Rejuvenating kunanyi / Mt Wellington's Great Short Walk – notes

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Youtube: https://www.youtube.com/watch?time_continue=1&v=o0C15EJkBtI

PART 1

Slide 1 – Welcome (145)

Hello Americans and visitors. Firstly I want to say how fantastic it is to be here on our first visit to the states.

I also want to acknowledge the generous assistance of the American Trails Association and the City of Hobart in enabling us to attend the ITS.

Today Lindsay and I want to take you on a journey down under to our home town of Hobart in Tasmania, and describe a project we have been working on for the last 3 years, the rejuvenation of kunanyi / Mt Wellington's Great Short walk.

kunanyi is the aboriginal name for Mt Wellington and I pay respect to the **traditional** and original **owners** of kunanyi, the muwinina mou-wee-nee-nar people.

So where is Hobart - who has been to Tasmania?

Let's fly from here to Hobart.

Slide 3 Hobart vs Syracuse (85)

To give you some idea of Tasmania and Hobart here are some fun facts.

Tasmania has an area of 68,400 km^2 while New York State is just over twice the size at 141,300 km^2.

However, New York States population is 19.85 million, around 40 times that of Tasmania.

The population of Hobart (220,000) and Syracuse (145,000) are much closer.

They are both nearly the same distance from the equator – Hobart is 42 deg south, Syracuse 43 deg N.

Hobart has hotter summers but milder winters, and only around 2/3 the rainfall of Syracuse.

Slide 4 – Hobart and kunanyi (123)

This is a view of Hobart taken from the Derwent Estuary looking towards the city and waterfront, with kunanyi / Mt Wellington in the background.

The City of Hobart is a local government authority who manages the municipal area of Hobart.

As well as the built-up area the City of Hobart manages the bushland area of 4,589 ha. (11,400 acres).

Within the bush there are 235 km (146 m) of tracks and trails, of which 115 km (71m) are fire trails and 120 km (75m) are walking/shared use tracks.

The management of the tracks and trails, bridges, barriers, signs and other facilities is the job of our area, Bushland Infrastructure.

I manage capital works projects and work closely with Lindsay who supervises on ground construction and operations.

Slide 5 – Hobart's Great Short Walk (150)

This is Hobart's Great Short Walk on kunanyi / Mount Wellington that over the last 2 years the City of Hobart has worked to restore

The walk follows the historic Pinnacle and Organ Pipes Tracks through forest and a sub-alpine environment and has spectacular views of Hobart and the Organ Pipes.

The tracks ascend gently from 700m at the Springs for approx. 2.5 miles across the mountain underneath the Organ Pipes – dolerite cliffs - and around to the Chalet at 1000m.

The City of Hobart owns the land but it is within Wellington Park, which is has a separate Management trust.

We must get permits from the Wellington Park Management Trust for most works other than routine maintenance.

For a permit we have to be able to demonstrate works will not affect the Park's natural and cultural values, or people's enjoyment of the park.

Slide 6 History 1 (92)

Construction of the Pinnacle track started sometime after 1894 and both tracks were completed in 1920-30s depression era.

The original intent was to construct a four-foot wide track, however the tracks have varying width from around 1300mm (4.3') to 700 (~2.5') width in boulder areas.

There is evidence such as borrow pits, photographs, and newspaper articles of the track being surfaced in local soil and gravel.

With the construction of Pinnacle Road around 1935, the track was severed, and now terminates at The Chalet.

Unused sections of the track above The Chalet remain visible, and these were visited to ascertain original construction methods.

Slide 7 History 2 (60)

The Pinnacle track features a top drain in wetter sections, visible on the far right.

This drains across the track formation via stone lined water bars, or under in earthenware culverts. The earthenware culverts are thought to be original

The age of the stone lined drains is unknown, but some are thought to be original, or from the 1928 upgrade.

Slide 8 – Prior Condition (96)

Since construction in the 1930's the tracks had deteriorated through use and the natural processes of mass movement, frost heave and erosion.

Embankments and stone walling had collapsed, drainage ceased working and surface gravel eroded, leaving an uneven and unstable walking surface.

