

<b>Name:</b>	Beckley Park
<b>Project Description:</b>	Water Conservation Project
<b>Date of Report:</b>	12 Feb 2009

## 1. Background

Beckley Park is the home of the Geelong Harness Racing club, Geelong Greyhound Racing club, Geelong Karting club and Beckley Park Community market.

The project involves the implementation and trialling of a variety of initiatives in order to make this popular regional facility less reliant on mains potable water. The original scope of work for the project is attached at appendix A and included upgrading existing plumbing fixtures to water efficient appliances, conducting a dust suppressant trial, installation of a wastewater re-use system and installation of a 110 kL rainwater tank..

Beckley Park Committee of Management received 2 grants in 2007 to complete various water conservation works to the existing infrastructure at the Beckley Park facility (CWG = \$ 43,818 & SWF = \$32,085) . Beckley Park Committee of Management committed to providing the additional funds for the project ( \$ 85,811). The committee then successfully approached the relevant racing boards (GRV – Greyhound Racing Victoria & HRV- Harness Racing Victoria) for additional funding to complete the project (\$ 110,000).

## 2. Description of Project

During the process of preparing the schematic design for the Smart Water Fund component of the project it became apparent that the wastewater recycling system proposed for the washdown facility was not feasible.

Additionally, it became clear that a large stormwater drain servicing the property also serviced a large catchment (approximately 100 Ha) behind the facility which had the potential to provide large quantities of water suitable for irrigation of the two race tracks. Accordingly, a Civil Engineer was engaged to prepare a detailed design to install a gross pollutant trap and associated infrastructure suitable for capturing the stormwater flow. Initial modelling has suggested that annual capture of 75% of water requirements is possible (existing annual water consumption = approx. 8.3 ML) and that when the adjoining light industrial area was developed in the future this annual capture could provide for up to 100% of the annual water requirements for the facility. .

Preparatory drilling was conducted on the site of the proposed Gross Pollutant trap and underground tank to ascertain geotechnical information required for the detailed civil engineering design in February 2008 and revealed the presence of "very hard" basalt rock throughout the area of the proposed Gross Pollutant Trap (GPT) that will require "blasting" to position the GPT and infrastructure at the required 7.0m depth.

Due to the additional cost of removing this rock the committee of management decided to stage the project in order to source additional funding from external sources ( e.g. Local and Federal Govt. Grants & Racing boards etc ).

The revised project stages are detailed below :

### **Stage 1 (100% completed – funded by SWF, CWG, Racing Boards & Comm. Of Mgt. = \$270k )**

Dust suppressant trial

Upgrade existing public toilet infrastructure

Install 2 x 260 kL rainwater storage tanks to large grandstand roofs

Install pumps and transfer mains to track watering infrastructure

**Stage 2 (possible funding from a range of sources City of Greater Geelong, Federal Govt. Grants, Racing Boards & Comm. Of Mgt. = approx. \$ 500k)**

Install Gross Pollutant Trap and associated infrastructure

Install 2 x 260 kL rainwater storage tanks

Connect GPT to track watering infrastructure

### 3. Key Activities Completed

Stage 1 of the project has now been completed and the detailed scope of work is shown below:

#### **260kL Rainwater tank to Greyhounds Grandstand**

- Connect 1 x 260 kL Rhino tank to HR grandstand to existing downpipes

- Allow to connect overflow pipework and scour pipe to legal point of discharge

- Allow to install highflow pump and associated infrastructure

- Greyhound tank transfer main to existing irrigation tanks

#### **Drivers and Stewards facility**

- Upgrade 2 existing showerheads to 9lt. max. water efficient versions

- Replace 4 existing in wall cisterns / toilet pans with low flush toilet suites to toilets

- Allow to disconnect HW supply to public toilet vanities

#### **Conduct dust suppressant trial**

- Dust suppressant trial to Greyhound and Harness Racing tracks

#### **SW Public Toilets**

- Install 6ltr max. w'efficient flow restrictors to 7 vanities in public toilets under SW grandstand

- Provide and install new 13000 ltr colorbond steel tank to supply SW grandstand toilets.

- Provide and install new Rainwater switch and associated rainwater pump including integrated overflow back to SW drain

- Disconnect existing HWS to toilets under SW grandstand

- Connect new rainwater tank to existing toilet supply line

#### **Promotional Material**

- Graphic Artist

- Pull - up banners x 2

- Signage on tracks x 4

#### **Monitoring and Evaluation**

- Install weather station for future monitoring

#### 4. Results Achieved

- Achieved media coverage in local press (Geelong Advertiser and Geelong Business News ). Promoted the project via fixed signage and displays on Sky Channel and to race patrons at the respective tracks.
- Engaged racing boards in process and secured funding and support for the project from the same.
- Upgraded existing plumbing fittings across the facility with higher water efficiency infrastructure.
- Installed large scale rainwater storage tank (260,000 ltrs) to Grandstand roof.
- The momentum of the project resulted in alterations to track management processes that achieved irrigation water use savings
  - Use of on track wind barriers on the greyhound track to reduce loss of windblown sand from the track
  - Improved efficiency of watering regime / timetable to reduce required irrigation water on greyhound track prior to race meets
- Conducted large scale dust suppressant trial (Polo citrus) across both tracks to explore potential of dust suppressant to reduce water consumption. Moisture readings were taken before and after application of dust suppressant over the length of the trial to ascertain impact of the dust suppressant application.

*Harness Racing Trial* : Some technical issues regarding measuring moisture levels in the harness racing track meant that results of the first trial were inconclusive and the project was concluded at the end of the trial. The track managers are currently pursuing another trial with assistance from Harness Racing Victoria.

*Greyhound Racing Trial* : Results were more positive on the greyhound track and the track managers are keen to pursue periodic application of the dust suppressant in the future.

Careful application of the selected dust suppressant has resulted in up to an additional 2 hours of additional moisture retention in the track. Anecdotal evidence from the track manager suggest that this may equate to a reduction of up to 20,000 kL per race meet of irrigation water.

The track managers also pointed out that overuse of the dust suppressant can have a negative effect on the track consistency and needs to be carefully controlled.

### 5. Issues Arising

As discussed above the following issues were encountered during the course of the project :

- Lack of wastewater generated from the horse washdown facility led to the revision of the scope of work and the deletion of this component of the works
- Hard rock in the area of the proposed Gross Pollutant trap caused the deferring of that component of the works until additional funds could be secured
- Application of the dust suppressant to the race tracks needs to be carefully managed as overuse can seriously affect the composition of the race track
- Measurement of moisture in the “harder and more compact” harness racing track has been problematic.

## 6. Conclusion

The Beckley Park Water Conservation Project has been highly successful in many ways :

- The project has heightened the awareness of the importance of water conservation amongst track management staff, committee of management, Victorian Racing Board members and racing patrons generally. Future water conservation projects are currently being planned for the facility.
- Preliminary calculations suggest that water savings could be up to 3.5ML per annum for the facility and could approach up to 50% of annual water use (dependant upon actual annual rainfall ).
- The dust suppressant trial has been encouraging on the Greyhound track and track management staff have committed to continuing the program in the future.
- The committee of management have committed to a process of securing funding to complete Stage 2 of the project in order to secure the future water security of the facility.
- The availability of the stormwater harvest potential in the stormwater drains under the facility have heightened the need to conduct careful site analysis at the beginning of future projects to fully realise the potential of any particular site.