. The

details of such grant shall be coordinated between Developer and the City at the time of Development

D. Developer agrees to designate a temporary parking easement equivalent to the .40 acres, to be maintained by Hyde Park city, directly off of canyon road to facilitate parking for trail access. This temporary easement shall continue until the improved parking area and Trail are accessible to the public, at which time Developer may terminate the easement.

E. Developer agrees to dedicate a temporary trail easement adjoining the temporary parking easement and connected to the new trail dedication. This temporary easement shall continue until the improved parking area and Trail are accessible to the public, at which time Developer may terminate the easement.

F. Both parties agree not to utilize the parking area for parking, storage, or otherwise, until completion of the development phase directly adjacent to the dedicated land.

1.02. The City. The City agrees as follows:

A. The City will utilize the grant monies (estimated to be approximately \$70,000.0) from received from the State of Utah in the development and improvement of the Trail;

B. In considering Developer's future land use applications regarding the Development, the City will include the acreage underlying the Trail corridor and parking area, when considering acreage and density requirements for the Development.

## ARTICLE VII.

### MISCELLANEOUS

2.01. Rights and Obligations of Successors. This Agreement shall be assignable and transferable by the Developer to any subsidiary or affiliate of the Developer and shall inure to the benefit of and be binding upon the City, its agents and employees. Any assignee or transferee of Developer who accepts the rights and benefits set forth herein shall also be bound by all obligations set forth herein. As to the City, however, its rights and obligations hereunder are personal in nature and shall not be transferred or otherwise assigned.

2.02. Remedies. City understands that the Developer would not have any adequate remedy at law for the material breach or threatened breach by it of any one or more of the covenants set forth in this Agreement and agrees that in the event of any such material breach or threatened breach, the Developer may in addition to the other remedies which may be available to it file a suit in equity (without having to give a bond or other security) to enjoin it from the breach or threatened breach of such covenants.

2.03. Waiver. A waiver by any party of any provision hereof, whether in writing or by course of conduct or otherwise, shall be valid only in the instance for which it is given, and shall

not be deemed a continuing waiver of said provision, nor shall it be construed as a waiver of any other provision hereof.

2.04. Paragraph Headings. The paragraph headings of this Agreement are inserted only for convenience and in no way define, limit or describe the scope or intent of this Agreement nor affect its terms and provisions.

2.05. Preparation of Agreement. The parties hereto acknowledge that they have both participated in the preparation of this Agreement and, in the event that any question arises regarding its interpretation, no presumption shall be drawn in favor of or against any party hereto with respect to the drafting hereof.

2.06. Governing Law. This Agreement, and all matters relating hereto, including any matter or dispute arising out of the Agreement, shall be interpreted, governed, and enforced according to the laws of the State of Utah, and the parties hereto consent to the jurisdiction of any appropriate court in the State of Utah to resolve such disputes.

2.07. Amendments. This Agreement may be amended at any time upon unanimous agreement of the parties hereto, which amendment(s) must be reduced to writing and signed by all parties in order to become effective.

2.08. Indemnification. City agrees to indemnify, hold harmless and defend Developer, together with its officers, directors and employees, from and against any and all actions, suits, claims and other obligations and expenses, including reasonable attorney's fees and costs, arising out of or connected with (i) any action, claim or proceeding for injuries occurring upon the parking area or Trail, or (ii) any actions that may arise from alleged negligent acts or omission of the City, provided that the City shall not be liable for any action, claim, damage, injury, or loss caused by or arising out of the actions of third parties, who are not agents or representatives of the City, who leave the designated Trail and parking area or otherwise trespass upon Developer's property.

2.09. Entire Agreement. This Agreement constitutes and represents the entire agreement of the parties hereto with respect to the subject matter hereof, and all other prior agreements, covenants, promises and conditions, verbal or written, between these parties are incorporated herein. No party hereto has relied upon any other promise, representation or warranty, other than those contained herein, in executing this Agreement.

2.10. Further Instruments. The parties hereto agree that they will execute any and all other documents or legal instruments that may be necessary or required to carry out and effectuate all of the provisions hereof.

2.11. Attorney's Fees. In the event that any party hereto shall be in default or breach of this Agreement, said party shall be liable to pay all reasonable attorney's fees, court costs and other related collection costs and expenses incurred by the non-defaulting or non-breaching party in prosecuting its rights hereunder.

2.12 Development Rights. The City agrees to work with Developer in good faith on any future land use application. However, the execution of this Agreement alone does not constitute the approval of any land use application or land use regulation, neither does it create any vested development rights other than the density calculation authorized by Section 1.02.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

**DEVELOPER:**

TRIGGER ENTERPRISES, LLC

Date: \_\_\_\_\_

By \_\_\_\_\_  
Its \_\_\_\_\_

**CITY:**

HYDE PARK CITY

Date: 3/29/2023 \_\_\_\_\_

By  \_\_\_\_\_  
Its Mayor \_\_\_\_\_



## Memorandum of Understanding

Between:  
Poplar Holdings, LLC  
Parcel: 04-049-0008 & 04-049-0007,  
Located in North Logan, Utah

And:  
North Logan City  
2525 N 600 E, North Logan, Utah

### I. PURPOSE

This Memorandum of Understanding (MOU) is between Poplar Holdings, LLC (hereinafter referred to as the "Property Owner") and North Logan City (hereinafter referred to as the "City") to establish a cooperative relationship that supports the City's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

### II. BACKGROUND

North Logan City is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the City. As part of this initiative, the City is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

#### 1. Easement Support:

The Property Owner supports the City in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

#### 2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

#### 3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the City, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

### IV. SIGNATURES

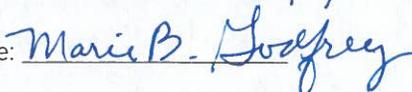
The undersigned have executed this Memorandum of Understanding as of the date indicated below.

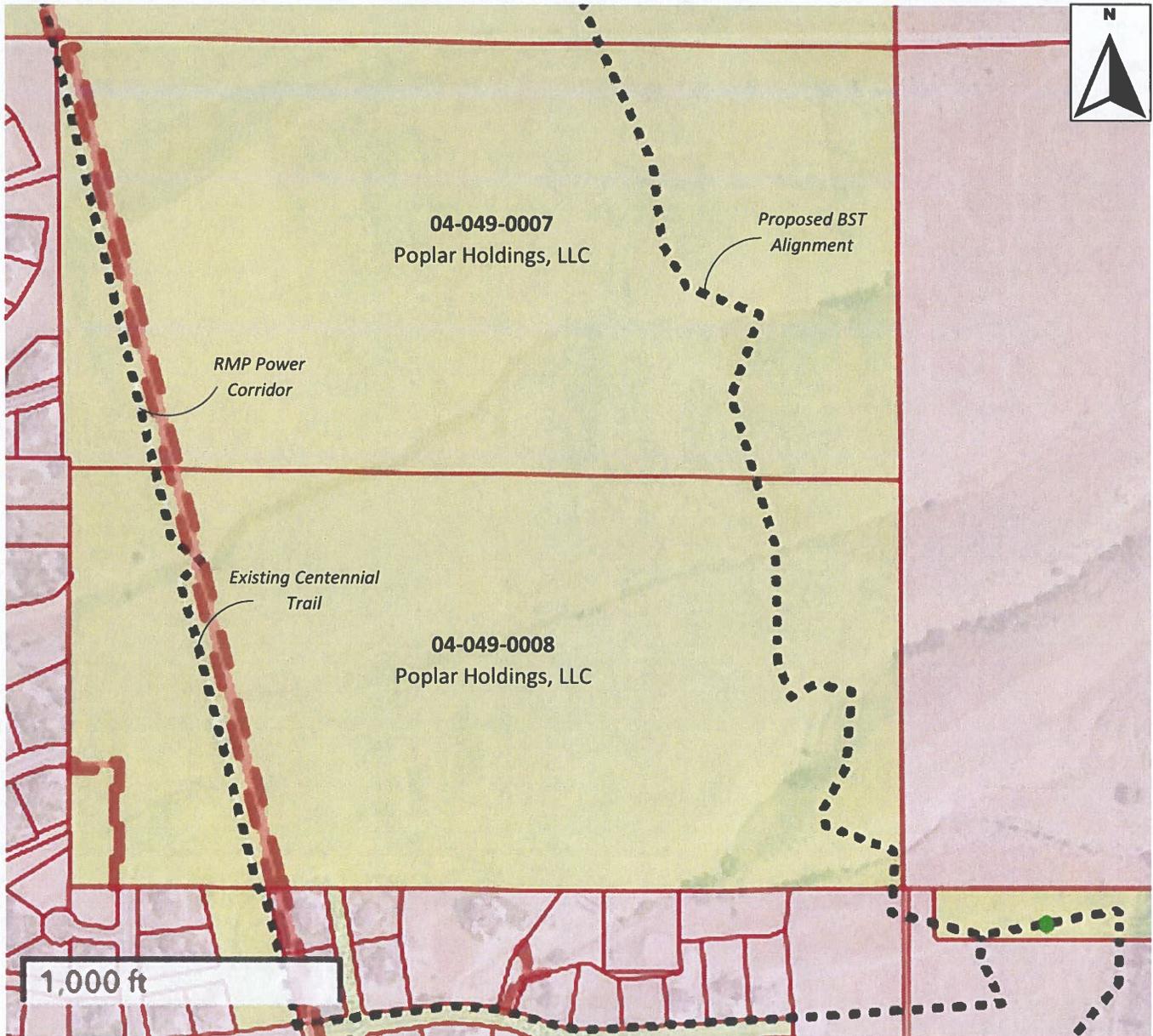
Poplar Holdings, LLC  
Property Owner

Scott Archibald, P.E.  
Authorized North Logan Representative,  
Sunrise Engineering  
10/16/2024

Date: 18 October 2024

Print Name: Marie B. Godfrey 

Signature: Marie B. Godfrey 





### Memorandum of Understanding

Between:  
Utah Power & Light Company  
Parcel: 05-004-0004, Located in North Logan, Utah

And:  
North Logan City  
2525 N 600 E, North Logan, Utah

#### I. PURPOSE

This Memorandum of Understanding (MOU) is between Utah Power & Light Company (hereinafter referred to as the "Property Owner") and North Logan City (hereinafter referred to as the "City") to establish a cooperative relationship that supports the City's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

#### II. BACKGROUND

North Logan City is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the City. As part of this initiative, the City is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

#### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the City in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

*Motorized access only for authorized purposes and RMP authorized access.*

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the City, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

#### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

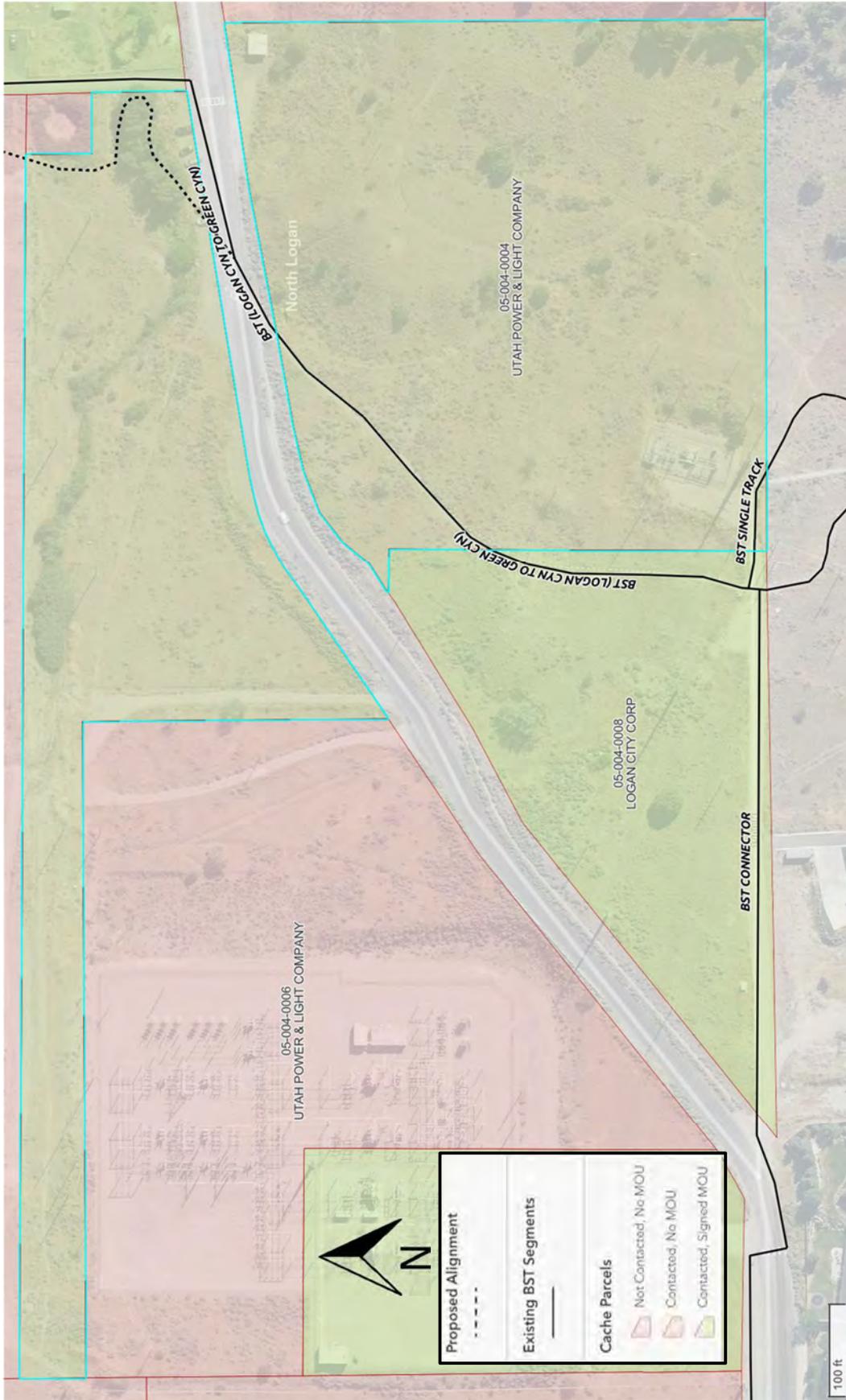
Utah Power & Light Company  
Property Owner

Scott Archibald, P.E.  
Authorized North Logan Representative,  
Sunrise Engineering  
10/1/2024

Date: 10/13/2024

Print Name: Clayton Cook *Scott Archibald*

Signature: *Clayton Cook*





## Memorandum of Understanding

Between:

UTC Associates, LTD  
Parcels: 18-006-0005 & 18-006-0001,  
Located in North Logan, Utah

And:

North Logan City  
2525 N 600 E, North Logan, Utah

### I. PURPOSE

This Memorandum of Understanding (MOU) is between UTC Associates, LTD (hereinafter referred to as the "Property Owner") and North Logan City (hereinafter referred to as the "City") to establish a cooperative relationship that supports the City's objective of establishing a Bonnaville Shoreline Trail easement on the Property Owner's land.

