1. Introduction
1.1 Project Background

The report has been prepared by Tract Consultants for the Surf Coast Shire.

With the development of the Community and Civic Precinct, the proposed Torquay Secondary College, the West Coast Business Park and other residential development, the entrance to Torquay has effectively shifted north from Darian / Grossmans Road to the South Beach Road intersection (refer Figure 1). Given the increasing number of residents, visitors and tourists using this town entrance it is highly desirable that the road entry creates a positive visual experience and one that represents the special qualities of Torquay as a place, a coastal community and part of a regional tourism network.

1.2 Study Area

The study area is focussed on the Surf Coast Highway from Grossmans Road in the south to the ridgeline location approximately 350m north of South Beach Road (refer Figure 1). A wider township and rural hinterland area has been considered within the project analysis in order to establish a design context for the study area.

1.3 Land Management

The current Surf Coast Highway road reserve which forms part of the study area is controlled by VicRoads. Surf Coast Shire maintains the 60km/hr township section south of Grossmans Road and VicRoads maintains the remaining 80km/hr – 100km/hr sections north of Grossmans Road. Future land development along parts of the study area will result in additional areas of land being made available for landscaping, pathways and other uses. These areas will form part of the overall study area. Future maintenance responsibilities for the whole study area will be established as part of an agreement between VicRoads and Surf Coast Shire.

1.4 Project Scope & Objectives

The aim of the project is to provide the Surf Coast Shire with a design for the Surf Coast Highway that recognises existing land uses, future development areas and other community uses and values.

The project is to provide the Surf Coast Shire with a vision and detailed Concept Design Plan for the study area to meet the following objectives:

- Develop a vision for the Torquay entrance to ensure that residents and visitors are provided with a positive aesthetic experience as they enter Torquay.
- Ensure that the appearance of land adjoining the highway is improved through the development of a clear landscape and visual character and that the impact of land developments is managed by the design outcomes.
- Provide advice on the desirability, location and form of any iconic entrance feature or signage.
- Provide advice on the signage strategies for minimising visual clutter within the road corridor.
- Examine the practicality of undergrounding overhead powerlines and identify any related funding opportunities.
- Examine options for the location and design of a tourist information bay(s).
- Protect and enhance the social, environmental and heritage values of the study area and meets Council and VicRoads detailed management requirements.
- Establish an off road shared path route that enables pedestrians and cyclists to travel from the Torquay township to key public use sites within the study area.
- Maximise access for all people regardless of ability.
- Provide comprehensive and open consultation with the study areas key stakeholders, including VicRoads, land owners and the wider community, so that where possible their needs and aspirations are understood and accommodated.
- Ensure that design and management strategies promote environmentally sustainable practices.
- Ensure that the Concept Plan is user friendly, illustrative, and incorporates specific plans, graphics and written guidelines that provide realistic outcomes for the development and management of the road reserve within Council's resource constraints.
2. Context
2.1 Regional Landscape

Torquay sits at the intersection of two main landscape character types (refer Figures 2 & 3).

A Western Plains landscape type characterised by:
- A flat to gently undulating landscape
- Shallow creek lines (Armstrong Creek & McCann's Creek) with broad floodplain areas
- Ephemeral wetlands and shallow lakes
- Sandy clay soils over basalt
- A combination of Grassy Woodland and grassland vegetation communities
- A combination of formal and informal cultural plantings that act as shelter belt plantations or mark property boundaries and building settings. These plantings typically include Monterey Cypress and Radiata Pine wind row plantations but can include mixed native plantations.

A coastal landscape system which forms the eastern edge of the Otway Ranges / Southern Uplands landscape character type. This area is characterised by:
- Undulating coastal landforms
- Deeply incised creek lines (Spring Ck & Deep Ck)
- Sands and sandy clay soils typically associated with the Anglessea Heathland
- A combination of Heathland and Eucalypt Woodland, Grassy Woodland and Coastal Scrub, which includes threatened Coastal Moonah Woodland communities
- A combination of cultural plantings including Monterey Cypress, Sugar Gum and Pine, that mark significant public places within the original town centre and coastal edge
- A pattern of remnant plantings based on old farm boundaries

In terms of the Western Plains landscape type:
- The agricultural landscape of the coastal plain (refer Figure 4) is characterised by gently undulating landform, heavily dissected by wind row plantations oriented to the south and west, with relatively small paddock sizes and a mixture of exotic and native vegetation.
- Forms, single species windrows best represent the agricultural history of the area and provide a clear visual structure to the landscape.
- Non site specific, generic highway planting combinations (Acacia / Hakea / Melaleuca etc) that are typical of many main road corridors, weaken cultural landscape quality and place identity.
- Creek lines and associated ephemeral wetlands dissect the valley landscape but are largely invisible when they are not marked by vegetation. These features reinforce the nature of this regional landscape and have the potential to be landmark visual features.
- Services such as power transmission towers, overhead power lines and protective roadside barriers are visually prominent in this landscape and detract from the natural feel of the landscape.
- Planting and management of roadside vegetation is limited by traffic safety setback requirements. The result is that roadside plantations are often non-conforming road features that are not managed for environmental or amenity purposes and as a consequence, the quality of existing planting (indigenous and exotic) is variable and generally in decline. When vegetation dies in these locations it is typically not replaced.

In terms of the coastal landscape type:
- The Torquay coastal landform is restricted to the coastal edge. The area north of the Spring Creek Reserve lacks a clear visual relationship to the coast.
- The northern section of Torquay generally lacks the landform, landscape and visual characteristics of other Great Ocean Road townships.
- With the exception of Grass Tree Park, remnant creek landscapes, and some remnant roadside vegetation the Torquay landscape has been mainly cleared of indigenous vegetation.
- The Surf Coast Highway landscape contains a mixture of remnant farm plantings and recent street tree plantings but the township lacks a clear overall planting character.

What this means:
- Management of the Western Plains agricultural landscape and remnant features such as wind row plantations and older public space plantings is important as it helps to identify Torquay and its history, and visually separates Torquay from the Geelong development area.
- Creek lines, remnant vegetation areas and major topographic variations are important indicators of the landscape type and should be enhanced to optimise both environmental values, visual quality and place identity.
- The features which define the coastal landscape type are not clear within those parts of Torquay that are away from the coast (north of Spring Creek). This setting requires a new overall landscape 'structure' and specific landscape features related to key places, rather than conservation of an existing, dominant landscape framework.
Figure 2 - Context - Regional Landscape
Figure 4 - Cultural Landscape Character north of Torquay
2.2 Torquay Planning & Development

The planning and development context is described in Figures 5 - 9.

- The Armstrong Creek development area at the southern edge of Geelong (refer Figure 5) will put a major new population (50,000) north of Torquay. This is likely to result in additional use of the Surf Coast Highway for recreation (to Torquay) and retail / education / employment related travel (from Torquay).

- The Armstrong Creek development area is separated from Torquay by the Mount Duneed and South Beach Road ridgelines and by the Thompsons Creek plain. There are proposed plans to develop this buffer area as an intensive agriculture zone. This land use is likely to complement the traditional visual character of the valley landscape, however, there is likely to be long term pressure for further development within the current buffer area and / or roadside areas which has the potential to reduce or eliminate the visual definition of Torquay as a distinct coastal township.

- The location of the Geelong Ring Road is likely to put more drivers on the Angelsea Road which has the potential to result in less recreation and tourism traffic using Torquay as a starting point for the Great Ocean Road. This will be influenced by specific signage treatments at key locations (current discussions between the Shire of VicRoads on this objective) and general factors relating to the identity of Torquay as a specific tourism and recreation destination.

