

FHWA Office of Federal Lands Highway

Bonnie Brae Access Study

Planning and Design: Final Report



Date: May 2024



U.S. Department
of Transportation

**Federal Highway
Administration**

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Executive Summary

The Bonnie Brae Access Study is a collaborative project between the Federal Highway Administration (FHWA) Western Federal Lands Highway Division, the US Forest Service (USFS), and the City and Borough of Juneau (CBJ), with the additional support of local nonprofit Trail Mix, Inc. This document proposes changes to the Bonnie Brae access trail and trailhead on Douglas Island in Juneau, Alaska, with the goals of improving access to the Treadwell Ditch Trail from the Bonnie Brae area, planning sufficient parking for current and future use, protecting the local ecosystem from degradation, and improving trail condition and design for users. These goals arose from the public's stated needs concerning the Bonnie Brae access trail, which is currently in a poor condition that creates both environmental impacts and user safety risks. The access trail connects to the Treadwell Ditch Trail, a popular trail system on federal land that has recently undergone its own series of improvements.

This planning study examined several trailhead design alternatives at various sites and encouraged the public to share their thoughts on the study. The study recommends two alternative site designs for improving parking near the existing trailhead (see Figure 1). One alternative proposes to add four head-in parking spaces directly adjacent to the existing trailhead. The second recommendation proposes to formalize the existing roadside parking on the eastside of Wee Burn Drive to create six parallel parking spaces across from the Bonnie Brae trailhead. Both recommended alternatives should be evaluated in the NEPA assessment prior to construction. Both proposals meet the study's goals and are also representative of direct public input. Proposed improvements to the access trail itself include rerouting a portion of the trail to avoid sensitive muskeg habitat, decommissioning portions of the trail no longer needed with the rerouted alignment and improving remaining trail segments by adding subgrade and surface materials to the trail itself plus additional fill material and revegetation for erosion control. Total estimated costs for the trailhead site design and the trail improvements are comparable with Site 1 estimated to cost \$605,000, and Site 4 estimated to cost \$ 638,000.



Figure 1. Conceptual drawings for the two recommended parking area and trailhead concepts: Alternative 1 (left) and for Alternative 4 (right).

This Final Report is structured as follows. First, we summarize the study approach used by the project team. Second, we summarize the study area needs assessment. Third, we synthesize stakeholder and public feedback received throughout the study development process and how it informed final recommendations. Fourth, we outline the project findings and recommendations, including the proposed improvements to the Bonnie Brae access trail and recommendations for the parking area and trailhead design, along with associated costs. Lastly, we identify additional considerations and future work collected during the study development process. The Final Report serves as the synthesis of all study development work completed and final recommendations. For more information on any aspect of the study development process or decision making, see the relevant appendices included at the end of this report.

Introduction

The Bonnie Brae Access Study is a collaborative project between the Federal Highway Administration (FHWA) Western Federal Lands, the US Forest Service (USFS), and the City and Borough of Juneau (CBJ). The project was funded through the Federal Lands Access Program and selected in the 2016 Call for Projects. The Federal Lands Access Program was established in 23 U.S.C. 204 to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. The Access Program supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators.

Project Background

The Bonnie Brae Estates subdivision, located on Douglas Island in the City and Borough of Juneau, Alaska, contains a 1.5-mile makeshift trail accessing the Treadwell Ditch Trail. The Bonnie Brae access trail is narrow, unsustainably graded, and features dilapidated plank walkways and loose soil. The CBJ, USFS, and FHWA worked together with the public to assess trail options and improvements that would enhance access to the Treadwell Ditch Trail and make it safer, as well as more environmentally friendly. This study also includes a proposal for enhanced parking, as well as other features, to facilitate access from the Bonnie Brae subdivision to the Treadwell Ditch Trail.



Figure 2. Vicinity map of the Bonnie Brae Trail leading to the Treadwell Ditch Trail. The trails are located on Douglas Island west of downtown Juneau, Alaska.

Location and Study Area

The Bonnie Brae Estates subdivision is located on Douglas Island, in the City and Borough of Juneau. The access trail's trailhead is located on platted public right of way, situated between privately owned parcels.. The street on which the trailhead is located, Wee Burn Drive, is a local street under the jurisdiction of CBJ and features a gravel travelway with limited shoulders. The surrounding land uses is overwhelmingly single family residential with a neighborhood park less than 200-feet from the trailhead. The access trail begins on the west side of Wee Burn Drive near the intersection of Marguerite Street (see Figure 3). The trail then continues southwest for approximately 1.5 miles until it connects to the Treadwell Ditch Trail. See Figure 2 for the location of the Bonnie Brae access trail.



Figure 3. Existing conditions of the intersection of Wee Burn Drive and Marguerite Street, looking north. The Bonnie Brae Access Trailhead is located along the left side of this photo where the green marker is located.

Study Goals

The project team developed the following goals for this study based on the original FLAP project application and the stated needs of the public:

1. **Improve access to the Treadwell Ditch Trail from the Bonnie Brae area.** The access trail that currently exists is used by some neighborhood residents and drive-in visitors, but it is not necessarily visible or well known to the interested public.
2. **Provide sufficient parking for current / future use.** A current limitation on accessing the Bonnie Brae trail is the residential neighborhood's lack of parking infrastructure for trail visitors.
3. **Protect the local ecosystem from degradation.** The current access trail does not feature a compacted trail surface, resulting in damage to native soil and muskeg through regular use. This contributes to soil erosion that further impacts the local environment.
4. **Improve trail conditions and design for users.** In addition to unstable walkways, the trail currently features mud, loose soil, tree roots, and steep grades that make it inaccessible to some users and not conducive to multi-use access.

Approach

The study was developed over a 14-month period between March 2023 and April 2024. Phases included documenting existing conditions, developing conceptual designs, and preparing the Final Report. The project team also conducted outreach and engagement parallel to the study phases.

Scope

A preliminary analysis of the area was performed during the project's initial FLAP application process, which set the proposed scope for the project. The scope was further developed during the site visit, which enabled the project team to examine potential alternative locations for a trailhead that would connect to the Bonnie Brae access trail further down Wee Burn Drive or along the North Douglas Highway.

Needs Assessment

An analysis of the existing conditions, which informed the Needs Assessment, was performed through desktop research and bolstered by the experiential knowledge of the project team. In addition to FHWA WFL, the team included CBJ, USFS, and Trail Mix, Inc.—agencies and partners that operate in Juneau and are responsible for trail maintenance and related issues. The project site visit further contributed to the Needs Assessment.

Conceptual Designs

Under the conceptual designs task, the project team evaluated parking designs and cost estimates, as well as potential trail improvements, based on the scope and goals of the FLAP

application. While performing the site visit, route, design, and cost considerations were then refined through professional judgment and knowledge of CBJ-owned land. The conceptual designs were shared with interested members of the public during an online open house and comment period, including a virtual meeting and a public comment form. Comments received were used to further refine the site options. The conceptual designs phase is summarized in the Findings and Recommendations section, and is available in more detail as Appendix B.

Final Report Development

The final task was to develop study recommendations and a final report. This involved sharing the proposed trailhead and parking designs, trail improvements, and cost estimates with the general public and interested stakeholders for discussion and revision. Comments received informed the final report development.



Figure 4. Portions of the makeshift Bonnie Brae Access Trail are located in sensitive muskeg habitat.

Needs Assessment

A Needs Assessment was conducted to better understand the existing conditions on and around the Bonnie Brae access trail and to determine what is most in need of improvement. In addition to desktop research, the project team completed a site visit in June 2023 which helped to inform the Needs Assessment. The project team found that the Bonnie Brae access trail is a useful resource for accessing the northern side of the Treadwell Ditch Trail, but it contains safety and environmental considerations that should be addressed in order to improve its utility and reduce potential harm.

Trail Conditions, Environment, and Safety

This study aims to provide safe access to the Treadwell Ditch Trail from the Bonnie Brae area while protecting environmental resources. The Bonnie Brae access trail is roughly 1.5 miles long and a portion of it currently consists of 14-inch, dilapidated plank walkways that rest on unstable, muddy surfaces. The steep grading is unsustainable and contributes to erosion, and is also unsuitable for biking and other uses. The unstable and slippery surfaces, combined with steep grades, create safety issues for users of the trail. These conditions were confirmed during the site visit.

Muskeg and sensitive organic soils along the Bonnie Brae access trail have degraded from unprotected user access, particularly when users attempt to avoid muddy areas and thus widen the trodden path. This degradation interrupts natural drainage patterns in the area.



Figure 5. Wood planks placed along the Bonnie Brae Access Trail.



Figure 6. Makeshift boardwalk created with logs through sensitive muskeg habitat along the Bonnie Brae access trail.

Land Ownership, Access, and Maintenance

The current Bonnie Brae access trail entrance is located on platted public right of way. The access trail then heads west onto property owned by CBJ land before continuing on to USFS land where the access trail ultimately connects to the Treadwell Ditch Trail. It exists in close proximity to privately-owned parcels in and around the Bonnie Brae residential neighborhood. The current access point for the Bonnie Brae trail is located on land platted as public right of way and is thus a publicly accessible connection to federally owned lands on the Tongass National Forest.

Existing Access Routes

The Bonnie Brae access trail is one of the few direct connections to the northern portion of Treadwell Ditch Trail. See Figure 7. Conversely, multiple access routes to the Treadwell Ditch Trail exist along the more southern portion of the trail system, south of the Juneau-Douglas Bridge. See Figure 8.

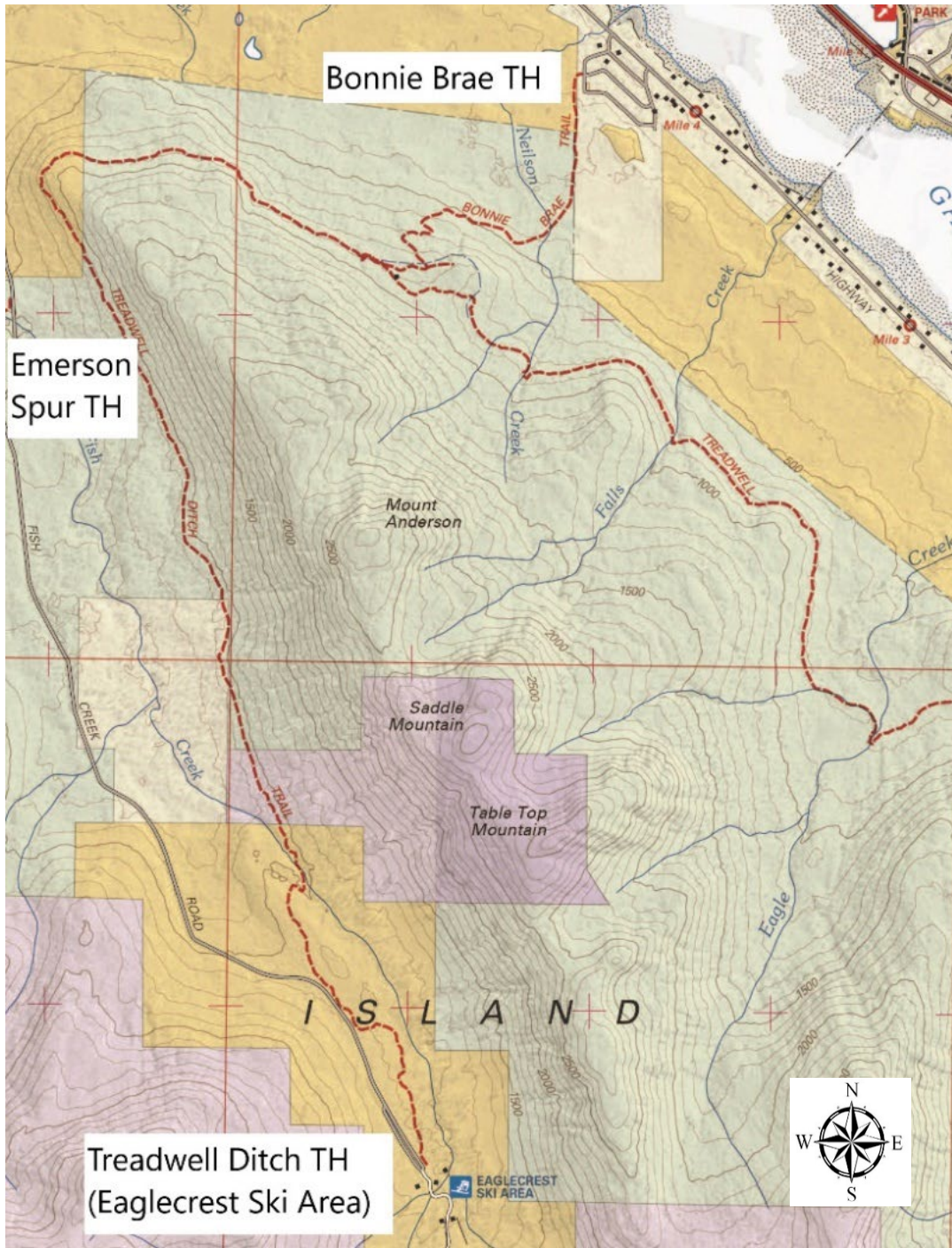


Figure 7. Map of Bonnie Brae access trail leading to the northern portion of the Treadwell Ditch Trail. (Not to scale)

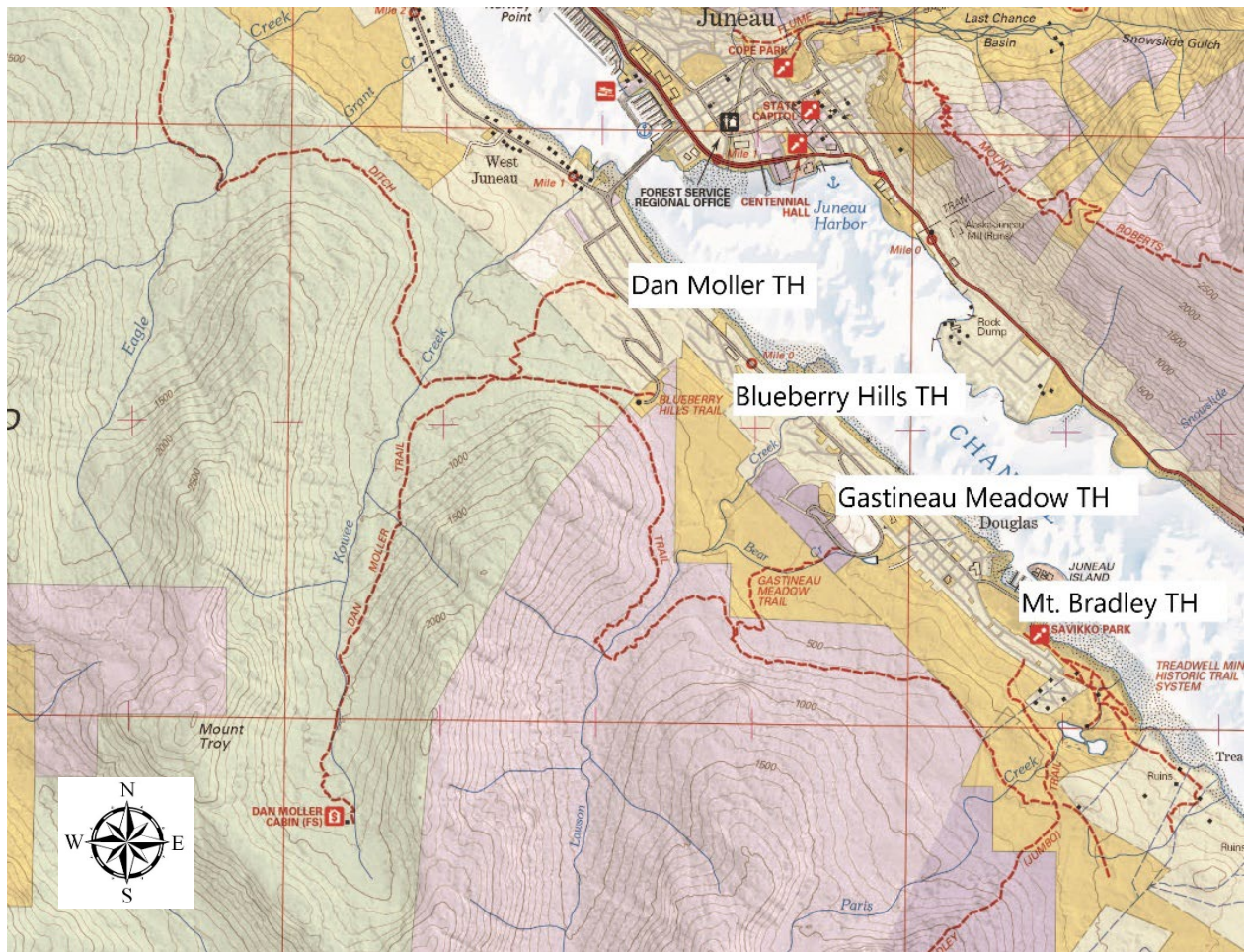


Figure 8. Map of other trailhead locations providing access to the Treadwell Ditch Trail from the southern end of the trail system. (Not to scale)

Usage and Traffic

Despite the access trail's makeshift nature and muddy conditions, residents of the Bonnie Brae neighborhood and outside visitors regularly use the trail in warmer months. This project's 2016 FLAP application reported that the Treadwell Ditch Trail averaged 8 – 10 hikers per day, with a 20-year projected increase of up to 30 hikers per day due to ongoing trail improvements. Given the Bonnie Brae access trail's unique placement along the northern side of the Treadwell Ditch Trail, it is expected that the access trail will continue to see steady use among those wishing to connect to the improved Treadwell Ditch Trail. Additionally, some neighborhood residents of Bonnie Brae indicate that they use the access trail as a standalone route for purposes of dog-walking, foraging, and hiking with children.



Figure 9. Family bicycling near the Bonnie Brae Access Trailhead on Wee Burn Drive.

Information Gaps

While the study's original FLAP application contained average trail traffic counts from 2016, the project team does not currently possess updated counts for 2024. The June 2023 site visit and informal observation support the 20-year projected average included in the 2016 report, with daily visitors to the Treadwell Ditch Trail not exceeding 30 on average. However, in the future it may be necessary to obtain updated visitor averages. Additionally, prior to any design and construction, an environmental conditions survey will need to be prepared in NEPA to assess and confirm the observed environmental considerations documented here.

Stakeholder and Public Perspectives

The project team invited public feedback throughout the study and conducted specific outreach measures in Summer 2023 and Winter 2023-24. These included a public survey on current uses of the access trail, an online comment period and feedback form based on several of the proposed site designs, and a virtual public meeting. Feedback from the public indicated that while most participants wanted safety improvements to the Bonnie Brae access trail itself, perspectives differed on how to accommodate a projected increase in visitation based on an improved trail—and whether such an increase was likely.

Public Survey Results

During June and July 2023, CBJ hosted an online survey asking residents of Juneau about their use of the Bonnie Brae access trail and the Treadwell Ditch Trail. The survey was conducted to help the project team understand how community members use the Bonnie Brae access trail and which proposed improvement options are most supported. The survey closed on July 15, 2023, with a total of 221 participants. The survey asked a series of ranked-choice and open-ended questions to assess participants' current usage and future expectations for trail access. Full survey results, including all write-in responses, can be found in Appendix A.

A clear result from the survey was that most respondents considered poor trail condition a top issue to address at the Bonnie Brae access trail (See Figure 10). Forty percent of respondents also identified lack of parking as a top issue. It is worth noting that several open-ended responses to the survey emphasized that the parking improvements should be considered only if the trail conditions were also improved. These results helped inform the Project Goals of improving access from the Bonnie Brae area, providing sufficient parking, and improving trail conditions for users.

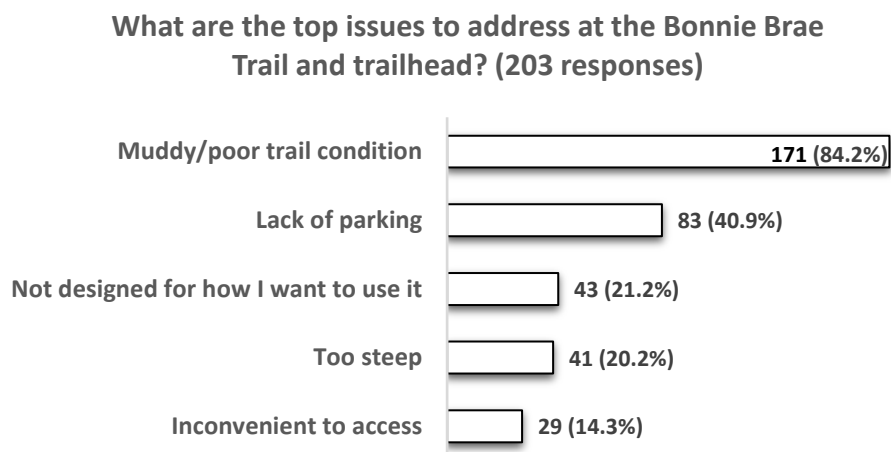


Figure 10. Survey results from Question 10, "What are the top issues to address at the Bonnie Brae Trail and trailhead?"

Results from an open-ended question asking how the Bonnie Brae trail could be improved reflected many of the same considerations, with additional concerns raised over protecting the local environment from degradation—particularly the muskeg along the access trail. Nearly half of survey respondents indicated that they accessed the trail by driving to it, indicating that the trail served not only local residents, but also those from around the area. This input from the public laid the foundation for the development of the project’s four goals.

Winter 2023-24 Public Involvement Plan

From late November 2023 to early January 2024, the project team conducted a public outreach initiative designed to encourage Juneau residents to become familiar with several proposed site designs and offer feedback on the study’s direction. Components of outreach included:

- Updates to the project website, including a project description, Project Goals, and site design options.
- A virtual public meeting held on December 7, 2023.
- An online public comment feedback forms available through January 10th.
- And radio, print, and social media advertisements to inform the public of these elements.

Notes from the public meeting, a summary of comment form results, and images of advertising materials can be found in Appendix A.

During the virtual public meeting, the project team heard from many Bonnie Brae neighborhood residents who expressed concern about the possibility of a large, obtrusive parking lot nearby. Others who typically drove and parked to access the Bonnie Brae trailhead expressed optimism at the idea of parking availability. Several community members wondered whether there could be an option to formalize the parking visitors already used on the roadside. These perspectives were also reflected in the public comment form, described below.

Public Comment Form Results

The public comment form was available online from December 1, 2023, to January 10, 2024. It included three proposed site designs and asked for feedback on each one. The form received a total of 95 responses. A complete summary of responses to all questions, as well as images of the site designs, can be found in the appendices.

Respondents found Site 2 to be the least preferred design overall, primarily due to its perceived impositions onto the Bonnie Brae neighborhood. The most well-liked design was Site 3, which respondents noted for its plentiful parking and its convenient off-highway location. Table 1 shows an overview of what percentage of respondents liked and disliked each design.