### II. BACKGROUND

North Logan City is committed to enhancing recreational opportunities for residents and visitors by developing a network of trails throughout the City. As part of this initiative, the City is seeking to collaborate with property owners who support the continuation of the Bonnaville Shoreline Trail on their property.

### III. DESCRIPTION OF COLLABORATIVE RELATIONSHIP

1. Easement Support:

The Property Owner supports the City in their objective to establish a trails easement on their property. Please see the attached exhibit for an approximate layout. In the future, this easement will be designated for the construction and maintenance of a 10-foot wide gravel trail. The easement will be used for public recreational purposes, including but not limited to walking, jogging, cycling, and other non-motorized activities.

2. Good Faith Cooperation:

Both parties agree to work in good faith to facilitate the future establishment of the trails easement, including participating in discussions, providing necessary information, and taking other actions necessary to further this objective.

3. Confidentiality:

This MOU does not create a legally binding agreement or obligation to establish the trails easement but instead serves as a mutual understanding of the intent and willingness of both parties to cooperate in the future. Sunrise Engineering, working on behalf of the City, may utilize this MOU as a letter of support for the project for the purposes of gathering project funding.

### IV. SIGNATURES

The undersigned have executed this Memorandum of Understanding as of the date indicated below.

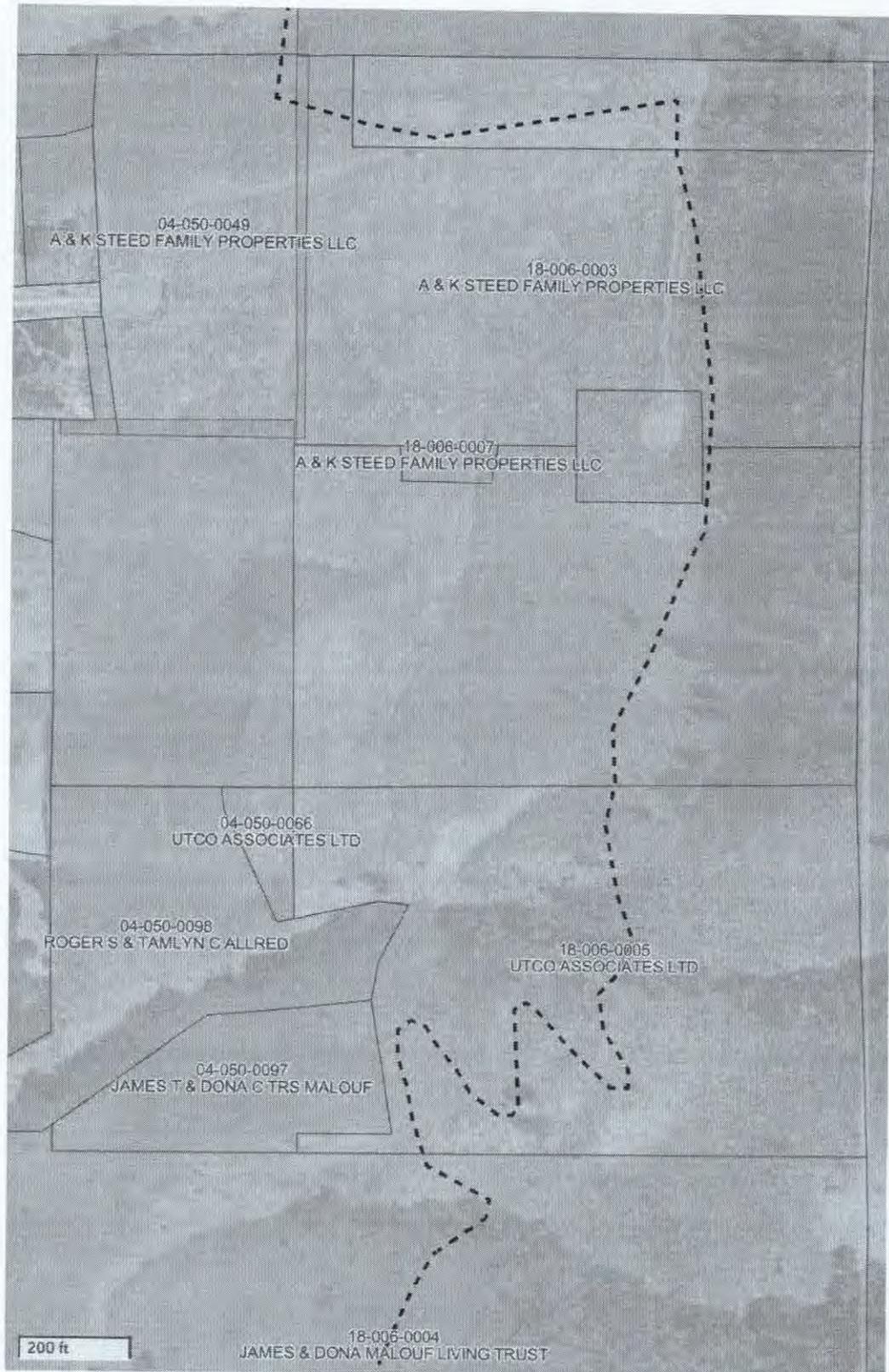
UTC Associates, LTD  
Property Owner

Scott Archibald, P.E.  
Authorized North Logan Representative,  
Sunrise Engineering  
10/1/2024

Date: 10/30/2024

Print Name: Bruce J. Nelson

Signature: Bruce J. Nelson  
mgn.



## Appendix B

### Engineer's Opinion of Probable Cost



	<b>Phase 1B</b>					
22	Mobilization	1	L.S.	\$ 30,000	\$ 30,000	
	<b>10-20% Avg. Cross-Slope BST Sections</b>					
23	Rough Cut 8' wide	2,500	LN.FT.	\$ 20	\$ 50,000	
24	Commercial Road Base	25,000	SQ.FT	\$ 2	\$ 50,000	
25	General Labor/Man Hour Tuning, Grading and final touches	54	HR.	\$ 70	\$ 4,000	
	<b>20-25% Avg. Cross-Slope BST Sections</b>					
26	Rough Cut 8' wide	2,300	LN.FT.	\$ 25	\$ 58,000	
27	Commercial Road Base	23,000	SQ.FT	\$ 2	\$ 46,000	
28	General Labor/Man Hour Tuning, Grading and final touches	57	HR.	\$ 70	\$ 4,000	
	<b>25-30% Avg. Cross-Slope BST Sections</b>					
29	Rough Cut 8' wide	3,100	LN.FT.	\$ 30	\$ 93,000	
30	Commercial Road Base	31,000	SQ.FT	\$ 2	\$ 62,000	
31	General Labor/Man Hour Tuning, Grading and final touches	108	HR.	\$ 70	\$ 8,000	
	<b>30-35% Avg. Cross-Slope BST Sections</b>					
32	Rough Cut 8' wide	2,300	LN.FT.	\$ 40	\$ 92,000	
33	Commercial Road Base	23,000	SQ.FT	\$ 2	\$ 46,000	
34	General Labor/Man Hour Tuning, Grading and final touches	150	HR.	\$ 70	\$ 11,000	
	<b>Physical Barrier 1</b>					
35	18" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,400	\$ 2,400	
36	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 2</b>					
37	18" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,400	\$ 2,400	
38	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 3</b>					
39	24" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,800	\$ 2,800	
40	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 4</b>					
41	24" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,800	\$ 2,800	
42	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 5</b>					
43	18" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,400	\$ 2,400	
44	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 6</b>					
45	18" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,400	\$ 2,400	
46	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Meadow Lark Lane Trailhead</b>					
47	General Labor/Man Hour Tuning, Grading and final touches	20	HR.	\$ 70	\$ 1,400	
48	Gravel	3,900	SQ.FT	\$ 2	\$ 7,800	
49	Marquee Signage	1	EA.	\$ 2,500	\$ 2,500	
50	<b>Phase 1B Construction Subtotal</b>				\$ 590,000	
51	Contingency 10%	1	L.S.	\$ 60,000	\$ 60,000	
52	<b>Phase 1B Construction Total</b>				\$ 650,000	
	<b>Professional Services &amp; Project Incidentals</b>					
53	Engineering Design, Survey, Construction Management	1	L.S.	\$ 95,000	\$ 95,000	
	Land/Easement Acquisition (To be Covered by Open Space Bond)	1	L.S.	\$ 135,000	\$ -	
54	Property Owner Negotiations	1	L.S.	\$ 20,000	\$ 20,000	
55	<b>Phase 1B Professional Services Total</b>				\$ 115,000	
56	<b>Phase 1B Total</b>				\$ 765,000	

	<b>Phase 2</b>					
57	Mobilization	1	L.S.	\$ 45,000	\$ 45,000	
	<b>0-10% Avg. Cross-Slope BST Sections</b>					
58	Rough Cut 8' wide	4,800	LN.FT.	\$ 18	\$ 87,000	
59	Commercial Road Base	48,000	SQ.FT	\$ 2	\$ 96,000	
60	General Labor/Man Hour Tuning, Grading and final touches	94	HR.	\$ 70	\$ 7,000	
	<b>10-20% Avg. Cross-Slope BST Sections</b>					
61	Rough Cut 8' wide	6,200	LN.FT.	\$ 20	\$ 124,000	
62	Commercial Road Base	62,000	SQ.FT	\$ 2	\$ 124,000	
63	General Labor/Man Hour Tuning, Grading and final touches	134	HR.	\$ 70	\$ 10,000	
	<b>20-25% Avg. Cross-Slope BST Sections</b>					
64	Rough Cut 8' wide	3,200	LN.FT.	\$ 25	\$ 80,000	
65	Commercial Road Base	32,000	SQ.FT	\$ 2	\$ 64,000	
66	General Labor/Man Hour Tuning, Grading and final touches	80	HR.	\$ 70	\$ 6,000	
	<b>30-35% Avg. Cross-Slope BST Sections</b>					
67	Rough Cut 8' wide	1,000	LN.FT.	\$ 40	\$ 40,000	
68	Commercial Road Base	10,000	SQ.FT	\$ 2	\$ 20,000	
69	General Labor/Man Hour Tuning, Grading and final touches	88	HR.	\$ 70	\$ 7,000	
	<b>Physical Barrier 7</b>					
70	30" x 20' Feet long, ADS Culvert	1	EA.	\$ 3,400	\$ 3,400	
71	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 8</b>					
72	30" x 20' Feet long, ADS Culvert	1	EA.	\$ 3,400	\$ 3,400	
73	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 9</b>					
74	18" x 20' Feet long, ADS Culvert	1	EA.	\$ 2,400	\$ 2,400	
75	Rip Rap, Grading, and Blending Culvert in with Ravine	8	HR.	\$ 70	\$ 600	
	<b>Physical Barrier 10 - Birch Creek Crossing</b>					
76	30' Pedestrian Bridge	1	EA.	\$ 40,000	\$ 40,000	
77	Bridge Installation and Abutments	1	L.S.	\$ 70,000	\$ 70,000	
	<b>Bogus Canyon Trailhead</b>					
78	General Labor/Man Hour Tuning, Grading and final touches	20	HR.	\$ 70	\$ 1,400	
79	Gravel	4,150	SQ.FT	\$ 2	\$ 8,300	
80	Marquee Signage	1	EA.	\$ 2,500	\$ 2,500	
	<b>Birch Canyon Trailhead</b>					
81	General Labor and final touches	16	HR.	\$ 70	\$ 1,200	
82	Fencing	210	LN.FT.	\$ 18	\$ 3,800	
83	Prefabricated 10' x 10' Vault Restroom	1	L.S.	\$ 80,000	\$ 80,000	
84	Marquee Signage	1	EA.	\$ 2,500	\$ 2,500	
85	<b>Phase 2 Construction Subtotal</b>				\$ 940,000	
86	Contingency 10%	1	L.S.	\$ 100,000	\$ 100,000	
87	<b>Phase 2 Construction Total</b>				\$ 1,040,000	
	<b>Professional Services &amp; Project Incidentals</b>					
88	Engineering Design, Survey, Construction Management	1	L.S.	\$ 145,000	\$ 145,000	
	Land/Easement Acquisition (To be Covered by Open Space Bond)	1	L.S.	\$ 239,000	\$ -	
89	Property Owner Negotiations	1	L.S.	\$ 30,000	\$ 30,000	
90	<b>Phase 2 Professional Services Total</b>				\$ 175,000	
91	<b>Phase 2 Total</b>				\$ 1,215,000	
92	<b>PROJECT TOTAL</b>				\$ 2,560,000	