- The investigation of transport options (future transport corridor (rail or bus transit) between North Torquay and Geelong / Armstrong Creek Major Activity Centre) are still being considered by Department of Transport and are likely to continue within the context of the Torquay 2040 and the G21 (Geelong Regional Planning Alliance Group) Regional Land Use Plan strategic planning studies. At this time, the Department of Transport considers that there is no specific requirement to set aside land within the Torquay North Outline Development Plan area for transport purposes as other transport alignment options are available (Dept of Transport / Surf Coast Shire correspondence 23/12/10).

- There is substantial residential growth planned for the northern and western parts of Torquay (refer Figure 6) which has the potential to further change the visual character of the setting and the specific relationship between Torquay township and its coastal setting.

- A Vegetation Protection Overlay applies to isolated sections of Deep Creek corridor (west of Surf Coast Highway and adjoining Coombes Road). (Figure 9)

- An Environmental Significance Overlay applies to the Thompsons Creek corridor and coastal outlet floodplain system and the Spring Creek corridor.

- A Significant Landscape Overlay applies to residential areas east of Surf Coast Highway and south of Deep Creek Reserve.

- Grass Tree Park is zoned Public Conservation and Resource (PCRZ) but is not addressed by a planning overlay that specifically addresses its (at least) locally significant vegetation conservation and landscape values.

- New land developments adjoining the Surf Coast Highway are required to include a 15m landscape reserve, with a 30m buffer for West Coast Business Park. The general expectation, represented within the Torquay North Urban Growth Area Outline Development Plan is that this road buffer area will be used as a plantation reserve (15m) with a shared path (2.2m) and with the road reservation retained for on road bike lane (2.2m) and overhead services easement (6m) (Figure 7). Developments are expected to include a service road adjoining the highway / landscape buffer reservation and for new properties to address the road corridor.

What this means:

- Visual separation between Geelong and Torquay helps to maintain the perception of Torquay as a coastal township and as a place with a specific relationship to the regional landscape. It is important that an effective and place specific landscape buffer is maintained over the long term.

- Large scale development within north and west Torquay will have a significant visual impact and is likely to change community and visitor perceptions and change the perception of the town from coastal township to coastal 'suburb'. Landscape treatment and visual management of the Surf Coast Highway corridor has the potential to mitigate this effect.
- The Geelong Ring Road development has the potential to reduce the volume of Great Ocean Road traffic passing through Torquay in the long term. This increases the importance of Torquay presenting itself as an attractive destination and 'place' in its own right, as well as a gateway to the Great Ocean Road. The GOR gateway function is likely to be best achieved south of Anderson Street and the Bell Street roundabout where the landscape and visual character of the setting reinforces the gateway function.

- The study area is not covered by planning overlays or other designated landscape or environmental values, although Grass Tree Park and Deep Creek Reserve are acknowledged as locally significant environmental and recreation assets.

- The use of landscape buffers along the highway reservation creates the potential for significant landscape and pathway improvements, but does not change the visual and functional characteristics of the highway, which in its current form is incompatible with the concept of Torquay as a high amenity coastal township. Changing the road speed, reducing services impacts and redesigning the road environment is more likely to achieve positive amenity improvements than landscape buffering alone.

Figure 5 - Regional Planning Context
Figure 6 - North Torquay Planning
Cross-section of Surf coast Highway landscape buffer

Outline development plan
torquay north urban growth area

Figure 7 - Outline Development Plan - Proposed Surf Coast Highway Cross Section
2.3 Regional tourism values

The Surf Coast Tourism Action Plan 2010/2011 defines a range of values for Torquay as a tourism destination, including:

- An iconic coastal recreation destination for the Melbourne and Geelong regions.
- A surfing and surf industry hub.
- A starting point for the Great Ocean Road.
- A regional centre for a geographically and economically diverse Shire.
- A setting with high ecological and aesthetic values.

In terms of the Surf Coast Highway, tourism initiatives are likely to include:

- Improving signage to Torquay from the Geelong Ring Road direction.
- Working with VicRoads and Tourism Victoria to establish a gateway sign to mark the start of the Great Ocean Road region.
- New signage schemes and graphic identity within the town and major approach roads.
- The possible development of a north bound tourist information and parking area within the Surf City precinct.
- Consideration of a south bound tourist information and parking area within the Surf Coast Community & Civic precinct.

What this means:

- Torquay is intended to represent a diverse range of tourism and civic themes which are difficult to present within a highway based environment that has a relatively poor existing landscape and visual structure. The starting point for the development of tourism themes and branding is likely to be the quality of the Torquay environment and its identity as a ‘place’—a coastal township with a distinctive cultural history and relationship to its environment—rather than by individual design elements alone. It is important that the study area, as the northern entry to Torquay, does not take on the role of achieving all the tourism and civic branding outcomes which is likely to lead to a visually confusing environment with an excess of visual messages.

2.4 Torquay image & identity

Victorian coastal townships, particularly towns along the Great Ocean Road, have a strong physical and visual relationship with the landscape. Town settings are typically characterised by:

- Strong landform/waterform patterns that define the boundaries of the town, shape development patterns and limit growth.
- Dense indigenous vegetation that encloses townships and visually expresses the geology, soil conditions and climate of the setting.
- A clear physical and visual separation between townships.
- A clear framework of cultural landscape features along foreshore recreation and civic areas such as window plantations and lawn areas that illustrate the history of settlement and land use.
- A direct link between the commercial centre and the main beach and recreation space.
- A dominant main street (Great Ocean Road) that is linked to the ocean and acts as the major town entry and exit.
- Relatively small commercial centres that are directly linked to main arrival route, with significant buildings such as Hotels and civic uses linked to the main street and key recreation settings.

Torquay has always been different to the Great Ocean Road townships in that:

- The main road (Surf Coast Highway) runs ‘behind’ the town, effectively acting as a bypass to the coastal edge and drawing commercial activity away from the Esplanade. This is a place with several commercial ‘centres’.
Development has not been limited by landform and as a result, residential development has moved away from the coast in often generic suburban patterns that do not reflect the coastal landscape.

The residential spread into the surrounding agricultural landscape has been a simple process of subdivision. These areas have generally not retained cultural landscape elements such as windrows, indigenous planting areas or environmental corridors, except creek corridors which have variable quality landscapes.

The town has generally not developed a dominant architectural design tradition or pattern of major public landscapes, buildings and places. In the words of local author Jock Serong, “Torquay has never been pretty in terms of building quality and public space; it has always been about the beach and the coast” (from Torquay — The Little Surf Town that Could).

Current Torquay development patterns suggest:

- The pattern of residential and industrial development in North Torquay is likely to increase road based views to generic suburban housing forms, residential landscapes and commercial development. This is likely to further erode the image of Torquay as a coastal township.
- The length of journey and travel time related to the northern road entry will increase significantly and the pattern of road based views is likely to create the image of a suburb rather than a coastal township.
- Surf Coast Highway has retained a highway scale through the town, up to the start of the Great Ocean Road (Bell Street roundabout). Again, this is likely to create the image of a suburb rather than a coastal township.

