

1. QUARRY ROAD TRAIL // Welcome to the Information Session

PROJECT DESCRIPTION

Quarry Road Trail is a popular commuter trail and recreational area for Calgarians.

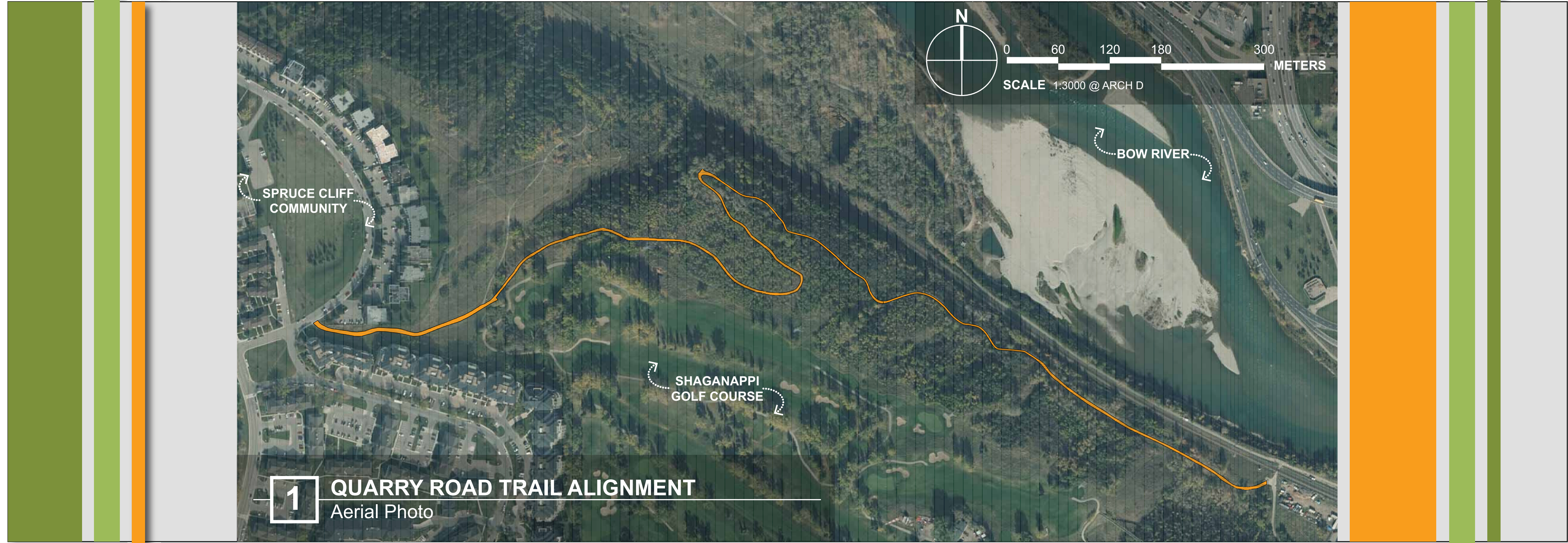
The City is planning improvements to Quarry Road Trail to ensure safe, continued use of this area for citizens and preservation of historic aspects of the trail.

WHY WE ARE HERE

1. To report citizen feedback received during the 1st open house.
2. Present the conceptual design for proposed upgrades to Quarry Road Trail.

The improvement strategy for Quarry Road Trail is based on a number of criteria, including but not limited to:

- Budget
- Safety
- Environmental Concerns
- Geotechnical / Engineering
- Standards and Best Practices
- Usage Data
- Historical Conservation
- Public Feedback



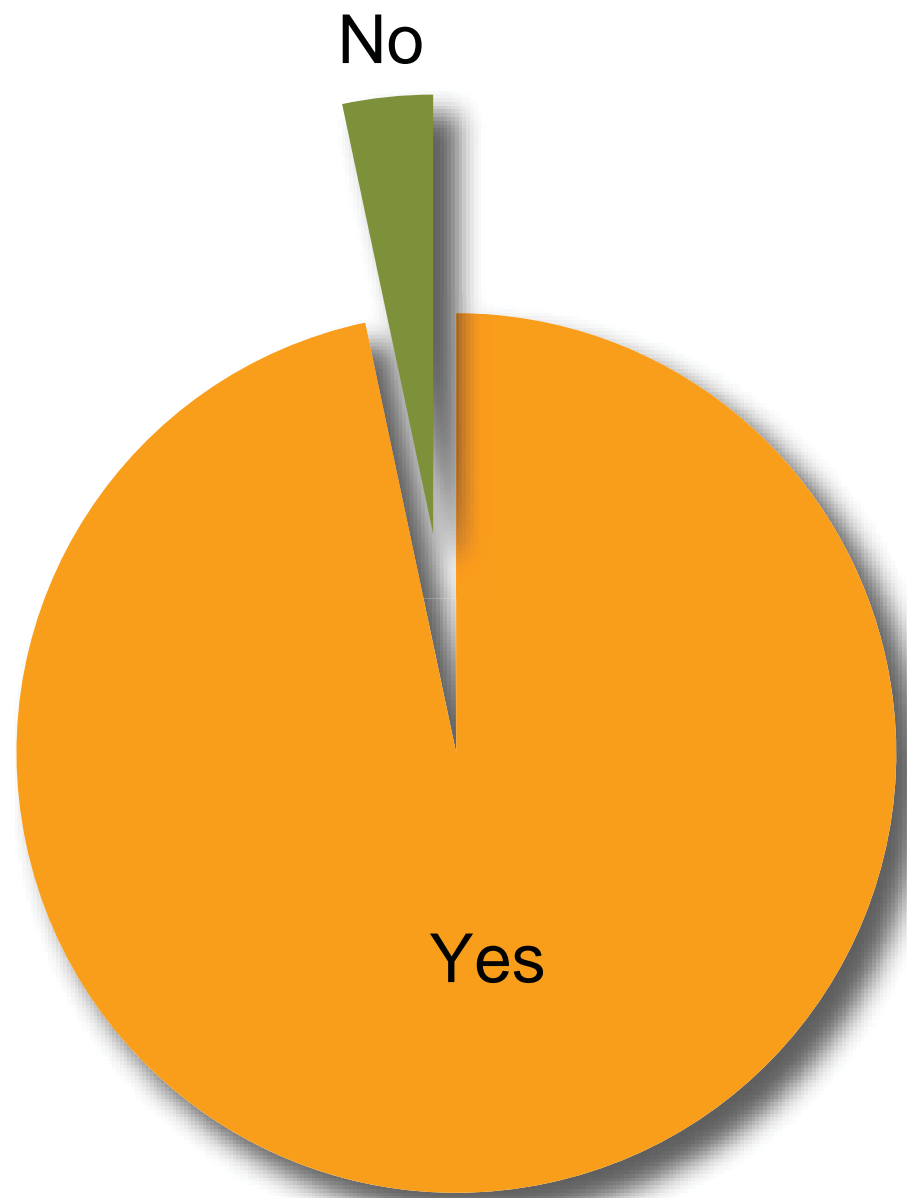
2. STAKEHOLDER FEEDBACK // What We Heard