	<b>Other Funding Source Improvements</b>					
93	Completed North Logan City BST Work		1	L.S.	\$ 455,000	\$ 455,000
94	Completed Hyde Park City BST Work		1	L.S.	\$ 384,000	\$ 384,000
95	Completed BST Alignment Study 2024		1	L.S.	\$ 50,000	\$ 50,000
	<b>Hyde Park Water Line Relocation</b>					
96	8" C-900 PVC Pipe		4,000	LN.FT.	\$ 80	\$ 320,000
97	Connect to Existing Water Main		2	EA.	\$ 5,000	\$ 10,000
	<b>Smithfield Water Line Extension</b>					
98	8" C-900 PVC Pipe		3,500	LN.FT.	\$ 80	\$ 280,000
99	Connect to Existing Water Main		2	EA.	\$ 5,000	\$ 10,000
	<b>Land/Easement Acquisition</b>					
100	Land/Easement Acquisition (To be Covered by Open Space Bond)		1	L.S.	\$ 400,000	\$ 400,000
101	<b>Other Funding Sources Total</b>					<b>\$ 1,509,000</b>

Appendix C  
StreamStats Culvert Sizing Calculations

# Physical Barriers Flow Calculations

Affected Parcel: 18-006-0004

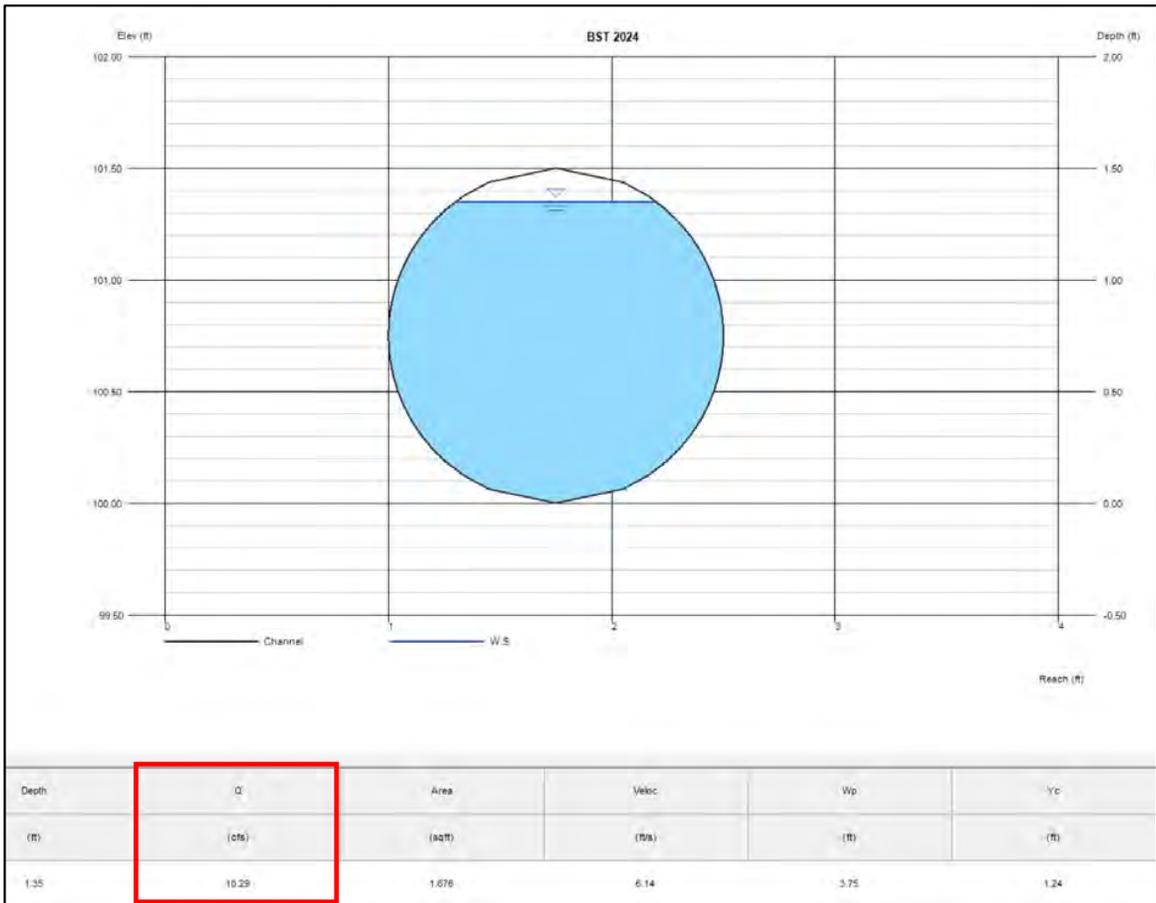
Label: PB1

Peak Flow: 9.56 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	3.6	ft <sup>3</sup> /s
20-percent AEP flood	9.56	ft <sup>3</sup> /s
10-percent AEP flood	14.9	ft <sup>3</sup> /s

## 18" Culvert Capacity @0.5% Slope:



# Physical Barriers Flow Calculations

Affected Parcel: 18-006-0005

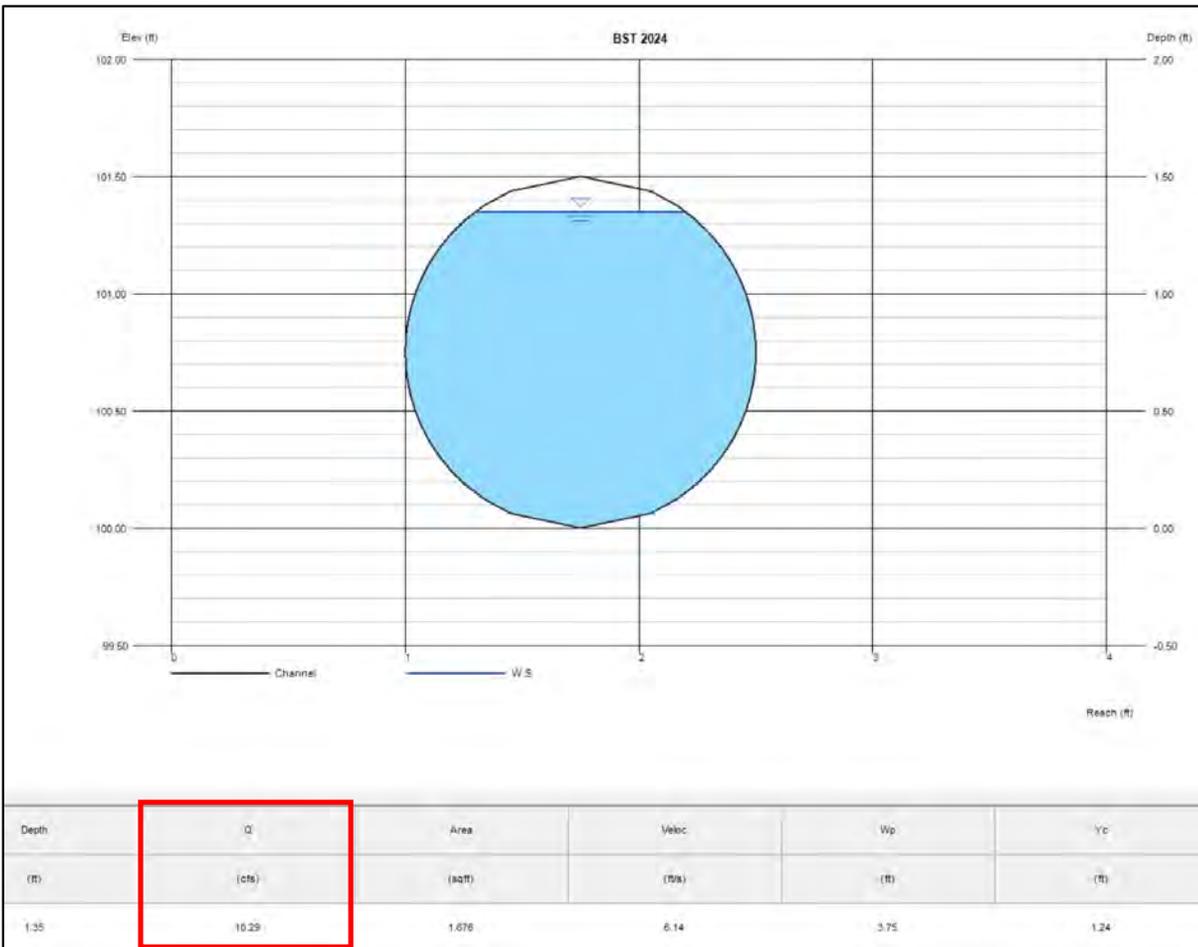
Label: PB2

Peak Flow: 3.03 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	0.998	ft <sup>3</sup> /s
20-percent AEP flood	3.03	ft <sup>3</sup> /s
10-percent AEP flood	5.07	ft <sup>3</sup> /s

## 18" Culvert Capacity @0.5% Slope:



# Physical Barriers Flow Calculations

Affected Parcel: 04-049-0008

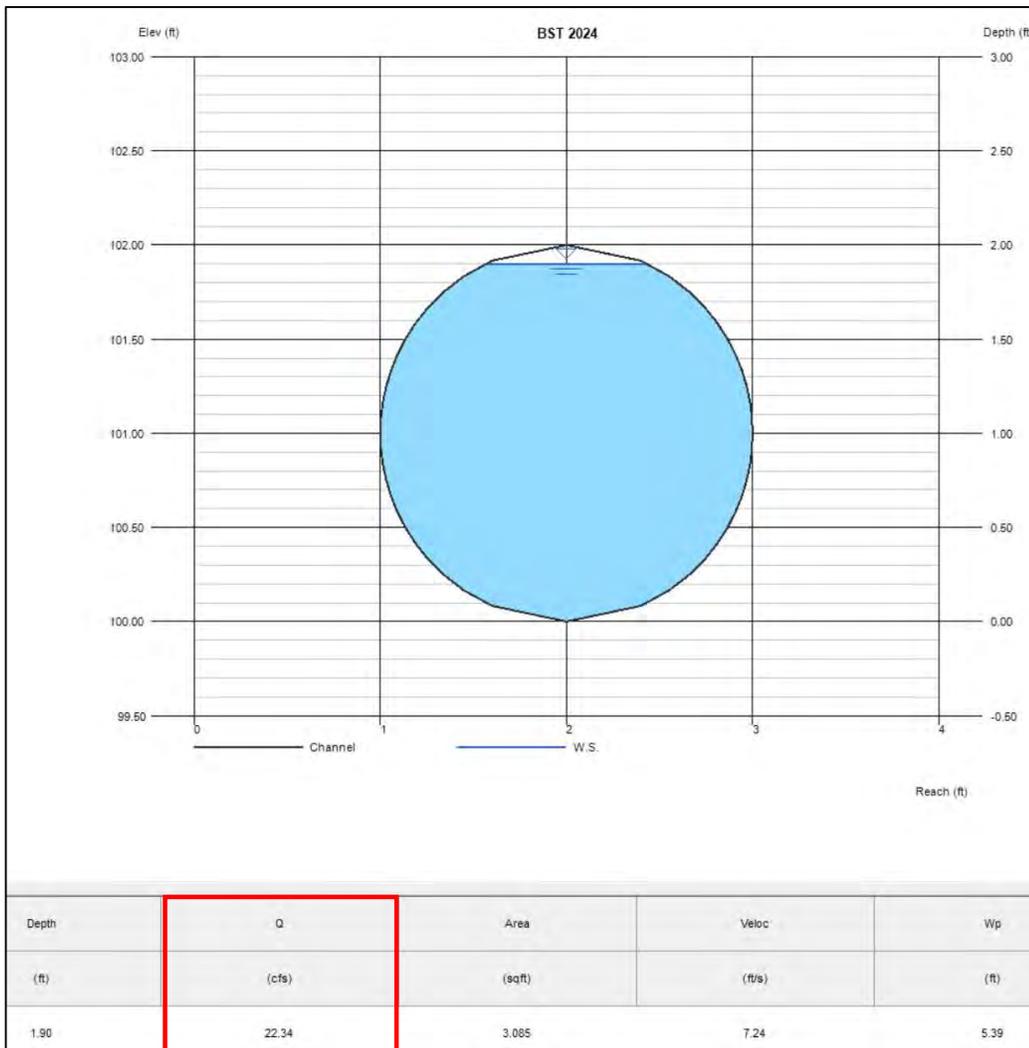
Label: PB3

Peak Flow: 19.5 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	7.97	ft <sup>3</sup> /s
20-percent AEP flood	19.5	ft <sup>3</sup> /s
10-percent AEP flood	28.9	ft <sup>3</sup> /s