The middle photo taken during project planning shows a walker leaning on rocks for support across the boulder fields.

This was a family of 3, the daughter leads, and the father and mother are in the rear.

The mother was not enjoying the unstable surface and was worried about the fall downslope off to the left.

Slide 9 – Prior Condition Pinnacle track (120)

On Pinnacle track, the installation of the Telecommunications conduit in the 1950s is believed to have caused significant disturbance leading to massive erosion.

The deeply eroded the section on the left would require substantial amounts of material re-establish enough profile to drain the track.

While experienced walkers coped with this condition, it was decreasingly enjoyed by the broader community.

This situation led Mick Hawkins, a local bushwalking enthusiast, to take influential Tasmanians, including the Governor, Lord Mayor and Director of Parks along the walks in 2015, to secure funding for Great Short Walk rejuvenation project.

The Great Short Walk project was initiated in 2016, and works were completed in March 2019, at an overall cost of $2.1 m AUD ($1.42m US)

Slide 10 Challenges summary (59)

In rest of this presentation I want to focus on the challenges we faced, organized under 6 topics:

- Project Concept and design
- The Mountain environment
- Management of Visitors to Wellington Park
- The Safety of our workers and visitors
- Significant Environmental values

- Heritage protection

These 6 topics relate directly to the first learning outcome we have set for this session.

Slide 11 - Learning Outcomes (72)

List and briefly describe 5 key issues to consider for heritage trail rejuvenation works in an Australian sub-alpine environment.

Through the discussion you should also begin to understand how to address the second learning outcome:

Analyze 3 different situations along a heritage trail in an Australian sub-alpine environment reserve and select appropriate construction solutions and techniques.

The remainder, greyed out section, of what you need for the second learning outcome will be provided by Lindsay.

Slide 12 Concept (121)

Multiple stakeholders were involved in the planning and we found they held widely different expectations.

Some people wanted no changes to the track, while others wanted a high-level, 1.5 m wide track with viewing platforms and rest areas.

The strengths and weaknesses of different options were assessed.

From this a vision was proposed that aligned with stakeholder expectations and that would inform design.

The vision was to provide a 2-3 hour walk suitable for most ages with some bushwalking experience, within half an hour of Hobart.

This would be along an historic track through the sub-alpine environment, with spectacular views of Hobart and the Organ Pipes.

The tracks would be well-maintained, but there would be hills, steps and some uneven surfaces.

Slide 13 Objectives (91)

From the vision we established objectives to guide the design process:

- **Integrate** conservation of heritage values with a contemporary recreation experience and sustainable track management.
- Address track defects that are a safety risk to users, and a reputational risk to the City of Hobart and Wellington Park Management Trust.
- Improve the provision of short, entry level bushwalking opportunities on kunanyi / Mount Wellington, accessible to most ages.
- Minimise adverse impacts upon the environment through sustainable construction techniques and processes.
- Improve long term financial efficiency through sustainable track construction techniques.

Slide 14 Montages and conceptual mock-ups (60)

Based on the above objectives, our Landscape architect prepared montages to assist in communication.

They included before photos and conceptual mock-ups of the intended outcome.

This montage shows a section of the Pinnacle track, with prior condition on the left and the intended condition of the right.

It shows the re-establishment of the track height, profile and drainage.

The historical top drain has been retained and the cross drain repaired.

Slide 15 Conceptual mock-up – Organ Pipes track (97)

This montage was of a boulder field section on the Organ Pipes track where most of the original surface material had eroded away.

The rocky surface was uncomfortable to walk on with potential for trips and ankle roll injuries.

The proposal was for minor top dressing with local soil and gravel.

It shows the aesthetic importance of having varying track widths and textures.

Rocks are placed with lichen and mossy sides up.

The vision, objectives and concept designs were presented and endorsed to key stakeholders, including walking groups and tourism operators.

Slide 16 The Mountain – inaccessibility (118)

The physical location of the track on the Mountain posed challenges of inaccessibility.

There was vehicle access only to each end of the tracks which were narrow and uneven.

No excavators could be used, only power carriers and hand tools.

We estimated we needed 1000 cubic metres, or 1500 tonnes of gravel, rubble and rock to replace that lost through erosion and mass movement.