Table 1. Summary of responses to the question: "On a scale of 1 - 5, how much do you like this site design?" for each of the three site designs shown to the public.

Rating	Site Design 1: Bonnie Brae 4 Spaces	Site Design 2: Bonnie Brae 12 Spaces	Site Design 3: Douglas Highway 20 Spaces
1. Don't like it at all	26%	42%	24%
2.	16%	13%	9%
3.	30%	17%	20%
4.	16%	10%	16%
5. I really like it	12%	18%	31%

Overall, respondents perceived unique advantages and disadvantages to each site. Site 1's minimalist design appealed to those who wanted a small footprint and little neighborhood disruption, but it struck others as inadequate. Site 2's off-roadway design seemed safer to motorists, but residents were concerned about increased traffic and other disruptions to the area. The new location proposed in Site 3 struck some respondents as being the most accessible due to its proximity to the highway, but for others that same proximity raised questions about the safety of turning off and onto a busy road. It was also clear that part of Site 3's popularity was due to it being away from the neighborhood; many residents emphasized their desire for an unobtrusive site.

Takeaways From Public Involvement

Throughout the process, participants expressed varying perceptions of what degree of projected trailhead use was *likely*, as well as what was *desirable*. The question of *likely* projected use is addressed with the data gathered for this study, including estimates of traffic increases driven by trail improvements and comparisons to other nearby trailheads. Many participants reiterated that it was difficult to judge which site design was most practical without knowing more about what types of trail improvements would be made.

Differing public opinions on *desired* levels of use conveyed a need for balance in the final site design proposed by the project team. The Bonnie Brae access trail is popular with some users outside the neighborhood who would like to be able to access parking and a well-maintained trail. At the same time, residents within the neighborhood—trail users and non-users—will be impacted by changes that carry the possibility of greater traffic to the area. There was a clear need to synthesize the perspectives of both groups by endorsing a site design that facilitates use for nonresident visitors but does not present an undue imposition onto the neighborhood.

Findings and Recommendations

Following the existing conditions, conceptual design options, and engagement efforts, the project team proposes the following improvements based on public and stakeholder perspectives and project team analysis. Findings refers to information gathered during the study to inform project decision making, and recommendations refers to decisions on trail improvements, trailhead and parking designs, and cost estimates.

Trail Improvements

The Bonnie Brae access trail currently consists partially of 14-inch, dilapidated plank walkways that rest on unstable, muddy surfaces and partially of a narrow foot trail. Steep slopes cause slippery conditions for trail users, and contributes to erosion. All of the alternatives assessed in this study include the necessary trail improvements outlined below. For developing the proposed trail improvements, the project team relied upon the expertise of Trail Mix, Inc., a registered 501(c)3 non-profit organization that functions as third party organization for maintaining and improving trails in Juneau.

Proposed Trail Improvements include:

- Finishing trail of 18-24 inch tread width
- Max 10-12% grade
- Native aggregate material, and some imported
- Average depth of aggregate and topsoil of 4-6 inches
- Revegetation along the trail for improved erosion control
- Realigning the southern portion of trail to avoid topographic challenges and sensitive habitat
- Decommissioning trail alignments no longer needed

In addition to the noted improvements above, the USFS provides additional guidance for trail design and maintenance for National Forest System (NFS) trail and trail segments¹. The USFS assigns all National Forest System Trails with a Trail Class, a prescribed scale of development that represents its intended design and management standards. The Bonnie Brae Trail (NFS Trail Number 33748) is classified as a "Moderately Developed (Trail Class 2)". The Trail Design Parameters for Class 2 trails with a design use of "Hiker/Pedestrian" recommends trail designs are consistent with those recommended by Trail Mix. See Appendix D for the USFS design parameters for this type of trail classification.

Trailhead Design and Parking

During the public involvement components of the study, participants indicated a need for more parking at the Bonnie Brae access trailhead. However, residents of the Bonnie Brae

¹ USDA Forest Service. (2016). *Trail Fundamentals and Trail Management Objectives*.
<https://www.fs.usda.gov/managing-land/trails/trail-management-tools/trail-fundamentals>

neighborhood made clear that a large parking lot was undesirable. The project team balanced these views with the additional consideration that a goal of the study is to facilitate access from (or very near to) the existing site. For complete information on the conceptual design process, including the earlier designs provided to the public for feedback, see Appendix B.

The proposed site design for improved trailhead and parking includes two alternatives: Site 1, which provides four head-in parking spaces on the platted public right of way adjacent to the existing trailhead; and Site 4, the preferred alternative originating from public suggestions to formalize on-street parallel parking on Wee Burn Drive. The project team finds that both Site 1 and Site 4 are feasible alternatives that are highly aligned with the project goals. CBJ and USFS will need to choose which alternative to pursue while weighing the additional considerations noted at the end of this report.

Recommended Alternative: Site 1

The first recommended alternative, Site 1, proposes four head-in parking spaces located within the platted public right of way adjacent to Wee Burn Drive (see Figure 11.) This parking area alternative would provide parking spaces directly adjacent to the existing trailhead, and would not alter the pavement width nor negatively impact the maintenance activities for Wee Burn Drive. The small footprint of the Site 1 alternative would limit negative impacts to the surrounding ecosystem and would have little disruption to the surrounding residential neighborhood.

As noted in the goal matrix below (see Table 2), the project team as well as the public have some concerns about vehicles backing up into the intersection of Wee Burn Drive and Marguerite Street. Feedback from members of the public also noted drainage concerns on the west side of Wee Burn Drive.

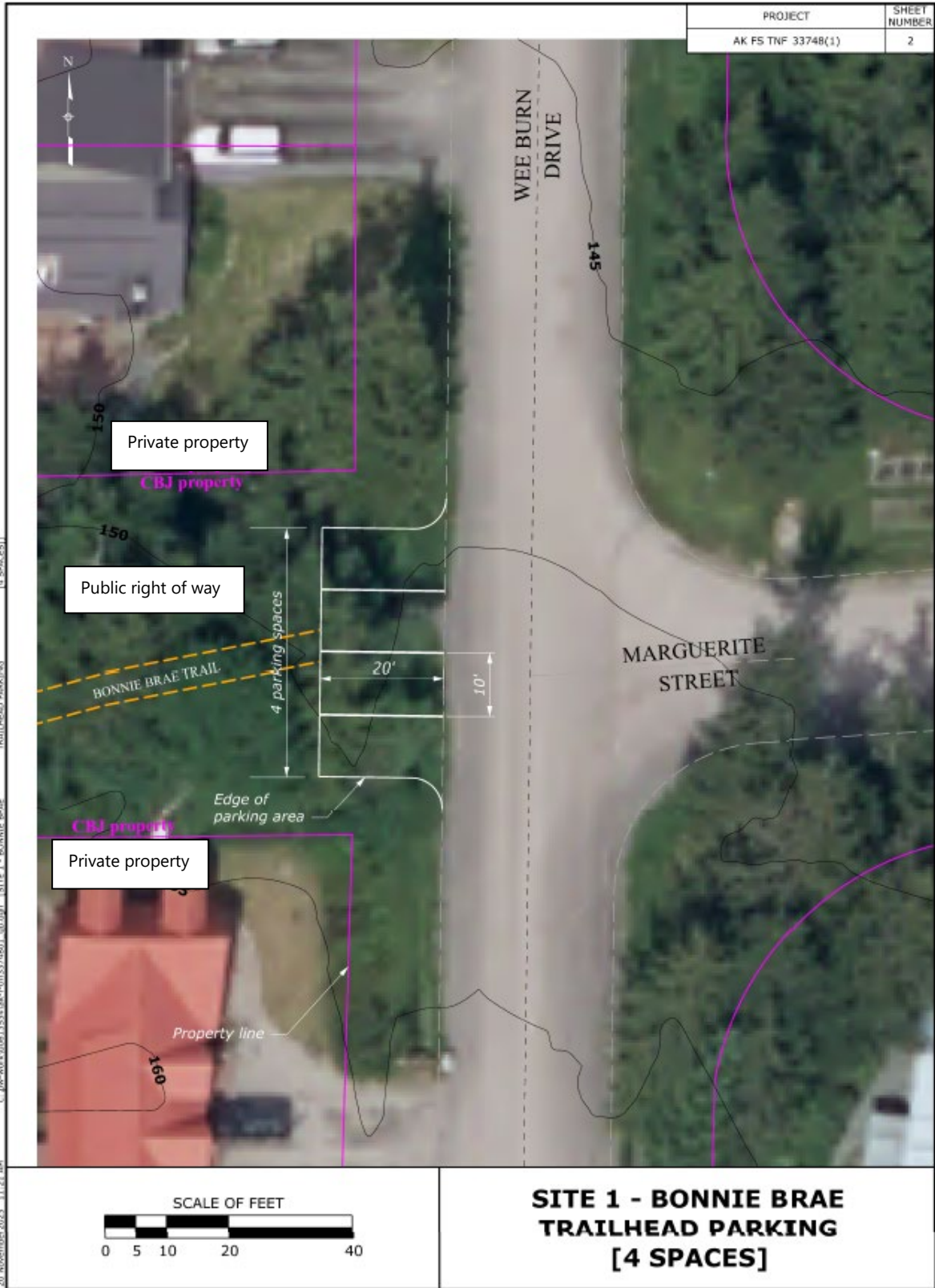


Figure 11. Proposed conceptual site design for Site 1 with four head-in parking spaces within platted public right of way off of Wee Burn Drive.

Recommended Alternative: Site 4

The second recommended parking concept known as Site 4 (see Figure 8) emerged from public suggestions to formalize the parking behaviors that already take place at the Bonnie Brae trailhead, namely parking along the east side of Wee Burn Drive. The reason visitors park along the east side of the street is because it is less impacted by drainage issues. To make parking there more amenable, the proposed design places six parallel parking spaces along the eastern shoulder of the gravel roadway, allowing for broader roadway utilization. The parallel structure also addresses the public's concerns about potentially backing out into an intersection (as with original Site Design 1). The reduced number of spaces and elimination of a dedicated driveway addresses the oversized, obtrusive feel of Site Design 2 which would have required clearcutting of forest.

Similar to Site 1, Site 4 is located directly next to the existing Bonnie Brae access trail trailhead and represents one of the two low cost alternatives for the improving parking area for the trailhead. It is unclear how much more usage the access trail will receive once trail improvements are made. Where as Site 1 would provide enhanced parking for four vehicles, Site 4 would provide enhanced parking for six vehicles, better addressing the public's current need for parking while leaving room for more development in the future if CBJ and its residents so choose.

Site 4 presents implementation challenges with regards to allowable parking along the public right of way. The project team received early feedback from CBJ Community Development Department that the City's development code does not support the addition of dedicated on-street parking. Furthermore, the Community Development Department noted that on-street parallel parking may impact street maintenance – specifically snow removal. Should CBJ and USFS wish to proceed with Site 4 as the desired trailhead and parking improvements for the Bonnie Brae access trail, CBJ and USFS would need to initiate further conversation with the Community Development Department to determine if a variance or design exception is appropriate and approvable.



Figure 12. Proposed conceptual site design for Site 4, with on-street parallel parking spaces along the east side of Wee Burn Drive.

Alternatives Not Recommended: Sites 2 and 3

Site 2 is located within the same platted public right of way as Site 1, with the primary design difference being a driveway leading to 12 angled parking spaces further into the site. The concept presented to the public (see Figure 13) includes a 20-foot wide driveway with access from Wee Burn Drive, and with a cul-de-sac turnaround and angled parking spaces placed along the throat of the driveway. The long driveway design is intended to reduce potential noise disturbances from trail visitors.

During the virtual public meeting, the project team heard concerns from local residents that formalizing such a large “destination” trailhead such as Site 2 would draw additional traffic to the neighborhood, and that the size of the site might feel invasive to the adjacent homeowners. The project team also notes that the cost estimate for Site 2 would be more expensive compared to Sites 1 and 4.



Figure 13. Proposed conceptual site design for Site 2 with long driveway, turnaround, and 12 angled parking spaces off Wee Burn Drive

The project team proposed Site 3 as an alternative that would accommodate the largest increase in visitors to the Bonnie Brae access trail by constructing a large parking lot with 20 vehicle parking spaces off of North Douglas Highway (see Figure 14). Because Site 3 is located the furthest from the existing trailhead, this alternative requires a new trail spur to be constructed

that would connect the proposed parking area to the existing Bonnie Brae trail. The anticipated cost for Site 3 would be higher compared to all other alternatives given the large size of the parking lot and the need for a new trail spur.

Unlike the other alternatives proposed, the impacts from Site 3 to the Bonnie Brae subdivision would be minimal since the improvements would be constructed far from the existing trailhead. Public comments on the initial alternatives indicate that Site 3 was the most popular and well-liked due to the minimal impacts to the Bonnie Brae subdivision and the increase in available parking. The public echoed the project team’s concerns about the anticipated cost of Site 3, as well as the site’s need for a new trail spur since the focus on the project should be improving the existing Bonnie Brae access trail.

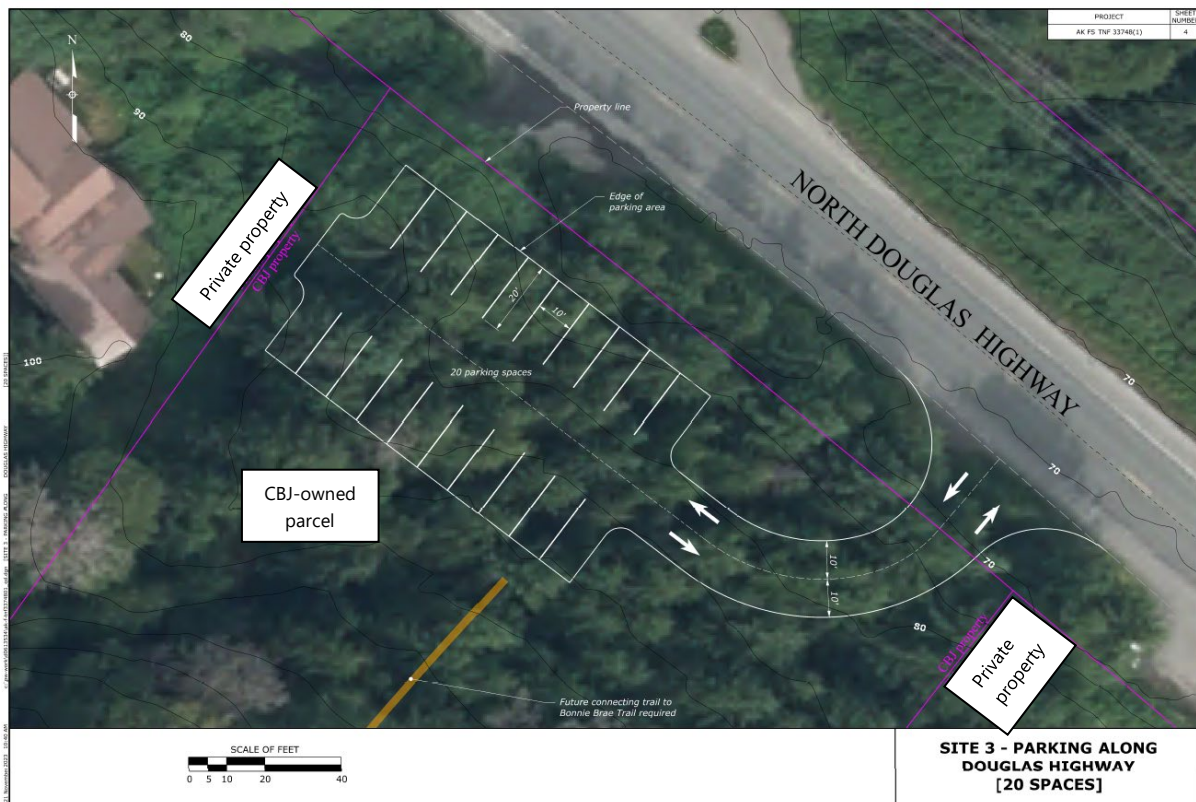


Figure 14. Proposed conceptual site design for Site 3 with long driveway, large parking area with two-way drive aisle and 20 vehicle parking spaces off of North Douglas Highway.

See Table 2 for a full breakdown of how the four proposed sites scored on addressing the project goals. Appendix A Public Involvement and Appendix B Conceptual Designs provides further detail and analysis of the various alternatives considered in this study.

Table 2. Goal matrix of proposed site designs. Ratings are shown on a scale of 1 – 5, with 1 being, "Does not meet project goal", and 5 being, "Meets project goal well".

<i>The goals of this reconstruction plan are to:</i>	Site 1: Existing trailhead, 4 spaces on west side of Wee Burn Dr.	Site 2: Existing trailhead, 12 spaces w/ turnaround on west side of Wee Burn Dr.	Site 3: North Douglas Hwy, 20 spaces	Site 4: Existing trailhead, 6 parallel spaces on east side of Wee Burn Dr.
Relative Cost	Low Cost	Medium Cost	High Cost	Low Cost
1. Improve access to the Treadwell Ditch Trail from the Bonnie Brae area.	3 This option uses the existing trailhead to improve access by adding limited parking. However, the design requires cars to back out near an intersection.	2 This option uses the existing trailhead to improve access by adding substantial parking with a dedicated driveway. However, neighborhood residents consider the design intrusive and thus not beneficial for access.	2 While the site's location and parking availability could improve overall access, it is not at the existing Bonnie Brae access trail.	4 This option uses the existing trailhead to improve access by adding limited parking. The design formalizes the current practice of parking on the street with minimal neighborhood disruption.
2. Provide sufficient parking for current/future use.	3 Adding four spaces may help with current use, but it could be too little for future use with trail improvements.	5 The addition of 12 spaces is expected to accommodate future use with trail improvements.	5 The addition of 20 spaces is expected to accommodate future use with trail improvements.	4 Six spaces accommodate current use. It is unclear whether it will be sufficient for future use with improvements.
3. Protect the local ecosystem from degradation.	4 The expected trail improvements and the small footprint satisfy plans to protect the local ecosystem. However, parking on the west side of the street may raise issues with drainage.	2 This option includes trail improvements to protect the ecosystem. However, its larger footprint and position within the forest would not only require significant clearcutting but also disrupt muskeg.	3 This option includes trail improvements to protect the ecosystem and would remove debris currently present at the site, but it features a large footprint that would require significant clearcutting.	5 This option uses the east side of the roadway to avoid negatively impacting drainage. Combined with anticipated trail improvements, it protects the local ecosystem while also featuring a small footprint.
4. Improve trail conditions and design for users.	5 Design includes trail improvements.	5 Design includes trail improvements.	5 Design includes trail improvements.	5 Design includes trail improvements.
Total	15	14	15	18

Cost Estimates for Design and Construction

The project team prepared cost estimates for the proposed trail improvements, as well as for two recommended site designs for parking improvements. The mileage assumptions in the cost estimates were calculated using GIS trail alignments provided by USFS. The cost per unit used for developing the estimates below are standard Federal Highway Administration costing assumptions for materials and labor based on bid history. The estimates below also include a typical 30% design contingency for these planning level estimates.

The costs shown below for trail improvements incorporate realigning southern third of the trail where it approaches the intersection with the Treadwell Ditch Trail. The cost estimates also include assumptions for decommissioning previous trail alignments no longer needed. Lastly, this study also provides cost estimates for the necessary trail improvements along the remainder of the trail where the alignment is not proposed to change. The cost estimates below (see Table 3) have been rounded up to the nearest thousandth for ease of readability. See Appendix E for more detailed conceptual-level cost estimates.

Table 3. Cost estimates for trail improvements and trailhead parking improvements at both Site 1 and Site 4 (costs displayed in 2024 US dollars)

Design Alternative	Trail Improvements	Parking and Trailhead Improvements	Total**
Site 1: Existing trailhead, 4 head-in spaces on west side of Wee Burn Dr.	\$390,000	\$94,000	\$605,000
Site 4: Existing trailhead, 6 parallel spaces on east side of Wee Burn Dr.	\$410,000	\$101,000	\$638,000

***Total costs include estimate for preliminary engineering (10% of total project) and construction engineering (15% of total project)*

Conclusion and Additional Considerations

This document provides the initial planning level study for needed improvements to the Bonnie Brae access trail. The project team members assessed trail improvement options for the deteriorating informal trail as well as multiple locations and concepts for improved access points to the trail. Successful public engagement informed the study's goals and as well as the project team's assessment of alternatives by prioritizing the need for improved trail conditions and for additional vehicle parking. A summary of the project's public engagement efforts is summarized in Attachment A: Public Engagement Summary.

The project team proposes trail improvements that would best enhance user experience and safety, as well as limit the impacts to the surrounding ecosystem. The project team proposes two recommended design concepts for the improved parking in close proximity to the existing trailhead. Site 1 includes constructing four head-in spaces in platted public right of way, and Site 4 formalizes existing on-street parallel parking with up to six spaces along the east side of Wee Burn Drive. The proposed trail improvements and preliminary cost estimates within this study will allow for CBJ and USFS to seek funding opportunities for construction.

Additional Considerations

This planning document represents the conclusion of current funding for this project. Any steps to implement the plan described in this document would require CBJ or USFS to initiate a separate funding proposal. Additionally, CBJ is under no obligation to proceed with these recommendations and could propose a revised or new site design to advance funding. If CBJ does choose to proceed with this recommended option or any other, it does not preclude the possibility of additions or alterations in future years.

If CBJ or USFS proceed with the recommended alternatives, the following considerations should be taken into account:

- The design concept Site 4 includes a proposal to widen the paved roadway on the eastside of Wee Burn Drive, a local residential street owned and maintained by CBJ. USFS would need to coordinate with CBJ to ensure adequate right of way is available for the desired parking improvements, and to obtain any necessary engineering-related approvals within CBJ rights of way.
- A fill permit from the US Army Corps of Engineers would be needed prior to any trail reconstruction (depending on the techniques proposed), due to potential routes crossing wetland soil.
- The Treadwell Ditch Trail is a historic property eligible for listing on the National Register of Historic Places. There is also a historic access trail to the Treadwell Ditch Trail in the

vicinity of potential reroutes of the Bonnie Brae access trail. For this reason, USFS would need to consult with a State Historic Preservation Officer on proposed actions.