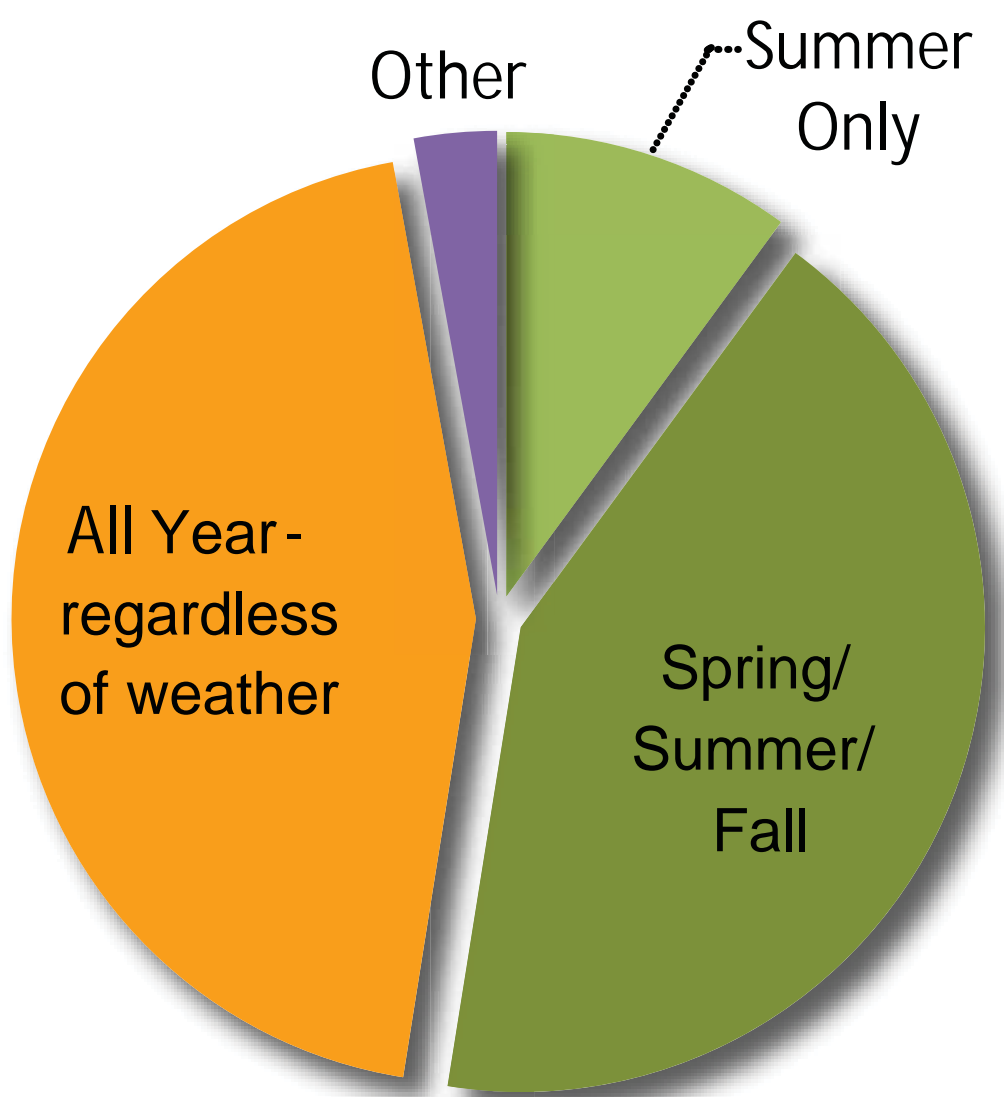
Number of Respondents from the March 11th Open House: 143

TRAIL USE QUESTIONS - FIRST ENGAGEMENT SESSION

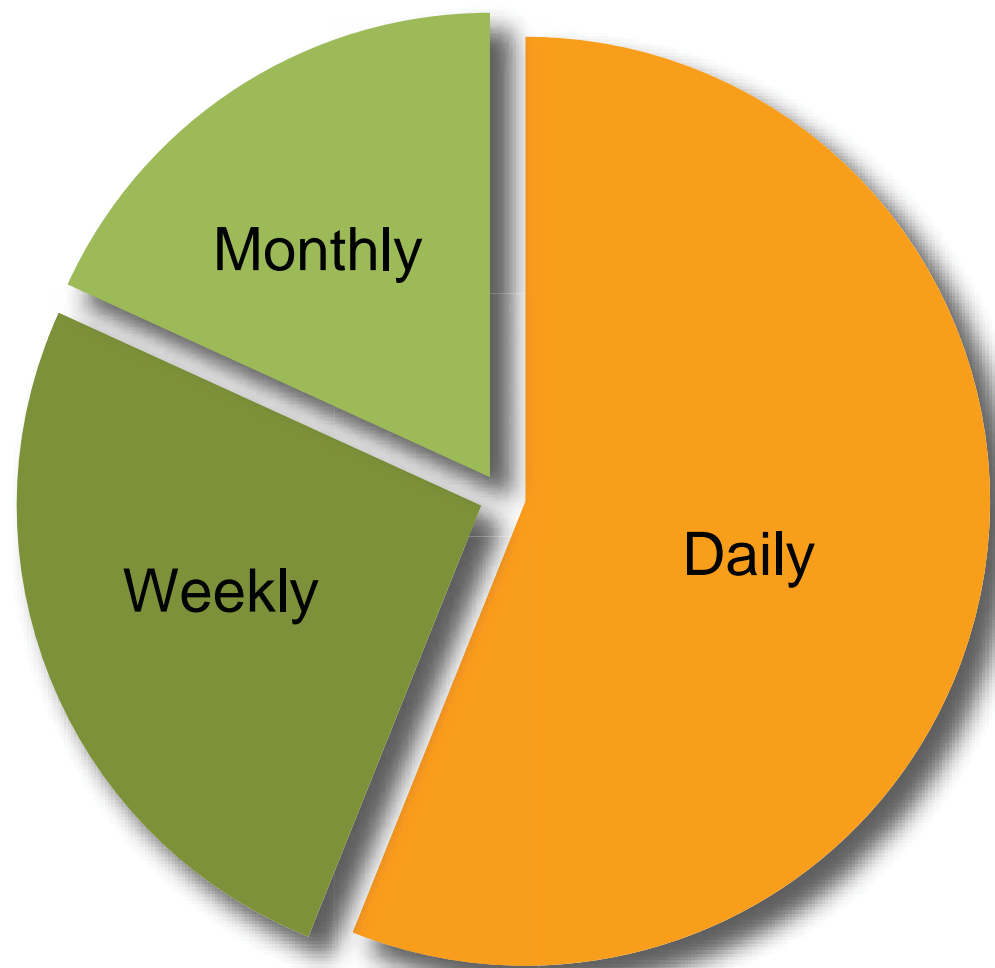
Do you use the trail?



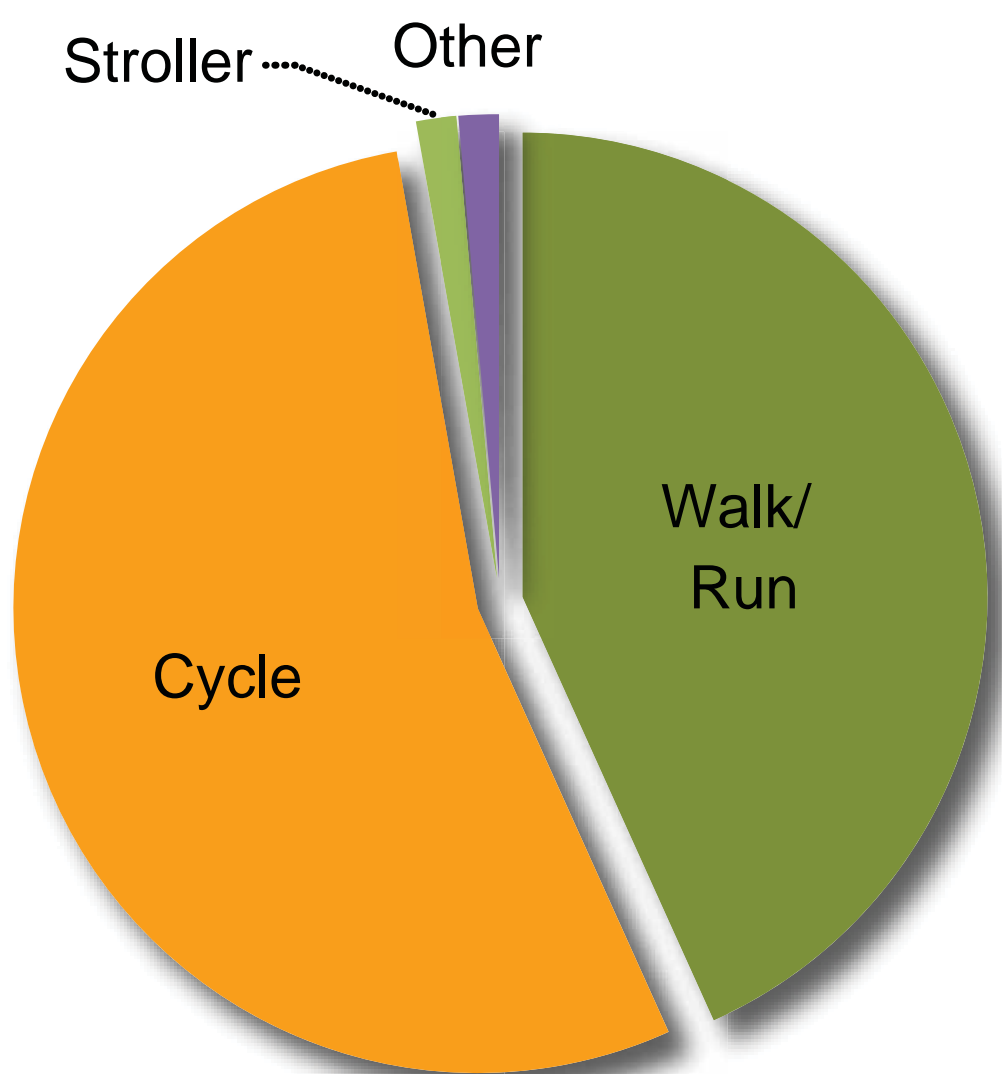
When do you use it?



