

Ski Hill Basin Analysis



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- Appendix B – Survey results
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PROJECT BACKGROUND AND PURPOSE

The Skill Hill Basin is located north of the City of Leavenworth. Each spring, snow melt rapidly runs off the hillside causing flooding and damage to county roads and private property. The Chelan County Flood Control Zone District (FCZD) is sponsoring this analysis to better understand the causes and issues related to the runoff and to develop a preferred alternative that can be implemented to address the flooding. Because the runoff affects so many private property owners, the project team developed a robust public outreach program to gain public information and opinion, identify potential pitfalls of the alternatives, and determine which aspects of the alternatives are considered most favorable to property owners.

OUTREACH PROCESS

During late 2019, when the public outreach phase of the analysis was initially developed, the project team proposed an outreach plan that was a combination of online and in-person opportunities. The project team envisioned a process that began with an ArcGIS Online Story Map to provide information about the project and obtain feedback about the proposed alternatives. The next step was to be an in-person meeting to discuss the top three alternatives. During this meeting, the project team could discuss details of each alternative and engage the participants to gather information to help inform the selection of the preferred alternative.

However, during early 2020 when the project team began planning for the public outreach to begin, COVID-19 required a change to the plans. Due to the quarantine requirements from the “Stay Home, Stay Healthy” mandate, the project team changed the outreach plan to be all online opportunities. The primary focus of the outreach plan became the online story map supported with interactive maps and a survey to gather input from the public.

The project team worked throughout 2020 to develop and refine alternatives and a story map for presentation to the public. In January 2021, the story map was released to the public. The story map is provided in Appendix A and graphics of the six alternatives presented in the story map are in Appendix B.

The story map provided the public information about the project, including:

- Project background and purpose
- Current conditions and causes of flooding
- Project steps
- Description and maps of alternatives

To gather input from the public, the story map included two surveys. One was to gather general feelings about the project and the other to evaluate the proposed alternatives.

The story map was advertised by the FCZD using several methods:

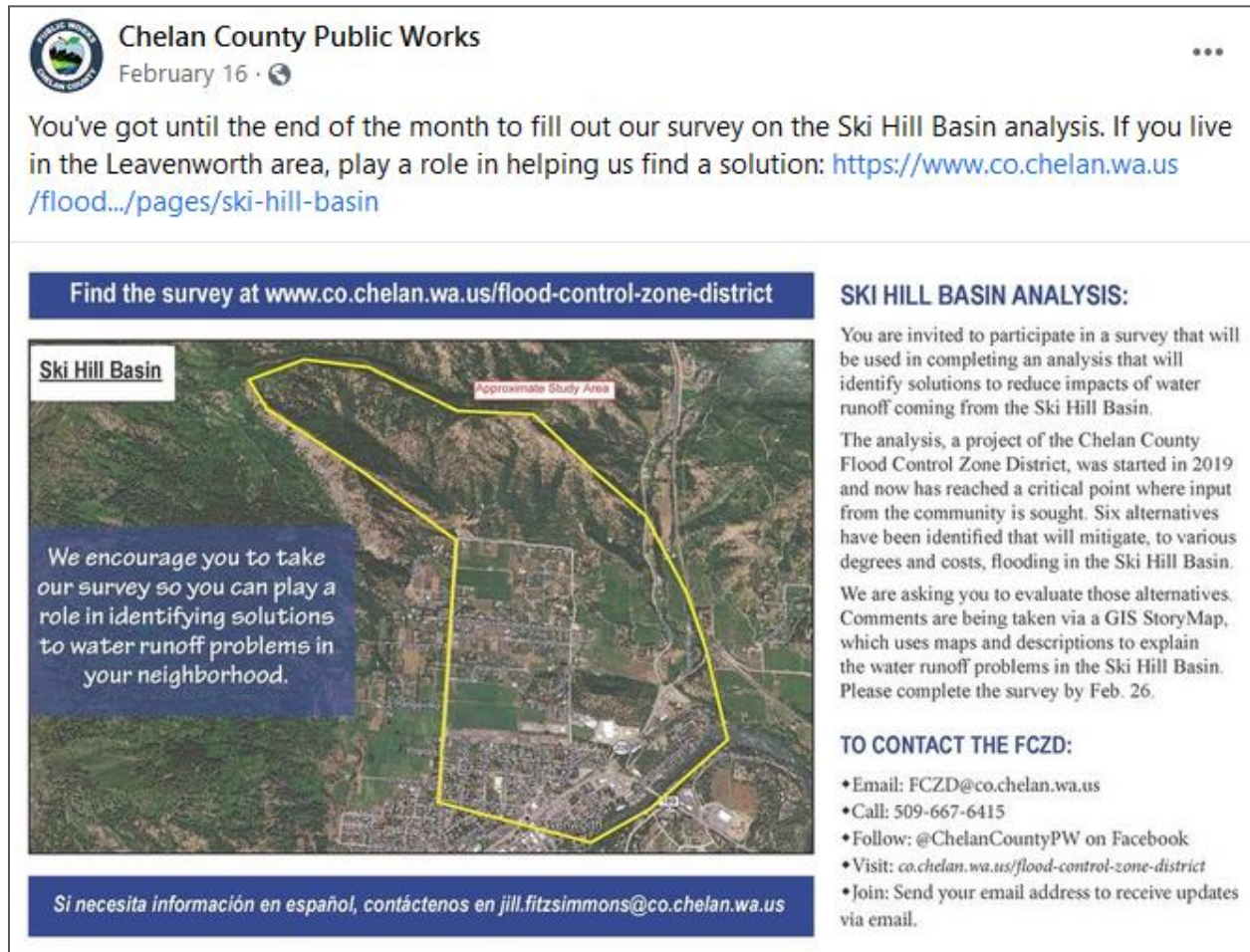
- Flood Control Zone District Website: <https://www.co.chelan.wa.us/flood-control-zone-district/pages/ski-hill-basin>
- Press release sent to local media outlets and email lists. The press release was posted on the City of Leavenworth website and the Wenatchee World posted an article about the project. (Appendix C)
- Facebook posts on January 16 and February 16, 2020 (Figures 1 and 2)
- Postcard sent to 337 properties in the project area (Shown in Figure 2)