- National Environmental Policy Act (NEPA) regulations for the construction process would consist of scoping internally and externally to explore the possibility of extraordinary circumstances. If none were found, trail reconstruction could occur without further analysis and documentation in an EIS, EA, or under a categorical exclusion for “construction and reconstruction of trails.”
- The southern trail alignments assessed as part of this study may change based on USFS ground-truthing efforts. If there are substantive differences between the mapped alignments used for this study versus the verified trail alignment, proposed cost estimates may change.
- CBJ will initiate an update to the Juneau Trails Master Plan in 2024. The project website for this effort states that the Plan will “...identify high-priority projects and develop a trail maintenance schedule to meet the growing demand for trail recreation of all kinds”². The forthcoming update to the Juneau Trails Master Plan could be a timely opportunity to elevate this study’s recommended improvements to the Bonnie Brae access trail as a priority for implementation.
- Portions of the Bonnie Brae access trail are located on property owned by CBJ. The USFS and CBJ should explore recording a permanent easement on the portions of the trail that cross CBJ-owned property for the purposes of trail construction and maintenance / for the purposes of maintaining public access.

Funding Options

The implementation of the proposed trail and trailhead access improvements depends on securing sufficient funds. The project team has identified the following as potential sources of funding for the proposed trail and trailhead improvements.

- [Federal Lands Access Program \(FLAP\)](#) – FHWA - The Federal Lands Access Program was established to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. FLAP supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators. Applicant must be state, county, tribal, or city government that owns or maintains the transportation facility.

² P&R – Project List – City and Borough of Juneau. (n.d.). <https://juneau.org/parks-recreation/project-list/entry/65773>

- [Federal Lands Transportation Program \(FLTP\)](#) – FHWA – The Federal Lands Transportation Program was established to improve the transportation infrastructure owned and maintained by federal land management agencies, including USFS. Though this program is only for federal agencies, these funds can be leveraged at the request of the appropriate federal land management agency.
- [Legacy Trails Grant Program](#) – USFS - Program goal for these funds is to support projects that restore, protect, and maintain watersheds on national forests and grasslands. Looking to fund projects that restore fish and aquatic organism passage, improve trail resiliency, preserve trail access, and convert unneeded Forest Service roads to trails. Protecting threatened, endangered, and sensitive species, and community water sources are among the top priorities for projects that improve and maintain trail access.
- [Transportation Alternatives \(TA\) Set-Aside Program](#) within the Surface Transportation Block Grant Program (STBG) - provides federal funding for projects and activities defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. The passage of the IIJA also added a new eligible project type: activities relating to vulnerable road user safety assessments (FHWA 2022). The DOT&PF issues a call for projects and applications are reviewed and scored with the final projects being selected by the DOT&PF statewide project evaluation board.
- [Hunter Access Grant Program](#) - The Federal Aid in Wildlife Restoration Act, commonly called the Pittman-Robertson Act (1937), provides funds to state fish and federal agencies to restore, conserve, and enhance wildlife populations and their habitats. Funded projects are diverse and include providing public use and access to wildlife resources. Other projects may include building, improving, and repairing public use trails, roads, parking lots, campgrounds, boat launches, and bridges. The ADF&G Division of Wildlife Conservation staff work with relevant stakeholders to identify access improvements. The ADF&G has an annual call for projects based on funding availability.
- [Great American Outdoors Act – Legacy Restoration Fund](#) – USFS Region 10 (Alaska) – This funding program supports USFS mission by restoring, protecting, and maintaining crucial watersheds within national forests and grasslands. This funding is administered by USFS through its long-range transportation planning processes.

Project Team Information

The project team included the following individuals:

- Seth English-Young | Lead Transportation Planner | FHWA Western Federal Lands
- Kevin Parker | Design Engineer | FHWA Western Federal Lands
- George Schaaf | Deputy Director, Parks and Recreation | City and Borough of Juneau
- Krista Garrett | Realty Specialist | US Forest Service
- Max Hertel | Recreation Planner | US Forest Service
- Pete Schneider | Recreation Program Manager, Juneau Ranger Dist. | US Forest Service
- Meghan Tabacek | Trail Program Manager | Trail Mix, Inc.

Additional technical support was provided by Ravyn Cervantes, FHWA Western Federal Lands; Kate McQuillan, FHWA Western Federal Lands; Ryan O'Shaughnessy, Trail Mix, Inc.; and Michele Elfers, formerly City and Borough of Juneau.

In fond memory of Allison Gillum.

Allison participated on the project team as a member of the US Forest Service. She passed away in November 2023.

Appendices

A: Public Engagement Summary

B: Conceptual Designs appendix

C: FLAP application

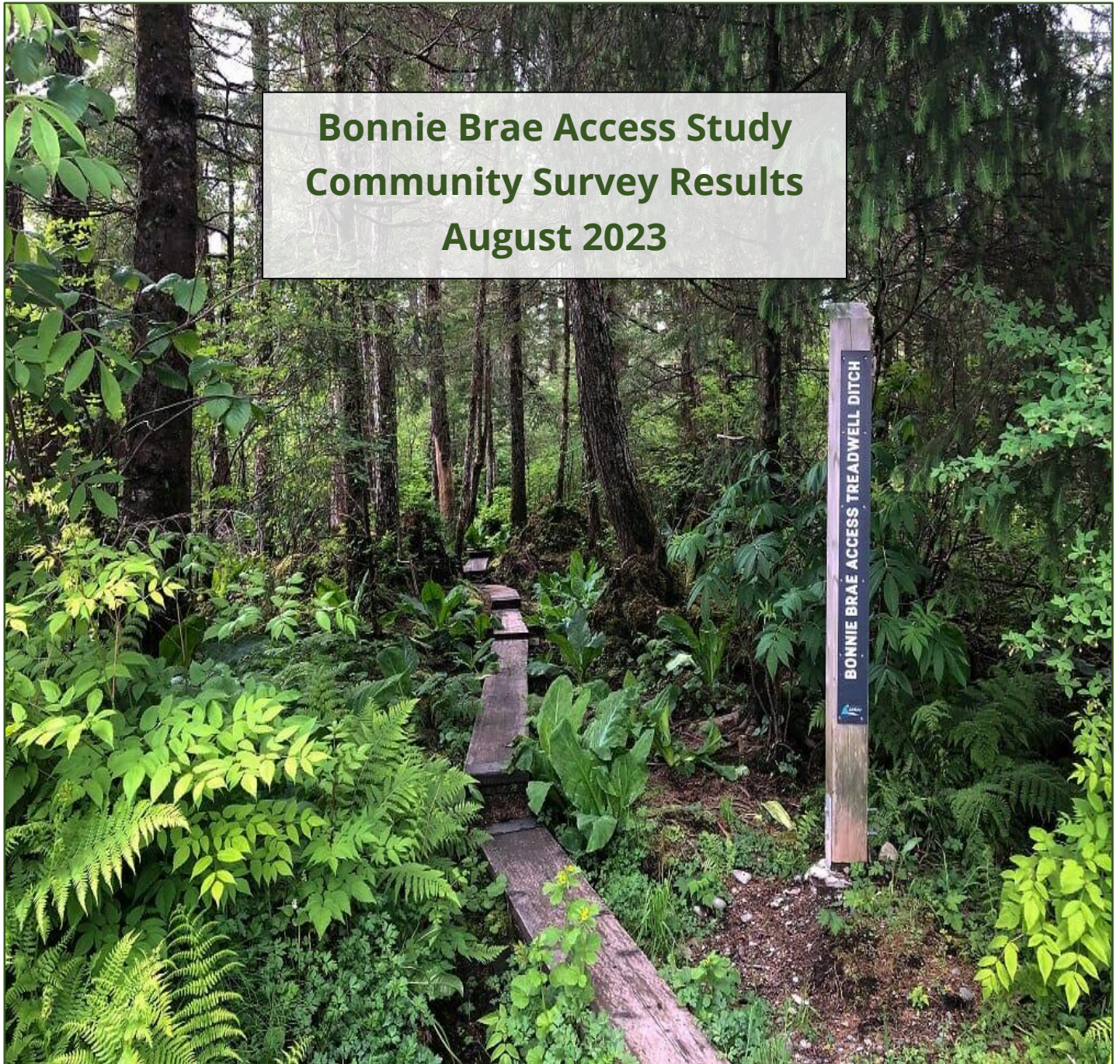
D: USDA Forest Service "Trail Fundamentals and Trail Management Objectives" (2016) excerpt of Trail Design Parameters for Hiker/Pedestrian use trails.

E. Cost estimates

Appendix A

Public Engagement Summary

Bonnie Brae Access Study Community Survey Results August 2023



Source: FHWA

Prepared by:

Western Federal Lands Highway Division

Seth.English-Young@dot.gov 360.619.7803

Contact: Seth English-Young, Project Manager

*Cover Photo of Bonnie Brae Access Trail,
City and Borough of Juneau*



U.S. Department
of Transportation

**Federal Highway
Administration**

Introduction

The Bonnie Brae subdivision, located on Douglas Island in the City and Borough of Juneau, contains a 1.5-mile makeshift trail accessing the Treadwell Ditch Trail. Since the Bonnie Brae trail is an informally adopted social route, it is narrow, unsustainably graded, and features dilapidated plank walkways and loose soil. The City and Borough of Juneau, the US Forest Service, and Western Federal Lands Highway Division (WFLHD) are working together to assess trail options and improvements that would make access to the Treadwell Ditch Trail safer, more accessible, and more environmentally friendly.

Recently a survey was conducted to help us understand how community members use the Bonnie Brae Trail Access and which proposed improvement options are most supported. The survey closed on July 15, 2023, with a total of **221 participants**. The survey asked a series of ranked-choice and open-ended questions to assess participants' current usage and future expectations for trail access. In many cases, participants were allowed to select multiple responses to a given question. Not every participant answered every question.

The survey results are summarized by question, followed by a brief conclusion. Write-in responses to the survey are listed in the Appendix.

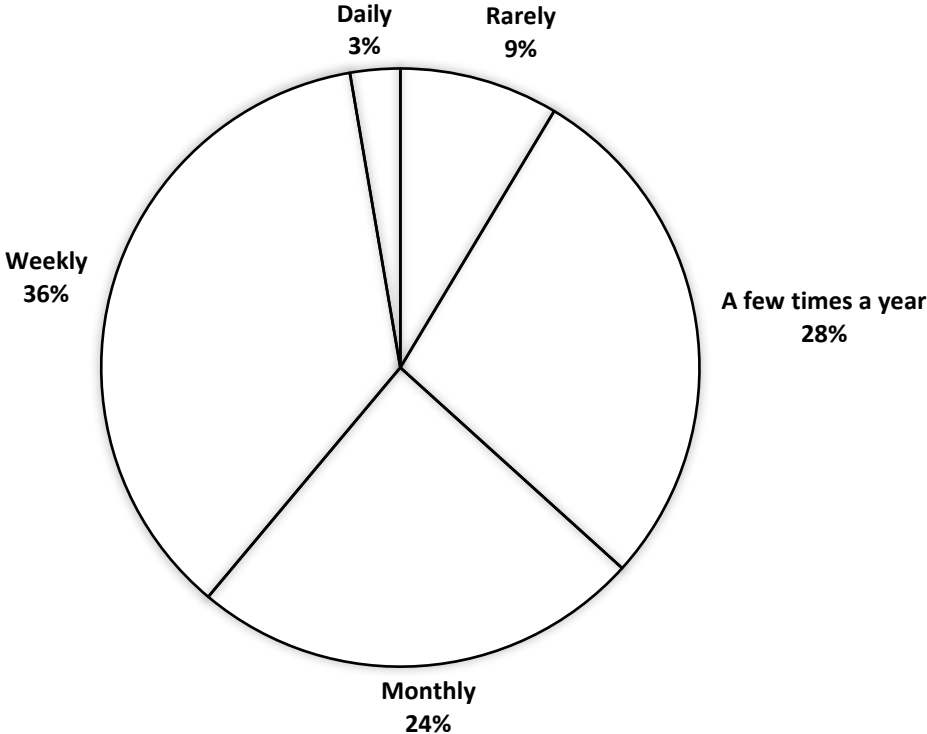
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Survey Results

Survey Question 1

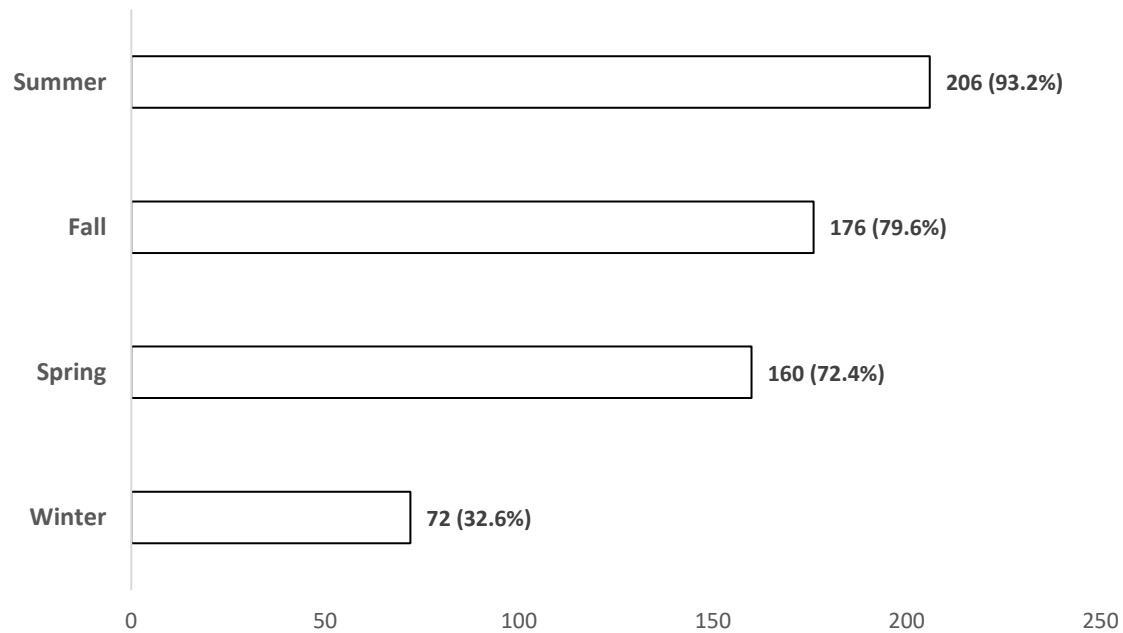
How frequently do you use the Treadwell Ditch Trail?
(221 responses)



Survey question 1 was a closed question that allowed participants to choose one response. All participants claim to have familiarity with the Treadwell Ditch Trail through some level of use. Only **3%** admitted to using the trail daily, but the majority of respondents said they use it *at least* a few times per year.

Survey Question 2

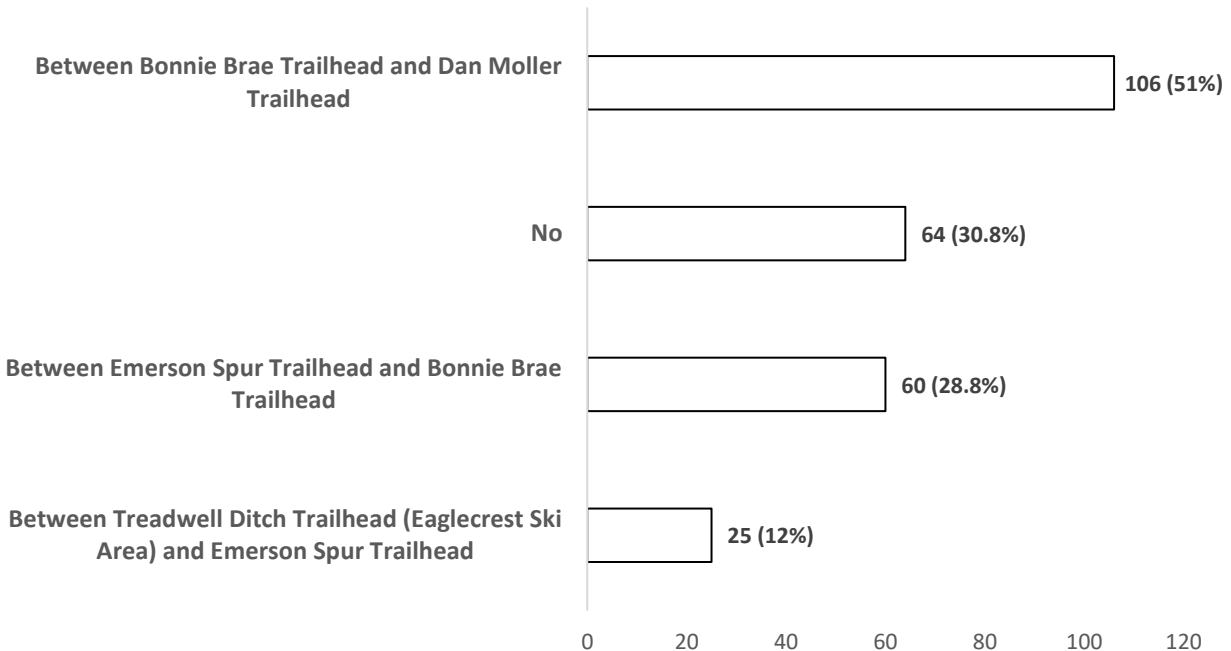
During which seasons do you mostly use the Treadwell Ditch Trail? (Check all that apply)
(221 responses)



Survey question 2 allowed participants to choose multiple seasons during which they used the trail. Summer was shown to be the most popular season for trail use, and winter was the least popular. Responses to later questions indicate that muddy and loose soil can cause difficulty along the trail, which is likely exacerbated by weather conditions in wetter months.

Survey Question 4

Should there be more access points to the Treadwell Ditch Trail? If yes, where? (208 responses)



Participants could choose multiple options for survey question 4. Of the 208 participants who responded, over **30%** *did not* want more access points to the Treadwell Ditch Trail.

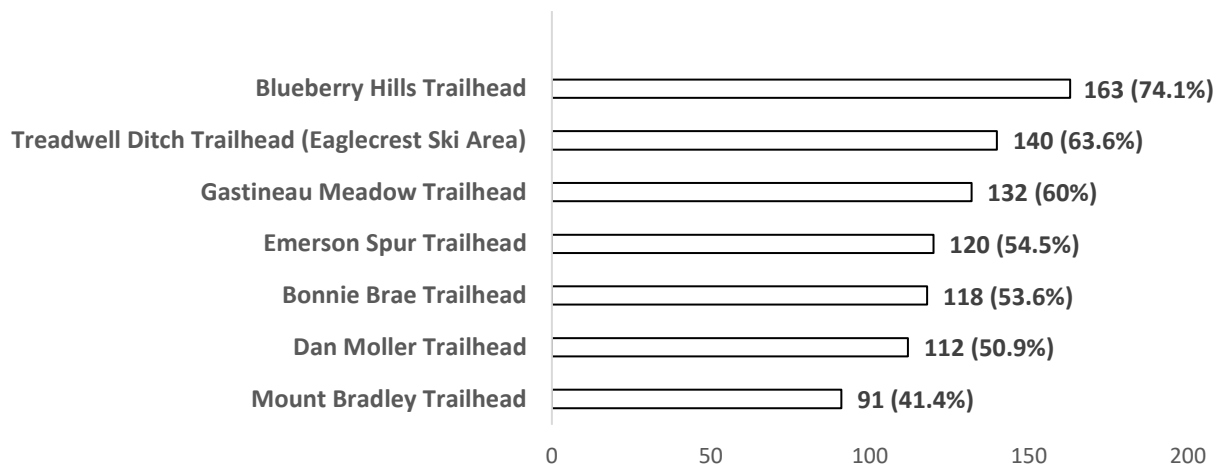
Among those who said yes, the most popular additional access point was **between Bonnie Brae Trailhead and Dan Moller Trailhead**, which **51%** of respondents support.

- Between Emerson Spur Trailhead and Bonnie Brae Trailhead showed nearly **30%** support.
- Between Treadwell Ditch Trailhead (Eaglecrest Ski Area) and Emerson Spur Trailhead received **12%** support.

Among write-in responses, several comments pointed out that the existing Bonnie Brae Trailhead should be the priority for improvement, while several others stated that the Treadwell Ditch Trail itself should be improved first. Other locations that were mentioned for possible trailheads included Gastineau Meadows, Sandy Creek, Bullion Creek, south of Mount Jumbo, between Eagle Creek and Falls Creek, and the old zipline access road.

Survey Question 5

What trailhead(s) do you use to access the Treadwell Ditch Trail? (Check all that apply)
(220 responses)

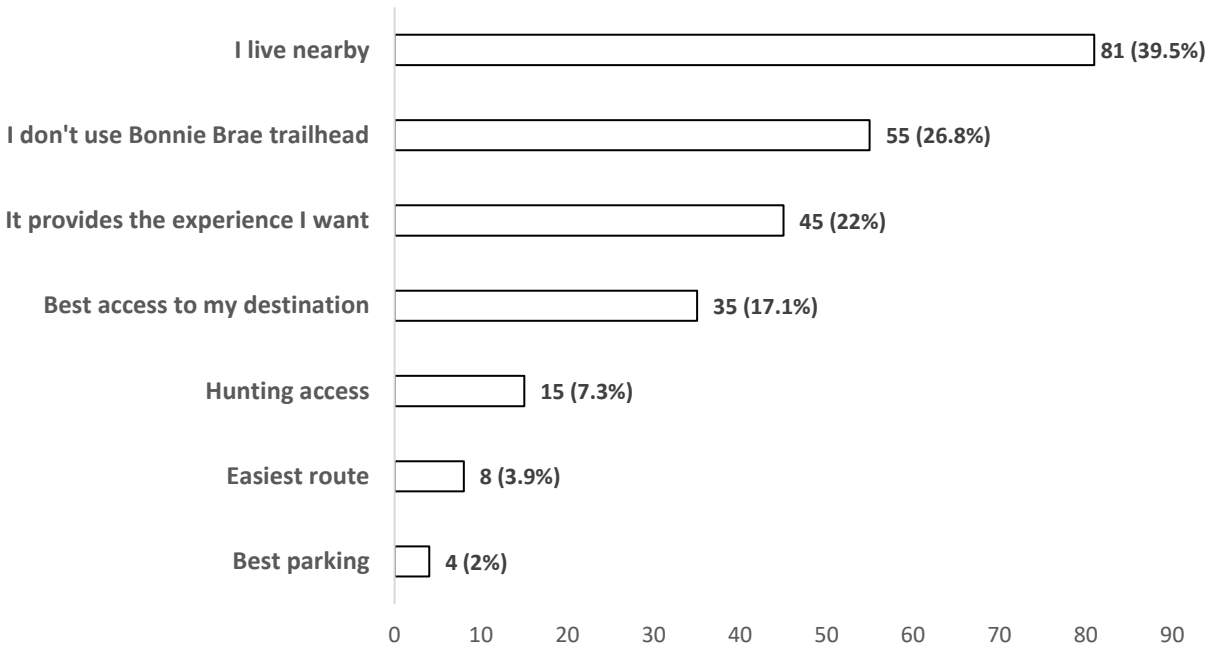


Participants were able to select multiple options for survey question 5. The top two trailheads were Blueberry Hills with **74%** of respondent support, and Treadwell Ditch Trailhead (Eaglecrest Ski Area) with **64%** support.

