

Best Practice Trail Auditing using Digital Platforms

Where we're going today ..

we'll be looking at:

- Auditing background and Trail Vision evolution
- What is best practice trail auditing
- Audit processes
- Reporting and leveraging audit outcomes
- Using technology in trail auditing
- Trail Vision demonstration

AND ...

you'll be able to book a spot on our 'trail' too



Trails Background and Trail Vision Evolution

- Auditing trails for almost 10 years
- 1 day in field = 2 days in office doing reports – had to be a better way
- Created beta version of software to simplify, improve accuracy and quality
- Created Trail Vision to build enterprise level trail management software
- Trails are assets, need to collect, analyze and present data to demonstrate



Our Vision

To change the way trails around the world are built and managed.

Our platform empowers people to create world class trail experiences through data.

Why do we audit trails?

- You cannot improve what you don't measure
- Audits are a snapshot in time, but over time, trends emerge
- Critical risk mitigation strategy
- Key data collection process for asset management
- Provides justification for capital, operations, and maintenance budgets
- Improve user experiences across your trail network
- Improve return on investment from your trails



Trail Asset Management Lifecycle



Best Practice Trail Auditing

- All audits should have a clearly defined purpose and outcome
- Auditing needs to be standardised to achieve valid outcomes
- Use same criteria, same methods, same tools
- Auditors need to have a uniform understanding of the purpose of the audit
- Auditors need to have a uniform understanding of how to evaluate trail elements
- Quality auditing takes time



Point Auditing versus Section Auditing

Point Auditing

- Detailed evaluation of each issue identified along the length of the trail
- Used to develop scopes of work for volunteers or contractors
- Number of issues per km of trail metrics can be defined and tracked
- Critical issues can be identified and addressed proactively
- Can be time consuming



Bike Patrol 6459 4147

MOUNTAIN BIKE PARK

EASIE

Point Auditing Versus Section Auditing

Section Auditing

- Evaluating sections of trail or the whole trail rather than individual points
- Rate each section against the average rating / worse rating
- Provides an overarching trail condition for trend analysis
- More time efficient therefore can be done more regularly





1. Confirm the purpose of the audit

- What are you trying to capture
- What are you trying to prove
- Has an event triggered the audit
- Is this the first audit or is there audit history available
- Will a maintenance scope of work be developed as a result of the audit



2. Confirm data collection requirements and outputs

- What data will you need following the audit
- How much detail do you really need detail = time
- Does historic data exist? This will guide how you structure your audit
- How will you capture and analyse the data
- How will you present the audit outcomes – start with the end in mind
- Plan B for data capture if tech fails

3. Fieldwork Plan

- Logistics to get to the location
- Walk / ride / drive the trail field time calculation
- Break down the audit scope into logical pieces / trail segments
- May require shuttles / eBike for gravity networks, etc.
- Confirm mobile coverage, address lone worker risks
- Safety risk assessment and mitigations



4. Auditor knowledge and experience

- Develop training materials for auditors
- Match the auditor to the audit scope and purpose
- Buddy up inexperienced auditors
- Calibrate audit methodology and data capture within the team
- Debrief after audits



5. Audit tools and equipment

- Data capture method / platform
- GPS unit / aerial
- Clinometer
- Tape measure
- EPIRB
- PPE and safety equipment



\$

Licenses

Organisations

Home

Activities



6. Field Capture

- Test equipment before travelling to location
- Follow the plan, be methodical
- Quality over quantity
- Escalate critical issues ASAP / flag in the field
- Check in with team at the end of each trail



7. Data collation and analysis

- Collate and review data for completeness
- Identify and address any data integrity issues
- Collate data into appropriate format for analysis
- Analyze against the purpose of the audit
- Develop and format audit outcomes

- City of Gold Coast Glossy Black Reserve Audit issues per trail
 - Glossy Black Reserve Cascades (17%)
 Glossy Black Reserve Cockys Climb (18%)
 Glossy Black Reserve Drop Bear (6%)
 Glossy Black Reserve Fledgling (3%)
 Glossy Black Reserve Jumping Ant Hill (21%)
 Glossy Black Reserve Lazy Lizard (22%)
 Glossy Black Reserve Rabbit's Run (7%)
 Glossy Black Reserve Test Run (5%)



Reporting and Using Audit Outcomes

- Reports must tell the story of the audit outcomes
- Clearly articulate the problems and solutions
- Identify trends and emerging areas of concern
- Snapshot for executives / detail for operators
- Build compelling arguments for funding or change
- Automate the reporting process as much as possible