To get it to the track by power carrier would require 4000 trips.

We compared this with helicopter transport, and found the cost to be similar, but with much quicker.

It was also probably safer than running power carriers along the uneven track, and have less wear and tear on built sections of track.

Slide 17 The Mountain – weather (110)

At between 700 – 1000m elevation, the mountain has extremes of winter cold with snow, ice and frost, high winds and then in summer the risk of bushfire.

We could only work for approximately 8 months of the year, and the access road was closed when icy or frosty.

These factors together with high winds or variable winds narrowed the times within which we could fly helicopters.

This required extensive planning and prioritization of helicopter operations and close coordination with the Helicopter contractor

The amount of labour required had to be estimated accurately to ensure the works were completed in time

The mountain environment increased the operational overheads of the work.

Slide 18 The Mountain – boulder fields

The Organ Pipes Track crosses 3 large boulder fields.

Work required moving boulders up to 10 tonnes to rebuild the collapsed embankments.

This work had to be done only with hand tools.

We conducted a geo- technical assessment of boulders that were hazardous to our workers and that needed to be stabilised.

Guidelines were developed for assessing the risk of moving boulders.

More rounded boulders were more likely to roll compared to angular boulders.

The downslope environment was assessed for its likelihood to capture rolling boulders and for the presence of sensitive receptors – such as Pinnacle road and walking tracks.

Slide 19 Visitor Management

kunanyi / Mt Wellington is heavily used by locals and tourists.

Last year there were 500,000 visitors to the main viewing platform on the top of the mountain.

There was pressure from park managers and tourism operators to keep open roads and tracks.

It was however essential to have tracks closed during works and close the main road and adjoining walking tracks during helicopter operations and when moving unsafe boulders.

A communications plan was developed.

We maintained direct email and phone contact with key stakeholders such as tourism operators, service providers and walking clubs.

We produced a project pamphlet at commencement, a project web site, updates on social media and extensive site signage.

Slide 20 – Safety

The difficult terrain, mountain weather, helicopters, heavy work and management of visitors all increased the safety issues and risks for the projects.

Helicopters were flying 800kg bags of rock and gravel so no-one could be underneath the flight path.

A safety management plan was developed and was supplemented with Safe Work Method Statements for high risk works and Standard Operating Procedures for most tasks, including traffic management plans.

Frequent reviews were conducted, regular toolbox meetings and work locations adjusted as dictated by wind.

We had 4 finger crush injuries in the first year, and then after an extensive review no more.

Slide 21 – Environment

Prior to works we conducted assessments to identify significant environmental values.

Flora and fauna desktop assessments and on-ground surveys were conducted by internal staff and specialist environmental consultants.

Two threatened species occurred in the works area, the Silky snail and Tasmanian daisy tree.

These were mapped and works were designed to minimise impacts.

A new section of the track was re-routed to avoid the Tasmania daisy tree.

An assessment of avifauna that might be affected helicopter operations was undertaken.

A Wedge tailed eagle nest was identified close to the flight path.

Our SOP entailed lookouts for Wedge Tailed Eagles and cessation of activities if one came into proximity with a helicopter.

Slide 22 – Heritage

Respecting the heritage of the tracks was important.

Overall, most of the heritage values would not be impacted upon by the proposed works:

- social values associated with the route and network,
- aesthetic values of views over Hobart and,
- the original track fabric

Areas of significance such as intact track sections and original walling were identified on site and in work plans.

Slide 24 – Heritage

On the Pinnacle track the original terracotta culvert pipes and top drains were of heritage significance.

Intact sections were retained without modification.

Broken culverts were also to be retained in situ. They were covered with geotextile and the new track built over the top.

New drainage points needed to be constructed to replace these.

Slide 25 – Heritage

However, much of the built up formation and structural stone work supporting the track formation across the boulder fields were unstable and needed repair.

To achieve the overall vision and objectives it was critical to restore and reconstruct these sections of deteriorating track, with the potential to impact upon (high) local scientific significance associated with the track fabric and original construction techniques.

Guidance on original construction methods was sought from historical reports and by inspecting old disused sections of the track in order to rebuild as close to the original work as possible.