The Bonnie Brae Trailhead, which is the subject of this study, received **54%** support, indicating that many respondents consider it to be an option for Treadwell Ditch Trail access, but also that there may be factors that prevent it from being as popular as some other options listed.

Survey Question 6

If you use the Bonnie Brae access, why do you choose this trailhead? (Check all that apply)
(205 responses)



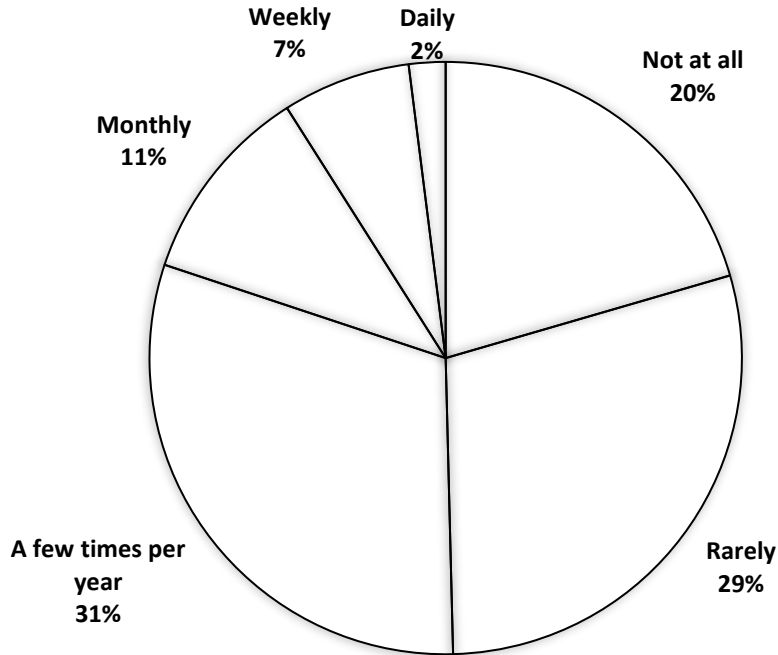
Of the 205 respondents who answered this question, **27%** clarified that they *do not* use Bonnie Brae access. Of those who use the trail, the largest percentage of responses indicated that they use it at least partly because they live nearby (**40%**). Participants were allowed to select multiple answer choices.

A full **22%** also indicated that the trail provides the experience they want. Many write-in responses clarified that using Bonnie Brae Trailhead works as a convenient circuit route; others mentioned that the route is quieter and more peaceful since it is less popular.

Only **2%** of respondents perceived Bonnie Brae access to have the best parking of the various Treadwell Ditch trailheads, which aligns with the concerns that respondents stated elsewhere in the survey about the need for proper parking facilities.

Survey Question 7

How often do you use the Bonnie Brae Access to the Treadwell Ditch Trail?
(220 responses)



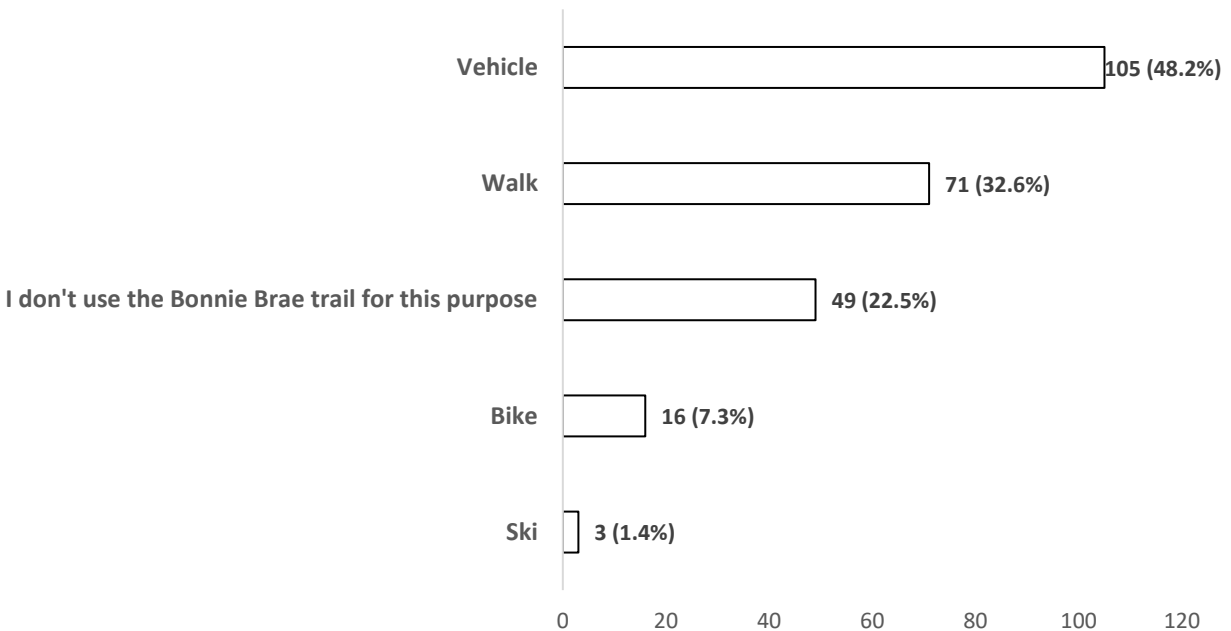
While survey question 1 asked respondents how often they use the Treadwell Ditch Trail, survey question 7 focuses more specifically on Bonnie Brae access to Treadwell Ditch Trail. The majority of respondents who use the Bonnie Brae Trailhead do so only a few times per year (**31%**) or rarely (**29%**), though other survey question responses indicate that many would be willing to use it more often if it were in better condition.

Survey Question 8

How do you get to the Bonnie Brae trailhead to access the Treadwell Ditch Trail?

(Check all that apply)

(218 responses)

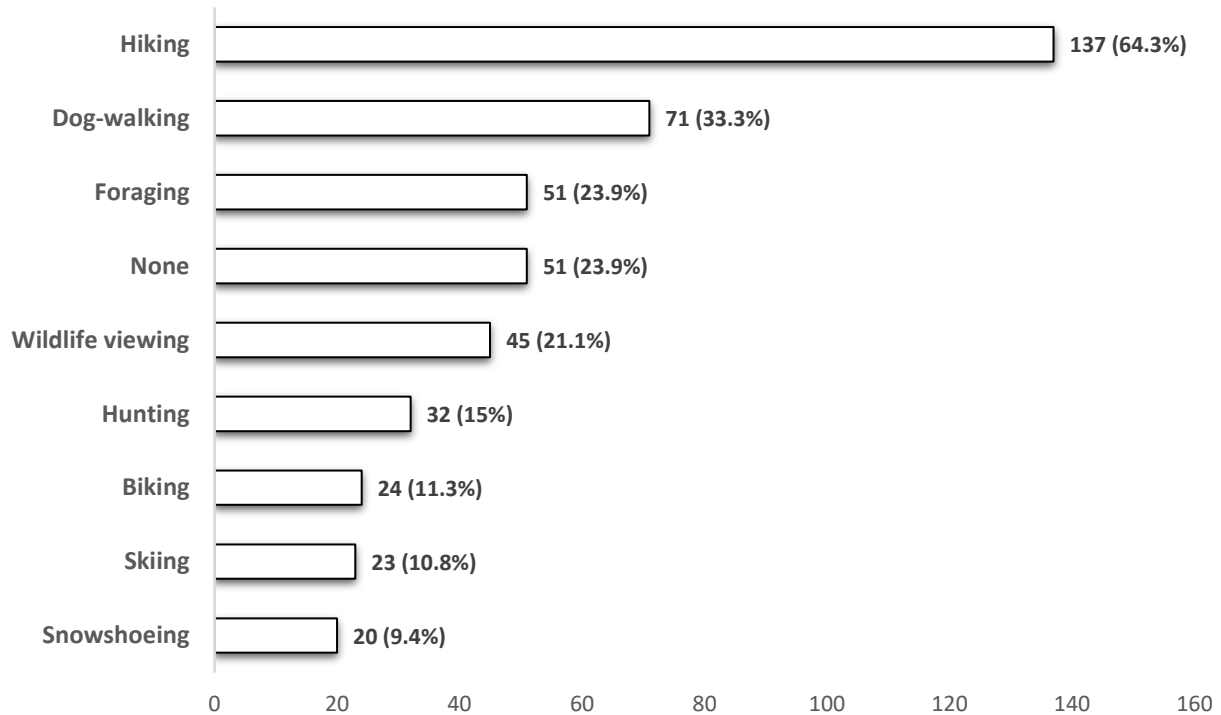


Of the respondents who use Bonnie Brae trailhead, a majority (**48%**) indicated that they get there by car at least some of the time. Walking (**33%**) was another popular method. Since respondents could choose multiple answers to this question, methods of arrival should not be seen as mutually exclusive.

Write-in responses mostly offered clarity on the primary answer choices—for example, “Park at the neighbors and walk up,” or “Get dropped off.” Running, snowshoeing, and skiing were also listed by several respondents as rare alternative methods of getting to the Bonnie Brae Trailhead itself.

Survey Question 9

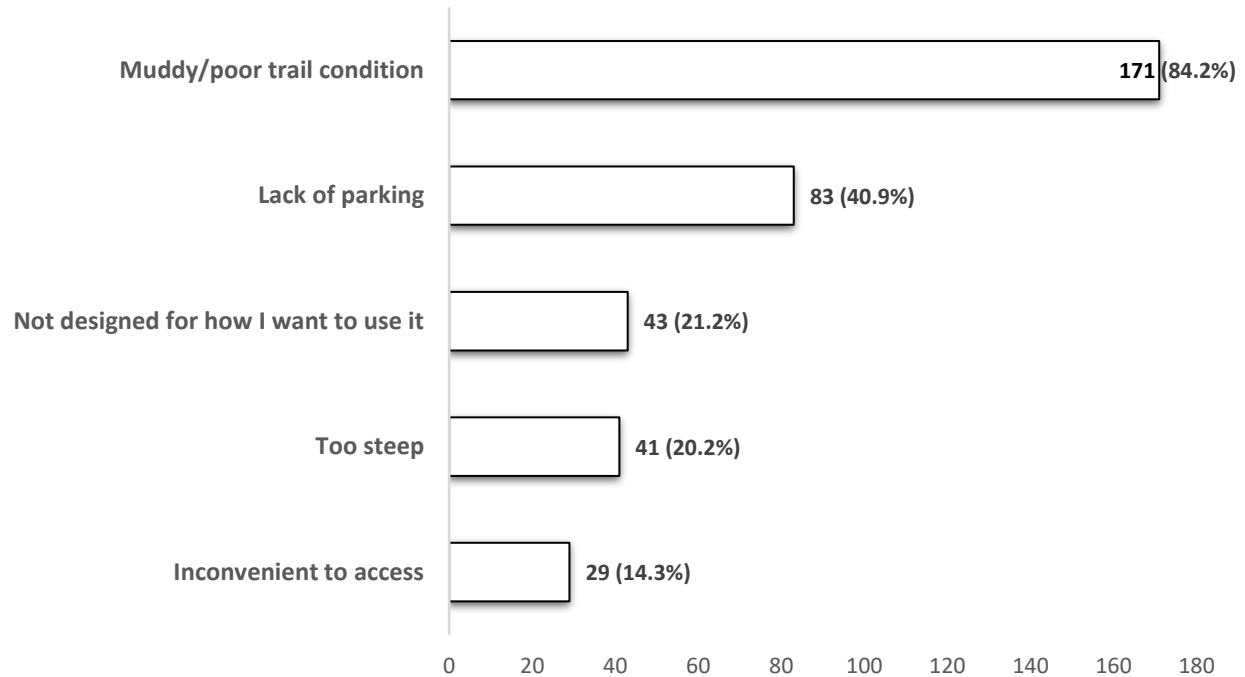
In the last 12 months, which recreational activities did you access from the Bonnie Brae trailhead? (Check all that apply)
(213 responses)



Survey question 9 enabled respondents to select multiple answer choices, including a write-in option. Hiking was shown to be the most popular trailhead activity (**64%**), though dog-walking (**33%**), foraging (**24%**), and wildlife viewing (**21%**) were also popular. Several write-in responses mentioned photography, as well as exploring and strolling.

Survey Question 10

What are the top issues to address at the Bonnie Brae trail and trailhead? (203 responses)



Survey question 10 allowed participants to select multiple answer choices. The vast majority of respondents (**84%**) agreed that muddy/poor trail conditions were a top issue for the Bonnie Brae Trail. At the other end of the spectrum, only **14%** of respondents indicated that a top issue was the trail being inconvenient to access.

The question also generated many write-in responses. (The full list of write-in responses is included in the Appendix.) A number of them mentioned the trail's unfavorable conditions for biking. This concern corresponds to one of the primary answer choices: "Trail not designed for how I want to use it," which **21%** of respondents chose.

Several other write-in responses reiterated that muddy and unsafe trail conditions overall presented the biggest challenge.

Survey Question 11

How can the Bonnie Brae access to the Treadwell Ditch Trail be improved?

(163 responses)

This question was completely open-ended, and responses below are loosely grouped by topic. (All responses are available in the Appendix.) Themes centered on the following:

1. Trail Maintenance and Improvement:

- Improve trail condition, tread, and drainage.
- Add gravel, boardwalks, and bridges to address muddy and rooty sections.
- Clear brush and fallen trees.
- Build stairs and switchbacks for steep sections.

2. Access and Parking:

- Create trailheads with proper parking areas.
- Provide multiple access points and access options.

3. Multi-Use and Biking-Friendly:

- Make the trail bike-friendly and safer with proper grading and surface.
- Make the trail suitable for hikers and trail runners.

4. Signage and Wayfinding:

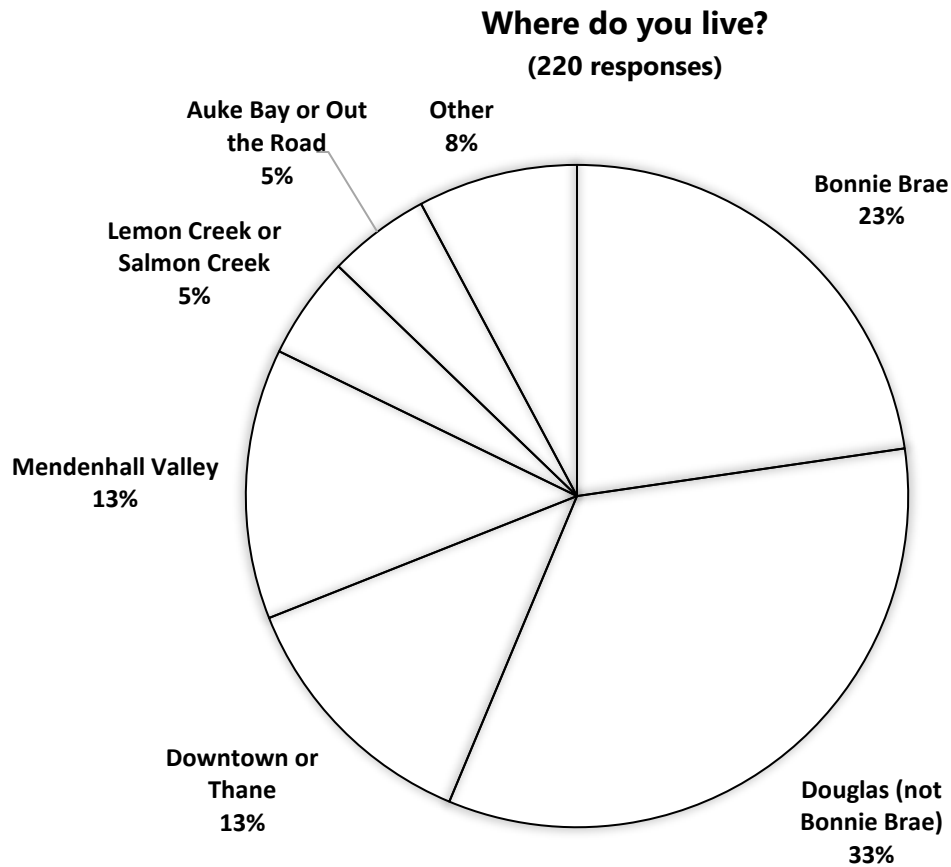
- Improve trail signage and wayfinding, including clearer markings for the trail's forks and routes.
- Place fences to prevent trespassing onto private property.

5. Environmental Considerations:

- Reroute the trail to avoid sensitive areas like muskeg and wetlands.
- Consider the impact of trail improvements on the environment.

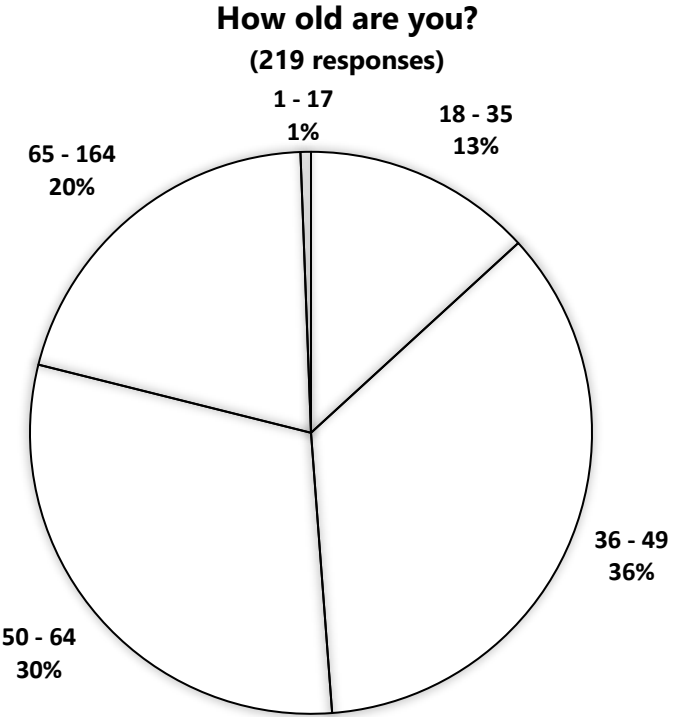
Overall, the main themes support making the trail safer, more accessible, and enjoyable for various activities while considering environmental impact and user needs.

Survey Question 12



Survey question 12 is a demographic question showing that the largest percentage of survey respondents lives in Douglas but not Bonnie Brae (**33%**), while another sizable percentage (**23%**) lives in Bonnie Brae itself. In addition to the six main answer choices represented on the graph, the "Other" category on the pie chart represent various write-in responses that include North Douglas and West Juneau. *This list of write-in responses is omitted from the Appendix to avoid publishing personally identifying information.*

Survey Question 13



Survey question 13 is a demographic question that sought to capture the age distribution of survey respondents. The largest percentage of respondents (**36%**) were adults between 36 and 49 years old.

Conclusion

This survey sought to understand how the public uses the Treadwell Ditch Trail and the Bonnie Brae access route that leads to it. The population that responded to the survey was one that had used, or currently uses, the Treadwell Ditch Trail in some capacity. Respondents most commonly use the trail in summer and fall months.

Participants were divided on whether there should be more access points to the Treadwell Ditch Trail, but the most popular option was an access point between Bonnie Brae and Dan Moller trails. Overall, respondents expressed optimism about the recreation opportunities available along the Treadwell Ditch Trail and its access points, even as some acknowledged that the trails can be improved.

Nearly a quarter of respondents said they do not use the Bonnie Brae access point at all, and many agree that it has both benefits and drawbacks. Those who use it acknowledge that they do so most commonly because it is close to where they live, it is a peaceful and more solitary trail option, and it offers a circuit route. Those who do not use the Bonnie Brae access point cite factors like the muddiness, overgrown roots, and steep inclines that make it challenging for many types of recreation—a reality also acknowledged by some of its active users.

Almost half of participants get to the Bonnie Brae access point by automobile, and improved parking was a top issue for many. Trail condition, however, was the number one issue among respondents. Trail challenges included inadequate signage, improper grading and surfaces for bicycles and walkers, slippery/muddy soil, and overgrown roots and brush. Respondents expressed concern not only for users' safety, but also for the potential environmental degradation of an inadequately maintained trail.

Many respondents mentioned the convenience of location and the natural beauty that make the Bonnie Brae access point a desirable trail and an ideal focal point for improved Treadwell Ditch Trail access. Participants view the Treadwell Ditch Trail as an asset to the Douglas area and are optimistic that specific improvements will create a better, and more sustainable, user experience.

Appendix

Any personally identifying information has been removed from write-in responses. Only unique responses are listed, alongside the number of times they appeared (in parentheses).

Survey Question 3 Write-in Responses

<i>What is one word to describe how you feel about the existing Treadwell Ditch Trail recreation opportunities:</i>
Accessible
Adequate (2)
Adventure
Amazing
Ample
Appreciative
Awesome (3)
Beautiful (2)
Better
boring
Bridgealicious
Challenging
Close
connector
Content
Convenient...
decent
Disappointed
Disappointing
Diverse
ecstatic
Enjoyable
Excellent (2)
Excellent it's my favorite trail! Amazing access just needs work on technical sections
Excited (2)
Excited for the completion of improvements to the trail since it will be the longest trail in Juneau for multi-use recreation!
Exciting (2)
Expansive

Fabulous
Fantastic
Fantastic!
fortunate
Fun (3)
functional
Good (2)
Good and getting better every week
Grateful
Great (2)
Great potential
great scenery and Great room for improvement
great trail improvements
Great! Would love to see more trials!!
Growing
Happy (2)
hiking
Hopeful
I like how it is low volume and not alot of users, especially in that middle area. Makes for alot of calm moments
I like that trail a lot
I love it and I love living near it. I would love to see continuous trail improvements.
I've been riding the Treadwell Ditch trail [...] on a mountain bike [...] I' find the trail interesting because there are so many different locations to access it from. Slowing for lots of alternative rides. I've taken both trails to Bonny Brie, each took 50 min and I had to carry my bike all the way. I'm so happy to hear the Bonnie Brie to Treadwell is going so see improvement.
Important
Improved (2)
Improving (4)
Inaccessible
Incomplete
Inconvenient
Incredible (2)
It's great and getting better with the work done by trail mix.
It's perfect the way it is
Lacking

Limited (2)
Love
Love all the improvements!
Love having it
Love it
Love it! Great work has been done to it.
Love this trail though certain sections need improvements
Lovely
Mandatory
Marginal
Meh
Muddy
Must
neat
Needs improvement (2)
Needs to extend south beyond the jumbo trail othee than that, good condition
Nice
Nice. I appreciate that it is one of the only flat-ish trails in town.
No opinion
Nothing compares to being able to walk out your front door and have unlimited access to all of Douglas Island
OK (4)
Options
Pleasant
Plentiful (2)
plenty
Plethora
Positive
Potential (2)
priceless
Promising (2)
Quiet
refreshing
Relaxing
Rough
Running
Soggy

Solid
Super
Superb Trail for non alpine hikers
Swampy
Terrific world class trail except for both Bonnie Brae exit trails worst possible and took us 5 hrs to go the 1.3 miles to where car parked and we ran out of light and phone charge and had to call 911 and SEADogs helped in dark.
Thankful (2)
thrilled
Too easy
Treasure
Unfinished (2)
Unique
Unpredictable
Varied
Vital
Wonderful
Wooded
world class, solitude, essential

Survey Question 4 Write-in Responses

<i>Should there be more access points to the Treadwell Ditch Trail? If yes, where?</i>
Between Gastineau Meadows and Jumbl
AT Bonnie Brae would be best
Also more trails like dan moller that take you to a ridge would be great!
Between eagle creek and falls creek
Better bike access at the south end into Douglas or the Treadwell ruins
Sandy beach area (Treadwell)
The old zipline access road past Treadwell.
Finishing the ditch trail should be priority w access points added subsequently
accedd to bullion creek & ready bullion sections of the ditch trail
You can acess the ditch in numerous places. It is plenty accessible already
Replace existing Bonnie Brae access trail with new trail
the new access south of mt jumbo trail will be great
Not sure but having access points with parking and at regular intervals seems reasonable.
Need one at Bonnie Brae -not really one there now!
There should be a trail up from Sandy Beach. There's almost such a trail that skirts the the north side of the Glory Hole.