What this means:

- Torquay, away from the coastal edge, does not have the dominant natural features, built form characteristics and consistent landscape treatments that typically shape visitor perceptions in other Great Ocean Road townships. It tends to exhibit generic suburban forms that are not place specific. If this area is to develop stronger coastal township characteristics, it is most likely to be achieved through the development of a strong network of cultural landscapes rather than through preservation of existing features or relating all design to a ‘coastal’ theme.
- The overall scale of Torquay has exceeded that of a traditional coastal township and has the potential to appear as a ‘suburb’ to visitors and tourists. Within the study area, design measures that exclude views to new development, reduce the visual scale of the road space and the apparent size of the town centre are more likely to enhance the coastal township aesthetic and the sense of place.
- Identification of the start of the Great Ocean Road is most likely to be effective in the area south of Surf City Plaza (Anderson Street) where there is a direct visual connection to the coast and coastal landforms and landscapes.
Figure 10 - North Torquay Open Space (SCS Plan)
Figure 11 - Pedestrian & Bicycle Access (SCS Plan)
3. Site Analysis
3.1 Existing streetscape design

In terms of the Surf Coast Highway landscape, the study area is influenced by the following:

- The study area is currently a high speed highway environment with cross section characteristics typical of a rural highway - 100km/h and 80km/h traffic speeds, gravel shoulder and swale edges in non developed areas (changing to kerb and channel as sites develop), a mixture of remnant vegetation on road verges, large planting setbacks related to driver safety, overhead powerlines (east side), lighting of intersections only and road based signage systems related to high speed traffic. These design characteristics and the planting offsets and setback requirements that are linked to its role as a highway, reinforce the function and status of the road rather than the emerging use of the study area as part of the Torquay township.

- The town and the study area in particular, appear to function primarily as a car dependent environment where road and parking infrastructure is a dominant visual quality.

- The town generally lacks shade and pedestrian amenity - qualities that would encourage tourists to stop and explore the setting.

- The natural coastal landscape has been fragmented by agriculture and urban development and, away from the coast, does not effectively frame the township. Places like Grass Tree Park and Deep Creek Reserve are key remnants and visual cues to the indigenous landscape type.

- New residential and industrial/commercial developments within the study area include lateral open space corridors that link to Surf Coast Highway corridor. New landscaped buffer areas within the highway corridor are intended to provide the major north-south link within this linear open space system. This will focus attention on the road corridor.

- The residential area south of Grossmans Road directly addresses the highway corridor and is likely to represent a clearly different appearance to new development within the study area. This is reinforced by the decorative approach to streetscape development within this area.

- The Surf City Plaza precinct is a commercial zone that has adopted a specific decorative approach to site planning and landscape development including change in building setbacks, decorative paving treatments, feature median planting and groundcover treatments and feature street furniture. Built form, architectural features (towers, second storey projections etc.) and large scale advertising panels reinforce these perceptions. These design treatments visually define the commercial precinct and for visitors driving through the town on Surf Coast Highway, are likely to suggest that this is the commercial centre of Torquay. The lack of a clear visual and landscape connection to the actual commercial centre on Gilbert Street / The Esplanade reinforces this perception.

- Residential streets in the area between the Highway and Esplanade have relatively uniform widths with a mixture of remnant indigenous planting and poor quality street planting (small, mixed tree species) with visually prominent overhead services. As a result, these residential areas do not visually represent a high quality coastal environment or the special function of some roads as major links between the highway and the Esplanade. Prominent road signage is used to compensate for the lack of spatial hierarchy and visual cues within the setting.

- Public spaces and road corridors generally lack shade, enclosure and visual amenity. Visitor perceptions are likely to be influenced by these qualities.

What this means:

- The Surf Coast Highway within Torquay retains 'highway' design characteristics and safety setback provisions which will limit new planting and other design qualities despite being developed for other specific purposes - landscape corridor, recreational trail link, residential setting etc. Changing the speed limit and potentially the status of the highway within the study area is critical to enabling long term long term development of the study area.

- Torquay exists as a series of precincts rather than a single township and it is important that each precinct develop its own visual character based on landscape and built form. It would be inappropriate to duplicate or imitate the Surf City Plaza street treatment within the study area. Developing clear visual differences between these two areas is likely to be beneficial to the image of Torquay as a place.

- Way-finding is a problem in Torquay. Landscape, visual and spatial variation should be used to enhance the sense of location within Torquay and to define main travel routes through the township. Signage, although required to provide critical statutory functions, should be seen as a secondary means of orientation where possible.

- There is significant value in having Torquay appear to be a 'town within a landscape' rather than a series of landscape elements within a built up area. This implies that public landscapes need to have a scale, consistency and level of continuity in order to present as a visually coherent system.

- The town generally lacks visual amenity and the qualities that visitors are likely to associate with high environmental values, sustainability, landscape quality, residential and recreational amenity - qualities such as shade, wind protection, enclosure which suggest an 'oasis' to the traveller.
3.2 Existing & proposed land uses

Existing and proposed land uses are summarised in Figure 12. Torquay is undergoing significant development in the area adjoining the study area which will result in the following overall changes:

- A new commercial estate (West Coast Business Park) with large scale building forms, vehicle related infrastructure, vehicle movement and corporate advertising. SCS Consultation results suggest there is specific community concern about the visual impact of commercial development on the character of Torquay. Planning permit conditions require:
  - Protection of existing trees
  - Development of a 30m wide visual protection buffer along the Surf Coast Highway frontage, incorporating a 2m wide pedestrian path.
  - Development of a 50m wide amenity buffer between West Coast Business Park and the adjoining development to the south.

- A new Surf Coast Community and Civic centre and sports precinct with related built form and landscape changes. This development will generate significant pedestrian and vehicle movements and act as a major public landmark within Torquay with both day and night use.

- A new proposed secondary school development immediately north of the Civic Centre precinct, with connections to adjoining open space and recreation networks. This development will generate significant pedestrian and vehicle movements and act as a major public landmark within Torquay with both day and night use. The design of the facility has not been established but the visual quality of the development from the highway will be important.

What this means:

- A significant increase in residential development fronting the highway with associated changes to:
  - Built form
  - Increased lighting levels
  - Vegetation loss within housing road edge reserves.
  - New and more diverse range of planting styles within the residential environment
  - More complex road based views to housing areas (colours, materials, shapes and spaces)
  - Increased levels of pedestrian and bicycle movement
  - An increase in traffic lights

- A possible increase in highway lighting levels and generally higher levels of ambient and site specific lighting within new developments.

- A likely increase in the recreational use and development level of Grass Tree Park Nature Reserve and Deep Creek Reserve.

- An increase in pedestrian and bicycle movement within the highway road reserve.

- A clearer visual distinction between formal parks and other land uses. The overall level of ‘green space’ will decrease and the character of Torquay in this location will change from an undeveloped, green character to an urbanised visual character.

- A new, continuous roadside linear reserve system will develop as a result of open space contributions with the potential to cater to a range of recreation, landscape, environmental and visual management requirements and to link land uses.
Figure 12 - Existing and Proposed Land Use
3.3 Cultural heritage values

Aboriginal Affairs Victoria Cultural Heritage Management Plan database has no specific records of significant sites within the study area.

Grass Tree Park Nature Reserve does have a range of community values related to conservation and recreation values and the specific management requirements related to the status of the Heathland vegetation community which are detailed within the Grass Tree Park Nature Reserve Management Plan 2004.

3.4 Climate

As a coastal environment, Torquay is subject to strong wind conditions (south and south-westerly in the winter) that:

- Has a significant impact on pedestrian amenity and seasonal outdoor use.
- Has the potential to create safety issues for cyclists in elevated or unprotected locations, particularly highway bike lanes where they would be positioned adjacent to high speed traffic.
- In combination with soil type, the level of wind movement increases the level of surface evaporation and transpiration rates in plant material. This is a relatively dry environment which will limit plant species selection and potentially growth rates.
- Salt laden winds are a factor in plant growth and condition, but a lesser consideration in the study area than close to the coast.
- The study area is at the northern edge of Torquay and a significant distance from commercial centres. Pedestrians and cyclists using the highway trail system and adjoining open space reserves will require support in the form of rest areas, shelter, drinking water and toilets at key intervals.
3.5 Vegetation & ecological values

Vegetation within the study area is a combination of:

Remnant exotic tree species (mainly Pine and Cypress), mainly located at the northern end of the study area, particularly the South Beach Road intersection.
- Generally located along old fence lines, acting as wind row and shelter planting for past agricultural activities.
- Remnant plantings are generally incomplete and in poor condition (wind damage) with minimal ecological value, although they may provide nesting sites for birds.
- These plantations are important visual markers that represent the cultural history of the area, direct views to and from the road and provide a large scale visual element within the highway corridor.
- These planting areas are not listed as significant within the Surf Coast Shire planning policy framework.