## 24" Culvert Capacity @0.5% Slope:



# Physical Barriers Flow Calculations

Affected Parcel: 04-049-0008

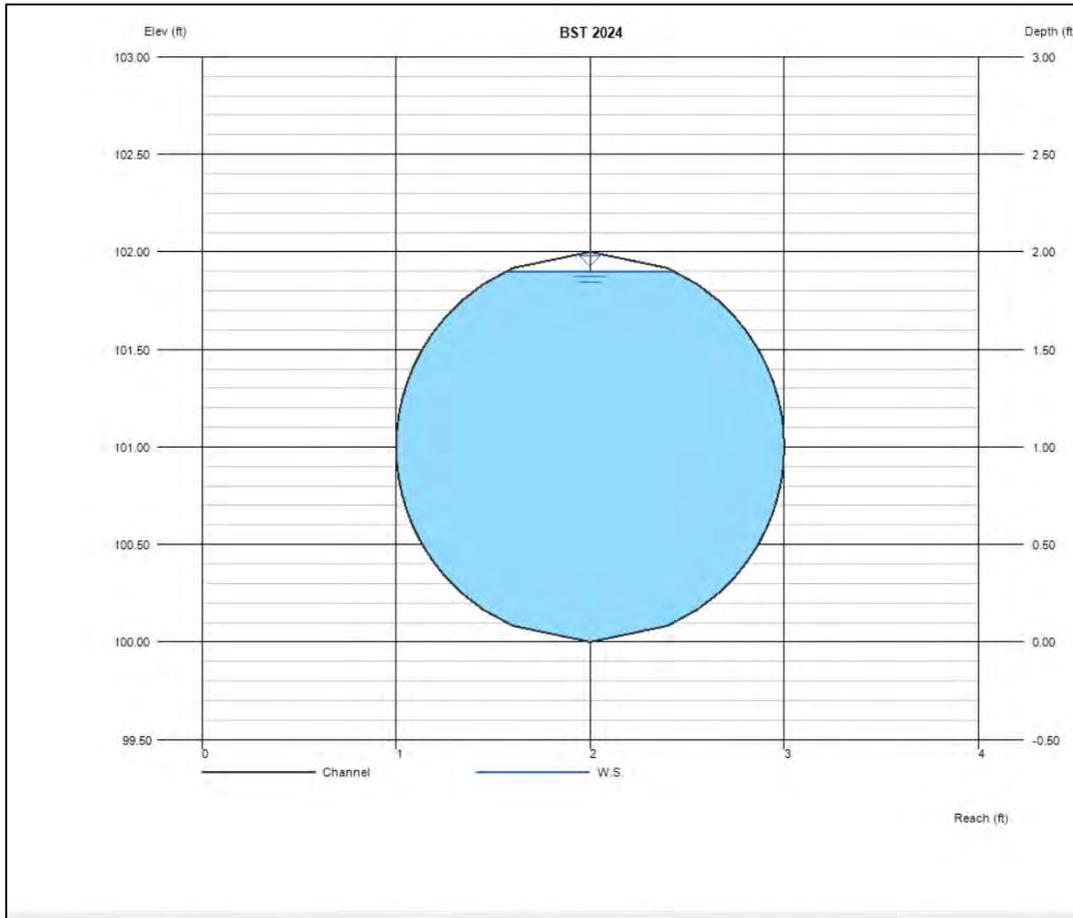
Label: PB4

Peak Flow: 13.1 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	5.14	ft <sup>3</sup> /s
20-percent AEP flood	13.1	ft <sup>3</sup> /s
10-percent AEP flood	19.9	ft <sup>3</sup> /s

## 24" Culvert Capacity @0.5% Slope:



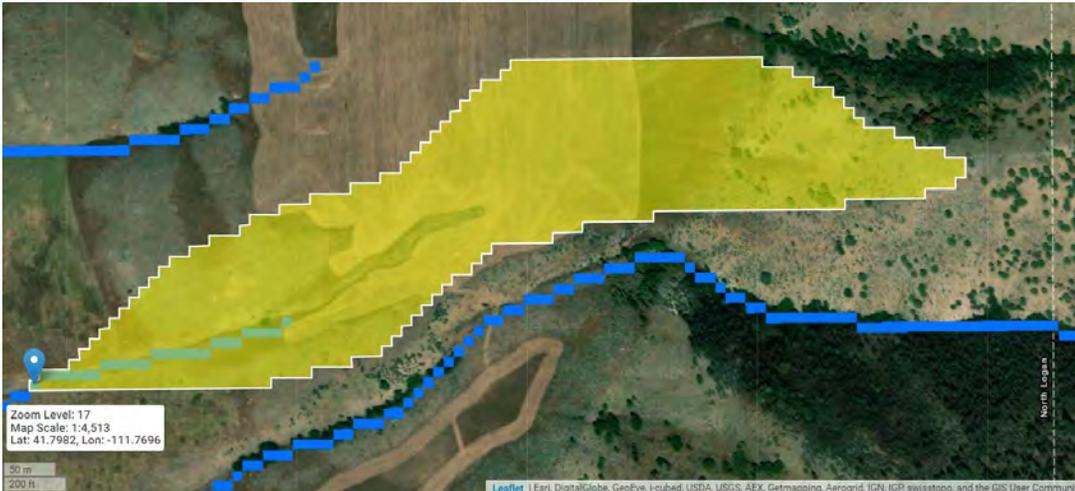
Depth	Q	Area	Veloc	Wp
(ft)	(cfs)	(sqft)	(ft/s)	(ft)
1.90	22.34	3.085	7.24	5.39

# Physical Barriers Flow Calculations

Affected Parcel: 04-049-0008

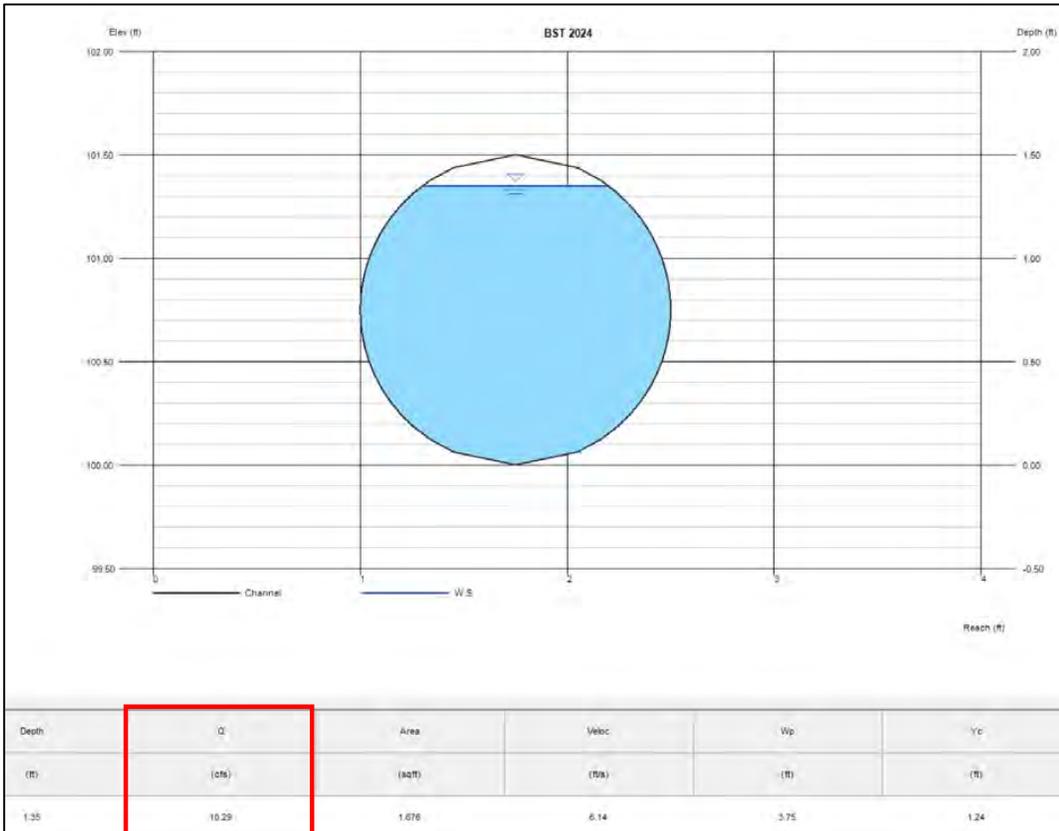
Label: PB5

Peak Flow: 3.66 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	1.22	ft <sup>3</sup> /s
20-percent AEP flood	3.66	ft <sup>3</sup> /s
10-percent AEP flood	6.09	ft <sup>3</sup> /s

## 18" Culvert Capacity @0.5% Slope:



# Physical Barriers Flow Calculations

Affected Parcel: 04-049-0007

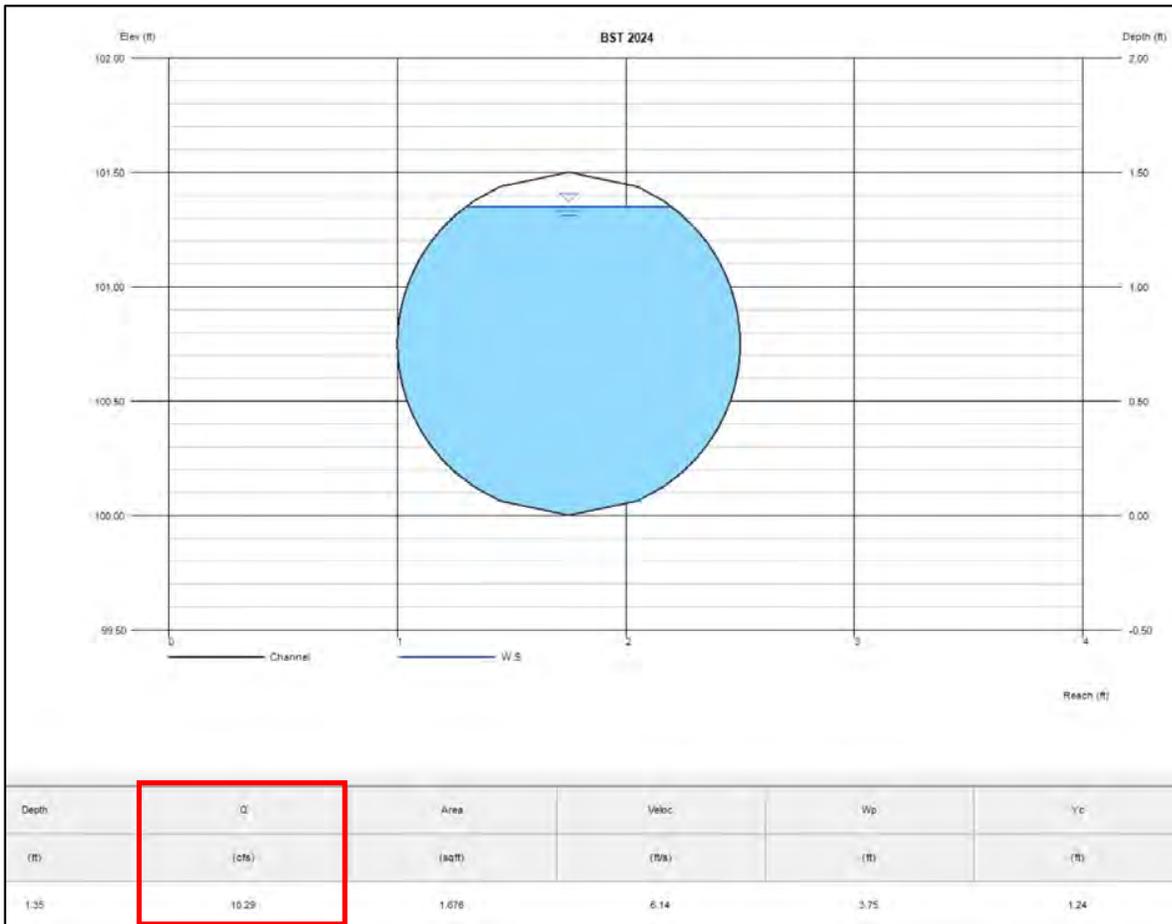
Label: PB6

Peak Flow: 5.33 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	1.86	ft <sup>3</sup> /s
20-percent AEP flood	5.33	ft <sup>3</sup> /s
10-percent AEP flood	8.63	ft <sup>3</sup> /s

## 18" Culvert Capacity @0.5% Slope:

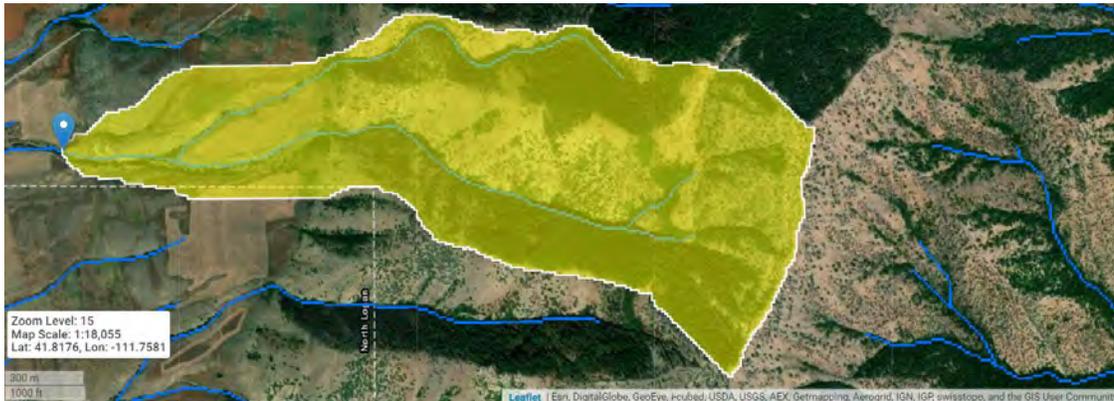


# Physical Barriers Flow Calculations

Affected Parcel: 04-049-0003

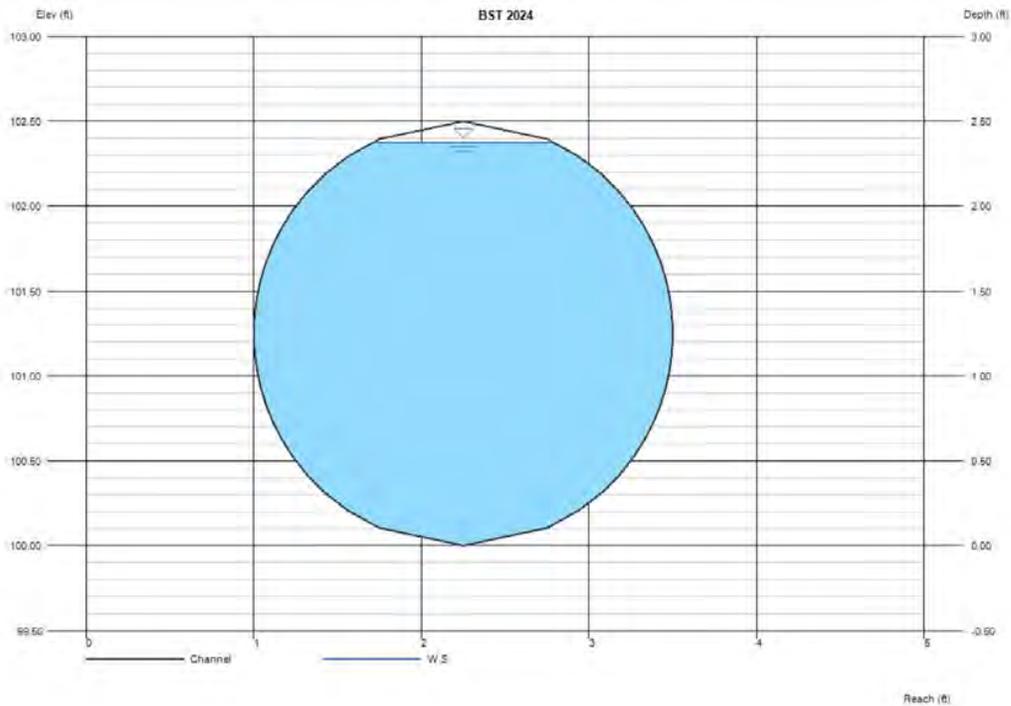
Label: PB7

Peak Flow: 26.4 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	11.2	ft <sup>3</sup> /s
20-percent AEP flood	26.4	ft <sup>3</sup> /s
10-percent AEP flood	38.6	ft <sup>3</sup> /s