Survey Question 6 Write-in Responses

<i>If you use the Bonnie Brae access, why do you choose this trailhead? (check all that apply)</i>
It provides for round trip Circuits instead of out and back adventures.
Too muddy and rooty
Less foot traffic. Has the quiet and isolation I like without having to go far
Any additional downhill trail is a good idea for mountain bikers in Juneau.
Great views from the meadow
I'd like to use it but it's not well maintained for my kids
I live nearest the access area but the trail makes it a challenge so I opt for other access trailheads instead
Too dangerous-no clear trail
Tried to downclimb it. Found it impassable. Went all the way back to Blueberry trailhead
I would use it if it were bikeable!
If I carpool with a friend, one of us parks at the Dan Moller trailhead so we can hike from BB to DM without having to backtrack.
Note: There is a North and South access from Treadwell do Bonnie Brae
I used to use it to access Mountain Biking when the TWD was in horrible shape . It helped to create an adventure circuit.
to start or complete a loop
I want to walk from Blueberry to Bonnie Brae
Cross country skiing
Tried it for 1st time 6/19/23 horrible trail the north access
Carpooling for one-way trips
typically use it as an option to depart from the ditch
Treadwell trail maintenance
I have used the Bonnie Brae trailhead once approx 4 years ago and it was in such poor condition that I've not used it again.
I would use Bonnie Brae if it was easier to mountain bike
Less traffic, good for walking dogs without being bothered
Good access or stopping point when I want a shorter route.
no good for mtn biking or skiing, appreciate running access.
I grew up in that neighborhood so nostalgia
I use it when dog sitting in Bonnie Brae
Midway point to exit the trail

It's fun to have the varying access points for running it and to be able to do different distances without having to do an out and back.
It's the end point for the mileage I want to hike
Don't use it because it sucks. To rough.
I never run into anyone on it
I once took the trail down from Treadwell and found it difficult and muddy. So I came back to try the other trail from Bonnie Brie to Treadwell, it was also muddy and I had to carry my bike for 45 min
trying different options
I used to but it's such a mess I don't anymore.
Desperation! Its too muddy!
when completing the trail in sections

Survey Question 8 Write-in Responses

Unique responses only; duplicates not listed.

<i>How do you get to the Bonnie Brae trailhead to access the Treadwell Ditch Trail? (check all that apply)</i>
Run
Get dropped off
I would but it's not a clear defined trail.
run/snowshoe
Park at neighbors and walk up
I drive but don't use the access since it's in such poor condition. If it was improved I would drive or bike to it.
various spots
End point from Blueberry trail just once and had to call 911. See other note
run via the ditch

Survey Question 9 Write-in Responses

Unique responses only; exact duplicates not listed.

<i>In the last twelve months, which recreational activities did you access from the Bonnie Brae trailhead? (check all that apply)</i>
Landscape Photography
Running
Running, strolling
Trail Running
Access to wander off trail
Peace of mind and access to some grand off-trail bushwhacking. (Don't tell anybody)
Exploring
photography
Trailwork on Treadwell trail
Trail work
I haven't used the access because it's in such poor condition. I would use it to bike, run, and ski if it was improved.

Survey Question 10 Write-in Responses

<i>What are the top issues to address at the Bonnie Brae trail and trailhead? (check all that apply)</i>
It is not bicycle friendly.
Can't find it
Design it to be hike and Mountain Bike accessible
Trail not bikeable
the north route is barely signed; the south route is badly sited and ugly now that the road is in.
Trail is very muddy and slippery. If trail was improved, it would be one of my go-to running trails. As it is, its too muddy and slow-going.
very poor signage for the trail and the trail is in horrible shape
I use the trailhead to access the meadows near my house. I rarely take the BB trailhead to get to treadwell because it's too muddy, steep and a long hike to get to the trail.
Took us 5 hr to go 1.3 miles and called 911
Overgrown, unmarked, slippery, dangerous, not good for my mobility level
Does not need to be too fancy....a bit rustic is ok.
Impact on the Bonnie Brae Neighborhood. There has already been significant impact to the neighborhood with construction of the new subdivision behind the neighborhood.
Could be better marked
The north fork of the trail from the meadow to the Ditch Trail isn't maintained
Signage
Replace board walk with turnpike and route it through muskeg to avoid steep sections between TH and Nielson Ck crossing. Follow the unofficial winter ski trail route
Dog poop is a big problem this year -- could use a trailhead trash and baggie station
Make it Bike Friendly
The new development above Bonnie Brae suggest the trail be rerouted.
In a neighborhood
I don't use
The South Access of the "Y" was poorly routed and has suffered significant erosion
Im not familiar enough to answer
I like that its harder to locate, limited parking etc.
Its in a residential area. Not too pleasant for the residents who live there, I would imagine

Survey Question 11 Write-in Responses

<i>How can the Bonnie Brae access to the Treadwell Ditch Trail be improved?</i>
Improved trail
I would love for both the access shown on these maps (largely abandon at this point), and the unofficial "south" Bonnie Brae-TWD access to be improved to a condition that would allow for safe trail running. The South access is very steep in places, and very muddy. The North access is overgrown, washed out in places, and has very slippery old log steps for a section. The lower portion, before the two trails fork above the meadows, has sections of old plank that are often very slick, and rotting out in places. I live in Bonnie Brae, but often end up driving to another trailhead for running on the Ditch, because the access from Bonnie Brae is so poor (wet/muddy, slippery, too uneven for running safely).
See above - reroute the lower trail so it follows the winter ski trail through the muskeg from the trail head to Nilesen Ck crossing, then zigzag straight up the hill, staying on the dry ridge to connect with the ditch trail just north of the south end of the new TWD washout bypass section constructed a few years ago. Avoid the swampy section that the upper part of "Paul's trail" traverses just below the ditch.
A conservative trail facelift is all that is needed. Nothing crazy. [...] I request that a fence is constructed [...] to keep people and pets from trespassing [...] I intend to have traps set in the winter and I don't want to accidentally injure unleashed dogs.
As noted, just above. The Bonnie Brae access splits into a North and South Access to the Treadwell. The South access was apparently staked and the route cleared. BUT, the routing was not well thought out. There has been quite a bit of erosion, especially undermining tree roots. It needs some work, or perhaps more thoughtful re-routing.
The sections at the very bottom, adjacent to Bonnie Brae, and at the top near the junction with Treadwell are very muddy. A new path through muskeg at the bottom to get the trail away from the new property development would be nice; could upgrade existing winter ski path. Consider re-routing upper section to get around the mud.
I use this access primarily for running on the Ditch. The south side is extremely muddy at the top section, and both the north and south sides are too rooty to actually run. I don't mind the steepness of the south side; it's nice to have a gentler option and a steep option, but again, neither is good for moving quickly.
It is one of the muckiest trails I've ever slogged through. It sets the bar for all others: "Is it muddier than Bonnie Brae access trail? Didn't think so." I tried the alternate route and it was straight up. I chose not to go back down. I would hike Treadwell Ditch much more if there was better access.

<p>Improve trail so it isn't so muddy & so many roots to climb over. It is especially bad when it is wet or icy. I want to be able to do a one way hike Emerson spur to Treadwell & down Bonnie Brae but the Bonnie Brae portion is so bad I don't like to use it so I have to do out & back on the Emerson</p>
<p>1. New trailhead with several parking spaces. 2. New route (better than the existing routes). 3. Improve tread (more gravel and boardwalk, less mud). 4. Improve grade (more switchbacks, less steepness). 5. New signage.</p>
<p>Not sure exactly, but it is an obvious trail choice to revitalize in order to complete the TreadWell Ditch vision from North to South creating a multitude of access points to and from TreadWell Ditch Trail.</p>
<p>Move lower trail from muskeg to better suited ground in trees, possibly closer to creek. Avoid trying to acheive bike friendly gradient on steep upper trail hillside, not everywhere needs to be bikeable.</p>
<p>This access point desperately needs a parking lot and the trail needs major improvement and to be bicycle friendly. More and better access points would provide better faster access for rescue personnel.</p>
<p>It needs major improvements so I would use it more. I want to bike it but too muddy and steep. The treadwell ditch is World class but too few access points. Parking needs improved if trail improved.</p>
<p>Signage & trail quality. It is unclear (from both directions) why the trail forks prior to Treadwell Ditch and if there are even supposed to be two routes. One is very difficult to follow.</p>
<p>trail condition is poor, but seems to be improving slowly. Its sad to have the new development so close as it has cut out a lot of the scenery and will not be as peaceful as it was.</p>
<p>The trail sucks. It is poorly maintained and very, very muddy. It needs significant improvements to the trail bed, drainage, brush encroachment, signage, and parking.</p>
<p>new route from new subdivision, or creating switchbacks on the southern bonnie brae access (i haven't used the northern access for a couple of years so can't comment)</p>
<p>If the current trail remains, improve with steps and gravel. If trail improves may need increased parking options. If new route, fill in or bridge over bog.</p>
<p>Better markings, clearing the trail of brush and fallen trees, building over muskeg to avoid slippery roots and steep ledges and sinking, sucking mud</p>
<p>clearly designated parking and adequate trail maintenance; make sure trail is adequate so hikers don't lose it and/or make their own ad-hoc trails</p>
<p>There are two accesses, the north and south access. It's nice to improve both as then it is a loop trail that can be done for a quicker walk.</p>
<p>The lower portion of the access is just horrible. I would use it more often to come down for a shorter route, but it in its current condition</p>

Provide formal trailhead facility while minimizing impacts to residential neighborhood. Trail is a horrible mess that needs to be improved.
General clean up of trail and a parking lot would be ideal. It's one of those trails I avoid after rain, which means I'm avoiding it often.
The upper portion is super muddy and has lots of roots. It could be improved greatly by more gravel, drainage & culverts to divert water.
Install gravel turnpike trail at a sustainable grade. Improve drainage. Provide formal parking area. Improved signage, including maps.
Off-street parking and trail maintenance. I don't use the BB trail due to access issues, but I would if these issues were fixed.
improve the areas that are very mucky. Add stairs or a switchback on the muddy, steep area on the lower section of the trail.
Trail improvements to cut down on mud/slippy board walks; less of an incline to make hiking with little kids a bit easier.
Make better for mountain biking, but NOT TOO EASY (not totally smooth). Please leave some features that are fun for bikers
Fix the slide on the ditch trail or embrace the unofficial trail that climbs to the ditch on the south side of the slide.
Rebuild the trail. It's never been properly built or maintained. Yet people still use it to the extent it can be.
Maintain and upgrade both the north and south forks of the access between the Ditch Trail and the meadow area
Build a new trail at 10 percent average grade and suitable for hikers, bike riders and trail runners.
Develop parking and trail access in new development (blacktail estates?) area above Bonnie Brae.
Finish brushing and bridging the north fork; move the south trail so it contours occasionally
Better parking and to pick a route, there are 2. One before and one after landslide.
A proper parking area. Better path/ route to make it easier and safer on a bicycle .
Less mud, more switchbacks. Would love to see it easier for little kids to walk on!
Update/add boardwalks through the woods; switchback or reroute steep, muddy section
Route it away from the new construction and road. Add trash can and dog poop bags.
Complete transformation. Needs a trail bed. Not just muddy roots in the wood.
North Bonnie Brae trail can use more grooming to help clearly identify the trail.
Reroute the access trail to get away from the new development above Bonnie Brae
It needs to be improved for mountain bike access and built with bikes in mind.
board walk through the wet areas. straighten out the trail "shorten the trail"
Address the poor muddy trail conditions and make it easier to find and follow

Back fill gravel on muddy sections and build ladder obstacles for technically
Hardened trail, stairways on steepest sections, off street parking, signage,
Trail marking less muddy more sign to identify location distances and creeks
The upper section needs a serious remodel to withstand any significant use.
Make it a bikeable hardened trail with reasonable grade for uphill riding
Boardwalks at start should be replaced with gravel. They are slippery.
Better trail marking and drainage improvements as trail is so muddy
It could be hardened and have better signage at the Dutch junction.
it would be great if it was more similar to the Emerson Spur trail.
Improve the condition, mark it more clearly, shorten it if possible
Improved drainage and/or gravel on trail to make it easier to hike
Making the trail accessible for biking would be highly appreciated
This is a great opportunity and location for a downhill bike trail
improve the current access from the south end (similar to Emerson)
I wouldn't be upset if the trail were improved with a gravel base
Removing downed trees and huge roots & hardening muddy sections
Increase drainage and make it (slightly) friendlier you bikes.
add stairs at the point where you have to scramble up a cliff
Better signage and fix the trail so that it is easier to hike
It needs to be built up into a proper trail. It's a disaster
Improve quality of the trail to equal quality of ditch trail
It's already better than it used to be, thank you for that.
Please make the Bonnie Brae access mountain bike friendly!!
The trail could be fixed and designed for mountain biking.
Please make it more accessible to downhill mountain biking
Put in a new trail that's relatively dry and less steep.
Stairs, fill in rooted areas, small bridges over creeks
Reroute trail, gravel and boardwalks needs replacement
Regrade for mountain bike use with a gravel surface
Ton of work to make it hiker friendly up or down
Reroute the current absolutely dismal USFS trail
trail reconstruction and wayfinding improvements
Parking and improved trail in certain sections.
A clear, safe footing access up to Treadwell.
Access is fine, trail itself needs some work!
Improve trail tread, cut back brush, signing
Widen, improve drainage, harden, switchbacks

parking. less steep, less mud (better tread)
Parking, trail Improvements, ease of access
Widened, hardened, brushed, made less steep
I don't know - have not been there recently
Widened and allow winter motorized access.
Better parking and better trail conditions
Fixing muddy patches and broken boardwalk.
Creating a less muddy/easier access trail
Gravel pathway would be a nice way to go.
Better signage, improve trail conditions
Trail conditions - fill in muddy areas
Realignment, maintenance, some gravel
Make it a gradual slope and nit muddy
better trail condition and parking
parking, signage, benches, gravel
Protect/improve wetland segments
Remove boards and install gravel
better trail surface and marking
More parking and better marked.
I think repairing the boardwalk
Better tread and public parking
As the residents who live there
Signage and trail improvements.
Reroute to make it less steep.
Improve drainage/trail surface
I don't think there should be.
Fix the muddy, rooty sections
plank and/or harden the route
Better parking and facilities
Parking lot; better weather
Rebuild it to multiuse trail
More info about where it is?
Less muddy at top and bottom
Make mountain bike friendly
create a good biking trail
Make it more fun to ride.
Make it bicycle friendly.

Major trail improvements
stabilized - switchbacks
Better trail and parking
More turnpike installed.
More trail maintenance
Make horse accessible
drainage, gravel, TLC
Make it not so muddy
less slippery boards
Fix the muddy areas.
Bike and ski access
Signage and parking
Gravel, switchbacks
improve maintenance
Clear north access
improve the trail
Straighten it out
Tread improvement
Trail development
Trail maintenance
fill muddy spots
The mud factor.
improved tread
Easier access
Better marked
more parking
I don't use
fix the mud
Bike access
less muddy
Do nothing
Not needed
I like it
Drainage
Bikable
parking
Parking

Gravel
stairs

Appendix B

Conceptual Designs

Appendix B: Conceptual Designs



Date: April 2024

Above photo: Wee Burn Drive, Juneau, Alaska (Credit: Seth English-Young)



U.S. Department
of Transportation

**Federal Highway
Administration**

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Overview

This memorandum outlines the proposed site locations and parking facility designs for the Bonnie Brae Access Study. The project team shows development of site location criteria, future design and construction considerations, and summary analysis of each route option. This memorandum and its recommendations are considered a draft and are for discussion purposes only. Final project designs and recommendations have been incorporated into the final report.

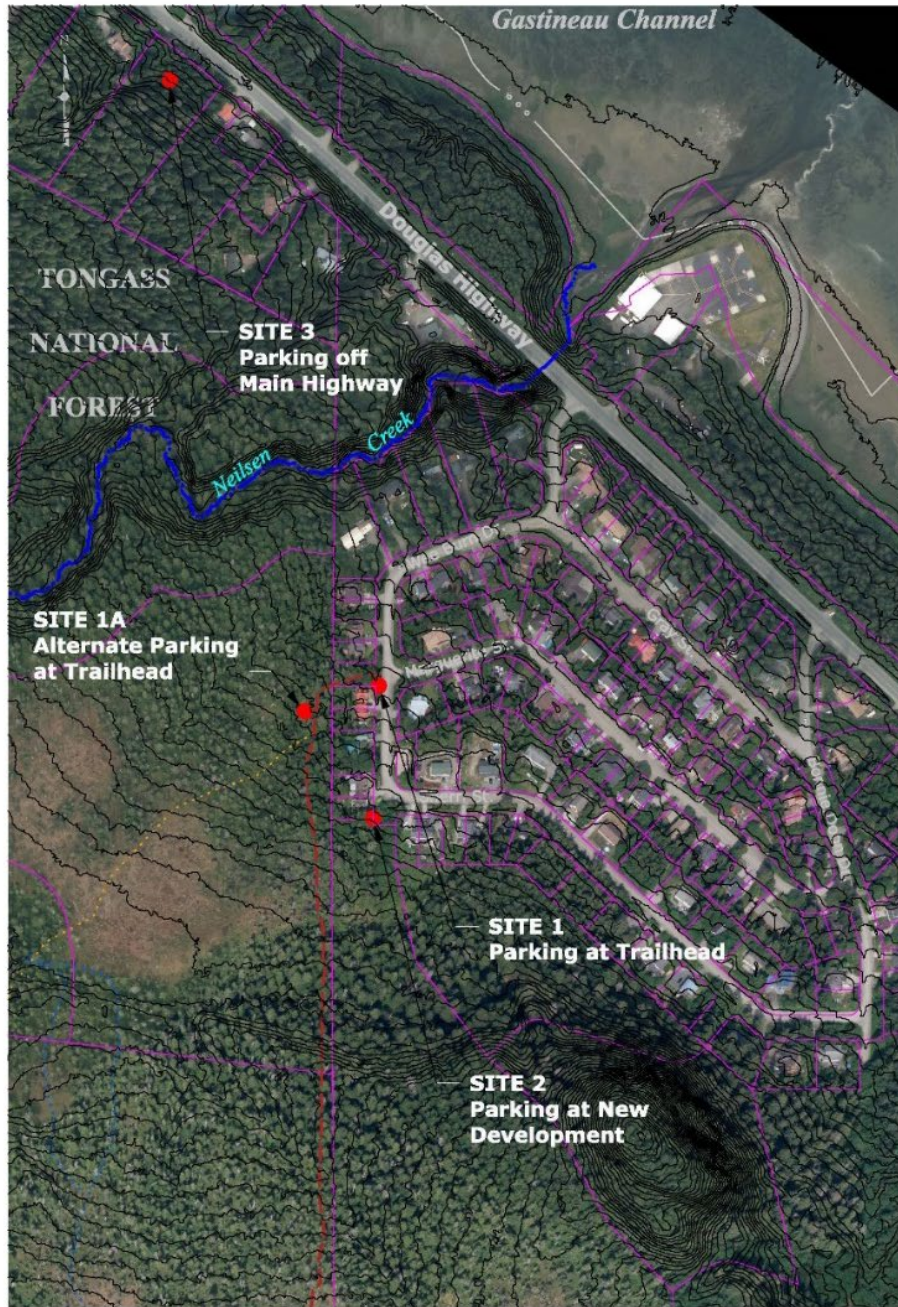
Design Sequence

The project team examined multiple possible access points to connect the Bonnie Brae access trail to the Treadwell Ditch Trail. They began with the initial options described below, then refined those options to present three revised site designs to the public.

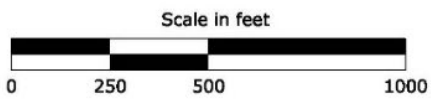
Initial Options

The project team originally came up with four site design options at three sites, with Site 1 having two design options. Figure 1 provides an overview of the locations of these initial concepts, labeled Site 1, Site 1A, Site 2, and Site 3. Based on the site visit, the team considered three distinct locations for a possible trailhead with various configurations of parking spaces. Site 1 is located at the existing Bonnie Brae access trailhead; Site 2 was identified at a new subdivision south of the existing trailhead on the same street; and Site 3 was identified off of North Douglas Highway, northwest of the existing trailhead.

PROJECT	SHEET NUMBER
AK FS TNF 33748(1)	1



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**BONNIE BRAE ACCESS PLAN
PARKING ALTERNATIVES**

Figure 1. Initial Parking Lot Site Design Alternatives

The project team chose Site 1 as a potential option because it currently provides trailhead access within the Bonnie Brae subdivision on Wee Burn Drive (See Figure 2 below). During the site visit, the project team saw that there was space on CBJ-owned land to insert a limited number of parking spaces between several private properties. Initial Site 1 offered a minimal design that consisted of adding four parking spaces at the existing entrance to the Bonnie Brae trailhead. Along with Initial Site 1A, it contains the fewest parking spaces out of the proposed designs.