General road planting (mixed indigenous and native species) located through the study area.
- Generally located along road and reserve edges and in medians as older plantations of mixed indigenous species (Eucalyptus, Allocasuarina and Banksia) and native species (Acacia, Hakea, mixed Eucalyptus and other species).
- These remnant plantations are generally intermittent with varying plant densities and understory planting.
- These plantations can contain valuable indigenous species and high quality feature trees but the overall visual impact of this planting is weakened by the mix of generic highway species, uneven planting densities and planting setback restrictions. Planting in these situations typically does not look like either remnant indigenous vegetation or a specific cultural landscape and can have the effect of making all areas look visually similar regardless of their location or purpose.
- The Dickens median plantation has a local level of significance for the community and likely to be viewed as a feature to be retained in its current form or with minimal change.
- These planting areas are not listed as significant within the Surf Coast Shire planning policy framework.

Recreation and Conservation Reserve areas (indigenous species with some non native intrusions).

Grass Tree Park Nature Reserve

The vegetation in Grass Tree Park is comprised of a mosaic of ecological vegetation classes dominated by Sand Heathland and Heathly Woodland. Sand Heathland is a treeless heathland with a dense heathy shrub layer consisting of a diverse range of shrubs such as Silver Banksia, Prickly Tea-tree and Fringe Myrtle, with scattered Grass Trees, sedges and other low growing species. In the Heathly Woodland, similar shrubs, grass trees and sedges occur, along with scattered low eucalypts such as Messmates, Manna Gums and Swamp Gums. These vegetation communities adjoin the Surf Coast Highway for most of the length of Grass Tree Park. At the vehicle pull in area off the Surf Coast Highway, the more modified central area of the Park becomes visible. This central section of the Park is dominated by weed species such as Carpet Weed, introduced grasses and woody weeds such as Coast Tea-tree. However, it is not highly visible from the Surf Coast Highway and weed issues and landscaping will be addressed as part of a master plan for the Park, planned to commence later this year.

Deep Creek Reserve

The Deep Creek Reserve contains two Ecological Vegetation Classes (EVCs): Grassy Woodland and Heathly Woodland/Damp Heath Scrub Complex. The riparian area supports species conditioned to wetter soils, such as ferns, sedges and rushes, through to species that have a preference for drier sites.

The flora diversity of the reserve is high. Approximately 90 species of indigenous species have been recorded from the reserve, reflecting gradients associated with soil types, hydrology and coastal influences.

Planting under the Surf Coast Open Space Strategy is generally to be based on indigenous tree, shrub and groundcover species based around massed plantings of sustainable plant communities, with extensive tree planting to provide shade and avenue plantings along pathways. What this means:
- Cultural planting remnants are important visual markers and should be retained and enhanced where possible.
- Existing road corridor vegetation is generally low to moderate in quality and provides an uneven and ‘generic’ appearance that is not clearly indigenous or clearly cultural in origin. This planting type will require substantial modification.
- The creek and conservation reserve areas are key visual and conservation features that mark specific landforms and locations. They should be highlighted within any future streetscape design.
- The visual impact of vegetation depends on the scale of the planting area, species diversity and quality, as well as the nature of associated views. Fragmented and inconsistent planting patterns are likely to have a minimal or negative influence on visual character.
3.6 Landscape & visual character

Regional landscape types and related values are described in Section 2.1.
The pattern of viewing within the study area is influenced by:
- Driver speed. Higher speed results in a narrower field of perception and a decrease in the detail perceived.
- Road elevation and topographic variation. Views will be drawn to low points and high points.
- Road orientation. Views will focus on the alignment of vehicles (forward views) therefore the importance of views and specific roadside locations will vary depending on the location of the viewer. Intersections and changes in highway alignment are key locations.
- Density and scale of existing roadside vegetation.
- Land use, built form and development density. A complex view with fragmented spatial arrangements and forms is likely to provide a less visually coherent view.

What this means:
- Topography and road orientation direct driver based views and potentially reinforce key views, awareness of design features and environmental changes.
- The ridge line south of Blackgate Road (crest), the road realignment opposite the proposed school site (ocean view) and the Deep Creek park system (low point and road realignment) are key locations.
- This is not an environment based on expansive views. Vegetation will be a key limiting factor to views to and from the highway.
- Higher driving speeds require simpler, large scale design treatments.

3.7 Bicycle & pedestrian access

Pedestrian and Bicycle movements/access is shown in Figure 11. Plans illustrate a four level pedestrian and bicycle access system:
- On road bike lanes (2.2m wide) on both carriageways
- Regional level shared path (2.2m wide) within plantation reserves on either side of the highway (Fig 12)
- Regional level shared path systems within Deep Creek Reserve
- Local level shared path networks within housing area linear park systems.

New generators of path activity are likely to include:
- The new secondary school
- Civic centre
- Sports precinct
- Deep Creek Reserve and Grass Tree Park Nature Reserve
- General residential development areas
- Development of the West Coast Business Park

What this means:
- There is likely to be a potentially significant increase in pedestrian and bicycle related travel within the study area. The safety and amenity of the path system will influence the level of use.
- Landscape treatment of the road corridor will have to consider pedestrian/bicycle users in addition to drivers. This may affect planting densities, lighting requirements, road crossing locations, public transport stops and other design factors.
- Lateral desire lines and crossing requirements will need to be factored into the design of road, path and landscape buffer systems.

3.8 Vehicle access

Vehicle access is generally described in Figures 13 - 16
- Access to new development will be limited to key signalised intersections at Glossmans / Coombes / Merrijig / Beacon / South Beach road intersections.
- All internal movement within new developments (including the proposed secondary school) will be via internal road networks. This will maintain the traffic performance and safety of the highway but is likely to lead to more red light stops within the study area and an overall slower average traffic speed south of the South Beach Road intersection.
- The effect of school traffic is yet to be defined but the number of public transport stops and highway crossing movements is likely to increase.

What this means:
- The use of signalised intersections is likely to lead to minimal changes in the safety and performance of the highway but the overall traffic speed is likely to decrease due to more frequent red light stops.
- There will be an increased pedestrian and bicycle use of the road corridor and more road crossing movements, particularly in the area of the civic centre, school and park trail locations.
- There are potentially a range of issues related to the SurfCoast Highway's function as a 'highway' (high traffic speed, noise levels, lighting standards and related roadside hazard reduction), versus its function as a 'local road' and part of a regional and local trail network and landscape system.
3.9 VicRoads requirements

The design and maintenance of VicRoads assets is defined in VicRoads (current) and Austroads (2010) design standards. Currently the road speed changes from 100km/hr to 80 km/hr south of Coombes Road and from 80km/hr to 60km/hr south of Grossmans Road.

Road design and safety is influenced by a range of factors:
- Traffic speed
- Traffic volume
- Road grade
- Horizontal alignment (curve radius)
- Landform adjoining the carriageway (recoverable or unrecoverable slopes)
- Location of existing impact hazards (trees, poles etc)
- Location of intersections and turning traffic

Designing and maintaining the road corridor to achieve a safer highway environment is critically important but also has a significant effect on the appearance and function of the landscape within the road reservation and potentially the amenity of adjoining properties. Reducing traffic speed can have a dramatic and positive effect on landscape development potential and pedestrian / cyclist amenity.