## 30" Culvert Capacity @0.5% Slope:



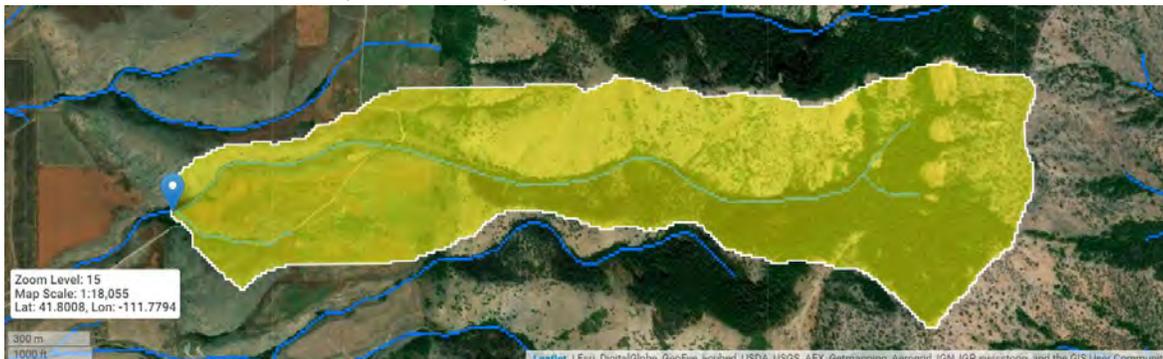
Depth	Q	Area	Veloc	Wp	Yc
(ft)	(cfs)	(sqft)	(ft/s)	(ft)	(ft)
2.36	40.50	4.020	8.40	6.74	2.14

# Physical Barriers Flow Calculations

Affected Parcel: 04-049-0004

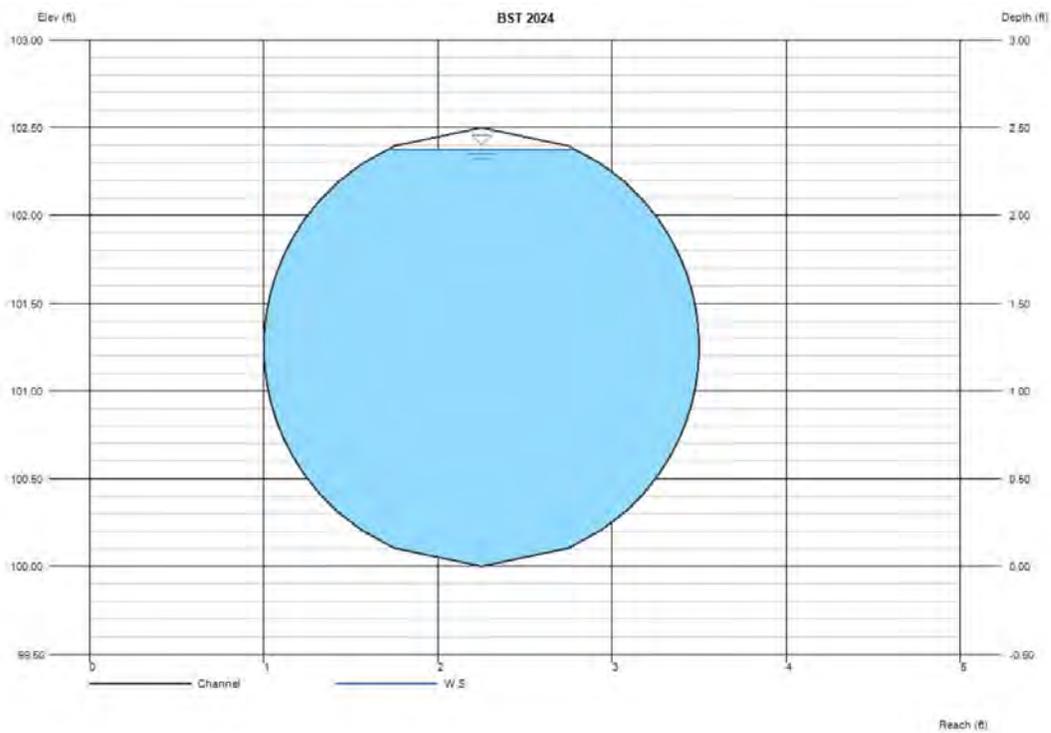
Label: PB8

Peak Flow: 25 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	10.5	ft <sup>3</sup> /s
20-percent AEP flood	25	ft <sup>3</sup> /s
10-percent AEP flood	36.5	ft <sup>3</sup> /s

## 30" Culvert Capacity @0.5% Slope:



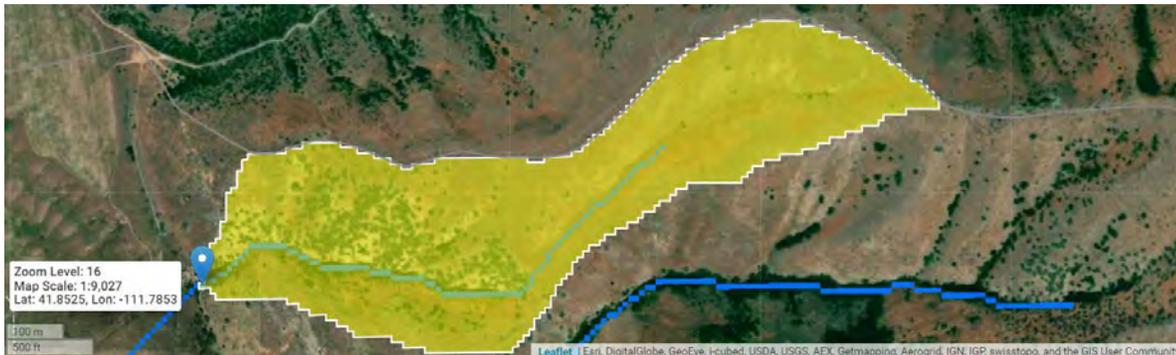
Depth	Q	Area	Veloc	Wp	T/c
(ft)	(cfs)	(sqft)	(ft/s)	(ft)	(ft)
2.38	40.50	4.620	8.40	6.74	2.14

# Physical Barriers Flow Calculations

Affected Parcel: 08-048-0001

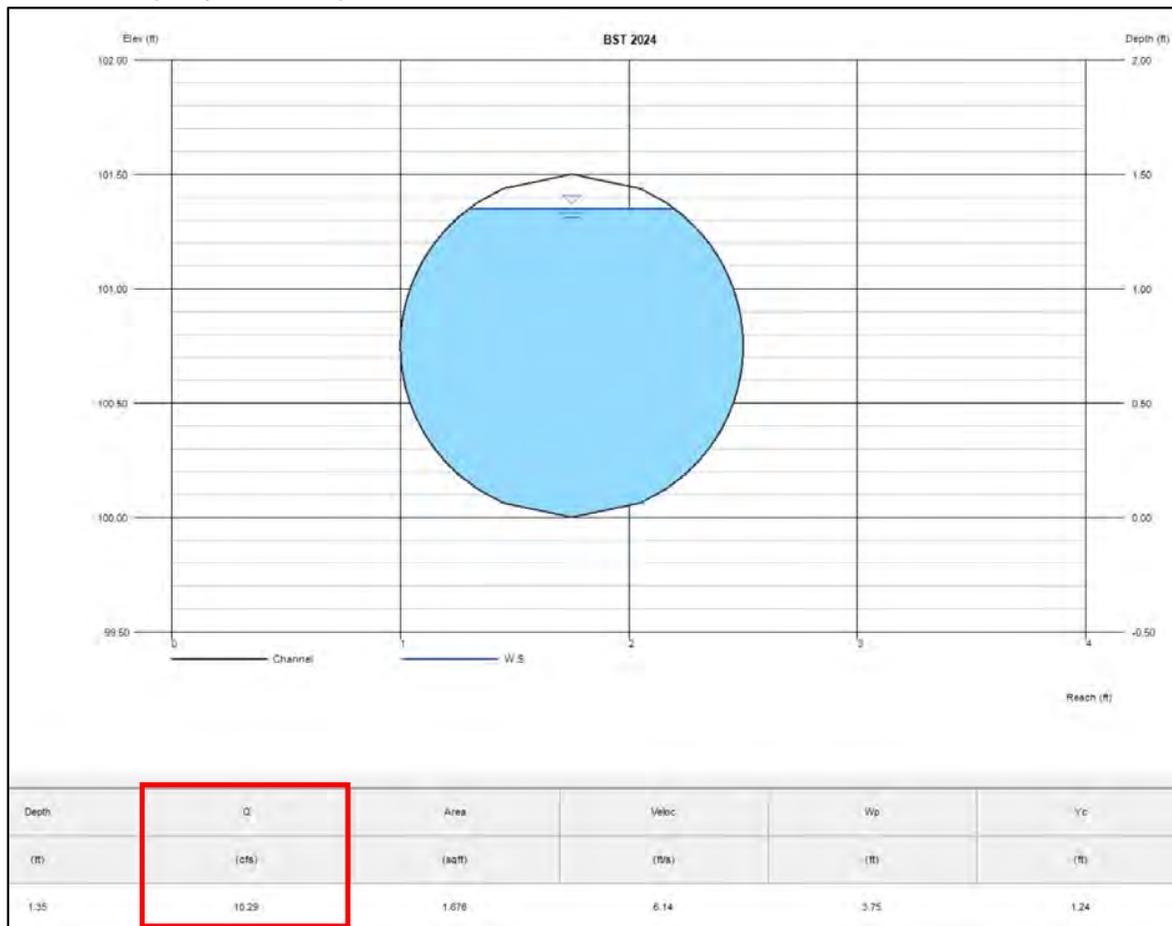
Label: PB9

Peak Flow: 6.91 cfs (80th Percentile)



Statistic	Value	Unit
50-percent AEP flood	2.45	ft <sup>3</sup> /s
20-percent AEP flood	6.91	ft <sup>3</sup> /s
10-percent AEP flood	11.1	ft <sup>3</sup> /s

## 18" Culvert Capacity @0.5% Slope:

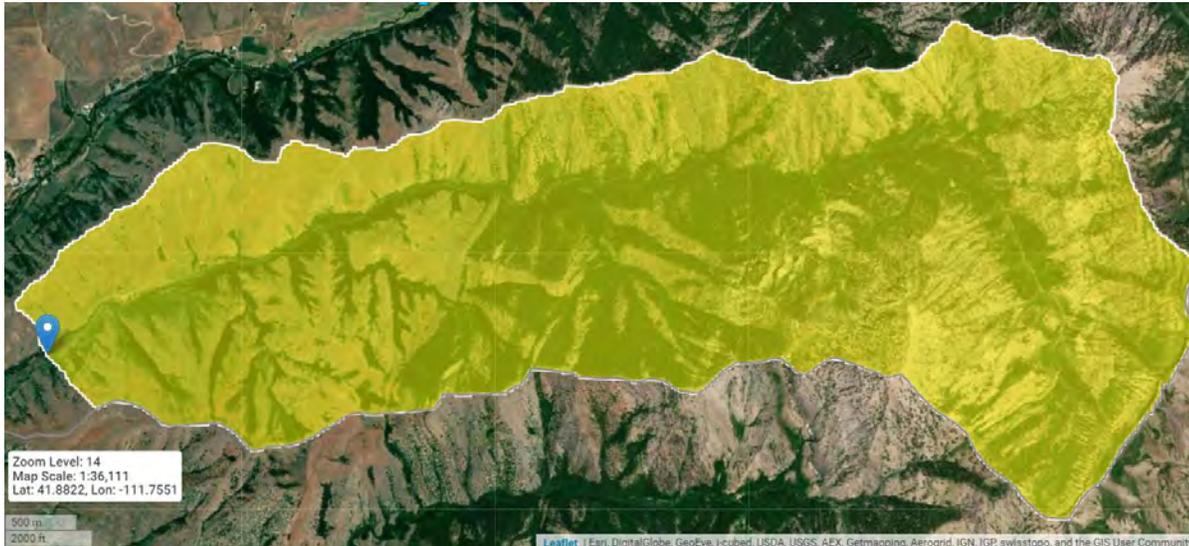


# Physical Barriers Flow Calculations

Affected Parcel: 08-047-0001

Label: PB10

Peak Flow: 115 ±54 cfs (80th Percentile)



Statistic	Value	Unit	SE	ASEp	Equiv. Yrs.
50-percent AEP flood	58.2	ft <sup>3</sup> /s	62	62	1
20-percent AEP flood	115	ft <sup>3</sup> /s	54	54	1.5
10-percent AEP flood	154	ft <sup>3</sup> /s	53	53	2