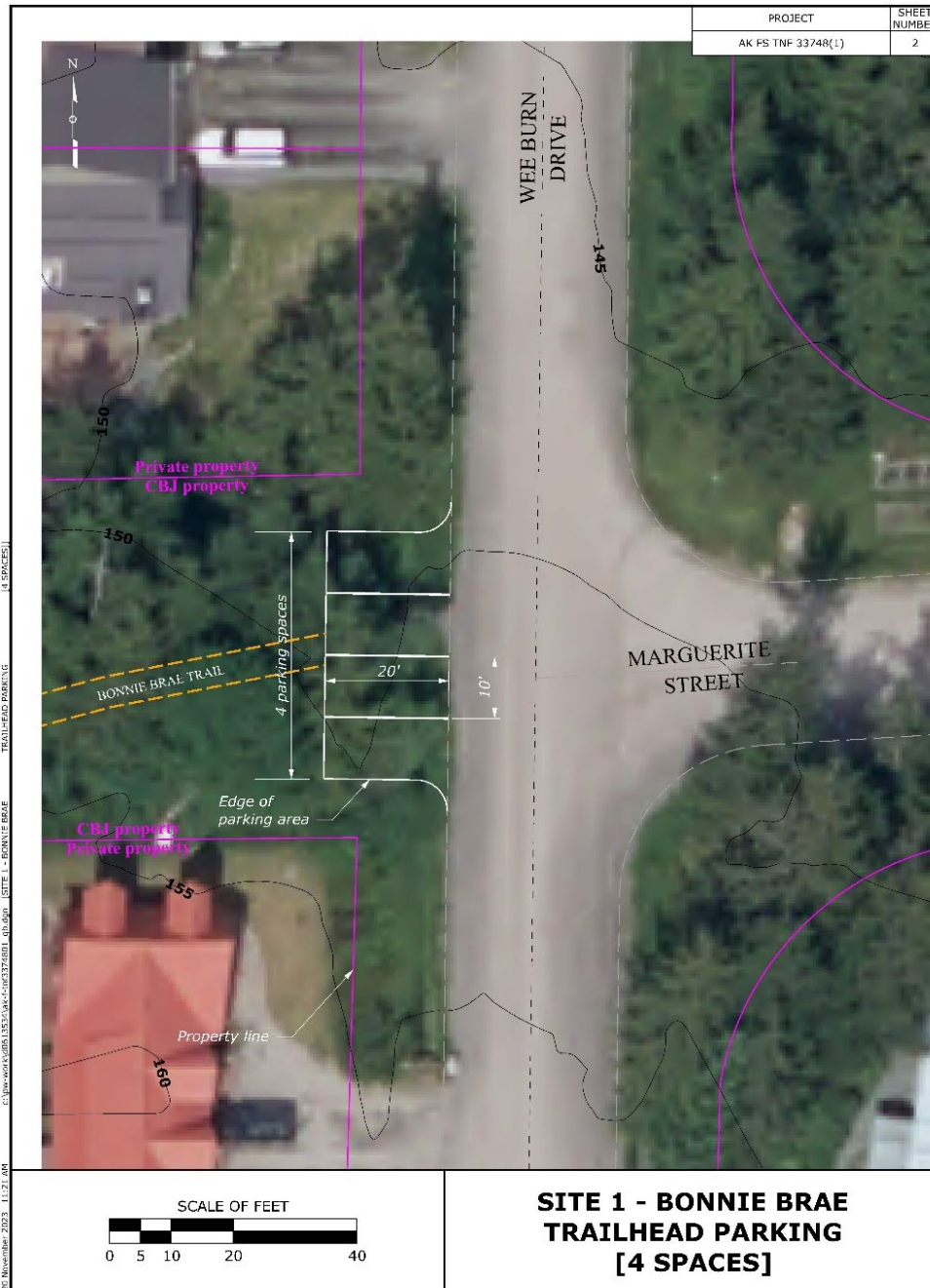


Figure 2. Initial Site 1 concept for parking at existing Bonnie Brae Access trailhead

Due to the proximity of the surrounding privately-owned properties, the project team also considered whether off-street parking would be a feasible option at the existing trailhead. An alternative parking lot layout at the same existing location as Initial Site 1 was devised and designated Initial Site 1A (See Figure 3 below), featuring a long driveway that would cut into the existing access trail and thus also reduce the need for repairs to that section of the trail.



Figure 3. Initial Site 1A concept for parking at existing Bonnie Brae Access trailhead

Initial Site 1A would eventually become the precursor to the 12-space option in the public involvement phase of the design process. The long driveway in this design was intended to reduce potential noise disturbances from trailhead visitors.

The project team located a second potential site at the southern end of Wee Burn Drive (See Figure 4 below) near a new housing development, where up to eight parking spaces could be placed. This location would require a spur trail to connect to the Bonnie Brae access trail but would place the parking sites further away from existing residences.



Figure 4. Initial Site 2 concept for parking at new subdivision

The Initial Site 2 was a viable option at the start of the study because the developer at the new subdivision was open to talking with the city to reserve space for an access trail parking lot. Once the subdivision’s lots started to be individually recorded by the City, however, this potentiality became less viable since the developer no longer owned the whole property. Additionally, the length of the driveway featured in this site design appeared impractical for the amount of proposed spaces. Thus, Initial Site 2 was eventually dropped.

Finally, Initial Site 3 proposed a location off of the North Douglas Highway near the Bonnie Brae neighborhood (See Figure 5 below). This location would contain space for up to 20 parking spots and would not require vehicles to drive along the gravel road of Wee Burn Drive to get to

the trail. However, a new trail would be needed to connect the site to the existing Bonnie Brae access trail.

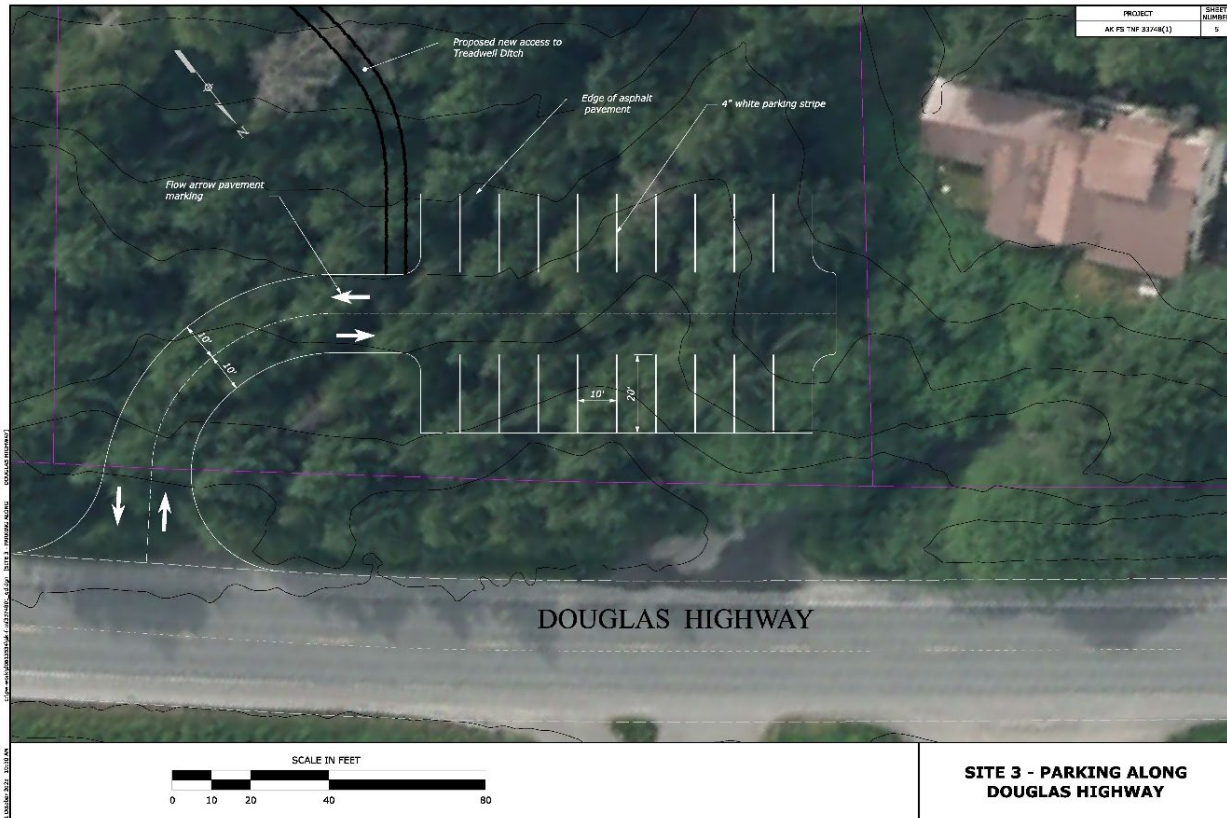


Figure 5. Initial Site 3 concept for parking adjacent to North Douglas Highway

Initial Site 3 was also proposed in anticipation of increased visitor use of the access trail, with the idea that a trailhead directly off the highway would be easier for visitors to locate and might be more conducive to larger groups.

After discussion within the project team, Initial Site 2, located at the southern end of Wee Burn Drive near the new subdivision, was discarded as an option. Initial Sites 1 and 1A were retained with revisions, to be proposed to members of the public during the Winter 2023-24 public involvement segment of the study. Since the parking proposals differed so significantly between the two designs at the same location, it was decided that they should be renamed Site 1 and Site 2 despite being in the same spot. Initial Site 3 on the North Douglas Highway was also retained as an option for the Winter 2023-24 phase of public involvement.

Options Presented to the Public

During the public comment period of the project's Winter 2023-24 public involvement phase (December 1, 2023 – January 10, 2024), the project team presented the three site options to the public. Figures 6 - 7 below show a close view and a wider, more detailed view of the locations of these three site options.



Figure 6. Revised site design concepts for public feedback with Sites 1 and 2 located along Wee Burn Drive, and Site 3 located adjacent to North Douglas Highway.

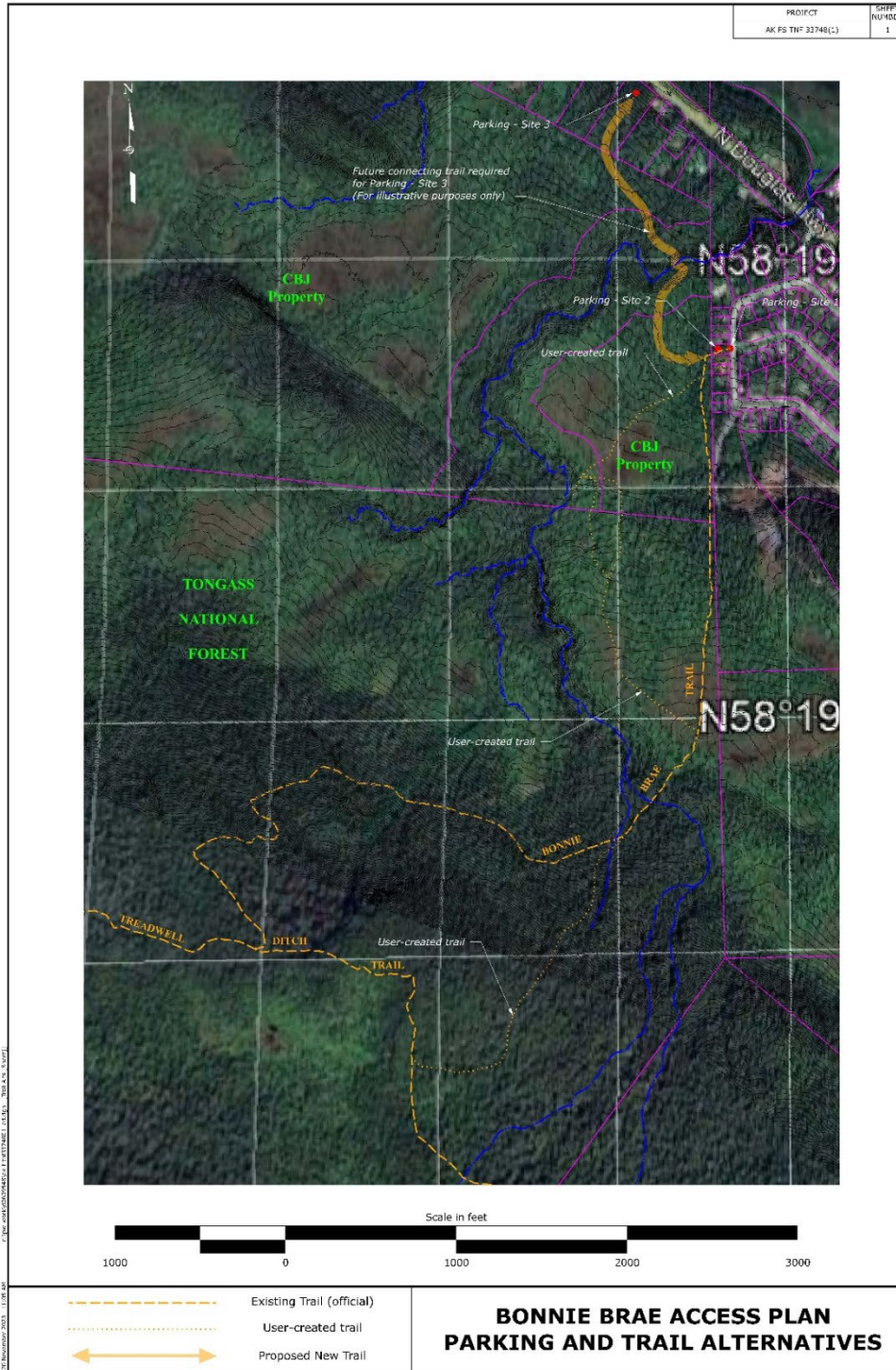


Figure 7. Wide view of Sites 1-3 with trail markers and property lines. This figure was made available to the public on the project website.

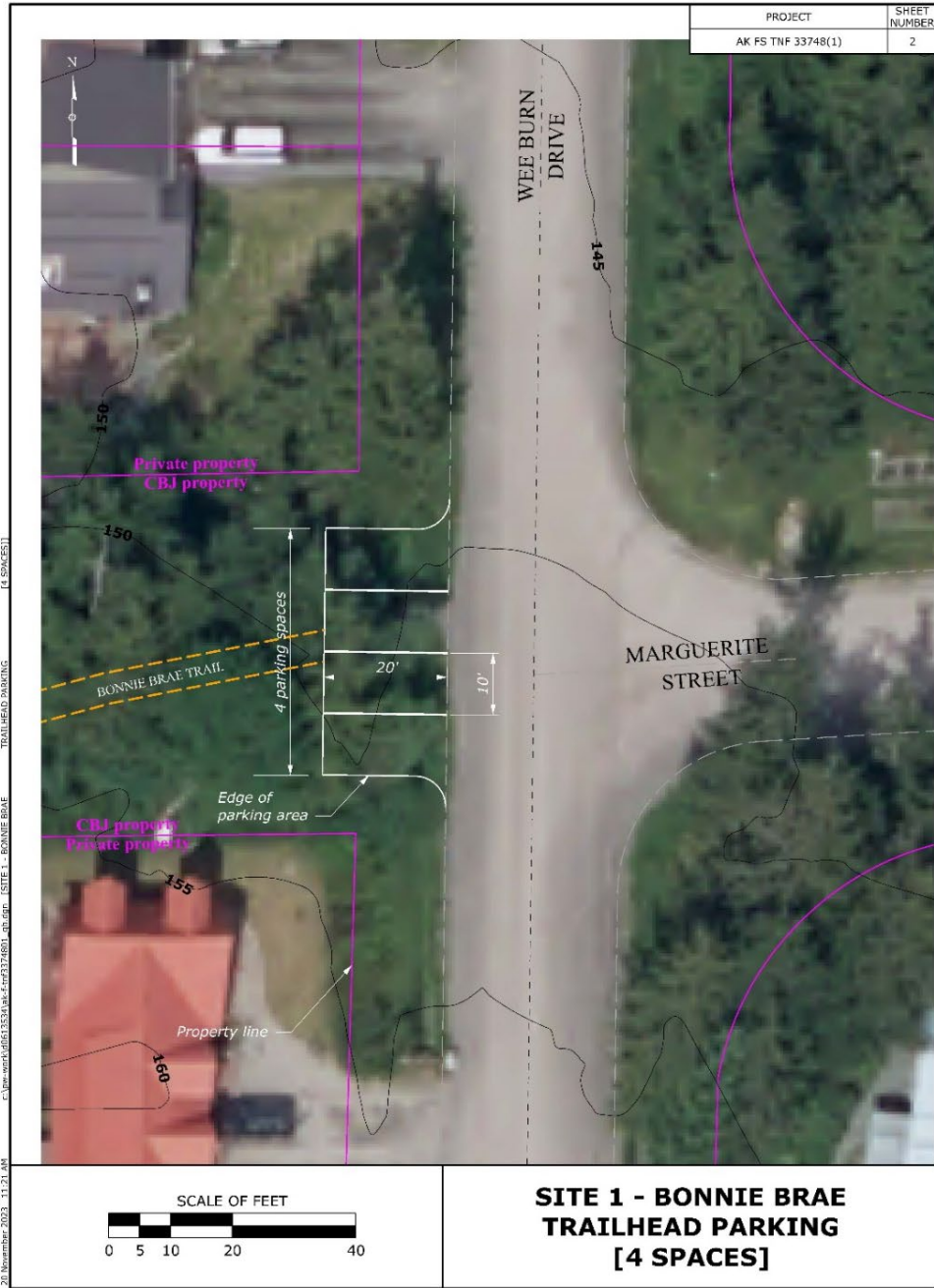


Figure 8. Site 1 at existing Bonnie Brae Access trailhead, including 4 head-in parking spaces off of Wee Burn Drive

Site 1 (See Figure 8) was retained from the initial decision-making phase and presented to the public as the least expensive option, given its minimal design and its placement at the existing trailhead.



Figure 9. Site 2 at existing Bonnie Brae Access trailhead with up to 12 angled parking spaces along a driveway with turnaround off of Wee Burn Drive

Site 2 (See Figure 9) was revised from the initial design phase to include a wider driveway that could fit up to 12 vehicles on one side. A new turnaround area was added to facilitate entries and exits. Site 2 was presented to the public as a more expensive option than Site 1, but a less expensive option than Site 3.

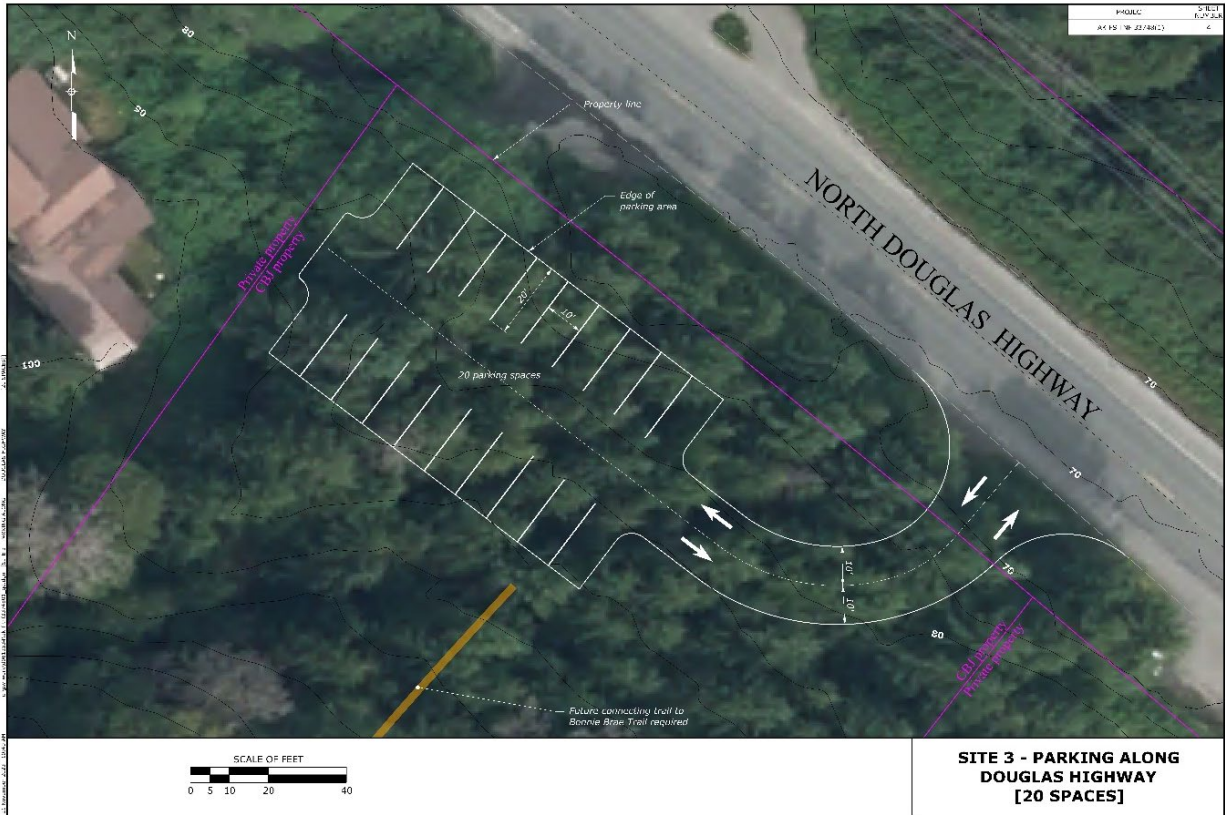


Figure 10. Site 3 located off North Douglas Highway with up to 20 parking spaces

Site 3 (See Figure 10) was retained from the initial design phase. The drawing itself was revised to reflect a north orientation. Site 3 was presented to the public as the most expensive option, not only because of the greater number of parking spaces (20) but because a spur trail would need to be constructed in order to connect to the Bonnie Brae access trail.

Option Suggested by the Public

During the virtual public meeting that was held on December 7, 2023, a member of the public described some of the current drainage issues that exist on the west side of Wee Burn Drive in the vicinity of the Bonnie Brae trailhead. Since the west side of the street is also used for snow collection during colder months, visitors to the Bonnie Brae trailhead tend to park parallel along the east side of the street to access the trailhead. The member of the public suggested that the project team look into formalizing this current parking situation. The suggestion was echoed by several comments collected in the online public comment form. The project team drafted a new conceptual design known as Site 4 that incorporates the publicly suggested option of constructing up to six parallel parking along the east side of Wee Burn Drive (see Figure 11).



Figure 11. Site 4 design informed by public feedback which includes up to six on-street parallel parking spaces on Wee Burn Drive

As the project team further evaluated the results of the Winter 2023 – 24 public involvement campaign, the conceptual designs for Sites 1 through Sites 4 were evaluated against the study goals based on participant feedback. While several participants in the public comment form suggested the new housing development on Wee Burn Drive as another potential site, this suggestion was not considered due to the project team’s prior evaluation of Initial Site 2 (see Figure 4) and rejection of that same site.

See the Final Report for the table showing how each site option scored on each goal. Site 4 emerged as the option with the highest score, meaning that it best fulfilled all four study goals. For this reason, the project team decided to move forward with Site 4, even though it was not among the three site designs presented during the public comment period.