We followed the guiding principle from the Burra Charter:

'Do as **much as necessary** to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained'

Slide 26 Heritage – changed management

Several of the original construction techniques were no longer considered appropriate in the kunanyi / Mount Wellington environment.

These included extensive borrow pits adjacent to the track and rock blasting, and additional buried culverts.

Current commonly used construction techniques, such as stone paving and/or pitching to protect steeper sections from erosion, natural drainage and grade reversals to promote more frequent water dispersal, and paving natural drainage areas in stone, were proposed to ensure the long-term sustainability of the track.

I have a short video to show you regarding heritage values which will also give you a better appreciation of the overall context.

Slide 27 – Geology and Soils

For aesthetic and heritage reasons, we aimed to use weathered dolerite rock and decomposed dolerite aggregates / soils matching the existing soils and geology.

Some rock and soil could be won from the site and local borrow pits, but not sufficient for all the work.

Other sources for gravel were examined, including existing stockpiles and borrow pits in the north western section of Wellington Park

This was ideal, but transport costs were prohibitive.

A commercial quarry was identified in the same geological stratum – Jurassic dolerite - as the tracks.

Significant geo-heritage values occurred in the location and were addressed by limiting the locations and number of borrow pits.

Slide 28 – Detailed Design

Final design involved the translation of the track concept and objectives into specific features that track workers could construct.

Two main methods for specifying this were the design drawings and the conceptual mockups, together with written descriptions.

Design drawings detailed treatments for typical situations, not all situations.

For example, (this) one detailed the repair of collapsed sections of boulder field crossings, including the embankment walls, the correction of track surface levels and profiles, the types of materials and the retention of “natural” elements such as mosses and lichen covered rock faces.

Slide 29 – Design montages

Accompanying the design drawings were montages that communicated the look and feel of the intended outcome, very hard to capture in drawings.

A before photo was placed next to a mock-up of the intended outcome, and a commentary included highlighting the salient aspects.

This montage is of a section of boulder field crossing.

The pictures in the mock-up can be used to identify typical situations on the track, and aspects such as track texture and width, boulder alignment and orientation.

Slide 30 – Gradients and surfaces

A crucial design drawing was the one that depicted surface treatments for specific track slopes.

Only gently sloping track sections will retain a surface of soil and gravel, up to 12%.

Steeper sections are prone to erosion, and hence it is necessary to armour the surface with rock as the slope increases.

Our design drawing shows how the proportion of rock increases as the slope increases

Slide 31 Heritage - Pinnacle track

Another design drawing depicted a typical section of the Pinnacle track.

This section was deeply eroded, it included a heritage table drain and the optic fibre conduit.

Here substantial quantities of imported rock and rubble were required to reinstate the track height to achieve adequate crossfall and drainage.

The conduit service pits had to be raised to the new level.

Crucially, the heritage drains needed to be retained and repaired to continue to function adequately.

Slide 32 - Montages

Again, the design drawing was accompanied by a montage showing the prior condition and conceptual mock-up of the intended outcome.

The situation in the photo complements the design drawing by showing additional elements such as the water supply piping, or a different track profile such as substantial outfall profile that requires correction.

Also, as the track slope is steeper the surface has been fully armoured with rock paving and pitching.

Slide 33 Heritage drains

Specific drawings were produced for the restoration of significant heritage assets.

For example, original cross drains carried water from the table drains on the upslope side of the track to the lower slope.

Many of these had been eroded or damaged.

The drawing depicted the materials to be used, dimensions, alignment, safety aspects, and erosion protection.

Slide 34 - Heritage culverts

Originally, terracotta culverts were also used to drain water across the track from table drains.

In some instances, these were damaged beyond repair, and hence they were replaced at new locations with modern polypropylene culvert pipes.

The design drawing included cross section views to show stone headwall construction, installation depth and slope of the new culvert pipe.

Design was used to gain work permits and brief workers so that construction works could commence

This is the end of my session and Lindsay will pick up with construction and operations

PART 2 – Operations – Lindsay Ashlin

Slide 36

Thanks, Al// it's my absolute pleasure to be here with you all.