- Four 30-second radio spots daily February 8-13 and February 15-20 for a total of 48 spots. KOHO and KPQ radio interviews.
- News story on KPQ on January 29, 2021 and story posted in the Leavenworth Echo newspaper on February 10, 2021.
- News item posted to Chelan County website on both the main page and FCZD page.

Figure 1. Facebook Post – January 26



Figure 2. Facebook Post with Image of Postcard Sent to Study Area Landowners – February 16



PARTICIPATION

The robust advertising by the FCZD resulted in great participation by the public. During the time when the survey was open (January 26 to February 28, 2021), the story map had 247 users, with 67 of those users returning more than once for a total of 407 total page visits (Figures 3 and 4). While at the site, users stayed an average of 7 minutes 17 seconds on the page, indicating they took the time to read the information, review the proposed alternatives, and take the survey (Figure 5).

The story map included two surveys. The first survey asked two basic questions about flooding problems in the Ski Hill area. This survey had 77 responses. The second survey asked several questions about the proposed alternatives and had 66 responses. Both surveys asked open ended response questions that provided participants the opportunity to describe their flooding problems or the ideas or feelings about the proposed alternatives. Many survey participants took opportunity of the open-ended questions and provided long, detailed descriptions about their experiences with flooding and how they felt about the alternatives.