Drop Bear - Item 7

Location: -28.12111042759805, 153.39847845739607

CONTRACTOR OF A REAL PROPERTY OF A	
Trail Grade: Blue	
Observation: Wor	k required
Trail Condition: Poor	
Tread type: Natu	iral, Loose
Feature Type: Bern	n, Drainage feature - failed
Repair Work Required:	air trail tread, Repair berm, Clean out drain
Extent of Repair Work:	or maintenance <25%
Repair Method: Han	d maintenance
Priority: Med	uim - within one week
Comments: Repains	ir berm tread to improve riding experience, clean out drain on the le of the berm



Berm damage

Leveraging the Trail Pulse



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Leveraging the Trail Pulse

CONDITION



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Audit and Inspection Schedules

- Routine audits and inspections are critical to developing your database
- One third-party audit per year
- Monthly inspections
- Targeted audits post incident, fire, weather event, etc.



Technology in trail auditing

- Leveraging technology is critical for:
 - making data capture easy
 - streamlining field work
 - improving data quality
 - improving data integrity
 - simplifying data analysis
- Heavy reliance on GPS signal external aerials are effective
- Data heavy due to use of photographs

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Home	Activities	Organisations	Licenses



before we let you see the app... any questions or comments?

Tell VIII Sion

in 4 simple steps



Core Trail Management Functions





Trail Vision App

- Works completely offline
- Easy to use, intuitive interface
- Captures point-based data (Activity Item Form) and wholeactivity data (Activity Form)
- All data deleted once an activity is synced to the Web Portal
- Compatible with cell phones, tablets, iPads
- Download from:
 - Android Google Play Store
 - Apple App Store iOS,

App - Getting started

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Login	Forget your peakword? Don't have an eccount? Sign up	Best practice trail management
Sign Up	Version 121	Trail Vision is the platform that Government Departments, Councils, Land Managers, Commercial Park Operators, Builders, Consultants, Contractors and Clubs use to
Delete your account		professionally manage trails and mitigate risk.
Version 1.2.1		Version 1.2.1
	Create an Account	
	Create an Account	
	Email	
	First name	
	Last name	
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	Confirm Password	
	Sign Up	

App - Creating an Activity



App - Capturing Activity Data



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App - Completing an Activity







Trail 6Backbone2934mBlack (Difficult)Closed for major repairsClosed for major repairs293\$34	81.00 \$77,000.00
Trail 7 Crazyhorse 4612m Double Black (Extreme) Closed for major repairs Closed for major repairs 123	23.00 \$130,500.00
7 12427m 681 \$69,	5.00 \$792,500.00



Step 2

Gain insights and take action via the Web Portal

Web Portal – Activities Dashboard

- View all at-a-glance
- Filter by date range and/or Lifecycle
- Export activity and spatial data (items and tracking)

ecycle All			> Date range	Date from (VVVV	-MM-DD) Date to	(XXXX-MM-DD)	Filter				
All			baterange	Date from (1111	-MM-DD)	(TTT-MM-DD)	Filter				
Activity Stati	stics										
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Manage Activ	vities										
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Web Portal – View Activity

- View all items, data, images and location
- Filter items, by collected data
- View and edit Collector Form data
- Add items to Work Orders



Web Portal – View Activity

- View all items, data, images and location
- Filter items, by collected data
- View and edit Collector Form data
- Add items to Work Orders



Web Portal -Dashboard

- Key trail information, from collected data
- Statistic indicators and benchmarks, useful for:
 - Demonstrating positive impacts of works
 - Meeting risk management and due diligence obligations
 - Building an argument for extra resources

rail iision Dashboard				Trails Activities Work Orders	Activity Reports My A	ccount Organi	isation Manageme
Trails Summary							
Trail Trail Name	Length Difficulty Rating	Status	Description		No. Issues Mair	tenance Spend	Value
Trail 2 Water Tank	423m Green (Easy)	Open - good condition	Flat and wide mult end, suitable for be	-use trail, suitable for beginners i-use trail, some exposed rock on the western sginners	39	\$3,081.00	\$137,000.00
Trail 3 Fitness Trail	1671m Blue (Intermediate)	Open - poor condition	Key connecting tra with some smaller	il from the east into the park, flowy singletrack jumps, trail has changed since the recent rain	22	\$2,298.00	\$145,500.00
Trail 4 Old Hill	849m Blue (Intermediate)	Closed for minor repairs	Closed for minor re	epairs	28	\$2,436.00	\$89,500.00
Trail 5 Fish head	1238m Black (Difficult)	Closed for major repairs	Closed for major re	spairs	58	\$6,148.00	\$116,500.00
Trail 6 Backbone	2934m Black (Difficult)	Closed for major repairs	Closed for major re	apairs	176	\$21,648.00	\$100,500.00
Trall 7 Crazyhorse	4612m Double Black (Extrem	e) Closed for major repairs	Closed for major re	epairs	184	\$18,032.00	\$145,000.00
/	12427m				526	\$55,134.00	\$827,500.00
Total Historical Ma	aintenance Spend			Key Indicators			
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	N N	lay-22 (7%) in-22 (7%)		Average Issue Resolution	Dutstanding Issues Beyond Target	Maintenana Trail Val	ce Spend vs ue Ratio
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Web Portal -Dashboard