In a nutshell, my role as Tracks Supervisor// for the City of Hobart// is to act as the **link** <u>between planning and operations</u>. Managing the teams to realise the vision.

Slide

Hobart is one of the most remote capital cities in the world// on the edge of an island// on the edge of the Southern Ocean.

Our city is a part of nature// and nature is a part of our city.

We are proud caretakers, critics and advocates// who ensure nature is valued// in honour of past, current and future generations.

Slide

Greenways thread through our city// linking parks and reserves.

We cross paths// and live in harmony with our wildlife.

Pademelons, tiger snakes, platypus, echidna and wedge tail eagles to name a few.

Slide

Some of you may be familiar with our *Tasmanian Devil* made famous by Warner Brothers here in the US!

Slide

Hobart's Great Short Walk// had close to 100// City of Hobart- staff and contractors// working on this project.

Track builders racked up 35,000 hours // working in all sorts of weather.

Rebuilding these tracks an inch at a time.//

Their care// and attention to detail// has resulted in a track that is part of nature// not separate from it.

Placing every single rock with care.

Slide

As Al outlined// the project overcame challenges.

Track builders worked with hazardous rocks//, heritage and threatened flora and fauna

Helicopter airlifts were critical // transporting over **1000 tons** (900 tonnes) of rock and gravel to the mountainside.

Slide

Everyone involved in this project has been deeply passionate about bringing *Hobart's Great Short Walk,* back to life.

This video gives an insight from some of our 'trackies', who worked on this project.

Slide

Video - Trackies

Slide

The men and women you saw in this video are some of the most talented track builders// in Tasmania.

Slide

Throughout the project // our systems for communication between track builders, supervisors, managers, planners and officers evolved.

Slide

We found working in teams // of around five track builders, // including a team leader best.

Slide

Assigning sections of the track to each team// fostered a sense of ownership// and accountability for their work. (Show on slide)

Regular planning meetings // provided a forum to share information // ideas and challenges.

These meetings helped ensure we were true to the design // and maintained a high standard of work. (Show on slide)

Slide

Morning tool box meetings on site// within each team// utilised the "Weekly Run Sheet". (Show on slide)

We found this helpful to ensure communication was two-way.

- we listed the hours worked for each member of the team,
- the tasks they undertook for budget purposes
- the materials used
- track section they are working on
- items talked about at the daily tool box
- and any other notes

Slide

Prior to commencing any new section of track// we undertook an audit with our cultural heritage officer.

Data sheets // like this // (point to the sheet) // were used to document // heritage features // like retaining walls, borrow pits and drainage //

As part of the permit // the heritage officer // checked the work site fortnightly // to ensure compliance.

You can see here // the team have noted heritage water bar and walling.

There is a note recommending extra drainage // and the types of surface treatments- local dirt and pitching.

This data informed operational staff on heritage // and surface treatments.

This links into our next learning outcome.

Slide

Analyse three different situations along a heritage trail //

in an Australian sub alpine environment reserve//

and select appropriate construction solutions and techniques.

Slide

Al mentioned earlier how the surface treatments // match the gradients of the track.

This slide shows the treatments//.

- Where the gradient is 12% or less // we use gravel only.
- When the gradient is between 13-18% // we use a combination of gravel and rock. //
- As the slope increases// we increase the amount of armouring with rock // to protect against erosion and wear.
- When the gradient is over 18% // we use all rock.

I'll now go through each of these in more detail.

Slide

We try to use **local** soil and gravel // varying in fragment sizes // for the final surface layer.

This maintains the natural appearance// and blends in with the surrounding soils, // providing a durable walking surface.

We need to ensure there is a suitable level of clay content // in the gravel mix // to aid with binding.

We aim for a minimum coverage of two inches.

We like the gravel to be moist but not wet when laying.

We include drainage points at regular intervals // normally every **30-60 feet** (10-20m) // depending on gradient.

We create a cross-slope // or crown profile to aid surface drainage.

We try to allow enough time prior to public use // for the surface to compact.

Too much use when the new surface is wet can led to problems.

Slide

As you can see here//

It normally takes a few months for most of our surfacing material to settle// with the cycle of rain, sun and use.