Figure 3. New and Returning Users

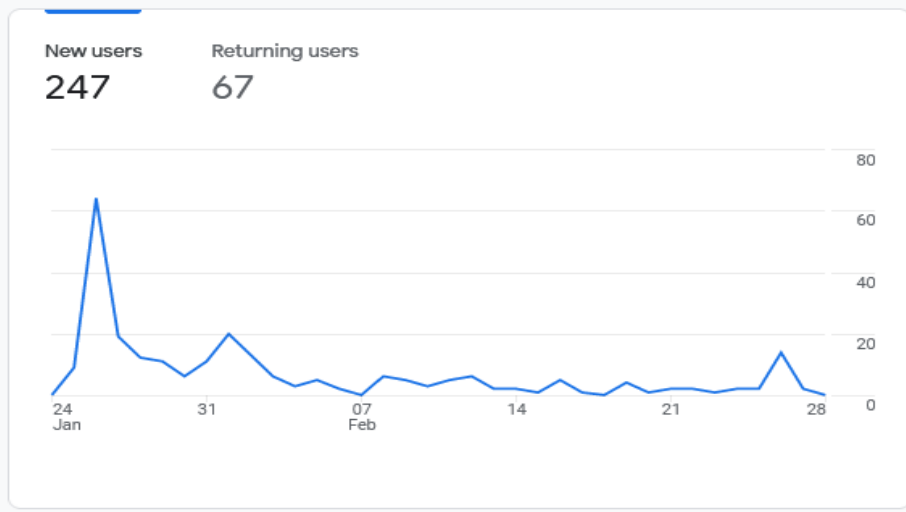


Figure 4. Total Page Views

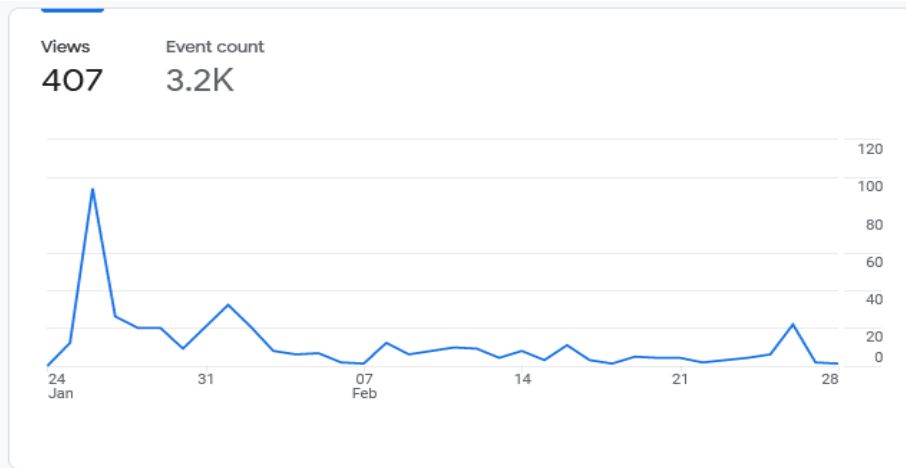
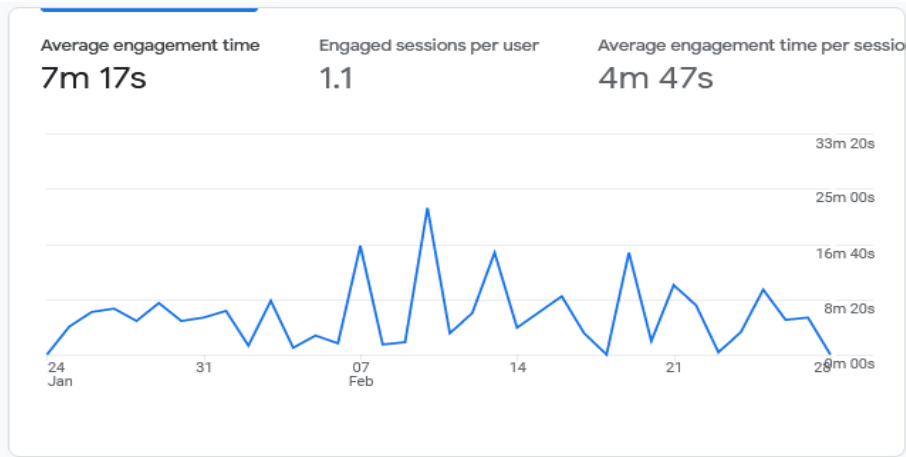


Figure 5. Average Engagement Time

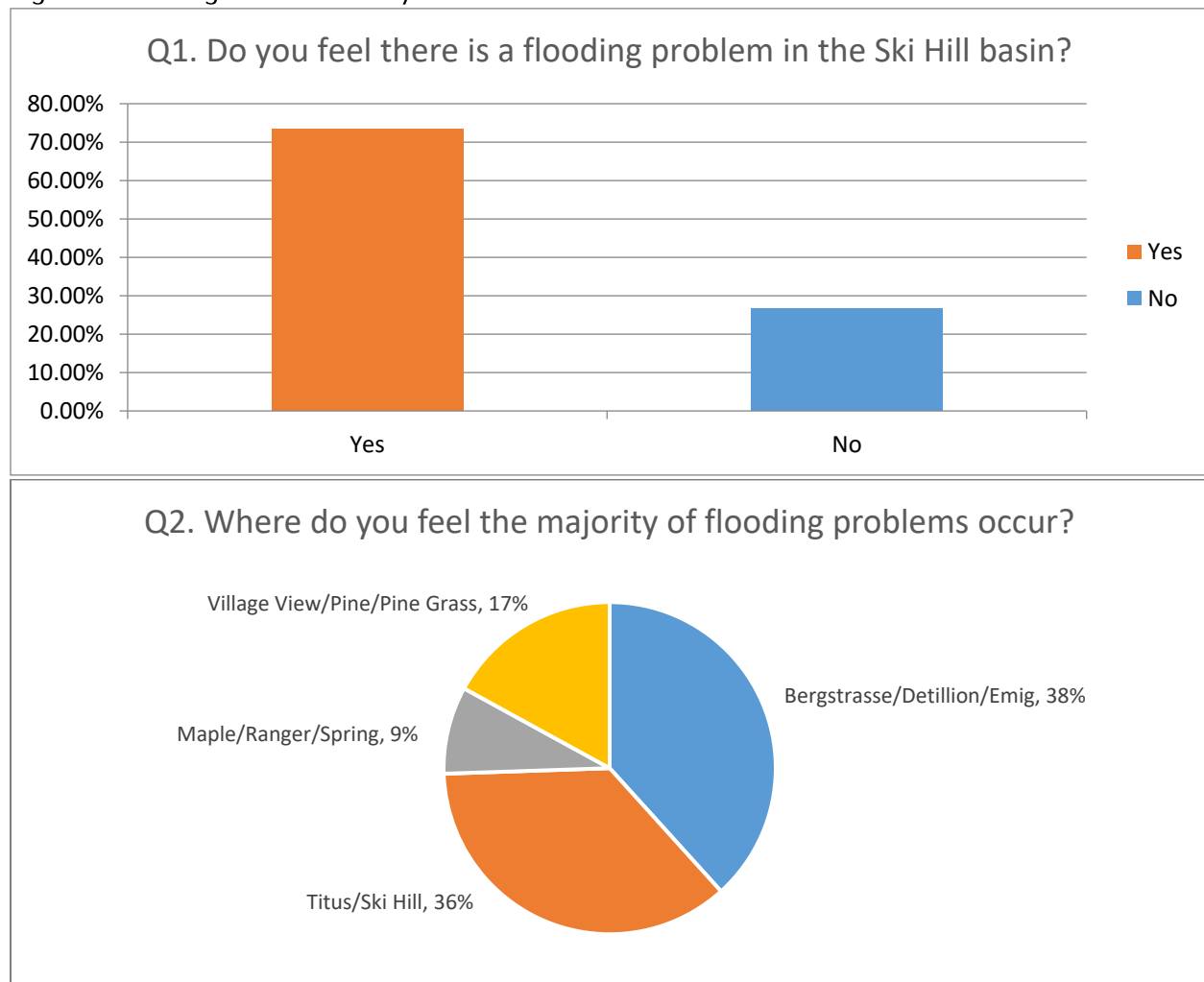


RESULTS

Flooding Problems Survey

The first survey asked two questions to gather general feelings about the flooding problem from the survey participants. Seventy-seven participants responded to this survey. Almost 75% of survey participants feel there is a flooding problem in the Ski Hill basin. Survey participants identified the greatest problems areas as the Bergstrasse/Detillion/Emig area and the Titus/Ski Hill area. Participants also described their experience with flooding in the area. Several identified new growth, lack of planning, and impacts to a wetland as an issue. Several participants were concerned with how projects may affect their property.