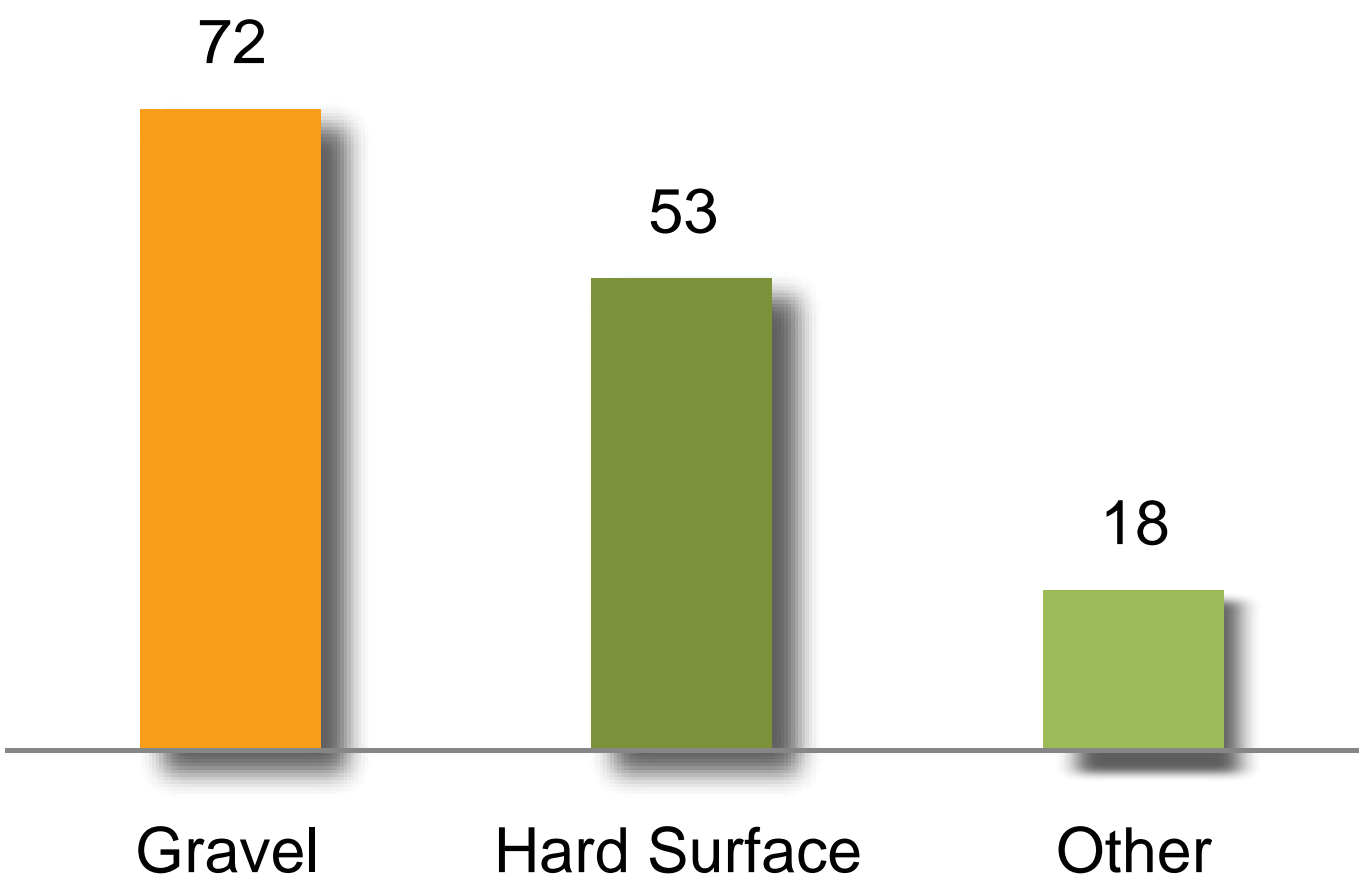
How often do you use it?



How do you use it?



PREFERENCE FOR TRAIL SURFACE MATERIAL



Note: Gravel trails do not permit snow clearing.



3. STAKEHOLDER FEEDBACK // What We Heard • • •

FEEDBACK

A summary of key stakeholder feedback items, professional concerns and how comments were addressed.

WHAT WE HEARD - PUBLIC CONCERNS

WHAT WE KNOW - PROFESSIONAL CONCERNS

HOW WE'RE ACCOMMODATING CONCERNS

Safety	<div>Slow cyclists down and improve interaction with pedestrians.</div> <div>Reduce amount of ice and snow on the trial in winter.</div> <div>Prevent the formation of ruts on the trail.</div> <div>Address safety concerns of the area.</div>	➔	<div>Steep slopes and blind corners increases pedestrian conflict on the trail.</div> <div>Cyclist speeds needs to be reduced.</div> <div>More precautionary and wayfinding signage is required on the trail.</div> <div>The existing trail doesn't allow easy access for Bylaw Officers and emergency personnel.</div> <div>Trail edges are steep and currently unbarricaded.</div>	<div>Implement a clear safety signage system.</div> <div>Improve sight lines around blind corners.</div> <div>Reduce trail grades to slow cyclists.</div> <div>Improve drainage and reduce the potential formation of ruts and channel formation.</div> <div>Install railings in steep locations.</div> <div>Increase bylaw officer presence by providing a turn-around area for bylaw and police vehicle access, a potential call box and GPS location markers.</div> <div>Have minimal vegetation clearance erosion, reduce and enforce weed control during construction.</div> <div>Protect significant trees during trail construction.</div> <div>Rehab informal pathways with erosion control and native plants.</div> <div>Visual impact of trail improvement (ex: retaining walls and railings) will be mitigated through vegetative screening and careful consideration of sight lines.</div> <div>Improvements will not impact the character defining qualities of the site Switchback will enhance views of the Quarry site.</div> <div>Potential interpretive signage options and location are being evaluated to further illustrate the heritage Quarry site. The City of Calgary Parks, Cultural Landscape Management, and the Edworthy Park Heritage Society will be collaborating on interpretive signage options.</div> <div>Per City policy, gravel trails are not able to be snow cleared.</div> <div>Drainage improvements and sustainable trail design will direct water off the tread surface and reduce the risk of ice build up in problematic areas.</div> <div>Erosion control will reduce maintenance costs.</div>
Environment	<div>Minimize environmental damage during trail construction / improvements.</div> <div>Establish a system for preventing the formation / use of undesignated trails.</div>	➔	<div>A paved pathway needs to be salted, which can cause environmental damage through runoff.</div> <div>Invasive species are key concern for environmental restoration of Quarry Road Trail.</div> <div>Significant vegetation and trees are located close to the edge of the trail.</div> <div>Undesignated trails are disturbing natural areas.</div> <div>Environmental restoration is required to improve wildlife nesting and habitat.</div>	
Aesthetics	<div>Maintain the natural look and feel of the trail.</div>	➔	<div>The natural environment, topography and history should be featured in trail improvements.</div>	
Heritage	<div>Maintain the historical nature of the area.</div>	➔	<div>The historic Quarry on site should be featured as a key trail aspect.</div> <div>The historic trail location should be maintained in future trail improvements.</div>	
Maintenance	<div>Ice build up is a major safety concern.</div> <div>Improve trail drainage.</div>	➔	<div>The slope exceeds the maximum grade standards for sustainable trail design.</div> <div>Frost heaving is an issue with the maintenance of paved trails.</div>	