In a short time // it will compact / / washing and wearing the clay off // leaving a hard // durable surface.

If there is a lot of rain // and use // soon after a new surface is laid // sometimes, some sections can get muddy.

This can raise concerns with users // we find signs, such as this one // helpful to inform the public.

Slide

To source local material // we dig borrow pits.

Prior to clearing, digging and during excavation // we check the site for signs of cultural heritage.

Our borrow pits are:

- areas out of sight from the track //
- with a zig zagged access // to limit the visual impact //
- vegetation is removed // with top soil and surface organic matter // saved for pit rehabilitation //
- pits are dug to a maximum depth of **2 and ½ feet** (750mm). //

After the pits are closed // they are filled with rock or rubble // covered with the saved top soil and surface organic matter.

At times, it can be difficult to find areas for local borrow pits // in these situations we import gravel and rock.

Slide

The imported materials used for this project were dolerite spalls //

These provide a chunky rubble sub-base //.

And dolerite decomposed red gravel// which was used for bedding-in, the surface material // and for the final capping layer if needed.

If possible we aimed to cover this with local soil and gravel.

The imported gravel can be slippery underfoot when dry // it has a less natural finish // it's noiser to walk on //
and does not have suitable clay content // to bind the surface well.

Slide

As the gradient increased // we increased the proportion of rock to gravel // to armour the surface against erosion and use.

Key points include: (refer to slide photos)

- the use of irregular edging, avoiding straight lines //
- no regular coursing of joints //
- gradual transitions between sections of all gravel to all rock //
- and vary the size of rock//

The armoured drainage points // provide a clear base for maintenance crews//.

Slide

Rock for pitching, paving and walling // was won from the track surface // and collected from the surrounding areas.

Sometimes there was not enough rock // available from around the track // without altering the natural appearance //.

To gain sufficient quantities // rock had to be bagged away from the track // and then transported to the work site by helicopter.

The photo shows local stone that has been collected, ready for use.

Slide

These three photos are of the same location // **before, during and after** works.

They show a treatment of rock and gravel.

You can see in the **before photo** that there was: (refer to photos)

- a narrow side drain // and poor surface drainage //
- no edging rock in the table drain
- soil erosion occurring // notice how high the original surface was //
- the conduit //

- and uneven surface.

You can see in the photo titled **during**:

- the rock surface provides a solid foundation
- the rock locks into place // creating pockets // to trap the soil // and gravel for binding //
- Edging rock is used to reinforce table drain and track edge //
- You'll note the surface is raised // with an in-slope profile // and the table drain is widened.

In the last photo titled **after** the:

- track surface has been capped with local soil and gravel to create a natural appearance
- leaf litter and organic matter has been added to the sides of the track for rehabilitation
- anchor rocks have been placed to break up edges
- with the weathered side of rocks facing out // to maintain a natural appearance.

Slide

On gradients of over 18% // we used paving and pitching // to fully armour the surface.

We generally used paving on gradients up to 20% // where rocks are laid flat // with the edges matching- the rocks "flow" into each other.

This provides an even surface, but can be slippery.

We generally use pitching when the gradient is over 20%.

We lay rocks on their edge // the rocks step up to provide "mini risers".

Occasionally wider // footpads are needed.

The rock surfaces // slope forward slightly // generally around 5%.

As you can see // in the photos // we often use a combination of paving and pitching techniques when armouring.

Slide

These photos show a gradient of 35-40% section// that has been pitched.

The heritage stone edging // and walling has not been touched.

'foot pads' // have been built to improve the surface.

Slide

As you saw in some early images // we worked amongst boulders on this project. Hazardous boulders were identified and assessed.
Rounded boulders were more likely to roll down slope // so precautions needed to be taken.

Slide

Boulders were re-seated in locations like this one.

This rock was about 11 tons, // the track surface was built up,// for it to be lowered into place.

Slide

The photos show how the rocks have been re-seated to provide an even track surface on a small boulder field.//

The anchor and blocking stones you can see, // guide walkers away from the edge.

Slide

Maintaining a natural track appearance across the boulder fields was challenging and we didn't always get it right.

This section took two goes.