Figure 6. Flooding Problems Survey

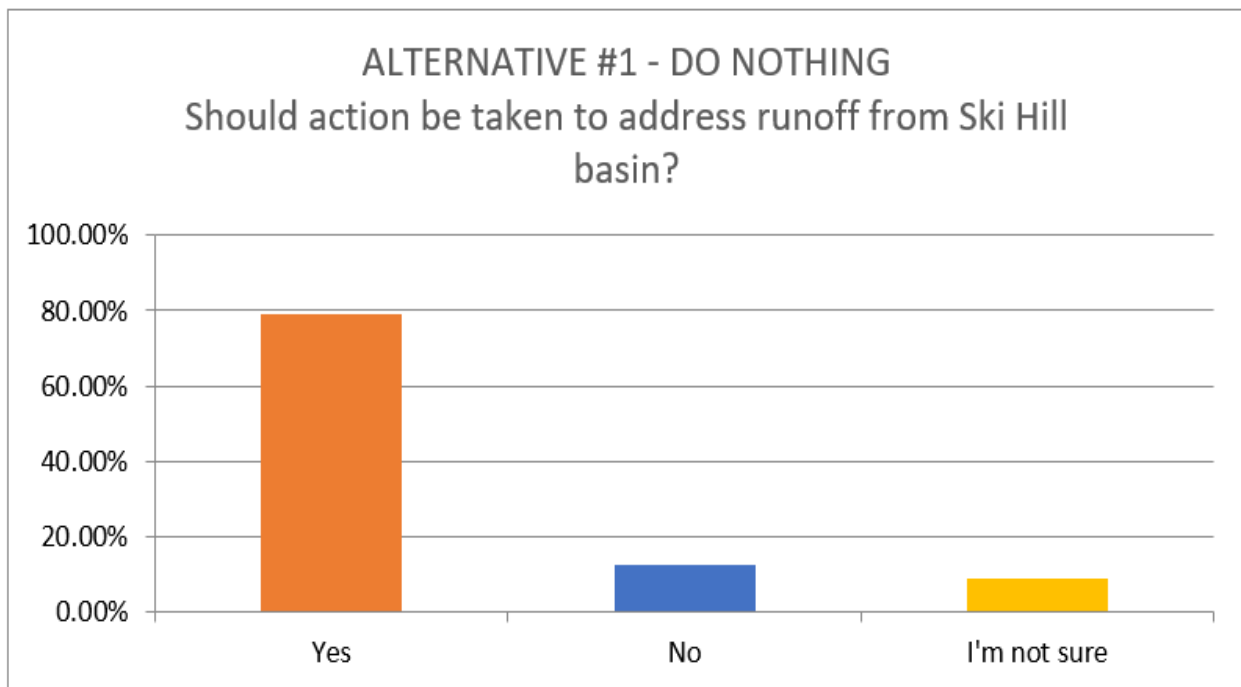


Alternatives Survey

The second survey asked questions about each alternative to determine the level of support from survey participants. Sixty-six participants responded to this survey. The project team presented six alternatives, including a do nothing alternative (#1) and a conceptual alternative (#6). Alternatives #2 through #5 built upon each other with the least action being taken in alternative #2 and the most action taken in alternative #5. See the story map in Appendix A and graphics in Appendix B for more information about each alternative.

For alternative #1, the survey asked participants a basic yes/no question to determine the level of support for taking action in the Ski Hill basin to address runoff. Almost 80% of survey participants answered yes, they support taking action, as shown in Figure 7.

Figure 7. Alternatives Survey - Alternative #1 Question



For alternatives #2 through #6, survey participants were asked a series of questions intended to evaluate how well they thought the alternative addressed certain issues. The survey asked participants to rate how well each alternative addressed the following priorities:

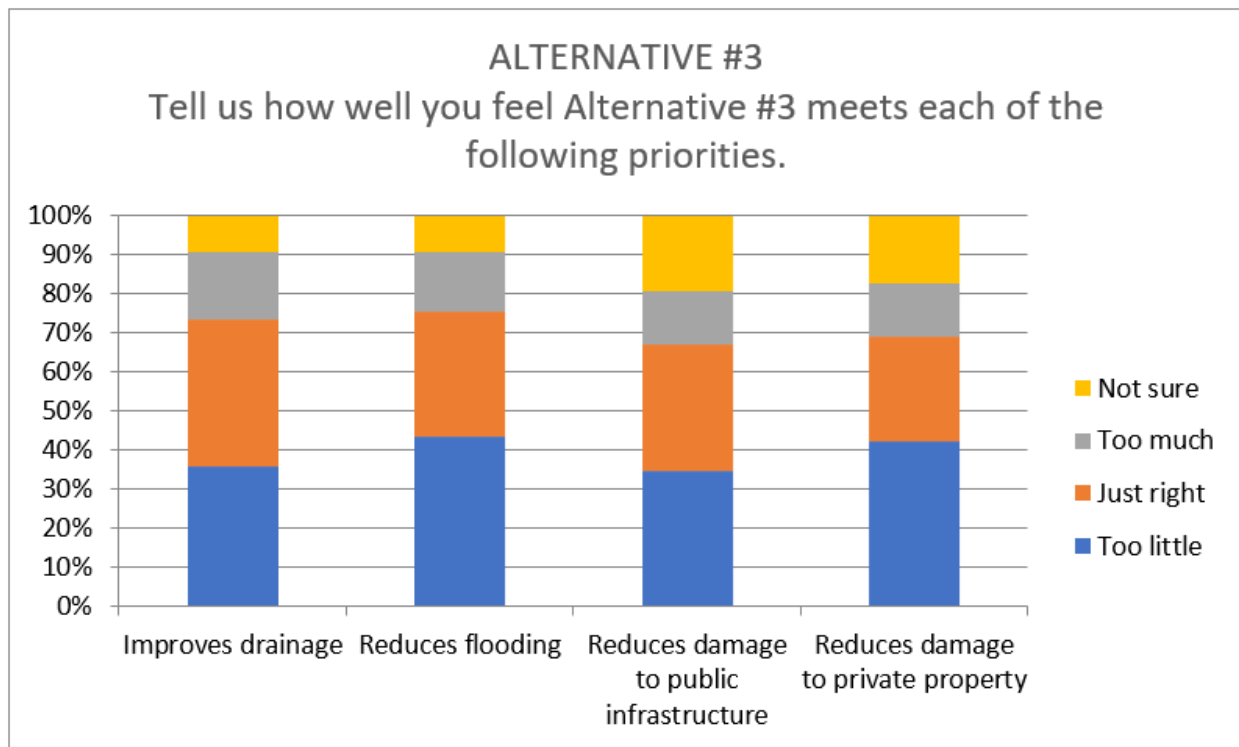
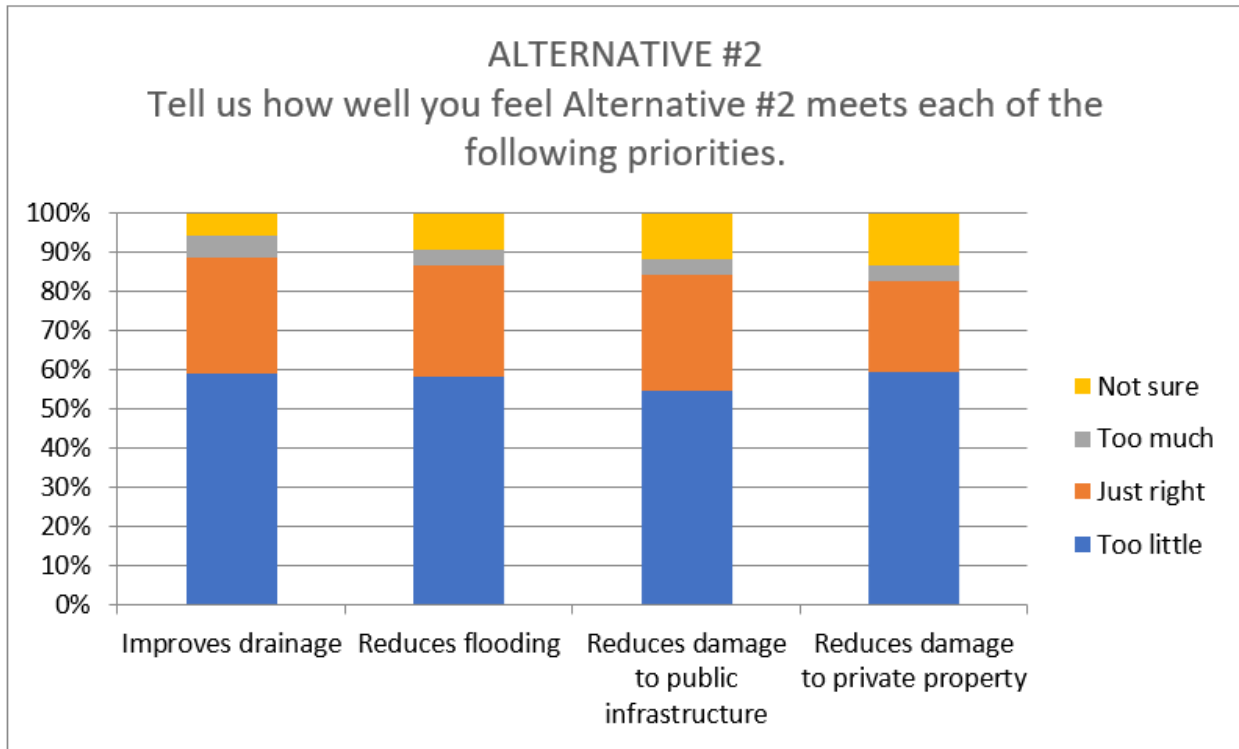
- Improves drainage
- Reduces flooding
- Reduces damage to public infrastructure
- Reduces damage to private property