Conclusion

The project team examined several possible sites and parking configurations for the suggested Bonnie Brae access trailhead improvements. While the existing Bonnie Brae trailhead was an obvious contender, the project team also explored site possibilities along the North Douglas Highway and near the new housing subdivision down the street from the existing trailhead. In addition to site location, the number of proposed parking spaces differed among the site designs based on the constraints of land ownership and access at each proposed location.

After refining the initial site designs, the project team offered three designs to the public for feedback (Figures 8, 9, and 10). During this process of public engagement, a fourth site design was suggested by the public (Figure 11).

The project team's evaluation of the four site design alternatives determined that Site 4 was the one that best fulfilled the goals of the study. However, feedback from CBJ staff indicated that on-street parallel parking may not be acceptable permissible with local regulations. Thus, in the final report, the project team proposed two alternatives for consideration as USFS and CBJ proceed with environmental assessment and securing funds for construction.

Appendix C

FLAP Application

**2016 Alaska Federal Lands Access Program
Project Proposal**

(Use this form for Road, Trail, Enhancements, Safety, and Planning Projects)

(To be completed by the State/Local Agency/Local/Tribal Government with a joint signature from the appropriate Federal Land Manager)

Application Checklist:

- Must be signed by the Federal Land Management Agency at the appropriate level:
 - Forest Service Forest Supervisor
 - BLM Field Manager
 - NPS Park Superintendent
 - FWS Refuge Manager
- Must be signed by the AKDOT or Local Agency with title or maintenance responsibility for the facility at the appropriate level:
 - Local Agencies should be signed by Mayor
 - AKDOT signature by Regional Director
- Match source has been informed and discussed with the appropriate agency, that match is pledged for this project. A letter pledging match is appropriate.
- Application must be received by Western Federal Lands by date due of May 16, 2016.
- Application must have a map showing project location relative to the Federal Land Management Agency boundary.
- A response to each of the evaluation criteria is highly recommended even if the answer is related to project information previously noted in the application. Not applicable is an acceptable response if appropriate. Include an answer to evaluation factor 10 if applicable.
- Project is likely limited to \$2.0 million or under of construction funding and would need \$180,600 of matching funding for \$2.0 million of Access Program funds. Match funding can be cash or from other sources. Efforts before the project is selected and has a signed match agreement will not be counted as match.

Project Name:	Bonnie Brae Access to Treadwell Ditch Trail Corridor Plan.
Route Name/ Number:	<i>Asset number or general route number and local name of the transportation facility</i> BONNIE BRAE ACCESS TREADWELL 33748
State/Local Government Applicant	<i>Entity applying for the proposed project</i> US Forest Service
Name and Ownership of Federal Land(s)	<i>Unit of the Bureau of Land Management, National Park Service, Fish and Wildlife, Forest Service or US Army Corps of Engineers.</i> US Forest Service and City and Borough of Juneau.
Accessed by Project:	
Ownership of the Transportation Facility:	<i>Who owns the transportation facilities?</i> US Forest Service and City and Borough of Juneau.
Entity responsible for maintenance:	<i>Who has the maintenance responsibility for the transportation facility? The question of maintenance responsibility is related to the eligibility language in MAP-21 for a Federal Lands Access route.</i> US Forest Service and City and Borough of Juneau (greater than 50% as documented in a Challenge Cost Share Agreement).

Contact Name, address, phone, and email	Name: Rorie Watt Address: City and Borough of Juneau, City Manager, 155 S. Seward St.; Juneau, AK 99801 Phone: 907-586-5240 Email: Rorie.watt@juneau.org
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Type of project proposed:	<input checked="" type="checkbox"/> Planning or Research <input type="checkbox"/> Design <input type="checkbox"/> Construction (road construction, reconstruction, rehabilitation) <input type="checkbox"/> Enhancement (Enhancement to a transportation facility: wayside, kiosk, restroom) <input type="checkbox"/> Alternative Transportation <input checked="" type="checkbox"/> Safety <input checked="" type="checkbox"/> Trail <input type="checkbox"/> Intelligent Transportation System
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Project Termini (location)		Mile Posts	Latitude	Longitude	Project Length (miles)	1.52
	Begin	0.00	58.329323	-134.501637		
End	1.52	58.319805	-134.515806			

Estimated Total Project Costs	\$90,000
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Funds Requested from Federal Lands Access Program	\$81,873
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Required Match	\$8,127	From: F.S. Recreation Planner
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Functional Classification of the roadway: (Show official designations of route.) (X) Non-motorized Trail
 () National Highway System () Arterial () Major Collector () Minor Collector () Local Road

Traffic Volumes	Current		20 year Projections	Basis for projections? (e.g. Transportation plan, population growth rate...)
	Actual Counts	Estimated		
Average Daily Traffic (ADT) on Highway		8 hikers	20 hikers	Improvements are underway on the Treadwell Ditch Trail in response to public demand. It is expected that some of the increased number of hikers on the Treadwell Ditch Trail will use the Bonnie Brae Access trail to get to the Treadwell Ditch Trail.
Seasonal Average Daily Traffic (peak season) (SADT) on Highway		10	30	Improvements are underway on the Treadwell Ditch Trail in response to public demand. It is expected that some of the increased number of hikers on the Treadwell Ditch Trail will use the Bonnie Brae Access trail to get to the Treadwell Ditch Trail.
Other Traffic Data:				

NBI Structure Number	Dimensions (Overall Length x Width)	No. of Spans	Bridge Type	NBIS Sufficiency Rating (1-100)

Problem Statement: What purpose does this roadway serve? What is the need for this project? Who will this project serve (such as skiers, communities, hikers...)? What are the conditions requiring relief? Describe the consequences if these conditions are not addressed. Describe physical and functional deficiencies, anticipated changes in road use, safety problems, capacity issues, structural bridge deficiencies, pavement condition, etc.

The purpose of planning the reconstruction is to provide safe access to the Treadwell Ditch Trail from the Bonnie Brae subdivision while protecting soil, water, and heritage resources. There is a need to provide hiker, skier, and mountain bike access to the Treadwell Ditch Trail that has sustainable grades and isn't dominated by wet degraded soils and 14" narrow dilapidated wood plank walkways. The current trail was never formally designed or constructed and exists as an adopted social route. The sensitive organic soils have degraded, interrupting natural drainage patterns. The resulting boot-sucking mud is difficult to walk through, causing users to avoid those conditions by going around muddy areas. This causes further degradation in adjacent soils, widening the area of impact. Exposed roots present a tempting walking surface above the mud, but they are slippery and use of them often leads to falls or twisted ankles. This ever-widening of muddy areas is one consequence if the unsatisfactory trail conditions are not addressed. An extreme consequence has resulted where users have taken it upon themselves to create alternative access routes to the Treadwell Ditch Trail. Two current user created access trails have caused a lot of

resource damage, as they have not provided hardened tread over organic soils and one is aligned on the fall line of the hillside, contributing to erosion. Treadwell Ditch Trail is scheduled for continued improvement which will only increase the use of the Bonnie Brae access point.

Description of proposed work: Describe the overall design concept, any unusual design elements, design standards, and any work affecting structures (bridges and major culverts). Include widths, surfacing type, earthwork needs or roadside safety features. Include optimum year work should be done and year work needs to be done no later than.

The proposed planning effort will develop a conceptual reconstruction plan for a sustainable access trail between the Bonnie Brae subdivision on Douglas Island and Treadwell Ditch Trail. The design narrative would be produced in 2019. The National Environmental Policy Act (NEPA) process could start later in 2019 and would be completed in 2020. Overall, sustainable trail design principles will be incorporated in the plan. These principles include keeping grades low enough to avoid erosion, aligning a full bench cut trail across the hillslope so water drains across the trail surface and not down the center of it, providing regular and frequent cross drainage structures to prevent water from building up on the trail surface, and hardening the tread with an aggregate surface. Other design details will be worked out through the design narrative process and consultation with the public and other resource specialists.

Description of work on this project that has been completed to date: Describe which elements of the project proposed have been completed to date.

Through remote sensing potential routes have been explored and a preliminary grade analysis has been completed to verify sustainable grades are possible without much of an increase in route length. Some conversations have occurred with the City and Borough of Juneau, the land owner of about 1/3 of the existing trail, about the feasibility of the project.

Much of the Treadwell Ditch Trail on City of Juneau managed lands, has been improved. NEPA was completed in April, 2016 to clear the way for replacement or new construction of 38 crossing structures on the Treadwell Ditch Trail between the Blueberry Hills and the Bonnie Brae access trails, all on Forest Service land. This already popular 5-mile section of trail will become much more accessible and attractive with the replacement of those 38 crossing structures. The Blueberry Hills access trail to the Treadwell Ditch Trail was constructed in the 1990's as a durable, full bench, aggregate surface trail. An analysis and plan to reconstruct the Bonnie Brae access trail would set the stage to complete a system of trails that would provide a loop trail opportunity for people. Loop trail opportunities were identified as a priority in the Juneau Trails Plan, 2006, completed by Trail Mix, a local non-profit trail advocate group that coordinates trail resources on Federal, State, and City lands in the Juneau area.

Right-of-Way, Permitting, NEPA Compliance: Describe the project's potential need for of right-of-way, possible permitting required, and the level of NEPA compliance either completed or needed.

The current trail begins on City land and continues to Forest Service land. With the Forest Service as the project leader, the Forest Service would need the cooperation of the City and Borough of Juneau to reconstruct the trail on City land. Conversations with the City have occurred regarding the possibility of reconstruction of the Bonnie Brae access trail and would continue through the design narrative process.

A fill permit from the Army Corp of Engineers would be needed prior to trail reconstruction, depending on the construction techniques proposed, as many potential routes would cross wetland soils.

The Treadwell Ditch Trail is a historic property eligible for listing on the National Register of Historic Places. There is also a historic access trail to the Treadwell Ditch Trail in the vicinity of potential reroutes

of the Bonnie Brae access trail. Because of this, the Forest Service would need to consult with the State Historic Preservation Officer on the proposed action. However, given this current proposal is for a planning project, no permits would be required to complete the planning proposed.

NEPA for the construction project would consist of scoping internally and externally to explore the possibility of extraordinary circumstances. If none were found the reconstruction could occur without further analysis and documentation in an EIS or EA under a categorical exclusion for "construction and reconstruction of trails".

Utilities: Identify utilities in the roadway corridor. Would relocation be needed? Would relocation require reimbursement to the utility owner? What is the estimated cost of reimbursement?

No utilities are involved.

Project is identified within the following (Check all that apply and show plan name):

System Transportation Plan:

Land Management Plan:

Regional Transportation Plan:

Local Agency Transportation System Plan:

Tribal Transportation Plan:

Other Transportation Plan: The Juneau Trails Plan, June 2006

Describe any other environmental or social issues that should be considered that are within the project area: Is the route included in an area receiving special management considerations for water quality, wildlife security, connectivity?

The long term community vision for Treadwell Ditch Trail is to connect Eagle Crest Ski Area with the community of Douglas; a distance of approximately 14 miles. There are several access points to Treadwell, one being from the Bonnie Brae subdivision. As the main trail is improved, the popularity will grow, and the existing access points will see more traffic.

Describe the range of attitudes, both support and opposition, that this proposed project will receive from organizations, the public and cooperating agency: State the basis for this supposition and include coordination efforts and public involvement efforts completed to date.

The City of Juneau and local trail advocacy group Trail Mix Inc. consider Treadwell Ditch Trail their number one priority as identified in The Juneau Trails Plan, 2006, a plan developed with public involvement. The improvements are support by organized ski and bicycle groups, and many individuals. We are not aware of any opposition to improving the trail, or access points to it.

This proposed planning project would begin with public meetings to announce the intent of the Forest Service to develop a reconstruction plan and solicit preferences and values of public members regarding their use of the Bonnie Brae access trail. Further consultation would occur internally with other Forest Service resource specialists and externally with the City and Borough of Juneau and other stake holders.

The lead agency for project delivery will be WFLHD. If any other lead Agency is recommended by the project proponent then indicate below which agency and provide rationale for recommendation. Include previous experience in delivering FHWA funded projects, any certifications to deliver FHWA funded projects, and ability to satisfy FHWA project delivery requirements:

The Forest Service, proposes to be the lead agency for this project since we have qualified personnel in Juneau to conduct the planning proposed, which will minimize costs for traveling.

Previous FHWA funded projects administered by the Forest Service on the Juneau Ranger District include the West Glacier (Skater's Spur) Area Enhancement 2013 FLAP, and Lena Beach Recreation Area Enhancement 2013 FLAP. Both projects have completed, signed NEPA decisions. West Glacier design is in the final stages of review and nearly ready to go to contracting, with construction expected to begin later in summer 2016. Lena Beach design is nearly at 60%, and will go to contracting later in summer 2016 for construction during the 2017 season.

This planning proposal will provide the Forest Service with the information upon which to base a construction cost estimate to later submit a more informed proposal for survey and design, and construction.

Total Project Budget: Fill-in estimates for appropriate items. Please attach an itemized budget or cost estimate sheet to the application

Item	Total
Planning (Design Narrative + NEPA)	\$40,000 + \$50,000
Compliance	\$N/A
Permitting	\$N/A
Design and Preliminary Work (Pre-construction)	N/A
Construction (including mobilization, contingency, and construction management)	N/A
Right of Way	\$N/A
Other:	\$
Other:	\$
Other:	\$
Other:	\$
Other:	\$
Other:	\$
TOTAL ESTIMATED PROJECT COST	
	<u>\$90,000</u>

Required Local Contribution to Project: (Describe the financial plan to provide the required 9.03% match for the project? Example match sources include State funds, local funds, Federal Lands Transportation Program, in-kind services, and right of way acquired.)

The match will come from Forest Service in-kind match through the Recreation Planner during the design narrative process.

Long Term Maintenance for the Project: (maintenance responsibility for the design life of the facility.)

The City and Borough of Juneau has an agreement with the Forest Service to cooperatively maintain this proposed access route (to an extent greater than 50% as identified in the financial plan of the Challenge Cost Share agreement).

Other contributions to the project: (Describe any additional contributions secured or being sought to implement the project proposal.)

Summarize the other funding to the project:

Other Funding Contributions to Project:	\$	From:	
Other Funding Contributions to Project:	\$	From:	
Other Funding Contributions to Project:	\$	From:	

Schedule for Project Development: Provide a project schedule if available. If not available please describe the current state of planning, permitting, compliance and design. Provide the expected completion dates for NEPA and design. Describe when construction would be expected to start.

This is a planning proposal only. Design narrative completion and begin NEPA in 2019. Completion of NEPA in 2020. With a design narrative and a NEPA decision to guide the work, construction funds would later be sought for survey and design, and construction.

How does the project relate to the following evaluation criteria?

Please provide information about how the project relates to each for the applicable criteria. Questions are provided as a guide to the response. This space will automatically expand to hold the words you type. The ranking team will appreciate concise responses addressing the ranking factor.

1. Development, utilization, protection, and administration of the Federal Lands and their recreation and resources.

Describe improvements for access to High-use Federal recreation site or Federal economic generator and its' recreation, renewable or subsistence resources associated with Federal Lands. Describe the recreation or resource utilized if the project is implemented. Forecast the effect expected from changes in access, development, restoration, utilization, protection and/or administration to the extent you are able.

Factor 1 response: Improvements will include rerouting an existing access trail from Bonnie Brae subdivision to the Treadwell Ditch trail. The reroute is intended to address steep grades, areas of erosion, and provide better and safer watercourse crossings. We would expect bicycle and ski equipment sales and rentals to increase. Running, walking, and hunting would increase.

The constructed improvements will be a significantly improved access route to the popular Treadwell Ditch Trail.

2. Enhancement of economic development at the local, regional or national level including tourism and recreational travel.

Identify the long term economic opportunities associated with the project. Also describe the scope of the economic development benefits. Industries to consider are tourism, recreation, logging, forest products, fisheries, mining, energy and transportation. Describe how the proposed improvements enable, support and sustain long term economic health of the community, region and the State. NOTE that the ranking team will not consider the short term effects of implementing the project, i.e. construction employment in the ranking of the project.

Factor 2 response: Juneau is tourism central in southeast Alaska. There is interest in possibly offering guided hikes and bicycling trips. It has yet to be decided whether commercial use will be allowed on this trail. If commercial use is permitted, fees returned by those operations would help pay for maintenance of the trail.

3a. Improvement to continuity of the existing transportation network serving the local community and region, which are economically dependent upon the network.

Capacity/demand are considerations in evaluation of this criterion.

How does existing demand compare to the capacity of the current facility? Is the need identified in a local, regional or State transportation plan for the Federal Land Management Agency plan? Identify how the community or communities are economically dependent on the network, and the elements that comprise that economy (e.g. fishery, timber, mining, hydro, tourism, etc.). How will the proposed project provide improvements to the existing transportation network and support the community's economic goals/needs, cost of living or economic plan?

Factor 3a response: Juneau area trails are considered world class, and we have more miles of trail than road. Tourism is especially important to Juneau. Where commercial use of trails is allowed, demand exceeds capacity. Treadwell Ditch Trail needs quite a few more improvements, before a higher capacity can be realized, or commercial use can be considered. Better access trails will help.

An analysis and plan to reconstruct the Bonnie Brae access trail would set the stage to complete a system of trails that would provide a loop trail opportunity for people. Loop trail opportunities were identified as a priority in the Juneau Trails Plan, 2006, completed by Trail Mix, a local non-profit trail advocate group that coordinates trail resources on Federal, State, and City lands. The loop would include the Blueberry Hills access trail, the Treadwell Ditch Trail, the Bonnie Brae access trail and Douglas Highway. Bonnie Brae access trail is a primary access point to Treadwell Ditch Trail.

3b. Address a gap in the transportation network serving communities, which are economically dependent upon the network. Local and Region long term transportation needs are considerations in evaluation of this criterion.

Are there gaps or missing links in the transportation system that the proposed project will address? Is the need identified in a local, regional or State transportation plan for the Federal Land Management Agency plan? What other practical routes or alternatives are available? Identify how the community or communities are economically dependent on the network benefit from the added continuity to the transportation network and support the community's economic goals/needs, cost of living or economic plan?

Factor 3b response: The gaps in the Treadwell Ditch Trail area are the access points. Ones like Bonnie Brae were user created by going directly up the mountainside. This causes much resource damage due to our wet environment. We will plan for developing a sustainable trail to address grade and drainage issues properly, making a better and safer access from the Bonnie Brae subdivision. The possibility of future commercial use could contribute to the economy, and return maintenance dollars to the Forest Service for the trail's upkeep.

This project will plan for a new route from the Bonnie Brae neighborhood to the Treadwell Ditch Trail and is identified in The Juneau Trail Plan, 2006 compiled by Trail Mix, cooperatively with Forest Service, Alaska State Parks, City and Borough Parks and Recreation, and public input. This new route would significantly improve the trail network by decommissioning the muddy, eroded, steep existing route with a gravel surface trail of moderate grades suitable for biking, hiking, and skiing.

4. Mobility: Provide users with efficient, affordable, and agency-appropriate access to and through Federal lands. Includes accessibility changes to meet ADA/ABA regulations
Describe access improvements or improved accessibility in terms of the user travel opportunity: user cost, speed, capacity, reliability, convenience, and service frequency.

Factor 4 response: User speed, capacity, reliability, and convenience would all increase with improvements to the Bonnie Brae access trail. Grades will be reduced, obstructions removed, and structures over water crossings will be improved increasing accessibility. The improvements that would be constructed after this proposed planning effort would significantly reduce travel time and effort between the Bonnie Brae neighborhood and the Treadwell Ditch Trail by decommissioning the muddy, eroded, steep existing route and providing a gravel surface trail of moderate grades suitable for biking, hiking, and skiing. Currently, biking or skiing aren't options on the existing Bonnie Brae access trail. The improvements would provide expanded opportunities for those modes of travel. Bikers won't just benefit from the increased access on the Bonnie Brae access trail, it will open loop opportunities for bikers to bike the Bonnie Brae Access trail to the Treadwell Ditch Trail, south to the Blueberry Hills access trail, then north along the Douglas Highway back to their vehicle at the new Bonnie Brae trailhead. Skiers can take advantage of the new longer route also by staging vehicles at both trailheads (Bonnie Brae and Blueberry Hills).

Standards in the Forest Service Trail Accessibility Guidelines will be followed in the planning and construction of the reroute.

5. Safety: Transportation infrastructure will provide safe access for the public to and within Alaska's Federal lands.

Describe the improvements to user safety by reducing hazardous features that have a history of accidents. Describe the range of users that are affected by the safety improvement. Also describe how the proposed project relates to any education and enforcement opportunities to improve safety. Safety projects could include but are not limited to traffic control signalization, maintaining minimum levels of retro reflectivity of highway signs or pavement markings, traffic circles (also known as "roundabouts"), safety rest areas, pavement marking, shoulder and centerline rumble strips and stripes, commuter carpooling and vanpooling, rail-highway crossing closure, or installation of traffic signs, traffic lights, guardrails, impact attenuators, concrete barrier end treatments, breakaway utility poles, or priority control systems for emergency vehicles or transit vehicles at signalized intersections.

Factor 5 response: We would significantly improve identified hazardous conditions along the trail corridor for hikers, biker, and skiers by constructing new trail without extensive muddy sections, roots and other tripping hazards, aligning the trail with moderate grades, providing hardened tread and proper drainage..

6. Asset investment planning: Consider sustainability of operation and maintenance of new and existing multimodal assets.

Describe the condition of the multi-modal assets including transportation facility surface, bridge structures and safety problems connected to the existing transportation system addressed by the proposed project. Do the state or local agency pavement, bridge and/or safety management systems recommend the proposed improvements? Describe how the project addresses the existing road, bridge, trail, parking, or alternative transportation system conditions and any system management recommendations. If bridge structures have deficiencies, include bridge number, condition rating, and the most recent bridge inspection report. Describe the tradeoffs between cost of maintaining the existing assets and investments in new assets.

Factor 6 response: The tread surface of the existing trail is native soil. These soils are composed primarily of organic materials. The root mat provides the sole means of armoring the underlying soils. Subject to the traffic over the years, the integrity of the root mat has long since been lost. The sensitive organic soils beneath the root mat have degraded, interrupting natural drainage patterns, resulting in deep, wide muddy areas. Bridges are non-engineered structures consisting mostly of native log stringers or wood planks stretched across streams. They sit upon sub-standard abutments.

The proposed planning project will evaluate sustainable routes and recommend structures and features that meet current engineering standards and follow sustainable trail design practices. These include keeping grades low enough to avoid erosion, aligning a full bench cut trail across the hillslope so water drains across the trail surface and not down the center of it, providing regular and frequent cross drainage structures to prevent water from building up on the trail surface, and hardening the tread with an aggregate surface. System management recommendations would stress the importance of clearing drainage structures at least once every 3 years.