What this means:
- Traffic speed and other design safety factors require spatial clear zones and / or safety barriers that have a potentially major effect on road aesthetics. Factors such as landform and road alignment can increase these clearance distances to the point where new tree planting is eliminated from the road reserve. Reducing traffic speed typically has a major effect on barrier requirements, planting and path locations.
- Traffic speed and particularly high speed truck traffic represents a hazard to on-road cyclists. High wind increases this safety risk.
- There appears to be an inconsistency between the emerging residential and civic nature of the study area and the status of the road as a high speed traffic zone. As the boundary to Torquay has effectively moved from Grossmans Road north to South Beach Road, the road design should in the short to medium term change to a 70km/hr environment which is more consistent with adjoining land uses and on road uses. In the long term, a 60km/hr speed limit would be the design objective (subject to VicRoads approval).

3.10 Services

A dial before dig application indicates the following services within the Surf Coast Highway:
- Powercor Australia (electrical)
- Tenix Networks (gas)
- Telstra Australia (telecoms)
- Barwon Water (sewer / water)

A mainly high voltage overhead power supply is located on the east side of Surf Coast Highway. These assets are administered by Powercor Geelong.

The overhead infrastructure has a major visual and landscape impact on the site through:
- Direct views of poles and overhead cables
- Protective barriers where poles fall within the clear zones
- Tree clearances and canopy pruning to protect assets

Major issues related to the modification of undergrounding of overhead services are:
- Powercor provide quotations for the assessment of existing assets and new design proposals. Cost relates to the scope of work.
- The cost of undergrounding high voltage assets is more than low voltage assets and is likely to include sub station works within the study area.
- The value of replacing an existing aged asset with a new asset (avoidance cost) is factored into the estimated cost of new works.
- There is now no government funding scheme to cover costs related to undergrounding of assets. The cost of the works is borne by the customer (Surf Coast Shire)
What this means:
- Power line infrastructure has a major visual impact on the study area, both directly and as a result of related vegetation clearance.
- Undergrounding is likely to be a high cost item. Partial undergrounding at critical visual locations such as the school/civic centre location is likely to be more achievable than undergrounding all assets within the likely time frame of this project.

CFA requirements
The study area is covered by CFA District 7.
- Under AS 3959 wind break plantations and vegetation areas of less than 20m width (no length limit) are excluded from consideration as a specific fire hazard. On that basis the study area is not likely to be considered a specific fire risk to adjoining land uses, although the flammability and condition of plant material should still be evaluated.

### 3.11 Signage

Signage within the study area includes the following categories:

- Mandatory signage systems
  - Road traffic management
  - Street names
  - Hazard warning
  - Civic bylaws notification

- Optional or non site specific signage systems
  - Town entry
  - Feature way finding
  - Tourism feature identification
  - Community services awareness and events
  - Current or seasonal events
  - Commercial locations and key uses

Torquay and the study area appears to have a relatively large number of signs, signage levels and graphic styles which are the result of:
- Incremental development of the signage system over time
- The heavy dependence on Surf Coast Highway as the main entry road and tourist route has resulted in all signage being focussed on this corridor. The highway has tended to perform an 'advertising' role as a result of the concentration of drivers.
- The highway not passing through the actual civic centre, but taking on some of those civic functions.
- The design of the urban environment has tended to be relatively uniform in appearance (road widths, landscape etc) which results in an environment with little visual 'structure' or meaning. An elaborate signage has been used to provide a visual structure and way finding.

What this means:
- The study area is likely to always have a relatively large number of signs as a result of its shared regional and local transport and its civic function. Signage should be simplified, co-located and minimised where possible.
- The South Beach Road intersection is likely to function as the new edge of Torquay and therefore general/statutory signage functions and tourism related signage are likely to move to this area.
- Civic design and landscape design should be used to provide non verbal visual cues where possible to assist with visitor orientation. Signage should be used to support environmental design where possible.
Figure 16 - Analysis Detail

Good quality indigenous vegetation

New town entry can commence at ridgeline. Potential 80km/h speed limit

Potential indigenous vegetation plantation

Good quality windrow plantations represent the cultural landscape of the region
4. Opportunities & Constraints
Figure 17 - Opportunities

**COMMERCIAL CENTRE**
- Change to road cross section
- Formal planting in parking lanes
- Decorative ground surfaces

**LANDSCAPE ENTRY / ENVIRONMENTAL ZONE**
- Simplified indigenous median planting
- Full indigenous revegetation to creek zone
- Indigenous planting to development edges
- Maintain views to key environmental features

**LANDSCAPE ENTRY / VISUAL SCREEN**
- Simplified indigenous median planting
- Screen planting to industrial developments
- Indigenous planting to development edges

**LEGEND**
- Indigenous vegetation
- Full EVC planting
- Selected indigenous vegetation
- Selected EVC plant species only
- Path system
- 2.5m shared use path & local paths
- Pedestrian rest area
- Seating, shelter and water
- Main intersection
- Signage, intersection
- Possible tourist stopping place
- Vehicle parking and information
- Planting feature
- Visual identity for major roads
- Key view lines
- Major road based views
- Screen planting
- Screening for industrial and residential estate
- Bus stop
- Possible public transport stop
- Town entry precinct
- Town entry visual character areas
- Overhead powerlines change
- Priority undergrounding location

New indigenous planting within parking lanes
Select indigenous planting to road edge
New road level pedestrian bridge
Possible Darlan rd tourist route
Screen planting to outside of shared use path
COMMERCIAL ESTATE
HOUSING ESTATE
LANDSCAPE ENTRY / CIVIC USES
Simplified indigenous median planting
Full Indigenous revegetation to Grass Tree Park
Modified indigenous planting to developments
Key civic activities & visual identity

CULTURAL LANDSCAPE / FORMAL TOWN ENTRY
Full indigenous median planting
Full Indigenous revegetation to verge or existing plantations
Key town entry signage
Potential tourist stop & information point
Potential start of South Beach Road tourist drive

Future development of Grass Tree Park for conservation & recreation

Screen planting to outside of shared use path

Commencement of formal town entry landscape
4.1 Key Opportunities & Constraints

The analysis process indicates a range of broad design and management factors that are likely to influence design within the study area.

- Torquay has design qualities which are different from other Great Ocean Road townships. Design within the study area cannot rely on existing environmental qualities and landscape features to establish a visual identity for the town entry; it must establish its own design framework. In this respect, the study area may be better represented as a specific environmental 'precinct' within Torquay, rather than part of a continuous linear design treatment based around the highway.

- There is a major risk that the study area will appear as a 'suburb' rather than part of a coastal township. This suggests that at least part of the design should be directed toward isolating road-based views of surrounding land uses as well as screening specific industrial views.

- The design should focus on developing Torquay as a 'place' with high environmental quality and amenity. Image branding should be a secondary concern and focussed on places where the visual environment is capable of supporting the branding theme - the town entry at South Beach Road intersection; commercial hub at Surf City with clear links to the Oliverside; Great Ocean Road at the Bell Street roundabout.

- The highway within the study area is currently expected to remain a highway, with the environmental effects, design, safety and management constraints that are linked to high speed/high volume transport. There are compelling reasons for the design of this section of highway to change to recognise adjoining land uses and the integral part that the highway corridor will play in the local trail network; that is for the road to be reduced to 70km/h at South Beach Road and become part of a local residential and civic environment, albeit that the capacity of the road would remain high.

- As the surrounding landscape changes through development, existing conservation reserves will become more important for recreation, conservation and visual amenity purposes. These areas must be brought into the road corridor and highlighted as regional features.

- Indigenous planting or culturally linked planting styles (wind row plantations) are appropriate for the site but the application must be suited to the setting. Full EVC planting is likely to be unsustainable in narrow roadside planting situations.