4. SUSTAINABLE TRAIL DESIGN // Principles Incorporated into the Quarry Road Trail Design

THE HALF RULE

A trail's grade shouldn't exceed half the grade of the hillside or sideslope that the trail traverses. If the grade does exceed half the sideslope, it's considered a fall-line trail. Water will flow down a fall-line trail rather than run across it.

- The majority of the existing Quarry Road Trail follows this rule. Some small improvements are being proposed to follow this rule in other locations.

THE 10% AVERAGE

Generally, an average trail grade of 10% or less is most sustainable. Also called overall trail grade, average trail grade is the slope of the trail from one end to the other.

- The proposed design for Quarry Road Trail has an average slope of 4.5%.

OUTSLOPE

As the trail contours along the hillside, the downhill or outer edge of the tread should tilt slightly down and away from the upperside. This tilt is called outslope and it encourages water to sheet across and off the trail instead of funneling down its center.

- The proposed design maintains 5% outslope for entire trail length.

GRADE REVERSALS

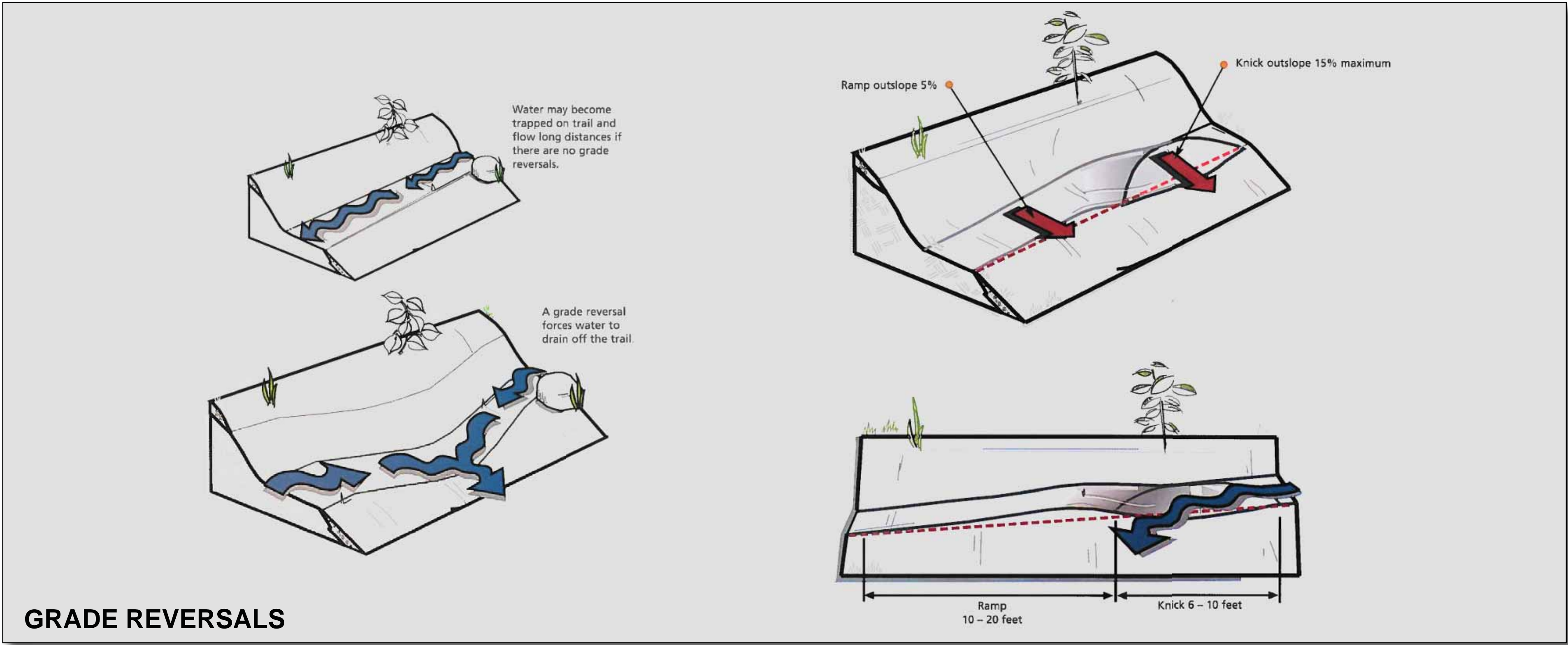
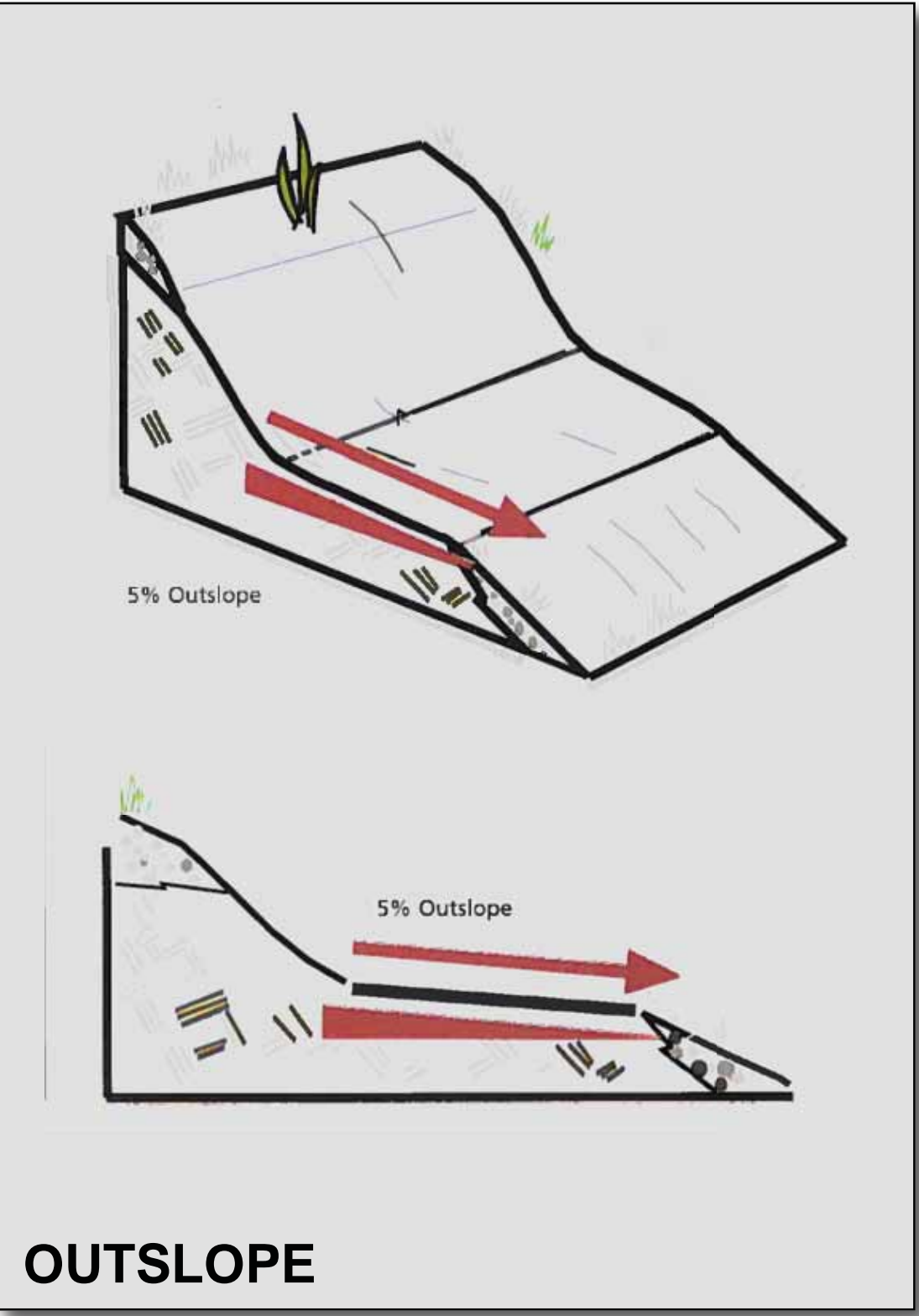
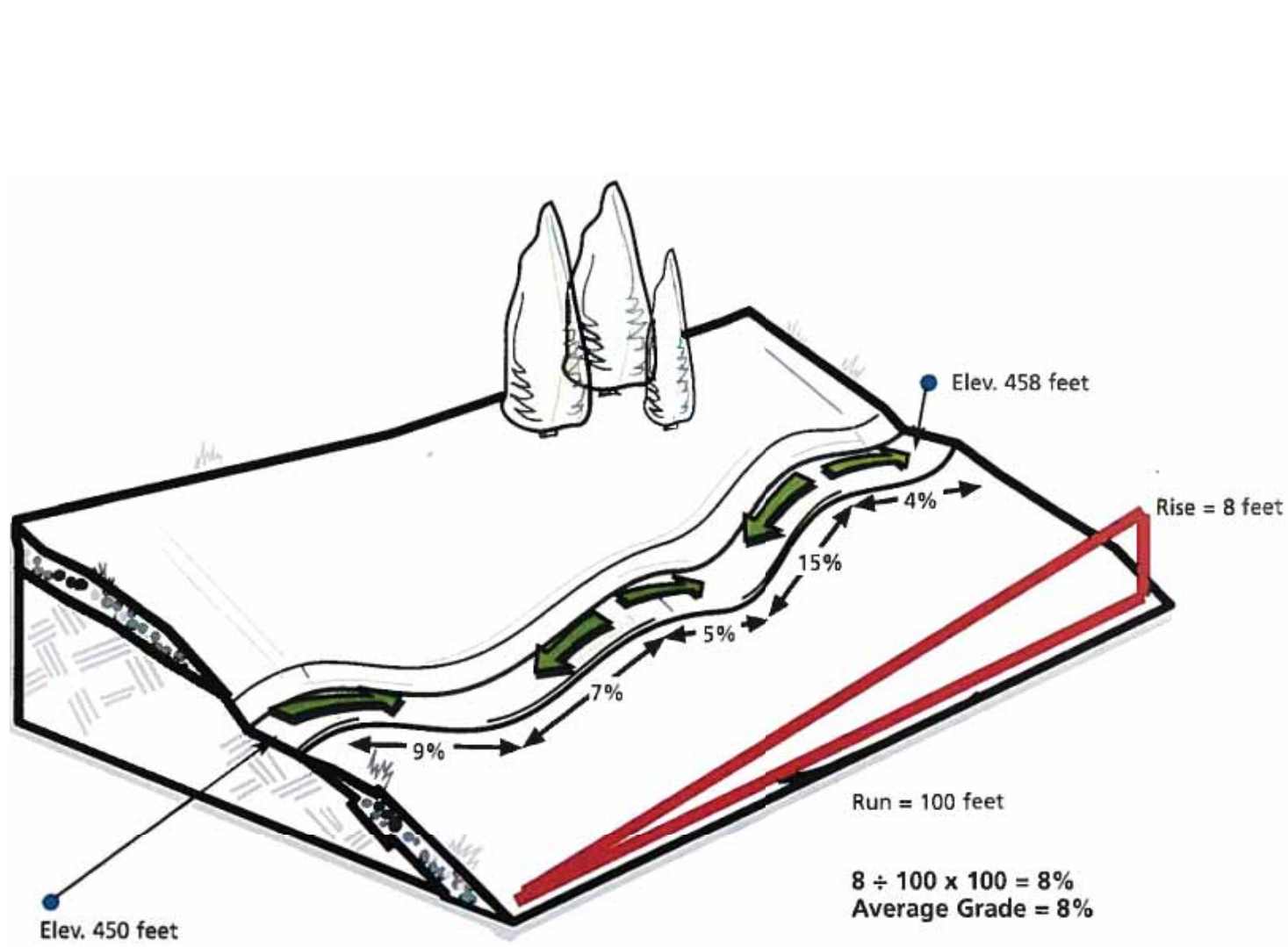
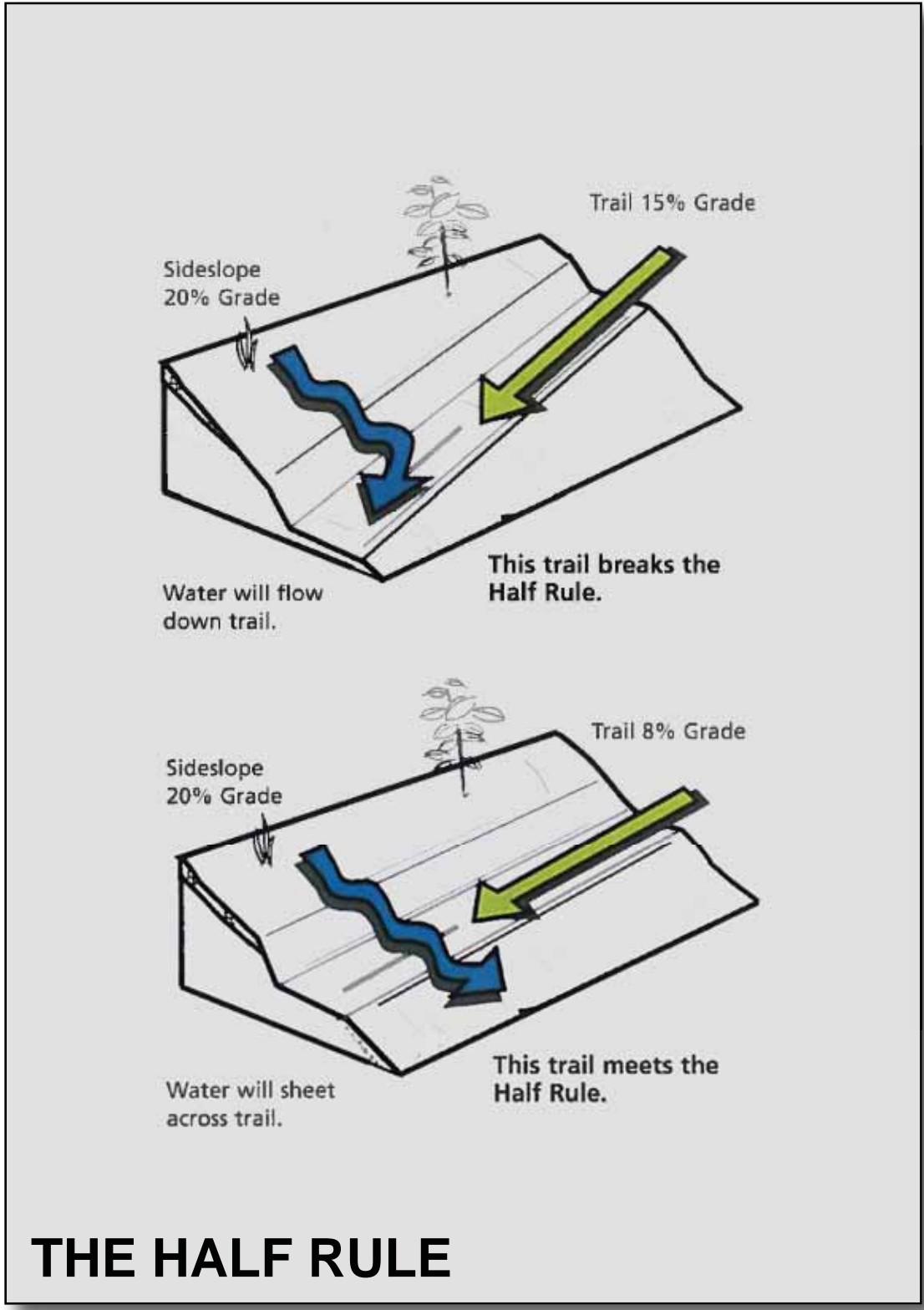
A grade reversal is a spot at which a climbing trail levels out and then changes direction, dropping subtly for 10 to 50 linear feet before rising again. This change in grade forces water to exit the trail at the low point of the grade reversal before it can gain more volume, momentum and erosive power.