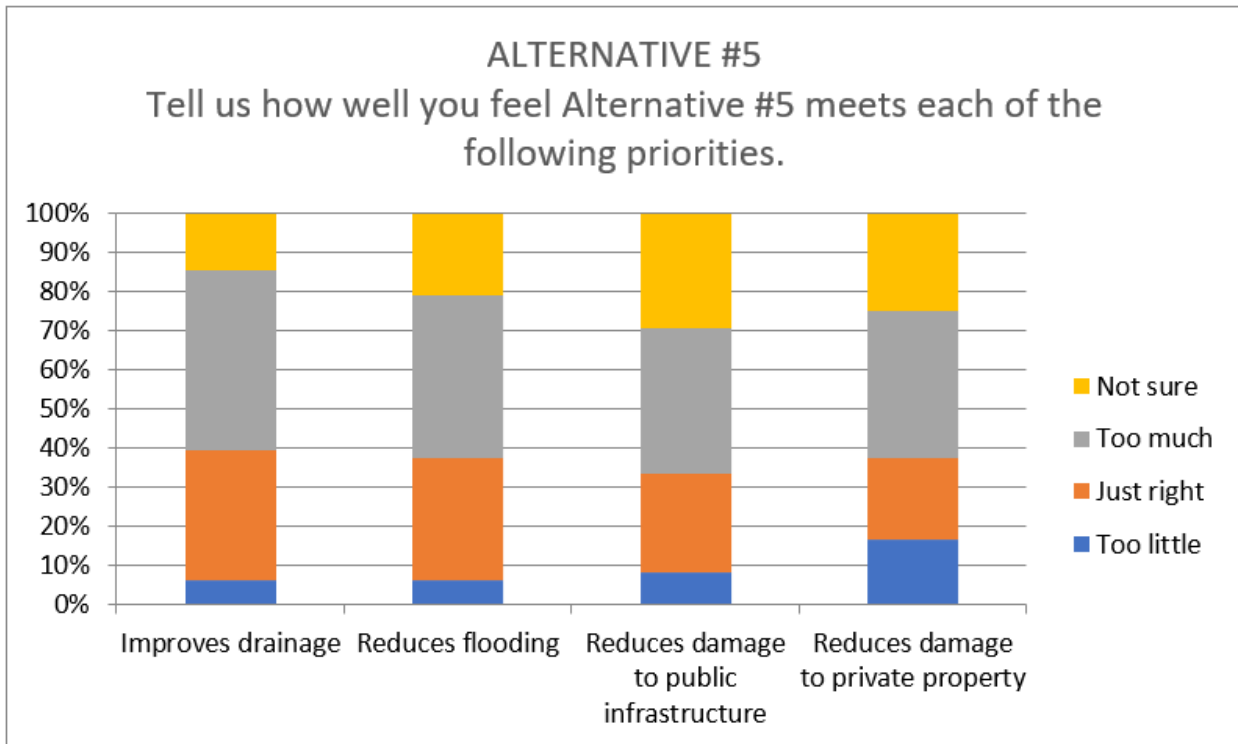
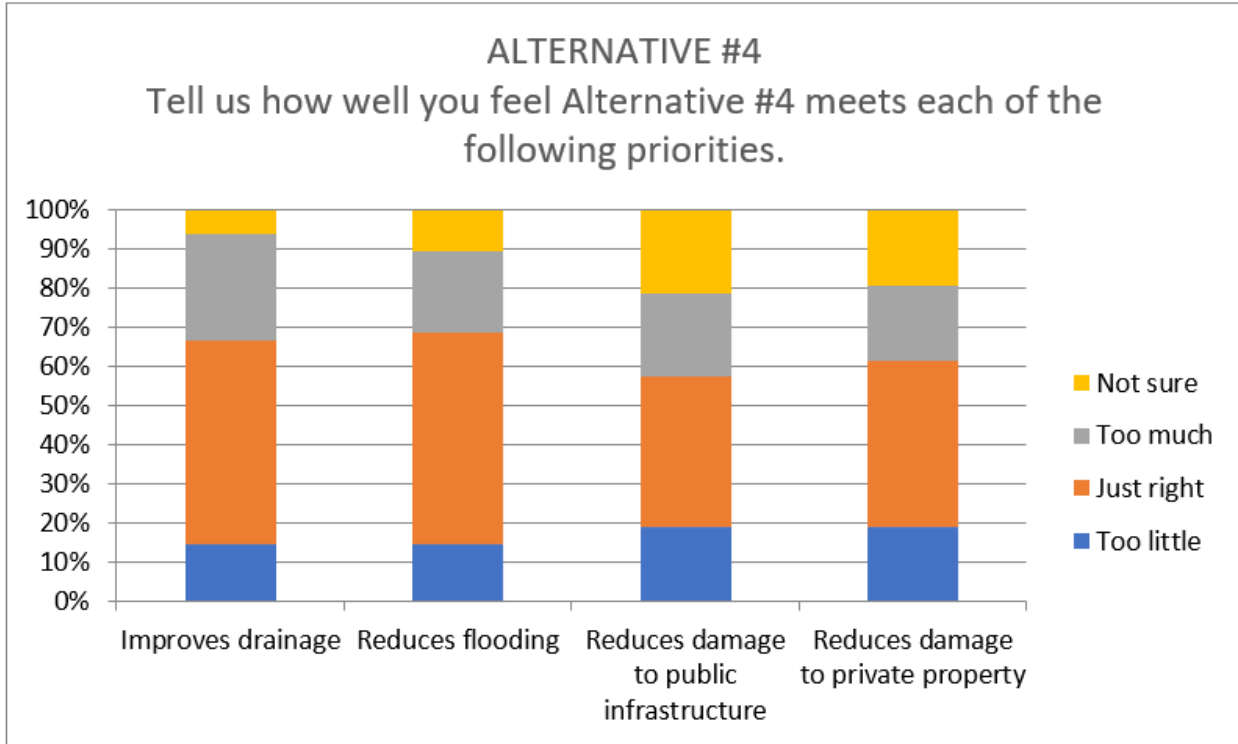
Survey participants were given the choices of:

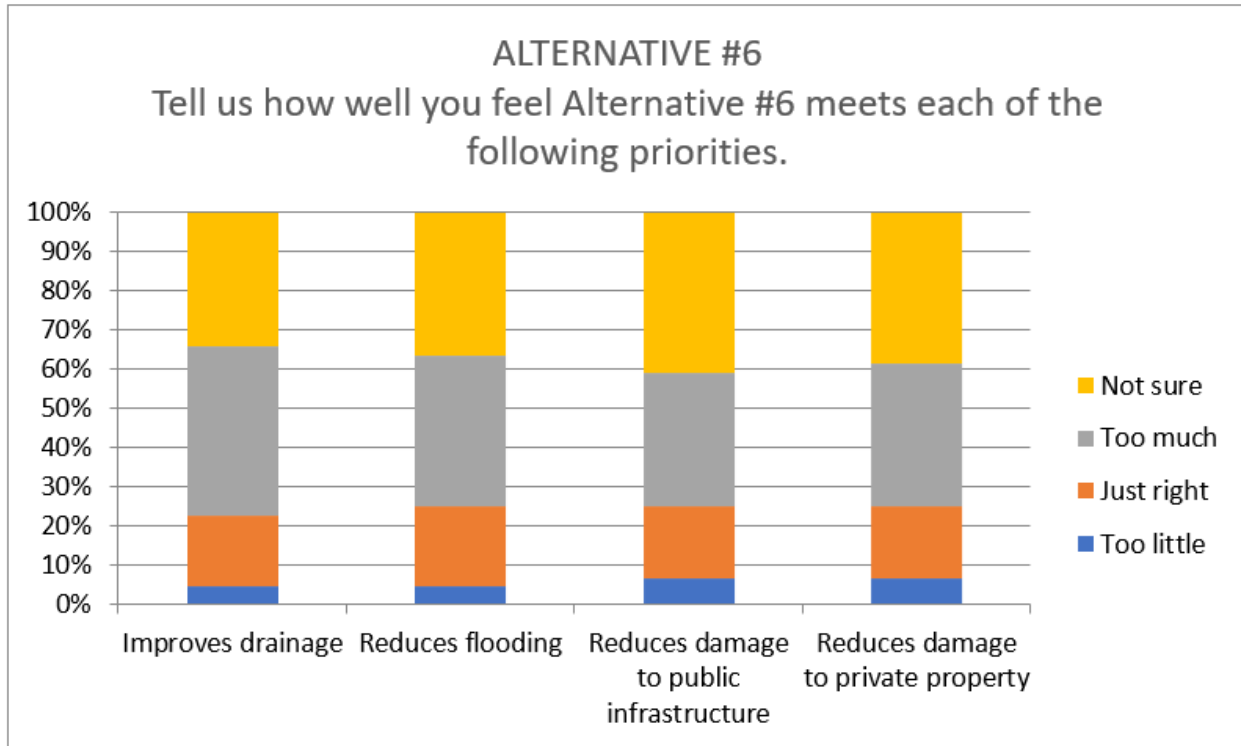
- Too little
- Just right
- Too much
- Not sure

Figure 8 shows the survey response for alternatives #2 through #6.