Opportunities

- A negotiated reduction in the designated highway speed to 70km
- Undergrounding of overhead services in at least key locations to allow for additional tree planting and changes to the scale of road spaces.
- Land acquisition to allow development of a visitor rest area, town entry signage and graphic identity adjacent to the civic precinct and school or South Beach Road intersection.
- Development of a network of pedestrian rest areas within the trail system.

Constraints

- The cost of power line undergrounding
- VicRoads approval of traffic speed reductions in advance of property development
- Land acquisition to allow for the development of a tourist stopping place
- Land acquisition to allow trail development
- Timing and establishment of trails and landscape within amenity buffers
- Management of existing planting on private land
- VicRoads approval for an additional traffic exit/entry related to a tourist stopping place
Figure 18 - Proposed Torquay Landscape Entry Zones
5. Design Concept
5.1 Design vision and objectives

The Surf Coast Highway road entrance will influence the perception of the town by visitors, tourists and local residents and represent the nature of Torquay as a Place and part of an iconic coastal landscape setting. The design vision is to reinforce the quality and identity of Torquay as a Place for both local residents and visitors. The Torquay entrance should provide a memorable visual experience that represents qualities that define Torquay as a Place and a community. These themes include the following:

Coastal township
The visitor should feel as though they are entering a coastal township, not a 'suburb by the sea'. This will be expressed by:
- The development of broad 'landscape zones' (Figure 18) that visually define the journey from rural hinterland (valley landscape), through the study area (environmental zone), the town centre and then the Great Ocean Road area.
- Controlling views of large scale development from the highway
- Visual focus on existing natural landscape features and civic settings
- Establishing visual differences between the approach landscape (the study area) and the town centre landscape design (the area south of Darian Road)

Coastal system
Torquay should be perceived as a 'place on the coast' with landscape and environmental qualities that are consistent with a coastal setting. This will be expressed by:
- Enhancing existing reserves, landforms and natural landscape features
- Utilising indigenous plant species in a consistent, large scale and self-sustaining manner
- Removing visually incompatible vegetation types, service features and signage elements

Environmental quality and sustainability
Torquay should be perceived as a setting with high environmental quality and a community which values environmental sustainability. This will be expressed by:
- Consistent, large scale use of indigenous vegetation
- Retaining and developing natural 'systems' such as drainage lines and wetlands
- A visual balance between built forms and landscape elements
- Removing incompatible landscape elements, including generic highway vegetation types
- Undergrounding power lines where possible to reduce visual impact, particularly in the initial entry location which includes the Civic precinct and Grass Tree Park

Nature based leisure
Torquay should be perceived as a place where nature based leisure is part of the culture of the place through surfing and beach culture and as an integral part of people's lives. This will be expressed by:
- The overall quality of open spaces, landscapes and environment
- The quality and amenity of the major path network and level of information provided to users
- The bold use of graphic design at the entry and key signage locations which link to the surf culture of the town

A youthful and diverse community
Torquay should be perceived as a vibrant, youthful and diverse culture where change, innovation and individuality are part of the community and the environment. This will be expressed by:
- The bold use of colour and sculptural design forms within the entry landscape and Visitor Orientation Bay setting

Function
Torquay landscape and infrastructure elements should be specific to its purpose and represent contemporary design standards. This should an environment that favours pedestrians and caters to their needs to the greatest extent possible. The highway must retain its transport functions but must also function as a local access road, a pedestrian use area and environmental corridor.
- Elimination of redundant and inconsistent infrastructure.
- Infrastructure design that is site specific and specifically related to current land uses and community needs rather than highway functions alone.
- Design for all abilities and for a range of user types
5.2 Key design elements

South Beach Road approach

The approach from the north will identify the approaching township and the actual town entry at South Beach Road. This road section will provide the first speed reduction zone (100km/h to 80km/h) and visual awareness that the driver is entering the town through a change in topography (uphill section) and an improvement to verge landscapes.

1. Encourage new Ecological Vegetation Class (EVC) screen planting within private properties. Removal of poor quality window plantations or existing non EVC vegetation as appropriate.
2. Selective removal of non EVC planting from highway median where possible and replanting with selected indigenous species, primarily Grassy Woodland EVC 175 species including Eucalyptus leucoxylon ssp. Bellarinensis (Bellarine Yellow Gum) and Eucalyptus radiata (Narrow – leaf Peppermint)
3. Speed restriction to 80km/h
4. Speed restriction to 70km/h
5. Statutory regulation sign
6. Screen planting to housing estate
7. New roadside tree planting to South Beach Road in accordance with Surf Coast Shire Tree Species Selection Criteria guideline document.

Secondary School entry

The school entry space, with the visitor stopping place and Civic Centre, forms part of a composition of visual elements that are intended to identify the town entrance. Development of the school edge landscape will include screening of parking areas.

Visitor Orientation Bay

The visitor orientation bay provides parking for normal and over size vehicles (caravans etc) and information relating to Torquay and the Surf Coast. A decorative feature, including paving and textured glass columns, will be developed in this location to visually identify the entrance to Torquay and link the main visitor arrival point with other civic precinct features.

8. Parking (incl. caravans and over dimension vehicles)
9. Information panel on sculptural tiled wall
10. Feature tiled form with textured glass columns (including internal lighting) to represent the formal town entry point and visitor arrival area.

Civic Centre setting

The Civic Centre is an iconic function within the town, with a contemporary design that incorporates many of the values and objectives identified in Section 5.1. Existing site features are retained with additional road edge planting to integrate new and old features, including the shared use path system.

11. New paving link to shared use path system
12. Powerlines are proposed to be undergrounded within the road section from South Beach Road to Beacon Boulevard.

Grass Tree Park

Grass Tree Park will be subject to a future Master Plan. A possible future change is that the existing parking area would be redesigned to provide for a new park arrival point which would be linked to recreation and conservation areas within the park. The highway edge of the Park will be revegetated and integrated with the proposed major path system.

West Coast Business Park

The business park is a major new land use that is intended to have a low visual impact on the highway and adjoining land uses. Planting treatments must provide visual screening but also allow for safe movement (visibility and lighting from the highway) along the adjoining major path system.

13. Existing signage with new decorative paving surround
14. New screen planting to development edge
15. New open woodland and groundcover planting on the road side of the path.
16. New random spaced woodland planting to Beacon Boulevard nature strip to restrict views from the highway to the side of the development.

Surf Coast Highway Housing Estate

The design proposes that the estate will be screened from highway views where possible and that this section of road blends with the environmental and visual character of the Deep Creek Reserve.

17. Screen planting to housing side of shared use path
18. Possible new pedestrian rest area and recreation space.
19. New wetland and water treatment feature within the expanded drainage reserve (not part of study area)
20. Path and wetland / drainage line features developed to provide a high quality landscape and visual experience for path users (not part of study area)
Deep Creek Reserve
The design of Deep Creek Reserve is subject to a separate Master Plan. The environment of this area will be rehabilitated and integrated with the new highway planting and path systems.

21. Possible new local path connections
22. New pedestrian bridge (potentially attached to road bridge)
23. New main path rest area

Median planting
The median plantation is a key landscape feature that has the potential to visually link all other landscape edge treatments. The design objective is to remove all non-indigenous trees, shrubs and groundcovers and to develop the plantation as a simple, open woodland with planting based on key EVC Eucalyptus species and groundcovers only. Lawn will only exist at the end of plantations where sight lines need to be maintained.

Surf Coast Highway central
The Darien Road / Grossmans Road intersection marks the entry to the town ‘centre’ and includes a transition to a more intensive and decorative landscape style. Darien Road is also a possible entry way and tourist route to the main Torquay retail centre via the Esplanade. The suggested modifications to existing landscape treatments (not part of study area) are intended to achieve a change in visual scale and a more intensive, green landscape appearance.