Photo 1 was our first attempt, you can see rocks are sitting on top of the track, in a line with the non weathered side facing up.

Whereas, photo 2, shows where we embedded the rocks, created uneven edges and had the weathered side facing out.

Slide

Our next learning outcome//

Outline a management plan// for helicopter operations in a public park// in an Alpine environment.

Slide

Central to my role was ensuring materials were ready and available// when needed for helicopter operations.

Mindful of the heritage value of the track // we needed to minimise impact. //

There was limited area for materials at each section // so regular drops were needed.

Weather was an important consideration // it needed to be carefully monitored // in the sub alpine climate.

Slide

My role involved coordinating:

- pilot and ground crew availability
- the supply of rock and gravel, // including filling bags on site
- and ensuring bags were dropped at the correct section of track.

Slide

We created some tables // to assist with planning // including a checklist of tasks in preparation

Slide

We found **this** table a easy way // to manage the data //
It included:

- The drop number // here on the left
- The type of material in each bag – R for local rocks, // Sp for spalls // and G for gravel.
- Numbered tags (point to the tag) were used along the track to identify the drop points.
- The origin or collection point for the bag- Bags with imported materials were located in a compound // in a car park on the mountain.
- While the bags filled with local materials // were collected from where they had been sourced // dotted approximately 300 - 400 feet from the track.
- There was also room to record the time of each pick-up // refuelling and other occurrences //.
- Team members found the colour coding we implemented on the table helpful too. // (point out) type, origin and destination

Slide

Central to our management plan was a ***Safe Work Method Statement*** // otherwise known as a SWMS//.

The SWMS was developed in consultation with team members.

Slide

(Point to document headings)

The SWMS sets out the high risk **tasks**//

the **hazards** arising from these tasks //

the possible **effect** of hazards //

Then, the measures we put in place to **control** the risks.

Slide

Although team members might have knowledge and understanding of the tasks // it was important we worked together // to ensure the safest method was followed.

Slide

You'll see here *overhead loads* was identified as a hazard //

One of the controls for this hazard// was no public access allowed within the area of helicopter operations. //

Closures were communicated electronically via email and through our media outlets.

Slide

This is a photo of a sign // that was placed at the key track junctions // informing users of forthcoming closures.

Slide

This video goes into some more detail on our helicopter operations.

Video

Slide

In the video you saw me briefing the team members prior to the operation commencing.

Slide

This is a photo of a map I used at a safety briefing // prior to the commencement of a helicopter drop //

It shows:

- where each team member is located // (point)
- and the locations closed (in blue) for the flights.

Slide

All team members needed to be part of this briefing.

Once prepared they ticked and signed the run sheet before commencing work.

Ensuring the team members // were prepared and ready // was key to managing safe helicopter operations.

Slide

In two years we had 78 flight hours over 21 days

1100 loads were delivered // of approximately **1000 tons** (900 tonnes) of rock and gravel.

The total cost was $135,000 US ($190,000.00 AUD)

This was $121 US ($171 AU) per load

With 14 loads per hour or 4 minutes per load.

Slide

In summary

Key Points

- Safety
  - Flight path walked and the all clear given.
  - No one within flight path or under bags at any time.
  - The pilot informed of any concerns asap
- Visitor Management
  - Clear communication to park users
  - signs on-ground
  - Email updates
- Pre flight planning and preparation
  - Clear allocation of tasks
  - Accountability
  - Drops sheet clear and concise
- Flight day
  - Clear roles and good communication

Slide

These tracks are now open to all // while honouring the past.

They blend into the natural landscape around them. *(Pause)*

They look like they have always been there. (*Pause)*

This video, I'm about to show // gives an insight into how people are *'grinning from ear to ear'//* with the rejuvenation of *Hobart's Great Short Walk.*

Slide

Video - People enjoying walk

Slide

- Planning & Design 2016-2017
- Construction Time 2017 -2019
- Length: 2.58 miles (4.15 km)

- Cost: $1.43 million US (AS$2 million)
- Rate: $105 US per foot (AS$ 480 / lm)
- Track building labour: approx. 35,000 hours

Slide

Questions

Slide

Thank you America