∴ Utilize Bridge Across Birch Creek

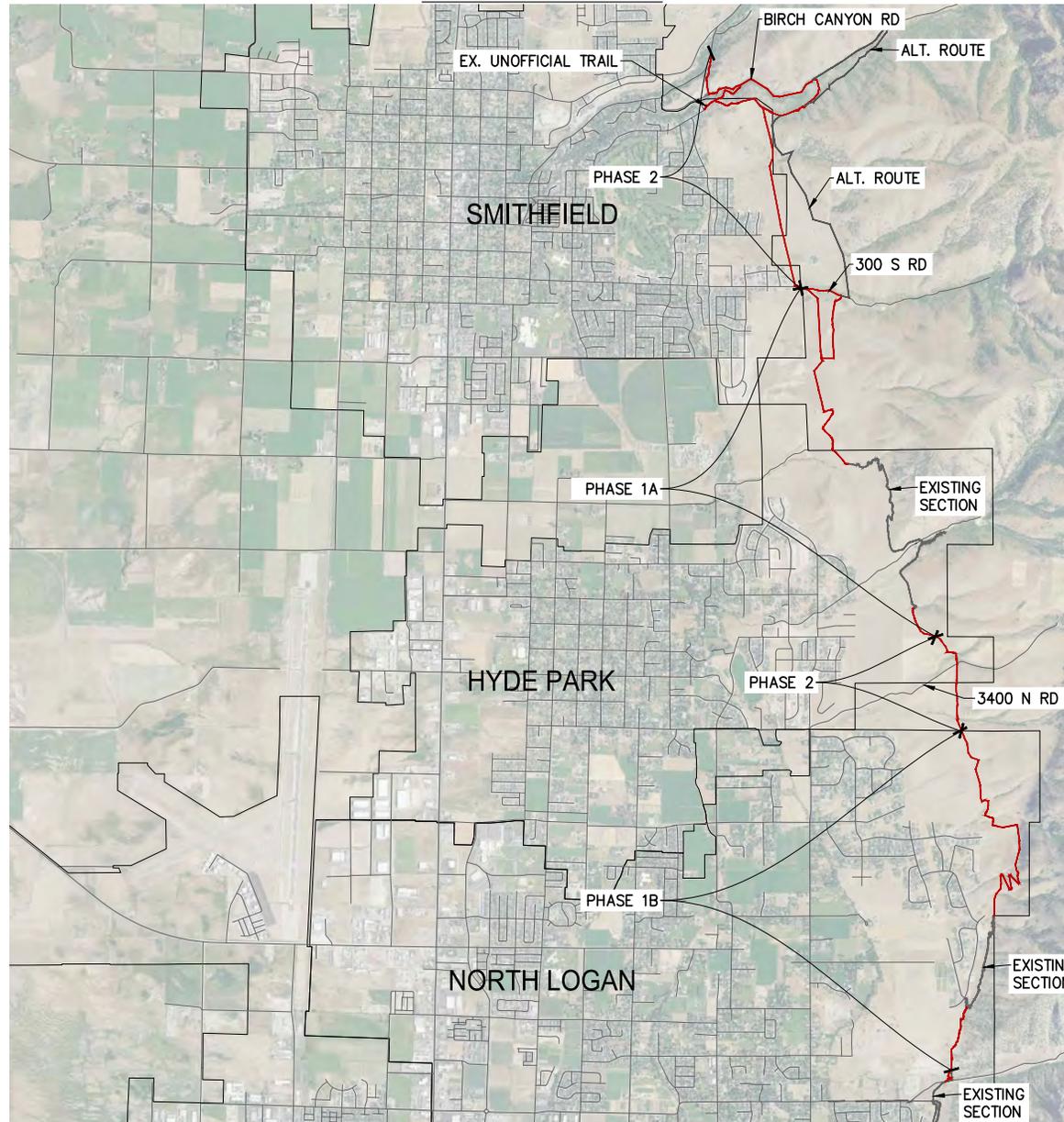


## Appendix D

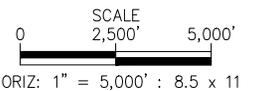
### Bonneville Shoreline Trail Exhibits and Details

# CACHE COUNTY BONNEVILLE SHORELINE TRAIL - PHASING MAP

2024  
LOCATION MAP



CACHE COUNTY, UT



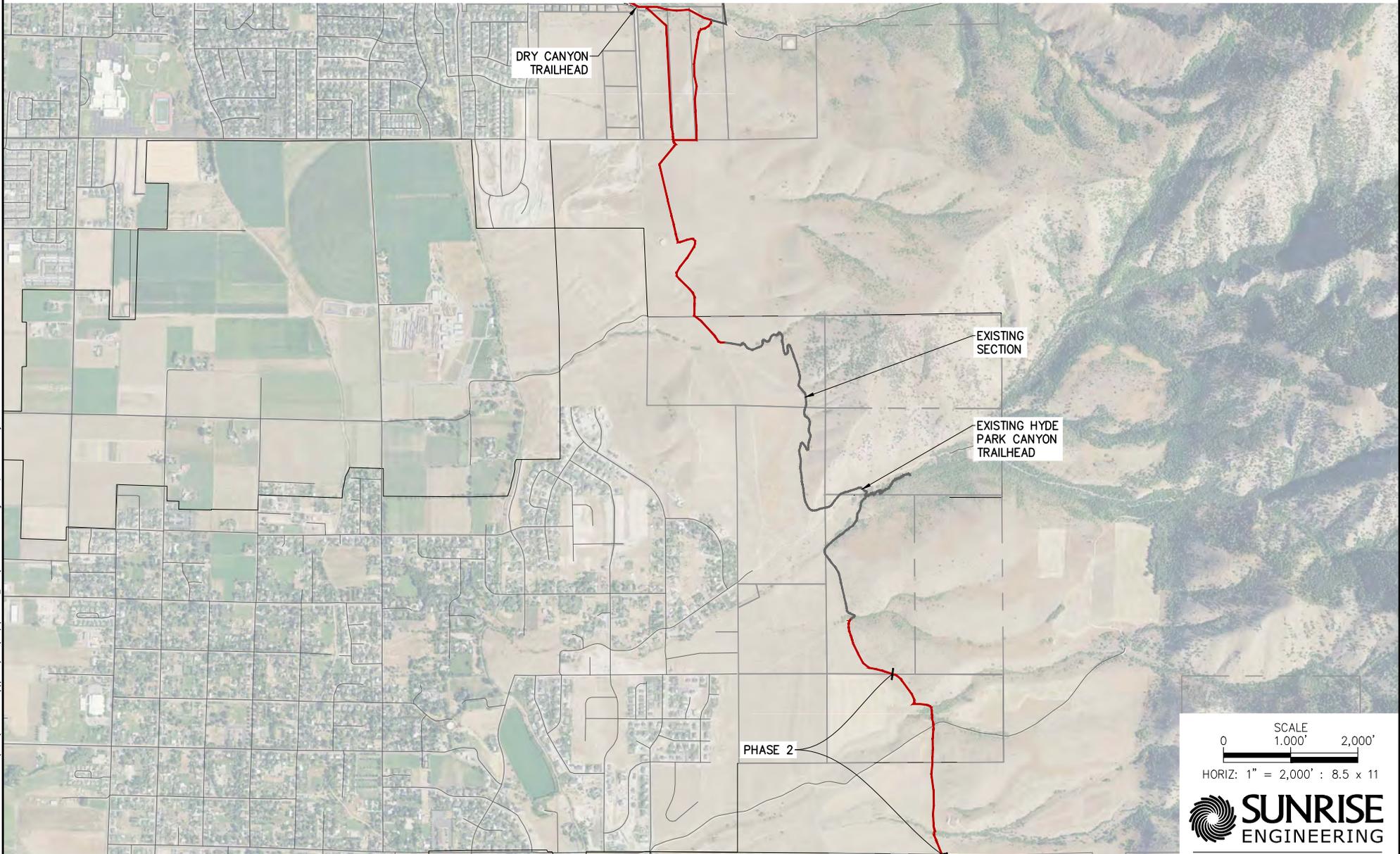
**SUNRISE**  
ENGINEERING

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NORTH LOGAN, UTAH 84341  
TEL: 435.563.3734  
www.sunrise-eng.com

# CACHE COUNTY BONNEVILLE SHORELINE TRAIL - PHASE 1A



2024  
AREA MAP



HYDE PARK



HORIZ: 1" = 2,000' : 8.5 x 11

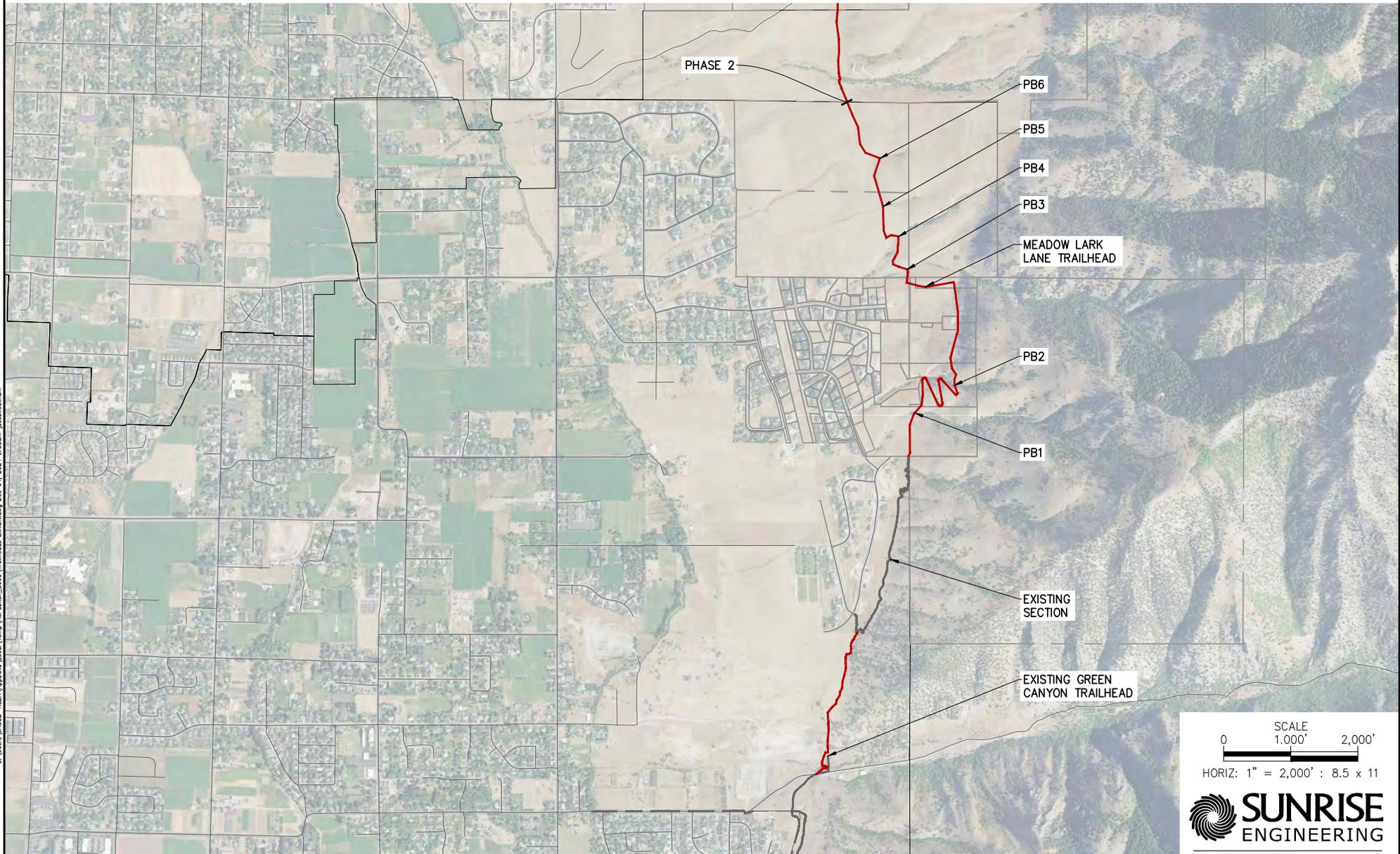


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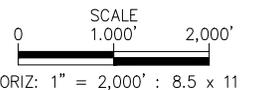
# CACHE COUNTY BONNEVILLE SHORELINE TRAIL - PHASE 1B



2024  
AREA MAP



NORTH LOGAN



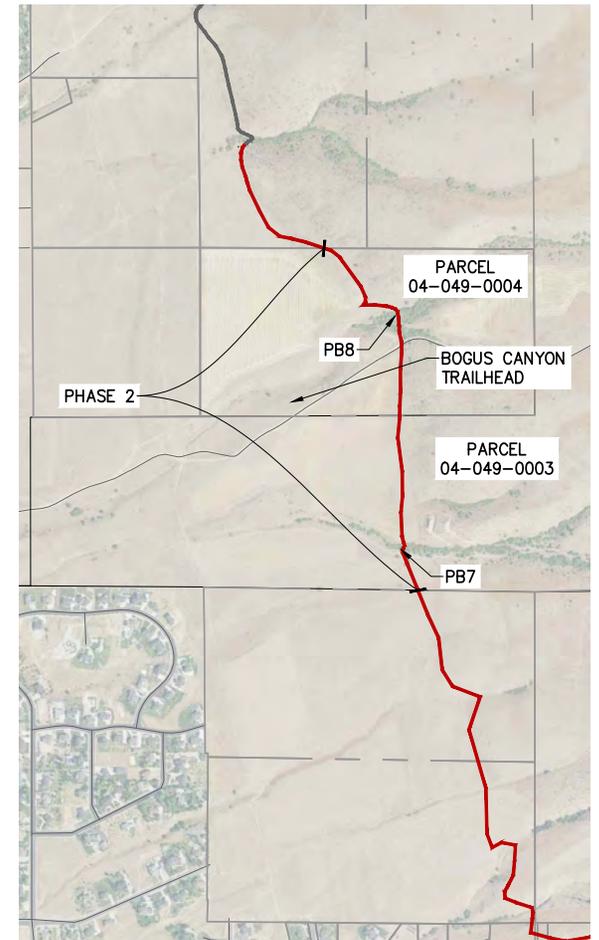
2100 NORTH MAIN STREET  
NORTH LOGAN, UTAH 84341  
TEL: 435-563-3734  
www.sunrise-eng.com