- Approximately 10 grade reversals located strategically to shed water from the tread surface in problematic area.

MAXIMUM GRADE

Maximum grade is the steepest section of trail that is more than 3m in length. An important consideration of trail design is the precise maximum trail grades that the trail will be able to sustain under local site considerations including but not limited to the half rule, soil type, annual rainfall and types of users.

- The proposed design for Quarry Road Trail has maximum grade of 17% in one short section.

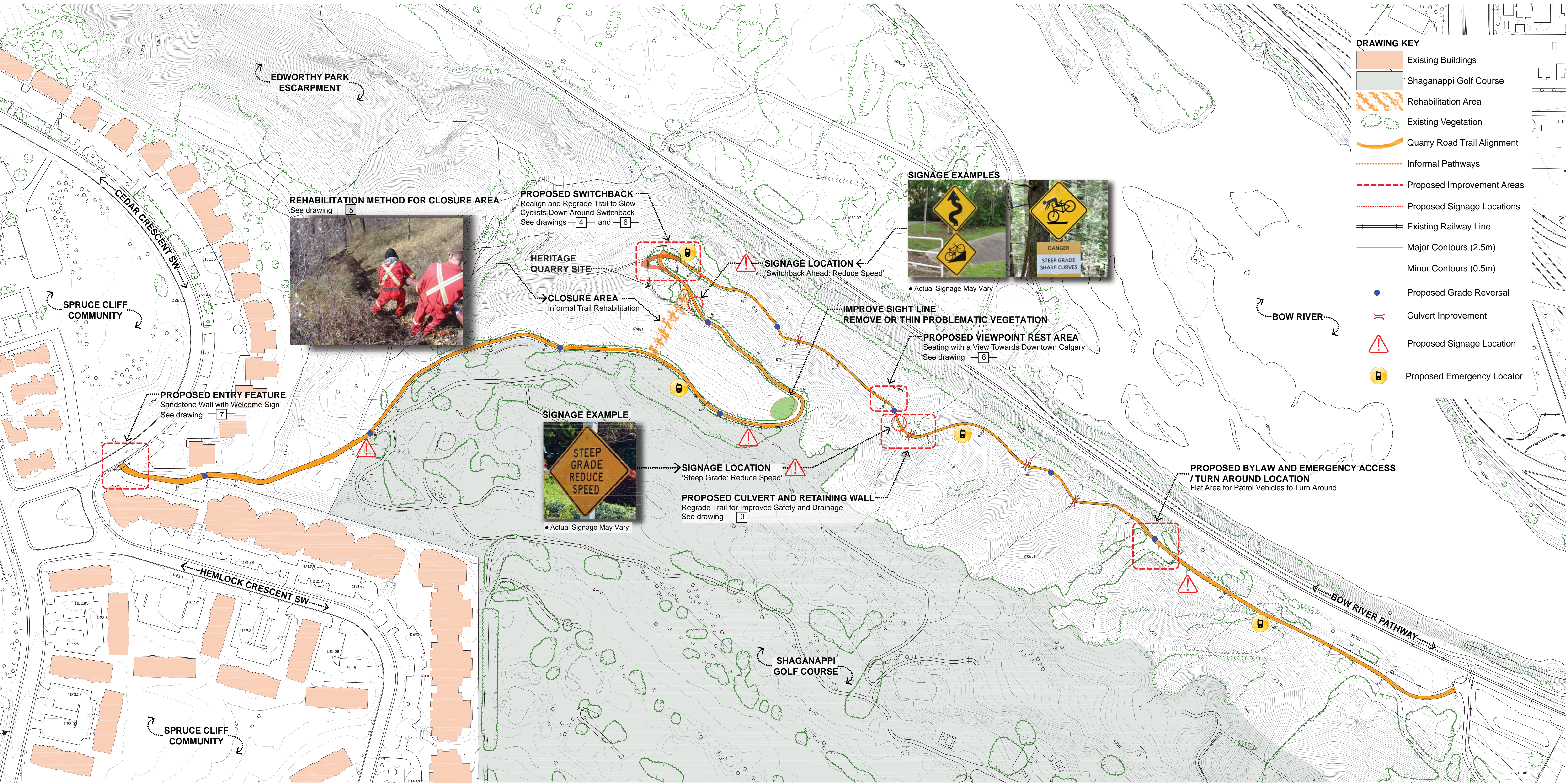


STORM DAMAGE
Quarry Road Trail received significant damage through erosion during a hail storm in August, 2015.

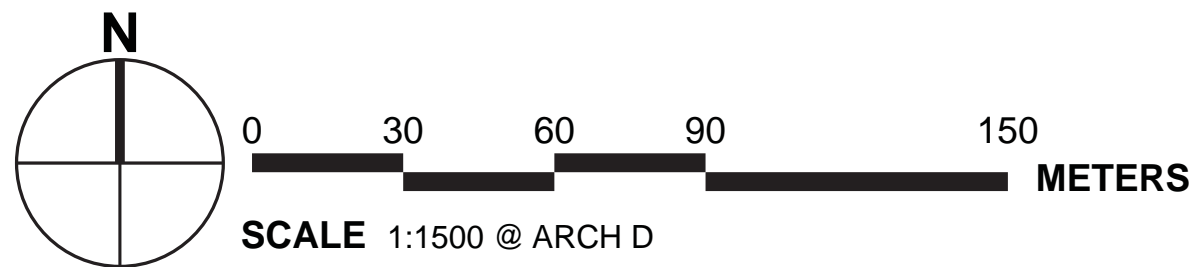
- Implementation of the sustainable trail design techniques outlined here such as a proper outslope and strategically placed grade reversals will reduce the chance of runoff creating deep channels down the tread surface, increase user safety and accessibility.

* Illustrations and information contained on this board are courtesy of the International Mountain Biking Association's publication entitled "Trail Solutions: IMBA's Guide to Building Sweet Singletrack".