 Maintenance Spend vs Replacement Value and Economic Value

• Key Indicators

- Benchmark performance
- Communicate wins
- Demonstrating positive impacts of works
- Meeting risk management and due diligence obligations
- Building an argument for extra resources





Item 1

Location: -41.3231117, 148.2529015

Trail Grade: Green Observation: Observation



Step 3

Engage and inform stakeholders with Reports

Navigation

MAP OF ALL ITEMS

Web Portal – Activity Reports

- View all at-a-glance
- Filter by status and/or date range
- Generate reports at the click of a button



Web Portal – Create an Activity Report

- Generate reports at the click of a button
- Select one or more activities
- Use a template to save time and standardize reporting

Activity Reports	_
	+ Create an Activity Repor
Organisation:	
TRC STC 2022	~
Activity Collector Form:	
BST Standard Audit	~
Activity Report Builder Template: Demo Create Activity Report	v
o Activity Reports	

Web Portal – Activity Report Builder

- Generated from templates
 - Minimizes effort required, delivers maximum output
 - Standardizes reporting
 - Enforces style guide
- WYSIWYG [text] editor
- Click based activity item adding and editing
- Conditional Filtering to find and add relevant items



Web Portal – Activity Report Builder

- Click based activity item adding and editing
- Conditional Filtering to find and add relevant Activity Items



Web Portal – Send Activity Report

- Email completed Activity Report to stakeholders
- Email Templates to save time and effort
- Request "sign-off"
- Trackable link know if and when they looked at your report!

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			Create Emails			
		Use	Licence Agreement - Logout			

Web Portal – Activity Web Report

- Interactivity to improve engagement
- User can interact with the map pan around, zoom in, etc
- Click image to see full size
- Does not require login
- Tracked: know if and when the recipient views the report!





Send Work Orders back to the App

Web Portal – Work Orders Dashboard

- View all at-a-glance
- Filter by date range



Web Portal – View Work Order

- View all items, data, images and location
- "As-is" Scope image, from Activity, to provide context
- Edit priority, instructions and assigned to
- Add comments
- Set Collector Form
- Send back to device



Web Portal – View Work Order

- View all items, data, images and location
- "As-is" Scope image, from Activity, to provide context
- Edit priority, instructions and assigned to
- Add comments
- Set Collector Form
- Send back to device



App – Work Orders

	Create Activity	
•	Work Orders Click Work Order to view/edit	l
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Web Portal – Complete Work Order

- Web Portal user has ultimate control of each Work Order Item's status
- Images tagged with status:
 - Scope (automatically applied to any images from the source Activity Item)
 - Pre-start
 - Progress
 - Completed
- Log of events throughout the works
- Web Portal user has final say on updating Work Order status to completed



Work Order Status

- App status auto-synced to Web Portal, if online
 - If offline, then click manual sync button when back online
- Automated status:
 - Available for Device
 - Downloaded on Device
 - Opened on Device
- Manual user-updated status:
 - In Progress
 - Completed
 - Problem
 - Paused
 - Cancelled



Key Benefits of Trail Vision

- Improve visibility and oversight, to minimize maintenance costs and maximize return-on-investment
- Make better decisions by using trail data to ensure decisions are evidence-based rather than gut-feeling
- **Communicate trail management needs** to trails and "non-trails" people alike, by using graphs, charts and key indicators that make sense to them
- **Save money** by addressing issues earlier, as they emerge, when they are smaller, easier and less expensive
- Coordinate volunteer and contractor activities and capture and report completed work
- **Optimize the user experience** and meet user expectations to enhance the trails' reputation and minimize litigation risk
- Seamless auditing and reporting capabilities, which will drastically improve the slow and tedious existing compliance auditing and reporting process
- Leverage purpose-built, user-friendly software that was designed and developed by trail industry experts specifically for the challenges of building and managing trail networks



Thank you!

- Book a virtual meeting with us to explore the potential that Trail Vision can unlock within your organization
- Come see us at the International Trails Summit in Reno, Nevada 17–20 April 2023
- Visit our website:
 <u>www.trailvision.app</u>