24. Proposed kerb extensions with additional tree and ground cover planting (not part of study area)
25. Modified centre median planting and ground surface treatments (not part of study area)

5.3 The Visitor Orientation Bay entry feature

The southern end of the Visitor Orientation Bay includes a series of design elements which mark the location as a visitor destination and, along with the Civic and Community Centre structure, forecourt sculpture and new landscape elements, form a composition of visual elements that represent the new entrance to Torquay.

Purpose
The decorative entry feature is intended to function as a three dimensional sculptural form which graphically represents qualities that define Torquay as a place and a growing community, including the following:

- Torquay as a place on the coast. A place with a specific relationship to its environment. A place that is aware of its environment and weather and the effect of these elements on people and their activities.
- Torquay as a place with a fresh, contemporary and youthful culture.
- Torquay as a creative community with a culture that embraces change.
- Torquay as a place where leisure, surfing and beach culture are integral to the life and identity of the community.

Design elements
The entry feature is based around three main design elements:

Mosaic tile pavement and sculptural mound extend along the edge of the pathway and provides a setting for the visitor orientation signage panels and the sculptural glass forms. These coloured glass and ceramic tiled areas will, through their form and colour, represent the coastal landscape – the greens and greys of the coastal landscapes, the yellows and oranges of the beach and the blues of the ocean.

Textured, opaque glass columns or shaped panels ranging in height from 3m to 5m will be a visual focal point. The arrangement of shapes will appear differently from different viewpoints and with different visual backdrops.

To distant viewers and road users these objects will be interesting sculptural forms that pick up the colours of the surrounding landscape, the sky and the changing weather. They will alter their appearance during the day and night with subtle changes in lighting (internal) and colour and they will change with the weather and the colour of the sky.

To pedestrians and cyclists the glass forms will exhibit the same changeable qualities related to light and surrounding colours but they will also have surface patterns, shapes, words and textures cast into the surfaces that represent coastal landscape features, artefacts and stories that describe the community and its cultural history. They will be objects to be explored and discovered.
The third design element will be the landscape. This combination of tree and groundcover planting will provide a richly textured ground surface to complement the sculptural elements and represent qualities of the coastal landscape. Trees will also focus views and emphasise the visual relationship between the sculptural features and building forms which collectively represent the town entry.

**Detailed design of the entry feature**

Design of the decorative entry feature will be subject to a future detailed design and modelling process which will assess the form, scale, location and materials to be used and the relationship of the entry feature to other site features. This detailed design study will be subject to a community engagement and Council approval process.

### 5.4 Design status

The design presented in this report is conceptual in nature and may not reflect all on ground conditions or technical requirements. Please note the following:

**Traffic speed**

SurfCoast Shire will aim to negotiate a 70km/hr or 60km/hr speed limit once the area becomes further developed. Traffic speed changes must be approved by VicRoads.

**Visitor Orientation Bay**

The location and detailed design of this facility must be approved by VicRoads.
Figure 19 - Concept Design
Figure 20 - Detail 1
Figure 24 - Section C
Figure 26 - Section D
Figure 29 - Section E
6. Implementation & Cost
6.1 Indicative costing

Based on typical industry construction rates, the indicative only cost range for the proposed works are:

- Works area 1 $1,257,000 - $1,505,000
- Works area 2 $812,000 - $1,050,000
- Works area 3 $711,000 - $956,000

Total cost for all areas $2,790,000 - $3,511,000

All costs are without GST. Further details are provided in Appendix 3.

6.2 Funding sources

The proposed works are likely to be funded from a variety of sources and implemented in stages over a number of years. Potential funding sources include:

- Surf Coast Shire programs.
- Department of Planning and Community Development – Community Works Program.
- Land developer contributions.
- Landcare programs.

6.3 Implementation strategy

The cost of the construction works, land availability and other factors will prevent the Torquay Entrance landscape works from being implemented in a single construction stage. A detailed, multi-stage implementation strategy will be developed and administered by Surf Coast Shire. The following factors are likely to influence the Strategy.

Works priority influences

- Not all land within the study area is currently available. Land contributions related to property development will only become available when the land is subdivided and no works can occur until that time.
- Land that will become available through the subdivision process may need to be modified to achieve grading and drainage requirements. This is likely to prevent early works and may impact on adjoining road reservation.
- Designated traffic speed has a direct influence on safety setbacks, planting and infrastructure locations. As a change in road speed is likely to be related to future school development and other land use changes, short-term works will be limited.
- Overall Council funding will be limited and it is likely that the works can only be funded over a multi-year timeframe.
- Construction scale and complexity has a direct influence on construction cost. It is likely that some major cost items such as undergrounding of power lines and shared use path construction will occur in larger sections. Simpler elements such as planting can occur in smaller areas/stages as funds and land availability permit.

Likely early works

- Areas where the full land area is available and where there is an immediate visual screening requirement, such as the Bunnings location.
- Areas such as Grass Tree Park and Deep Creek Reserve where there is an existing landscape feature that can be enhanced by further works.
- Areas which will be subject to future commercial and residential development where there is a future visual screening requirement.
- Areas where there is an existing environmental rehabilitation or stabilisation requirement. This could include areas that are subject to weed infestation, erosion or degradation through existing land use (for example the old VicRoads material dump).

Likely later works

- Areas that are subject to land acquisition or areas that may be subject to future changes to levels and surface drainage.
- Areas subject to vegetation removal. The concept is that new planting should be established before existing undesirable planting is removed in order to minimise the visual impact of vegetation removal.
- Changes related to future road speed changes or land use developments (such as the school or community precinct).
6.4 Works coordination

Surf Coast Shire will prepare and administer a detailed implementation plan. The following elements will be critical to this process:

- The plan must be coordinated through a key responsible person (KRS) or team that can be a centre for information, enquiries, decision making and action.
- The Implementation Plan must be developed to include a program of key dates relating to land availability, land development, land management, road speed and other changes.
- The Plan and subsequent detailed site design must include guidelines to coordinate design elements such as fencing and pathways in adjoining land developments which are likely to have an impact on the study area.
- The Plan must recognise the role and importance of community engagement in the implementation process and coordinate these inputs with construction activities.
7. Appendix
Appendix 1

Environmental Vegetation Class (EVC) Types
EVC/Bioregion Benchmark for Vegetation Quality Assessment
Otway Plain bioregion

EVC 175: Grassy Woodland

Description:
A variable open eucalypt woodland to 15 m tall or occasionally Sheoak woodland to 20 m tall over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on sites with moderate fertility on gentle slopes or undulating hills on a range of geologies.

Large trees:
- Species: Allocasuarina saligna
  - DBH (cm): 70
  - % ha: 75
- Species: Allocasuarina verticillata
  - DBH (cm): 40
  - % ha: 25

Tree Canopy Cover:
- Character Species: Allocasuarina verticillata
- Character Species: Allocasuarina saligna
- Common Name: Narrow leaf Ironbark
- Common Name: Golden Wattle
- Common Name: Drooping Sheoak

Understorey:
- Life form: Allocasuarina saligna
  - Percentage Cover: 10%
- Life form: Allocasuarina verticillata
  - Percentage Cover: 10%

Recruitment:
Continuous

Organic Litter:
20% Cover

Logs:
2.5 m/ha

Weediness:
- LF Code: T
  - Common Name: Atriplex
- LF Code: M
  - Common Name: Miconia

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For more information contact: Customer Service Centre, PO Box 196, Melbourne, Victoria 3001, Australia.

www.dse.vic.gov.au
Appendix 2

Typical Planting Safety Offset Requirements
If the slope is 3.5:1 (horizontal : vertical) or steeper, none of the slope may be included as part of the clear zone width (see below). The clear zone must include at least 3m beyond the toe of the better.