5. ISSUES AND PROPOSED SOLUTIONS



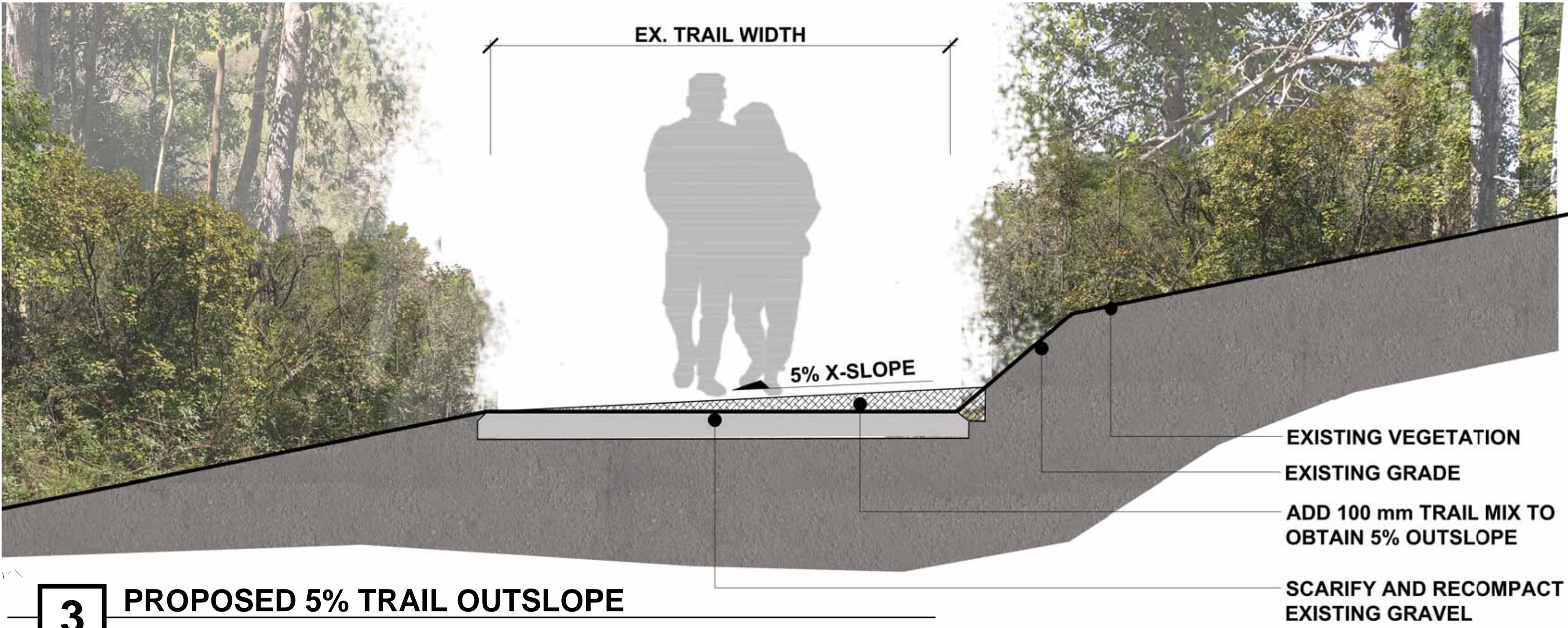
2 QUARRY ROAD TRAIL OVERALL TRAIL PLAN
Site Issues/Constraints and Proposed Solutions