Figure 8. Alternatives Survey - Alternatives #2 Through #6 Questions

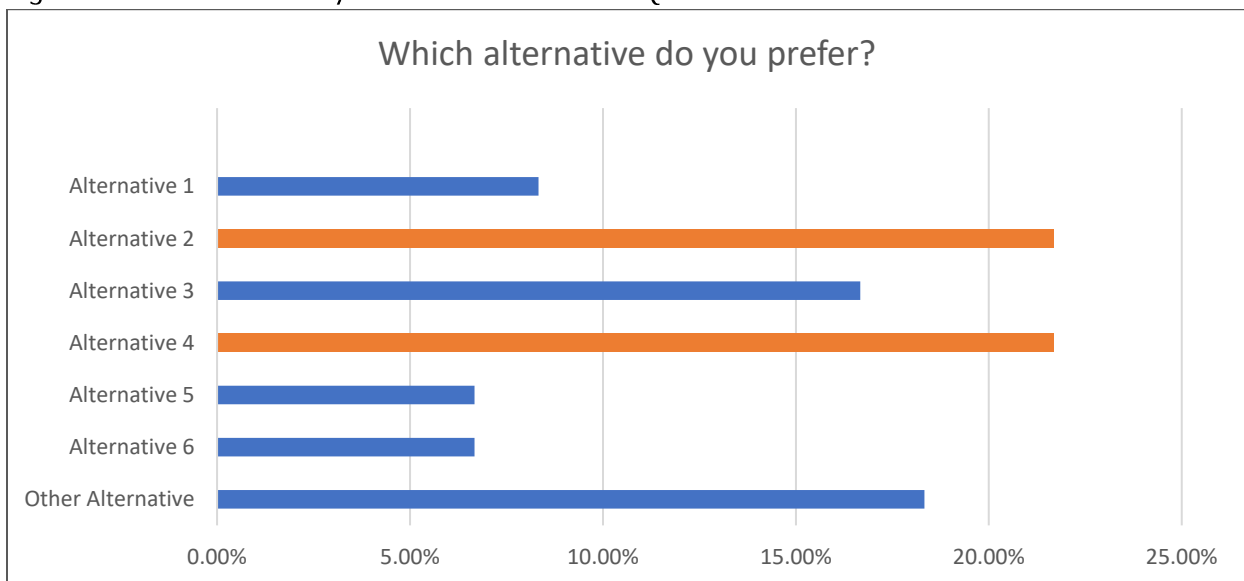






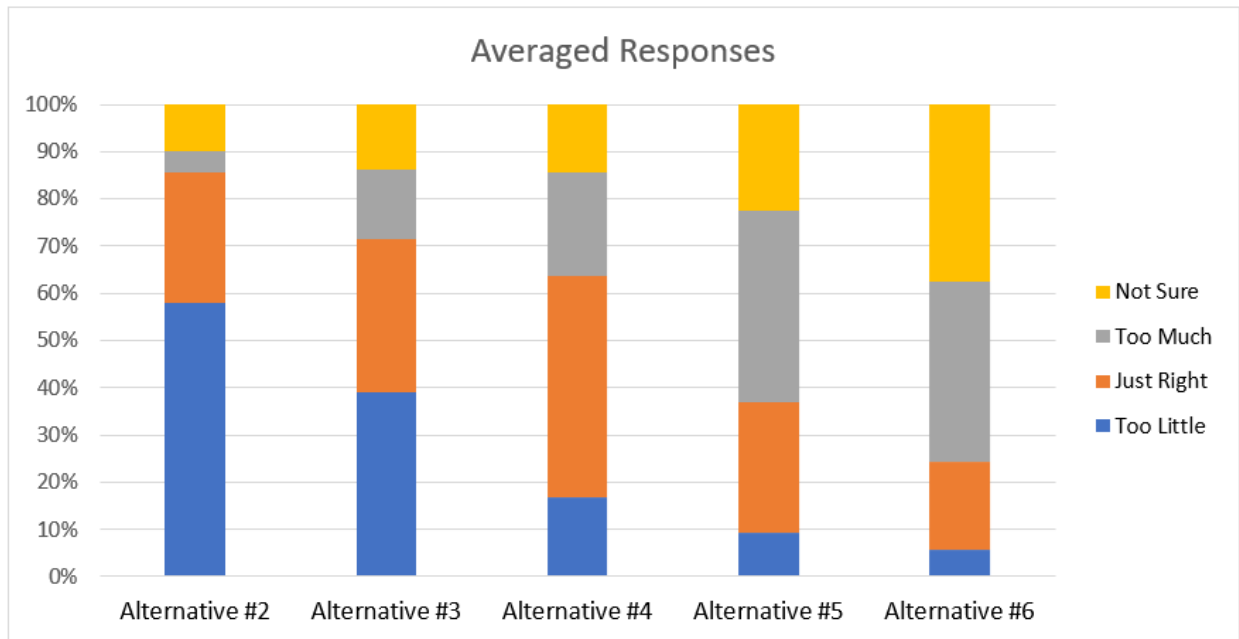
The final survey question asked participants to identify their preferred alternative. Most participants identified alternatives #2 and #4 as their preferred alternatives, as shown in Figure 9.

Figure 9. Alternatives Survey - Alternative Preference Question



To further evaluate the survey responses, the project team averaged the responses for each priority for alternatives #2 through #6. The results indicate that about half of the survey participants feel alternative #4 will provide just the right amount of benefit to address flooding in the Ski Hill basin, as shown in Figure 10.

Figure 10. Alternatives Survey - Averaged Priority Responses



TAKEAWAYS

Overall, survey participants are concerned about flooding in the Ski Hill basin. Several common themes emerged from reviewing the comments:

- Participants indicate flooding has increased or changed due to growth occurring in areas that used to pond and act as natural runoff retention. Many feel that lack of planning is contributing to the issue by allowing homes, infrastructure, and alterations to the wetlands in these areas without considering the runoff and requiring sufficient stormwater control.
- Several participants have constructed improvements or performed mitigation on their property to reduce flood damage and are concerned about whether their improvements will remain effective if an alternative is implemented.
- Many participants noted that road ditches have not been maintained and are full of silt which reduces their ability to convey runoff. They also noted that many culverts are too small.
- Several participants noted a desire for more natural features such as infiltration and ground water storage instead of conveying the runoff directly to the river.
- Many participants are concerned about flooding in areas adjacent to the study area.

APPENDIX A
Story Map

APPENDIX B
Survey Results

APPENDIX C

Press Release and News Articles