Currently, maintenance of existing structures will not bring structures within standards, including bridges, tread, and drainage structures. The cost of investing in the new assets is necessary for the trail and its associated structures to meet standards for sustainability, structural integrity, and accessibility as well as for resource protection. The maintenance regime of the new route will be simple and low cost compared to crews trying to patch and fill muddy trenches with slippery exposed roots.

The planning effort will also address the lack of parking issue on City streets in the Bonnie Brae neighborhood. The trail begins on a City Right-of-Way between two private property lots and there is no off-street parking. This sometimes leads to congestion on the residential street.

7. Environment: Protect and enhance natural and cultural resources through comprehensive transportation planning and management.

Describe how the proposed project implements the goals and objectives of the Federal Land Management Agency's (FLMA's) plans at the appropriate ecosystem scale (explain the indirect effects on the regional area). Explain how the project ensures protection of open water, wetlands, and aquifers across Federal lands. Explain how the project maintains or improves air quality. How does the project affect wildlife habitat by avoiding, minimizing, or mitigating transportation related impacts? Explain how the project avoids or minimizes negative impacts to culturally significant human settlements, subsistence areas, cultural landscapes, and historic and archaeological sites.

Factor 7 response: The proposed project will develop a plan that when implemented will address several environment-related goals and objectives outlined in the Tongass Land and Management Plan. These Soil and Water goals will be addressed: 1.) "Maintain soil productivity Forest-wide and minimize soil erosion resulting from land-disturbing activities." The proposed plan, when implemented, will restore productivity to soil over a net acreage of between ½ and 1 acre. By providing a hardened surface of a defined width for trail users, they will not have to hike off the trail to avoid mud. Past experience has shown that when trail-side soil disturbances cease, vegetation recolonizes quite readily, restoring productivity to the soil. 2.) "Minimize sediment transported to streams from land-disturbing activities." The reconstructed trail will prevent degraded trail tread in the vicinity of streams from contributing sediment to the streams.

This Heritage Resource goal will be addressed by this planning project: "Identify, evaluate, preserve, and protect heritage resources." Through the design narrative and NEPA processes, the heritage resources will be identified and evaluated for their integrity and eligibility to be listed on the National Register of Historic Places. The existing Bonnie Brae access trail to the Treadwell Ditch Trail overlaps a section of historic corduroy trail. This historic feature is being damaged as people continue to walk on it. One option under the plan to be developed is to avoid that section of corduroy trail, thereby preserving the remaining integrity of that feature. This would be a significant improvement for the preservation of the historic corduroy trail.

8. Partnerships. Describe the non Federal Land Access Program capital contributions for planning, scoping, design, right-of-way, and construction. What percentage of the proposed project total cost will be funded through means other than the Federal Lands Access Program? Identify the contributing partners' type of contribution, amount, and when those funds will be available. What other contributions (in-kind, donating materials, etc.)

Factor 8 response: The bulk of the \$8,127 required match will come from Forest Service in-kind match during the design narrative process. Trail Mix Inc., a local non-profit trail advocacy group, will be instrumental in the scoping process for NEPA and assisting to host public meetings. Currently the Forest Service has a maintenance agreement with the City and Borough of Juneau to provide the majority (greater than 50%) of the maintenance on the Bonnie Brae access trail.

This planning effort will be a collaborative effort with City and Borough of Juneau Engineering and Parks and Recreation staff which will allow the Forest Service and CBJ to address issues they each see as important.

9. Intrinsic Qualities. Describe any qualities that are applicable to the proposed project:
a. Special or unusual scenic attributes,

-
- b. historic resources such as National Register,
 - c. cultural or archaeological significance beyond the ordinary,
 - d. recreational potential to provide special services
 - e. Natural setting or factors that are unusual and of special interest.
-

Factor 9 response:

- A) The new access trail will traverse through old growth forest, a couple stream crossings, and open muskeg wellands offering a nice variety of scenic attributes.
- B) The Treadwell Ditch Trail is eligible for the National Register, and work to be completed this summer has been planned extensively with archeologists and through consultation with the State Historic Preservation Officer. The design narrative and NEPA for the Bonnie Brae access route will be reviewed by these entities as well. An interpretive opportunity exists to describe the historic corduroy access trail to the Treadwell Ditch Trail, describing its establishment, purpose, and importance for avoiding further degradation of the structure.
- C) The Treadwell Ditch fed what was the largest gold mine in the world of its time in the late 1800's. The remaining features, including the berm the trail is located upon, are considered historically significant.
- D) Do to the long length of the ditch (~14 miles), and the gentle grades over that distance (~1%), recreation potential for all forms of users is huge. Improving access points to standard will make the overall experience nicer, safer, and more sustainable. The Treadwell Ditch Trail is the longest continuous trail in Juneau, making it unique, and making the Bonnie Brae access point an important part of the overall transportation network. The Bonnie Brae access trail is an important link to provide a loop trail opportunity in combination with the Treadwell Ditch Trail, the Blueberry Hills access trail, and Douglas Highway.
- E) Old growth forest is a diminishing resource worldwide. To be able to experience a temperate old growth forest is a special opportunity. Providing a hardened trail with proper drainage and moderate grades will allow users to enjoy their natural surroundings as opposed to having to focus intently on their footing along the current muddy steep route.

10. Other Factors. For items not already listed above in responses to factors 1 through

9... Does the project exhibit significant innovation, creativity, of some other element not included in any of the factors above? This factor is not intended to score points for every project and not intended to score points for items listed above in Factors 1 through 9.

Factor 10 response: The project may include some replication of historic structures.

Other Remarks: The majority of trail miles in Juneau have been inherited from an earlier time before sustainable trail building design and construction practices were widely accepted. Indeed, much of the trail mileage adopted into the National Forest Trail System on the Juneau Ranger District came into being not through design and construction but through many people walking the same route over time. The majority of our maintenance budgets are spent trying to make the best of trails poorly sited and developed. It is a rare opportunity to plan new trail construction that will provide a trail in great shape for many years that is easy to maintain.

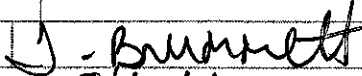
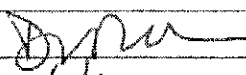
Trail Mix Inc. and the City and Borough of Juneau have successfully competed for a FLAP grant to complete work on a reroute of the Treadwell Ditch Trail very near to where this proposed access trail will intersect the main trail. This planning work will be very timely as improvements to the main trail will significantly increase use of the Bonnie Brae access route. This proposal is being submitted in hopes of heading off additional resource damage and injuries. There is a very high level of community interest in seeing this long term project to completion.

**JOINT ENDORSEMENT- This project is supported and endorsed by:
(add agency endorsements as needed)**

By signing this application the Federal Land Agency and Agency with Title or Maintenance Responsibility are agreeing the project has Access to Federal Lands and that there is interest in a possible project. Application must be signed by the Federal Land Management Agency appropriate level (Forest Service Forest Supervisor, BLM Field Manager, NPS Park Superintendent, FWS Refuge Manager) and AKDOT Region Director:

Agency	Contact	Phone	Email Address
Alaska Department of Transportation	David Miller Northern Region Director	(907) 451-2211	david.miller@alaska.gov
Alaska Department of Transportation	David Kemp, P.E. Central Region Director	(907) 269-0780	david.kemp@alaska.gov
Alaska Department of Transportation	Mike Coffey Southeast Region Director	(907) 465-1763	mike.coffey@alaska.gov
US Forest Service	Terri Marceron Forest Supervisor Chugach National Forest	(907) 743-9500	tmarceron@fs.fed.us
US Forest Service	Earl Stewart, Forest Supervisor Tongass National Forest	(907) 228-6281	estewart@fs.fed.us
National Park Service	Coordinate with Paul Schrooten	(907) 644-3388	paul_schrooten@nps.gov
Bureau of Land Management	Coordinate with Randy Goodwin	(907) 474-2369	rgoodwin@blm.gov
US Fish & Wildlife Service	Coordinate with Charles Grant	(907) 786-3506	charles_grant@fws.gov
US Army Corp of Engineers	Coordinate with Tim Feavel	(907) 488-2748	tim.a.feavel@usace.army.mil

Local Agencies should be signed by Mayor

Federal Land Agency(ies):	USFS Tongass National Forest	Agency with Title or Maintenance Responsibility:	City + Borough of JUNEAU
Federal Land Manager Name:	Title Forest Supervisor M. EARL STEWART	Authorized Agency Official:	Title City MANAGER
Signature:		Signature:	
Date:	5/16/16	Date:	5/11/16
E-Mail:		E-Mail:	
Telephone:		Telephone:	
Point of Contact:		Point of Contact:	

Title:		Title:	
E-mail:		E-mail:	
Telephone:		Telephone:	

Provide a high quality map clearly showing the project location and project termini and the boundary of the nearby Federal Lands.

The best available data should be used in completing the project proposal form. Photos should also be included that support the proposal.

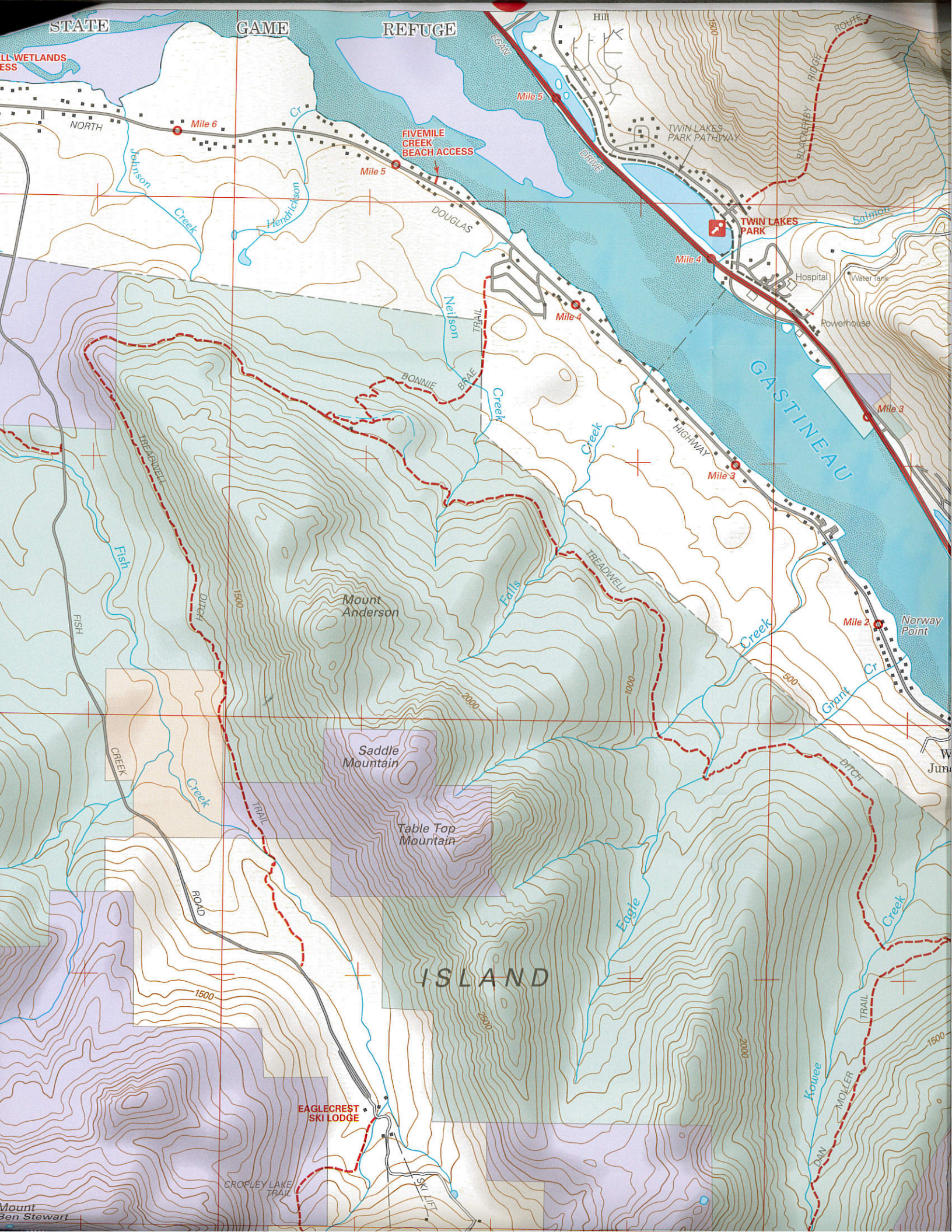
The proposal must be received by **May 16, 2016**. The total file size for the proposal form (including maps, photos and letters) should not exceed 10 megabytes.

Should you have any questions, please contact Corrie Veenstra or the Federal Lands Access Program coordinator for your agency:

Email the completed proposal form with all maps, signatures, and photos to:

WFL.CallForProjects@dot.gov

Agency	Contact	Phone	Email Address
Federal Highway Administration	Corrie Veenstra	(360) 619-7820	<u>corrie.veenstra@dot.gov</u>
Alaska Department of Transportation	Marcheta Moulton	(907) 465-8769	<u>marcheta.moulton@alaska.gov</u>
Alaska Municipal League	Kathie Wasserman	(907) 586-1325	<u>kathie@akml.org</u>
US Forest Service	Amy Thomas	(503) 808-2473	<u>aethomas@fs.fed.us</u>
National Park Service	Paul Schrooten	(907) 644-3388	<u>paul_schrooten@nps.gov</u>
Bureau of Land Management	Randy Goodwin	(907) 474-2369	<u>rgoodwin@blm.gov</u>
US Fish & Wildlife Service	Charles Grant	(907) 786-3506	<u>charles_grant@fws.gov</u>
US Army Corp of Engineers	Tim Feavel	(907) 488-2748	<u>tim.a.feavel@usace.army.mil</u>



STATE

GAME

REFUGE

WETLANDS

NORTH

Mile 6

Mile 5

Mile 5

FIVEMILE CREEK BEACH ACCESS

DOUGLAS

Hill

1500

ROUTE

TWIN LAKES PARK PATHWAY

TWIN LAKES PARK

Mile 4

Hospital

Water tank

Powerhouse

GASTINEAU

Mile 3

Mile 3

Mile 2

Norway Point

FISH

Mount Anderson

Saddle Mountain

Table Top Mountain

ISLAND

EAGLECREST SKI LODGE

CROPLEY LAKE TRAIL

SALT LAKE

Mount Ben Stewart

Appendix D

Excerpt of *Trail Design Parameters for Hiker / Pedestrian Use*, from USDA Forest Service "Trail Fundamentals and Trail Management Objectives" (2016)



**Trail Design Parameters
Hiker/Pedestrian** (FSH 2309.18, Section 23.11, Exhibit 01)

Design Parameters are technical guidelines for the survey, design, construction, maintenance, and assessment of National Forest System trails, based on their Designed Use and Trail Class and consistent with their management intent.¹ Local deviations from any Design Parameter may be established based on trail-specific conditions, topography, or other factors, provided that the deviations are consistent with the general intent of the applicable Trail Class.

Designed Use HIKER/PEDESTRIAN	Trail Class 1	Trail Class 2	Trail Class 3 ²	Trail Class 4 ²	Trail Class 5 ²
Design Tread Width	0" – 12"	6" – 18"	12" – 24" Exception: may be 36" – 48" at steep side slopes	18" – 24" Exception: may be 36" – 48" at steep side slopes	Not applicable
Non-Wilderness (Single Lane)	0" – 12"	6" – 18"	18" – 36"	24" – 60"	36" – 72"
Non-Wilderness (Double Lane)	36"	36"	36" – 60"	48" – 72"	72" – 120"
Structures (Minimum Width)	18"	18"	18"	36"	36"
Design Surface³	Native, ungraded May be continuously rough	Native, limited grading May be continuously rough	Native, with some onsite borrow or imported material where needed for stabilization and occasional grading Intermittently rough	Native with improved sections of borrow or imported material, and routine grading Minor roughness	Likely imported material, and routine grading Uniform, firm, and stable
Protrusions	≤ 24" Likely common and continuous	≤ 6" May be common and continuous	≤ 3" May be common, not continuous	≤ 3" Uncommon, not continuous	No protrusions
Obstacles (Maximum Height)	24"	14"	10"	8"	No obstacles
Design Grade³	5% – 25%	5% – 18%	3% – 12%	2% – 10%	2% – 5%
Short Pitch Maximum	40%	35%	25%	15%	5%
Maximum Pitch Density	20% – 40% of trail	20% – 30% of trail	10% – 20% of trail	5% – 20% of trail	FSTAG: 5% – 12% ² 0% – 5% of trail

Designed Use HIKER/PEDESTRIAN		Trail Class 1	Trail Class 2	Trail Class 3 ²	Trail Class 4 ²	Trail Class 5 ²
Design Cross Slope	Target Cross Slope	Natural side slope	5% – 20%	5% – 10%	3% – 7%	2% – 3% (or crowned)
	Maximum Cross Slope	Natural side slope	25%	15%	10%	3%
Design Clearing	Height	6'	6' – 7'	7' – 8'	8' – 10'	8' – 10'
	Width	≥ 24"	24" – 48"	36" – 60"	48" – 72"	60" – 72"
		Some vegetation may encroach into clearing area	Some light vegetation may encroach into clearing area			
Design Turn	Shoulder Clearance	3" – 6"	6" – 12"	12" – 18"	12" – 18"	12" – 24"
	Radius	No minimum	2' – 3'	3' – 6'	4' – 8'	6' – 8'

¹ For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

² Trail Classes 3, 4, and 5, in particular, have the potential to provide accessible passage. If assessing or designing trails for accessibility, refer to the Forest Service Trail Accessibility Guidelines (FSTAG) for more specific technical provisions and tolerances (FSM 2350).

³ The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.

Appendix E

Table 4. Initial construction cost breakdown for Site 1

Pay Item Description	Unit	Wee Burn Drive West Side Parking	Bonnie Brae Trail Realignment	Bonnie Brae Trail Reconstruction	Total Cost
Mobilization (10%)	LPSM	\$10,989.00	\$11,022.00	\$10,989.00	\$33,000.00
Construction survey and staking	LPSM	\$1,998.00	\$2,004.00	\$1,998.00	\$6,000.00
Contractor quality control and assurance	LPSM	\$2,997.00	\$3,006.00	\$2,997.00	\$9,000.00
Contractor testing	LPSM	\$2,997.00	\$3,006.00	\$2,997.00	\$9,000.00
Construction schedule	LPSM	\$999.00	\$1,002.00	\$999.00	\$3,000.00
Soil erosion control	LPSM	\$5,661.00	\$5,678.00	\$5,661.00	\$17,000.00
Watering for dust control	LPSM	\$2,997.00	\$3,006.00	\$2,997.00	\$9,000.00
Clearing and grubbing	SQYD	\$1,104.00	\$53,624.00	\$9,376.00	\$64,104.00
Roadway excavation	CUYD	\$1,380.00	\$37,080.00	\$2,400.00	\$40,860.00
Select borrow	CUYD	\$0.00	\$34,480.00	\$0.00	\$34,480.00
Roadway obliteration, method 1 (trail)	SQYD	\$0.00	\$27,400.00	\$0.00	\$27,400.00
Roadway aggregate, method 2	CUYD	\$1,440.00	\$8,460.00	\$1,800.00	\$11,700.00
Aggregate surface course	CUYD	\$1,000.00	\$11,750.00	\$2,500.00	\$15,250.00
18-inch pipe culvert	LNFT	\$15,000.00	\$0.00	\$0.00	\$15,000.00
Placing conserved topsoil, 4-inch depth	SQYD	\$690.00	\$27,930.00	\$5,860.00	\$34,480.00
Turf establishment	SQYD	\$414.00	\$16,758.00	\$3,516.00	\$20,688.00
Temporary traffic control	LPSM	\$5,661.00	\$5,678.00	\$5,661.00	\$17,000.00
Partnering	LPSM	\$1,665.00	\$1,670.00	\$1,665.00	\$5,000.00
Design contingency (30%)	LPSM	\$37,296.00	\$37,408.00	\$37,296.00	\$112,000.00
	SUBTOTAL	\$94,288.00	\$290,962.00	\$98,712.00	\$483,962.00
				Est. PE (10%)	\$48,396.20
				Est. CE (15%)	\$72,594.30
				TOTAL	\$604,952.50

Table 5. Initial construction cost breakdown for Site 4

Pay Item Description	Unit	Wee Burn Drive East Side Parking	Bonnie Brae Trail Realignment	Bonnie Brae Trail Reconstruction	Total Cost
Mobilization (10%)	LPSM	\$11,988.00	\$12,024.00	\$11,988.00	\$36,000.00
Construction survey and staking	LPSM	\$1,998.00	\$2,004.00	\$1,998.00	\$6,000.00
Contractor quality control and assurance	LPSM	\$3,330.00	\$3,340.00	\$3,330.00	\$10,000.00
Contractor testing	LPSM	\$3,330.00	\$3,340.00	\$3,330.00	\$10,000.00
Construction schedule	LPSM	\$999.00	\$1,002.00	\$999.00	\$3,000.00
Soil erosion control	LPSM	\$5,661.00	\$5,678.00	\$5,661.00	\$17,000.00
Watering for dust control	LPSM	\$2,997.00	\$3,006.00	\$2,997.00	\$9,000.00
Clearing and grubbing	SQYD	\$1,720.00	\$53,624.00	\$9,376.00	\$64,720.00
Roadway excavation	CUYD	\$3,480.00	\$37,080.00	\$2,400.00	\$42,960.00
Select borrow	CUYD	\$0.00	\$38,800.00	\$0.00	\$38,800.00
Roadway obliteration, method 1 (trail)	SQYD	\$0.00	\$27,400.00	\$0.00	\$27,400.00
Roadway aggregate, method 2	CUYD	\$2,070.00	\$8,460.00	\$1,800.00	\$12,330.00
Aggregate surface course	CUYD	\$1,500.00	\$11,750.00	\$2,500.00	\$15,750.00
18-inch pipe culvert	LNFT	\$15,000.00	\$0.00	\$0.00	\$15,000.00
Placing conserved topsoil, 4-inch depth	SQYD	\$405.00	\$33,515.00	\$5,860.00	\$39,780.00
Turf establishment	SQYD	\$243.00	\$20,109.00	\$3,516.00	\$23,868.00
Temporary traffic control	LPSM	\$5,661.00	\$5,678.00	\$5,661.00	\$17,000.00
Partnering	LPSM	\$1,665.00	\$1,670.00	\$1,665.00	\$5,000.00
Design contingency (30%)	LPSM	\$38,961.00	\$39,078.00	\$38,961.00	\$117,000.00
	SUBTOTAL	\$101,008.00	\$307,558.00	\$102,042.00	\$510,608.00
				Est. PE (10%)	\$51,060.80
				Est. CE (15%)	\$76,591.20
				TOTAL	\$638,260.00