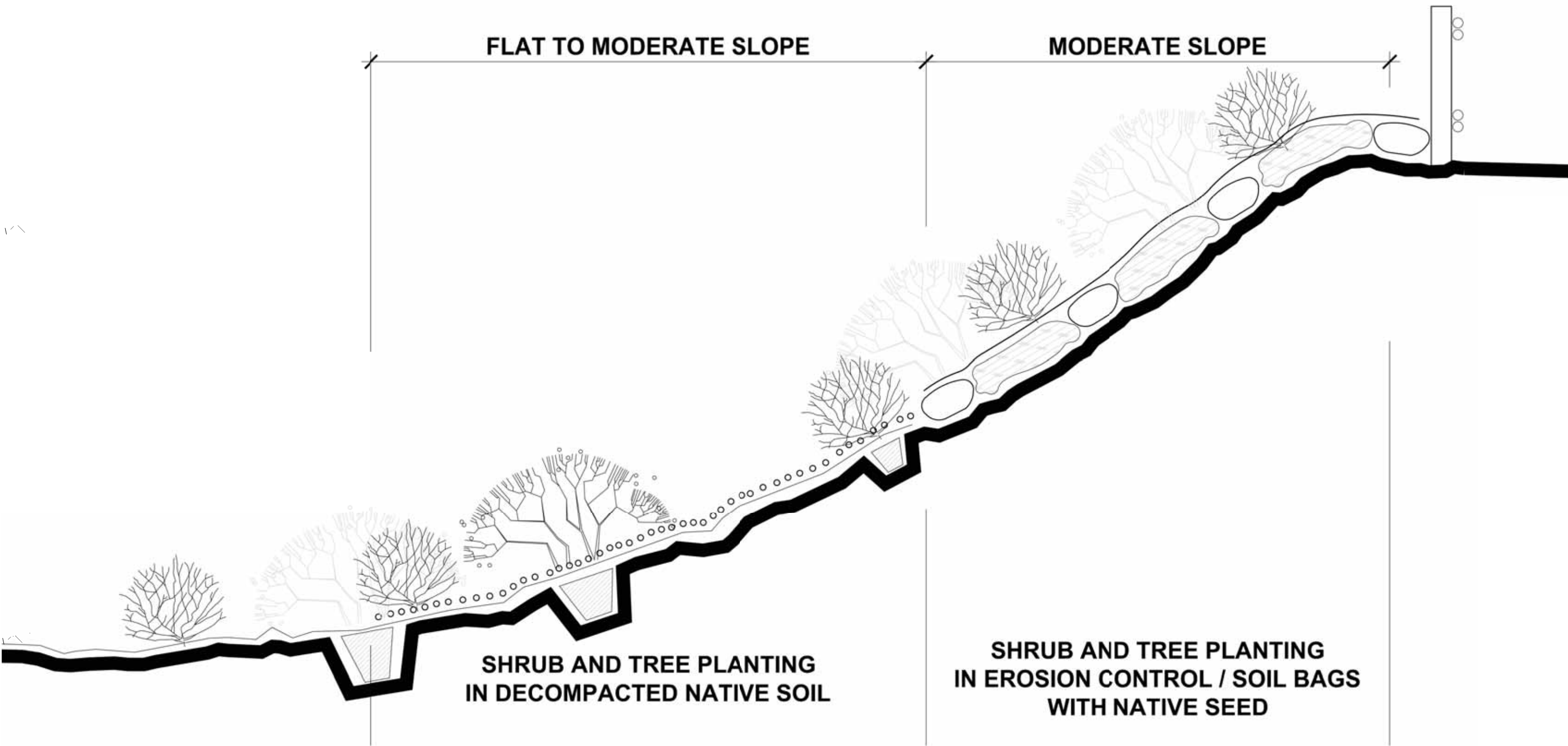
calgary.ca | contact 311



6. DETAILS OF THE DESIGN // Solutions to Improve Safety and Trail Function

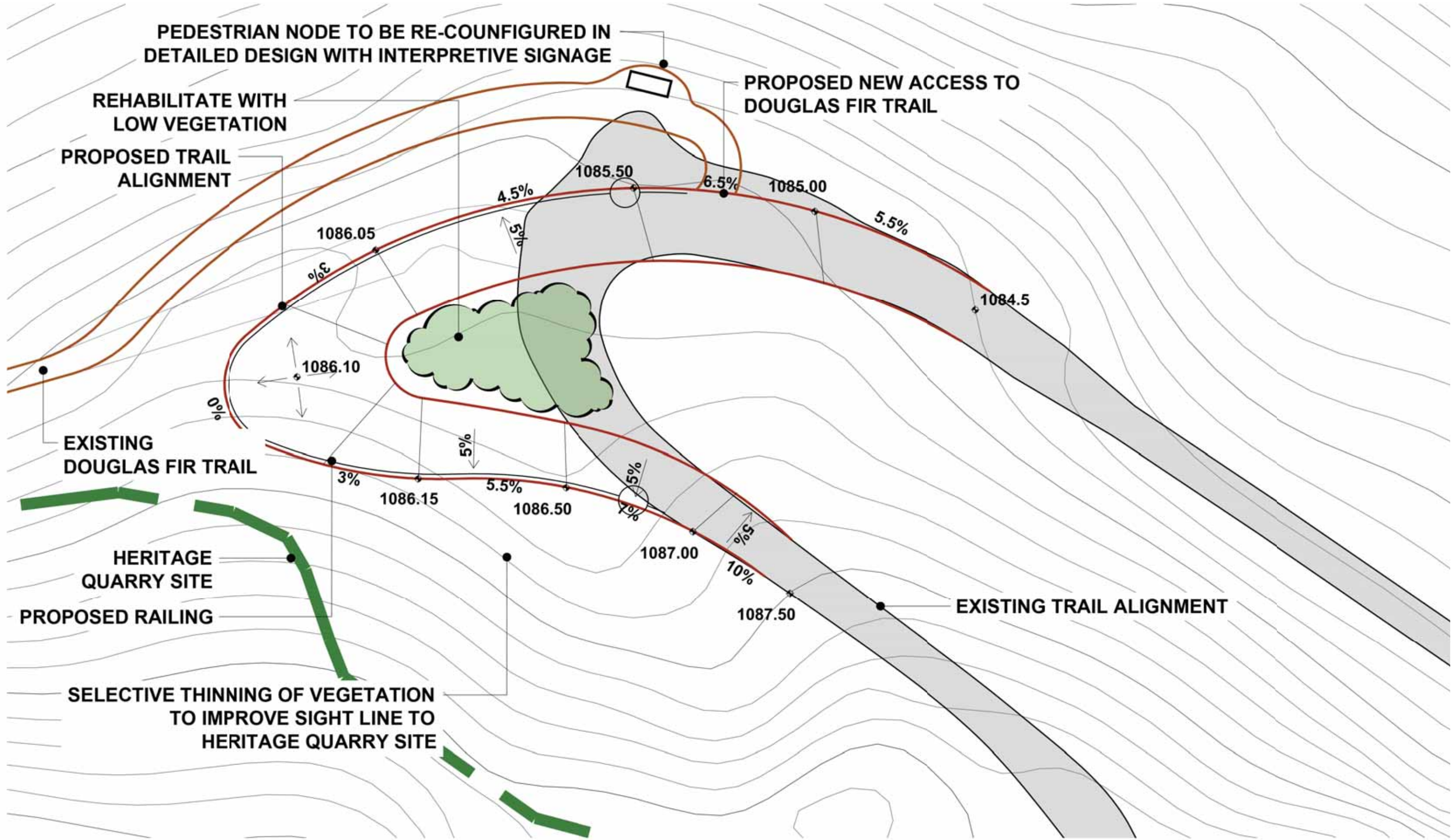


- Building an outslope (cross slope) on the pathway will make water quickly run off, reducing damage and keeping the pathway dry.



5 TYPICAL SHRUB AND TRAIL REHABILITATION

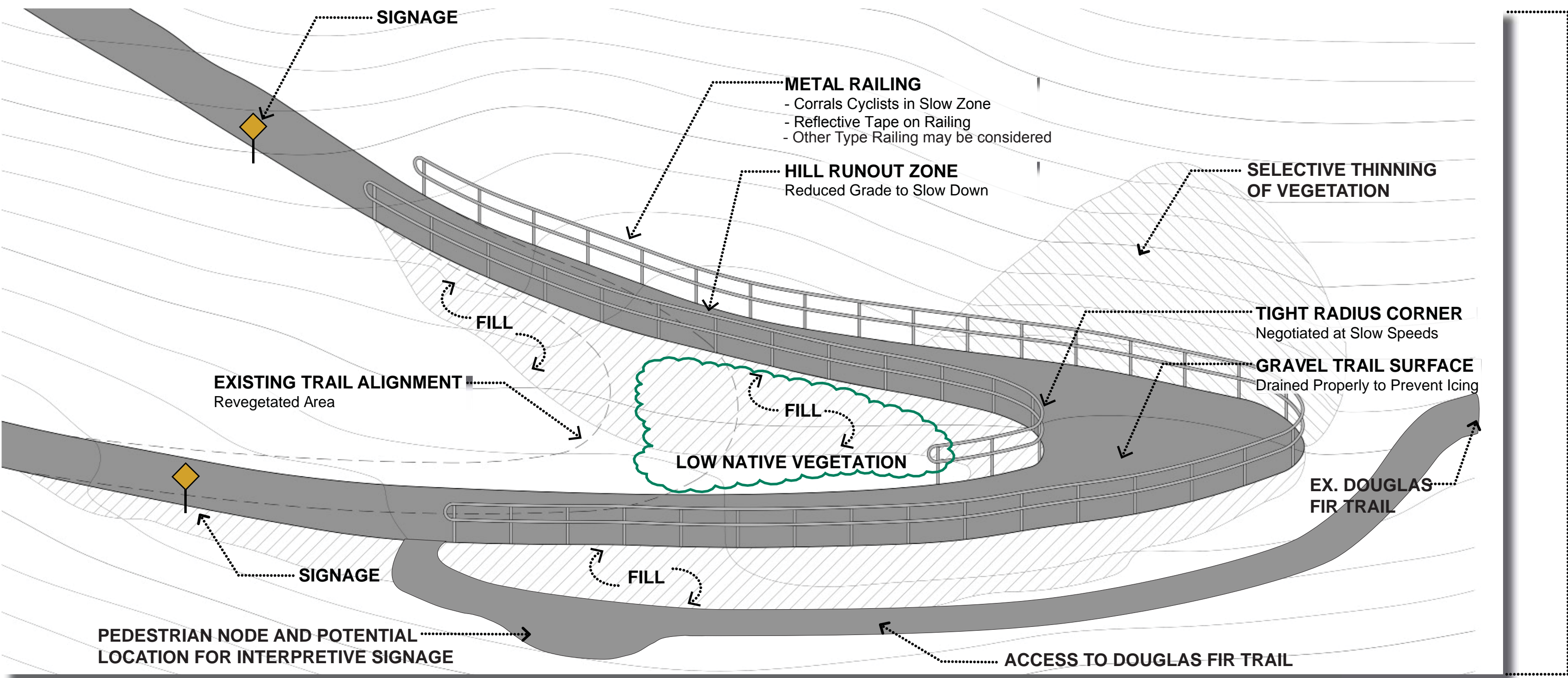
- Undesirable trails that are not sustainable will be closed by planting shrubs and trees, reducing visibility into the trail, and providing a temporary fence.



4 SWITCHBACK PLAN

- Building a switchback that has a tighter corner will force cyclists to slow down. Raising the grade at the switchback will reduce the slope of the pathway. Railing will keep people on the pathway. Reconfiguring the alignment will improve visual site lines to increase user safety on the switchback.

7. QUARRY ROAD TRAIL IMPROVEMENTS // What You Will See



6 TRAIL SWITCHBACK
Renderings are conceptual and subject to change through detailed design



7 TRAIL ENTRY FEATURE
Renderings are conceptual and subject to change through detailed design



8 VIEWPOINT / REST AREA
Renderings are conceptual and subject to change through detailed design



9 RETAINING WALL / CULVERT CROSSING
Renderings are conceptual and subject to change through detailed design

8. NEXT STEPS + TIMELINE



• Dates subject to change based on environmental constraints, funding, weather, etc.

THANK YOU FOR YOUR FEEDBACK!

Thank you for being involved in the Quarry Road Trail project. We appreciate all of the feedback and ideas that you have submitted and have been considered in the decision making process. The City appreciates your help and is always open to hearing ideas from the public. We look forward to working with you in the future!

If you have any last ideas we may have missed, please let us know using the sticky notes.

Thank you!



<http://www.calgary.ca/CSPS/Parks/Pages/Construction/Quarry-Road-Trail.aspx>



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Onward / The City of Calgary serves citizens through engagement, transparency, resiliency and innovation.