C:\Users\JACOB-LEA\AppData\Local\Temp\KvP\KvP\3696\Trailheads Exhibit.dwg, Dec 04, 2024, 9:38am jacob.lea@sunrise-eng.com

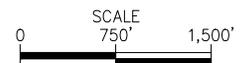
# CACHE COUNTY BONNEVILLE SHORELINE TRAIL - PHASE 2



2024  
AREA MAP



NORTH LOGAN



HORIZ: 1" = 1,500' : 8.5 x 11

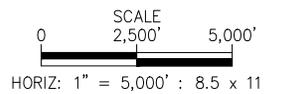
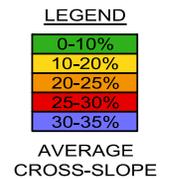
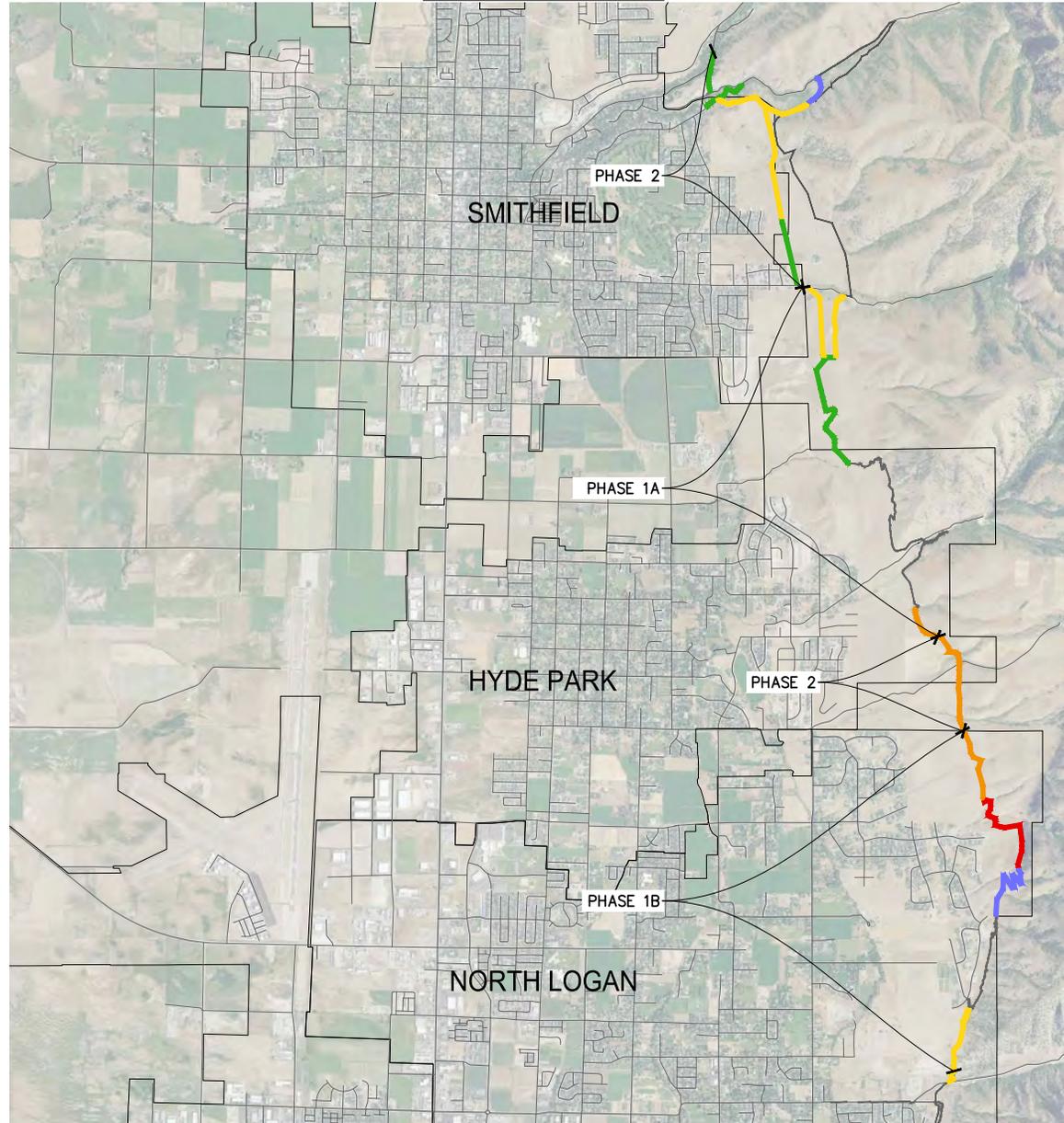


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SMITHFIELD

# CACHE COUNTY BONNEVILLE SHORELINE TRAIL - GRADE MAP

2024  
LOCATION MAP



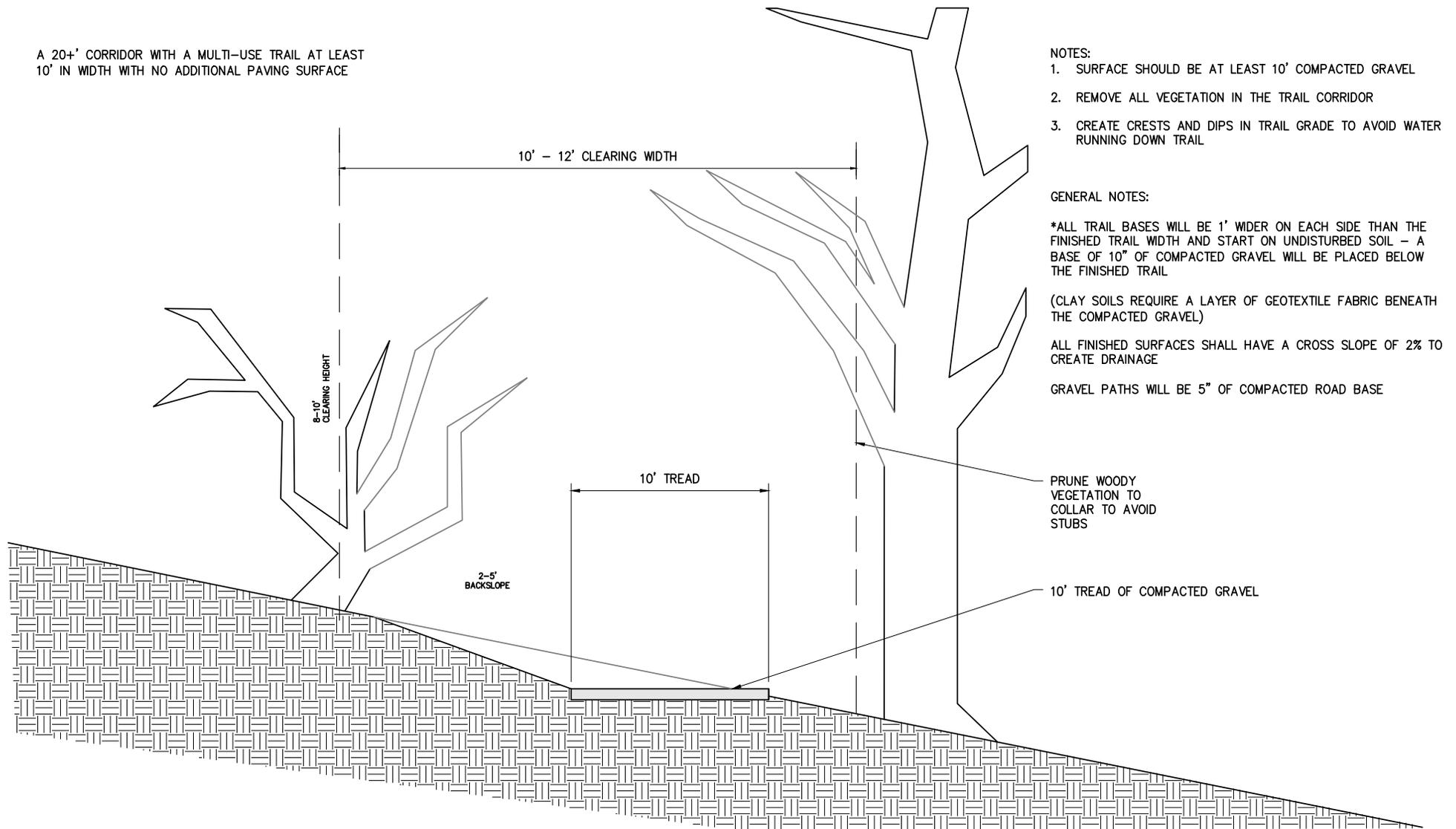
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CACHE COUNTY, UT

# CACHE COUNTY

## BONNEVILLE SHORELINE TRAIL - DETAILS

A 20+<sup>'</sup> CORRIDOR WITH A MULTI-USE TRAIL AT LEAST 10' IN WIDTH WITH NO ADDITIONAL PAVING SURFACE



### NOTES:

1. SURFACE SHOULD BE AT LEAST 10' COMPACTED GRAVEL
2. REMOVE ALL VEGETATION IN THE TRAIL CORRIDOR
3. CREATE CRESTS AND DIPS IN TRAIL GRADE TO AVOID WATER RUNNING DOWN TRAIL

### GENERAL NOTES:

\*ALL TRAIL BASES WILL BE 1' WIDER ON EACH SIDE THAN THE FINISHED TRAIL WIDTH AND START ON UNDISTURBED SOIL - A BASE OF 10" OF COMPACTED GRAVEL WILL BE PLACED BELOW THE FINISHED TRAIL

(CLAY SOILS REQUIRE A LAYER OF GEOTEXTILE FABRIC BENEATH THE COMPACTED GRAVEL)

ALL FINISHED SURFACES SHALL HAVE A CROSS SLOPE OF 2% TO CREATE DRAINAGE

GRAVEL PATHS WILL BE 5" OF COMPACTED ROAD BASE

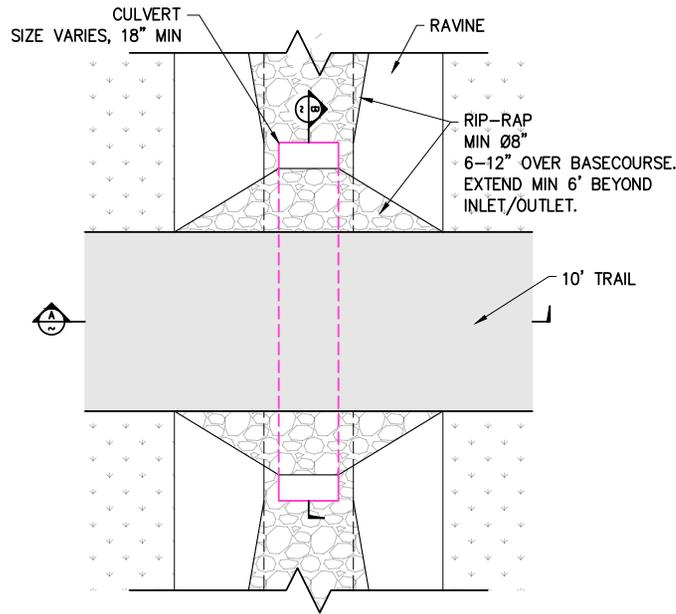
A WIDE MOUNTAIN TRAIL - 20' CORRIDOR  
~ NTS

**SUNRISE**  
ENGINEERING

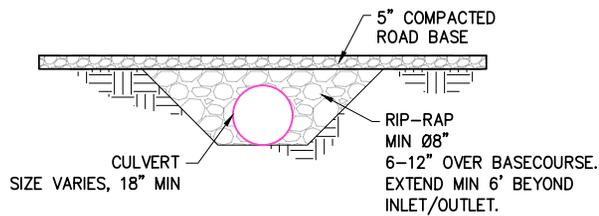
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# CACHE COUNTY

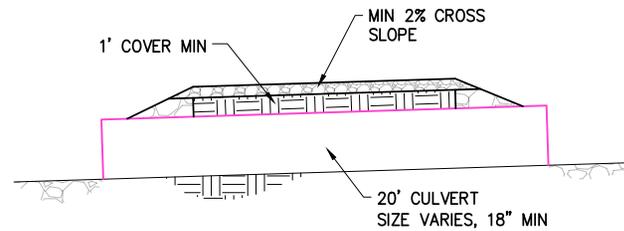
## BONNEVILLE SHORELINE TRAIL - DETAILS



TOP VIEW



SECTION A



SECTION B

NOTES:

1. SURFACE SHOULD BE AT LEAST 10' COMPACTED GRAVEL
2. REMOVE ALL VEGETATION IN THE TRAIL CORRIDOR
3. CREATE CRESTS AND DIPS IN TRAIL GRADE TO AVOID WATER RUNNING DOWN TRAIL

GENERAL NOTES:

\*ALL TRAIL BASES WILL BE 1' WIDER ON EACH SIDE THAN THE FINISHED TRAIL WIDTH AND START ON UNDISTURBED SOIL - A BASE OF 10" OF COMPACTED GRAVEL WILL BE PLACED BELOW THE FINISHED TRAIL

(CLAY SOILS REQUIRE A LAYER OF GEOTEXTILE FABRIC BENEATH THE COMPACTED GRAVEL)

ALL FINISHED SURFACES SHALL HAVE A CROSS SLOPE OF 2% TO CREATE DRAINAGE

GRAVEL PATHS WILL BE 5" OF COMPACTED ROAD BASE

A  
~  
TYPICAL PHYSICAL BARRIER CROSSING  
NTS



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08-049-0008  
LLOYD H FACER & JERRY R  
FACER FAMILY LIVING TRUST

PROPOSED 10'x10'  
RESTROOM LOCATION

EXISTING  
ROCK WALL

EXISTING TRAILHEAD PROVIDES ENOUGH  
PARKING FOR AT LEAST 10 VEHICLES

PROPOSED MARQUIS

PROPOSED  
3-RAIL FENCE

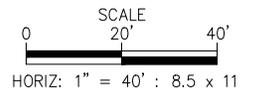
PROPOSED  
3-RAIL FENCE

BIRCH CANYON ROAD

TRAIL TO FOLLOW  
ROAD ALIGNMENT

08-048-0022  
HANSEN FAMILY HOLDING  
& DEVELOPMENT LLC

**NOTE:**  
THIS CONCEPT HAS BEEN  
DEVELOPED FOR THE PURPOSES OF  
PLANNING AND COST ESTIMATION.  
THE FINAL PLAN TO BE USED FOR  
CONSTRUCTION MUST BE APPROVED  
BY THE JURISDICTION IN WHICH THE  
TRAILHEAD IS LOCATED.



BIRCH CANYON TRAILHEAD  
CONCEPT

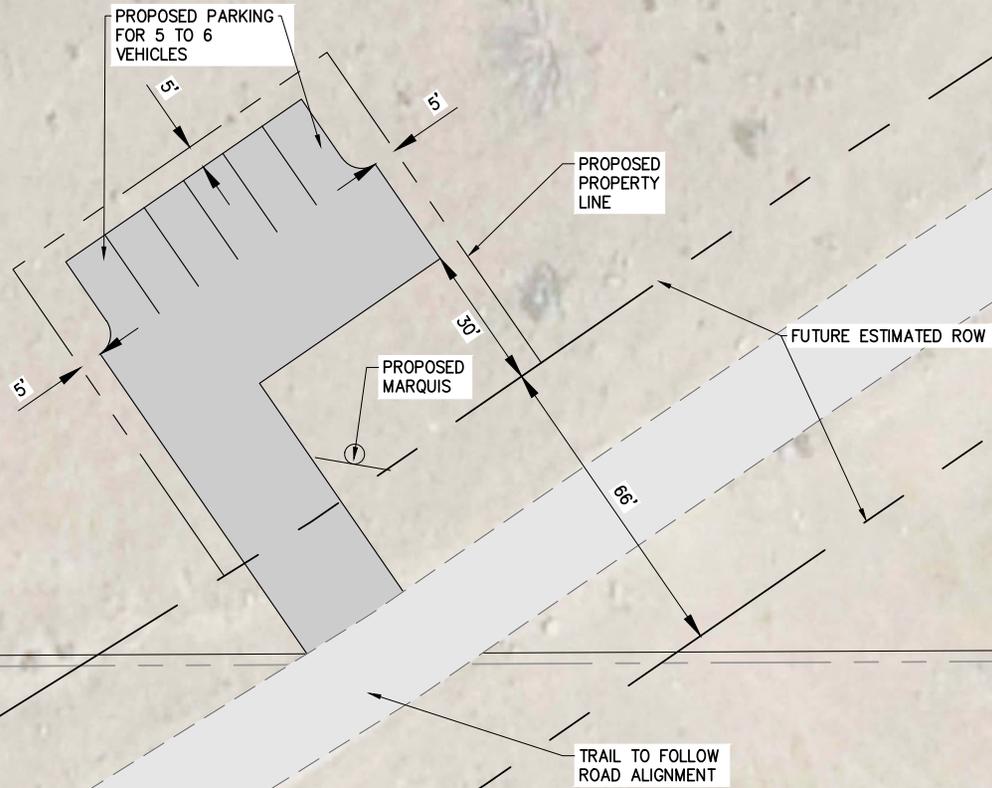


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TEL: 435.563.3734  
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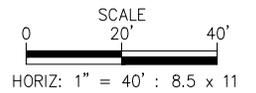


04-049-0004  
J SCOTT & CAROL A  
TRS BAKER



04-049-0003  
CIRCLE  
BAR S LLC

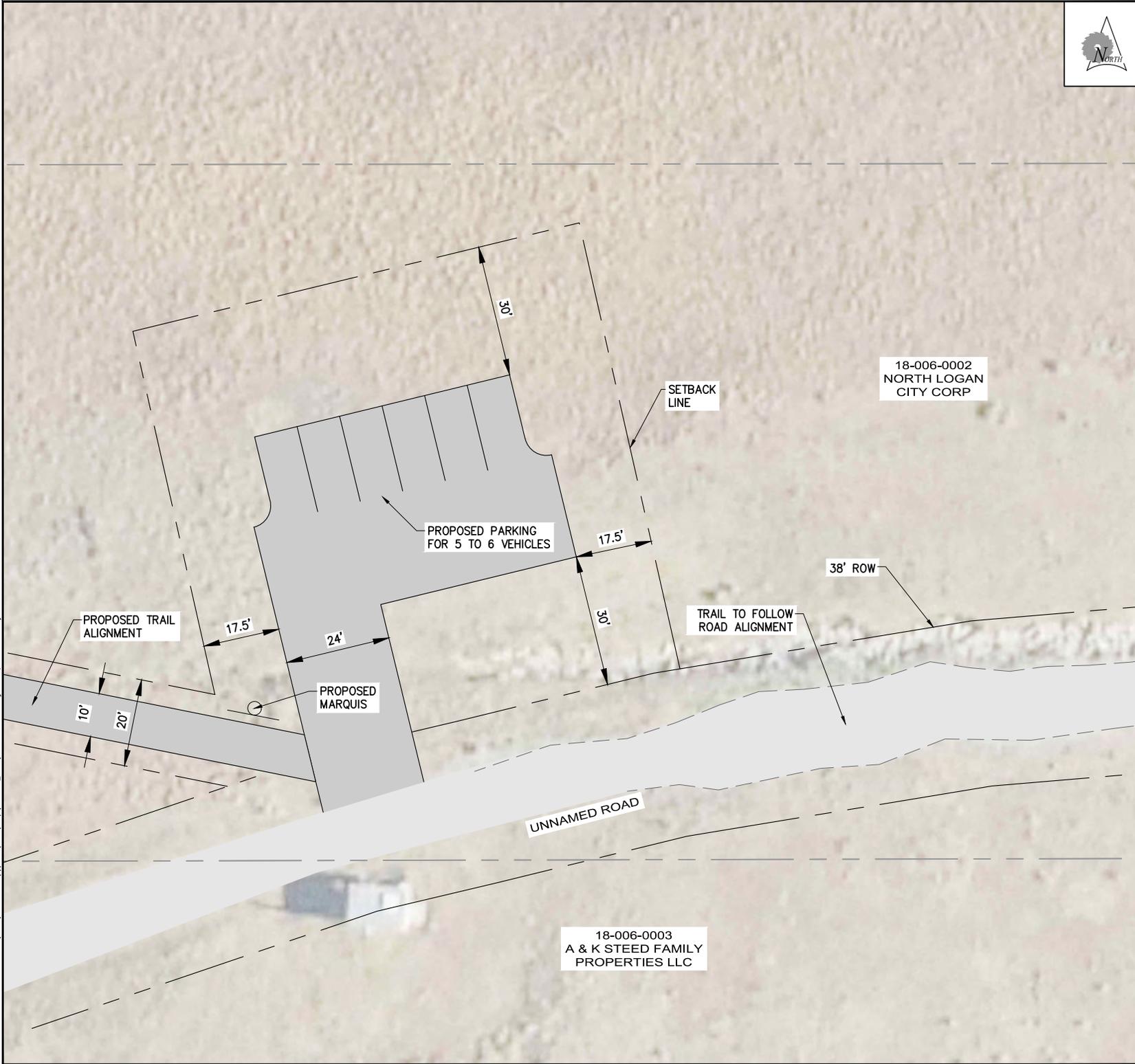
**NOTE:**  
THIS CONCEPT HAS BEEN DEVELOPED FOR THE PURPOSES OF PLANNING AND COST ESTIMATION. THE FINAL PLAN TO BE USED FOR CONSTRUCTION MUST BE APPROVED BY THE JURISDICTION IN WHICH THE TRAILHEAD IS LOCATED.



BOGUS CANYON TRAILHEAD  
CONCEPT



2100 NORTH MAIN STREET  
NORTH LOGAN, UTAH 84341  
TEL: 435.563.3734  
www.sunrise-eng.com



18-006-0002  
NORTH LOGAN  
CITY CORP

PROPOSED PARKING  
FOR 5 TO 6 VEHICLES

SETBACK  
LINE

38' ROW

TRAIL TO FOLLOW  
ROAD ALIGNMENT

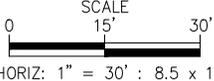
PROPOSED TRAIL  
ALIGNMENT

PROPOSED  
MARQUIS

UNNAMED ROAD

18-006-0003  
A & K STEED FAMILY  
PROPERTIES LLC

**NOTE:**  
THIS CONCEPT HAS BEEN  
DEVELOPED FOR THE PURPOSES OF  
PLANNING AND COST ESTIMATION.  
THE FINAL PLAN TO BE USED FOR  
CONSTRUCTION MUST BE APPROVED  
BY THE JURISDICTION IN WHICH THE  
TRAILHEAD IS LOCATED.

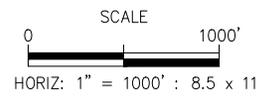
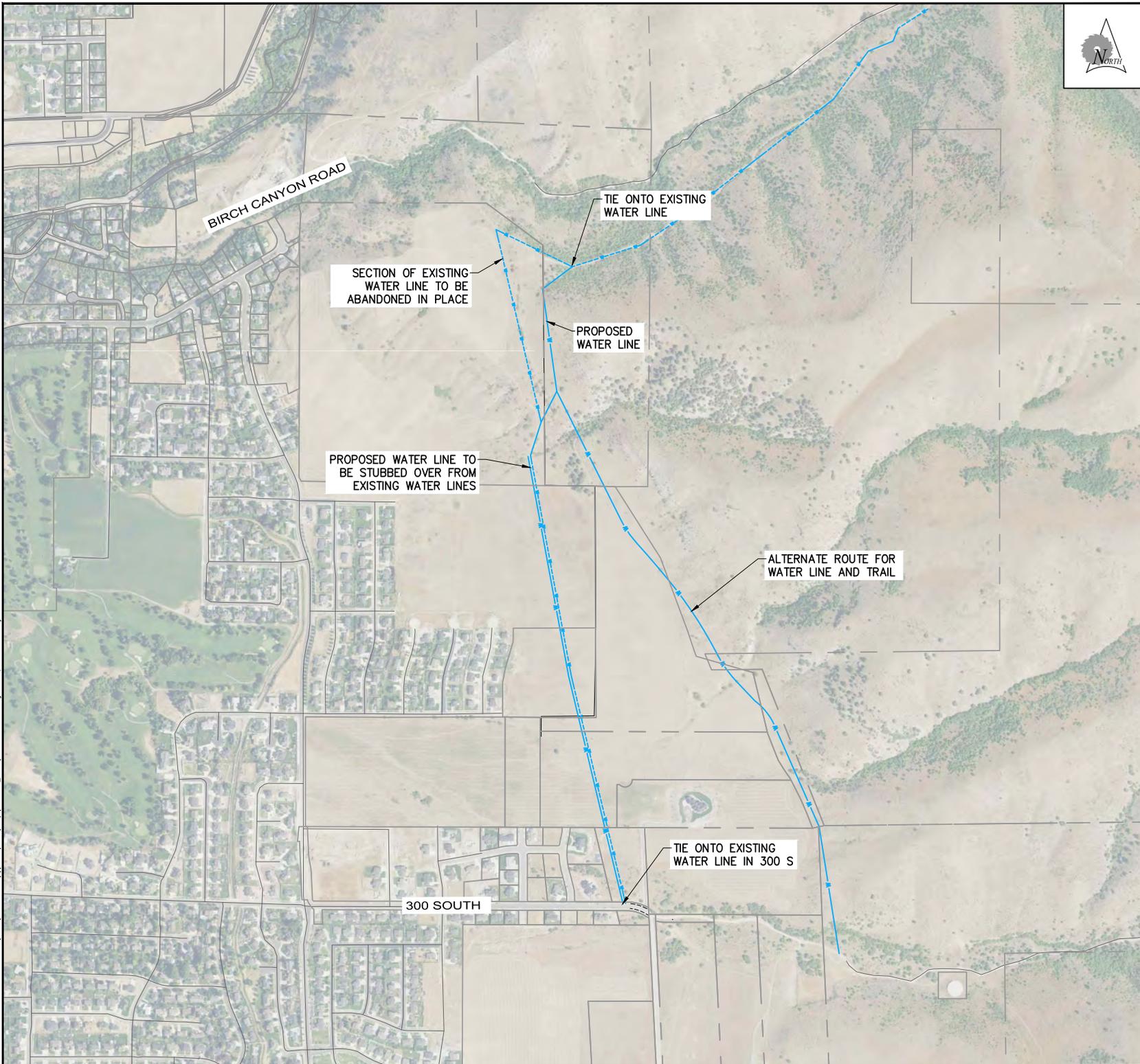


MEADOW LARK LANE  
TRAILHEAD CONCEPT



2100 NORTH MAIN STREET  
NORTH LOGAN, UTAH 84341  
TEL: 435.563.3734  
www.sunrise-eng.com

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**WATER LINE IMPROVEMENTS  
EXHIBIT**



2100 NORTH MAIN STREET  
NORTH LOGAN, UTAH 84341  
TEL: 435.563.3734  
www.sunrise-eng.com

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