Half the slope may be included if the slope is between 3.5:1 and 6:1 (see below). If the clear zone extends to or beyond the toe of the better, the clear zone must include at least 3m beyond the toe of the better.

The entire slope may be included if the slope is 6:1 or flatter.
Appendix 3

Construction works indicative costing
### Torquay Entrance Landscape

**Indicative only opinion of probable costs - Landscape Works Area 1**

**Prepared by Tract Consultants - Rev. 01 of July 2012**

#### Funding sources

The proposed works are likely to be funded from a variety of sources and implemented over a number of years. Potential funding sources include:

- Surf Coast Shire programs
- Department of Planning and Community Development - Community Works Program
- Land developer contributions
- Landcare programs

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#### Schedule of Rates

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<th>QNT</th>
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<td>- Raking 30 square meters of concrete paving and 7 poles</td>
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<td>$ 9,000</td>
<td>12,000</td>
<td>18,000</td>
<td>$12,000.00</td>
<td>$12,000.00</td>
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<tr>
<td>9. Visitors Information</td>
<td>No</td>
<td>52</td>
<td>$ 500</td>
<td>450</td>
<td>500</td>
<td>$25,200.00</td>
<td>$25,200.00</td>
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<tr>
<td>10. Visitor Orientation Bay</td>
<td>m2</td>
<td>891</td>
<td>$ 100</td>
<td>120</td>
<td>150</td>
<td>$89,100.00</td>
<td>$104,900.00</td>
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<tr>
<td>11. Chairs &amp; Tables</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Path &amp; Pathways</td>
<td>m2</td>
<td>7430</td>
<td>$ 110</td>
<td>1.00</td>
<td>5.90</td>
<td>$817,300.00</td>
<td>$817,300.00</td>
</tr>
<tr>
<td>- Preparation of existing bitumen paving, stoneware paving and internal lighting</td>
<td>m2</td>
<td>7430</td>
<td>$ 110</td>
<td>1.00</td>
<td>5.90</td>
<td>$817,300.00</td>
<td>$817,300.00</td>
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<tr>
<td>- Raking 30 square meters of concrete paving and 7 poles</td>
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</table>

**Landscape Works Total (ex GST)**

$1,220,866.85 - $1,495,716.15

**Establishment Maintenance**

- Maintenance (including but not limited to shade planting of all trees, pruning topping of all existing trees, watering and other minor works)

Weekend 13 295-295 $36,576.38 $33,883.48

**Maintenance Total (ex GST)**

$36,576.38 - $43,883.48

**Precautionary Items**

**Provisional Total (ex GST)**

$1,240,443.23 - $1,449,599.63

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1. Figures provided in the Schedule are approximate only and may not include allowances for all required works.
Torquay - Entrance Landscape
Indicative only opinion of probable cost - Landscape Works Area 2
PREPARED BY TRACT CONSULTANTS - Rev 01 July 2012

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>QTY</th>
<th>Low</th>
<th>High</th>
<th>Cost (Low)</th>
<th>Cost (High)</th>
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<tbody>
<tr>
<td>Preliminaries &amp; Site Establishment</td>
<td>❮br❯ acres</td>
<td>❮br❯ 1</td>
<td>❮br❯ 1%</td>
<td>❮br❯ 1%</td>
<td>❮br❯ $26,575.00</td>
<td>❮br❯ $29,250.00</td>
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<tr>
<td>Site Clearing / Selected tree removal &amp; eradication of invasive works area by inspection (including disposal off site)</td>
<td>❮br❯ m²</td>
<td>❮br❯ 600</td>
<td>❮br❯ 1.0</td>
<td>❮br❯ 1.0</td>
<td>❮br❯ $27,672.00</td>
<td>❮br❯ $30,239.00</td>
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<tr>
<td>Ground Preparation &amp; Re-Surfacing</td>
<td>❮br❯ m²</td>
<td>❮br❯ 15,000</td>
<td>❮br❯ 2.0</td>
<td>❮br❯ 2.5</td>
<td>❮br❯ $20,000.00</td>
<td>❮br❯ $22,500.00</td>
</tr>
<tr>
<td>Preparing of planting areas</td>
<td>❮br❯ m²</td>
<td>❮br❯ 38800</td>
<td>❮br❯ 1.0</td>
<td>❮br❯ 1.5</td>
<td>❮br❯ $34,562.00</td>
<td>❮br❯ $38,088.00</td>
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<td>Walk</td>
<td>❮br❯</td>
<td>❮br❯ 1.0</td>
<td>❮br❯ 3.0</td>
<td>❮br❯ 3.0</td>
<td>❮br❯ $54,901.00</td>
<td>❮br❯ $59,252.00</td>
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<tr>
<td>Edging &amp; Delineation</td>
<td>❮br❯ m²</td>
<td>❮br❯ 600</td>
<td>❮br❯ 600</td>
<td>❮br❯ 600</td>
<td>❮br❯ $14,800.00</td>
<td>❮br❯ $18,000.00</td>
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<tr>
<td>Footpath &amp; Boardwalks</td>
<td>❮br❯ m</td>
<td>❮br❯ 12</td>
<td>❮br❯ 12</td>
<td>❮br❯ 12</td>
<td>❮br❯ $13,960.00</td>
<td>❮br❯ $15,552.00</td>
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<tr>
<td>Site Furniture - Supply &amp; Install as specified</td>
<td>❮br❯</td>
<td>❮br❯ 2</td>
<td>❮br❯ 2000.00</td>
<td>❮br❯ 2000.00</td>
<td>❮br❯ $10,000.00</td>
<td>❮br❯ $15,000.00</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>❮br❯</td>
<td>❮br❯ 2</td>
<td>❮br❯ 2</td>
<td>❮br❯ 2</td>
<td>❮br❯ $15,000.00</td>
<td>❮br❯ $15,000.00</td>
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<td>❮br❯ m³</td>
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<td>❮br❯ 0</td>
<td>❮br❯ 0</td>
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<td>❮br❯ $0.00</td>
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<td>Landscaping Works TOTAL (ex. GST)</td>
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<td></td>
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<td>$798,899.12</td>
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</table>

Establishment Maintenance

| Establishment Maintenance | Weeks | 12 | 99 | 99 | $23,606.64 | $26,600.64 |

LANDSCAPE WORKS TOTAL (ex. GST) | | | | | $33,666.94 | $30,800.25 |

PROVISIONAL TOTAL (ex. GST) | | | | | $812,566.08 | $1,050,500.34 |

1 Figures quoted in the Schedule are an estimate only and may not include allowances for all selected works.

Funding sources

The proposed works are likely to be funded from a variety of sources and implemented over a number of years. Potential funding sources include:

- Surf Coast Shire programs
- Department of Planning and Community Development - Community Works Program
- Land developer contributions
- Landcare programs
### Torquay - Entrance Landscape

Indicative only opinion of probable cost - Landscape Works Area 3

PREPARED BY TRACT CONSULTANTS - FEW 01-27 July 2012

<table>
<thead>
<tr>
<th>Description</th>
<th>UNT</th>
<th>QTY</th>
<th>LOW</th>
<th>HIGH</th>
<th>LOW F</th>
<th>HIGH F</th>
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<td>1. Preliminary &amp; Site Establishment</td>
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<td>30h</td>
<td>30h</td>
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<tr>
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<td>45286</td>
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<td>0.76</td>
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<td>3. Ground Preparation &amp; Re-Shaping</td>
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<tr>
<td>a) Re-Shaping of selected areas</td>
<td>m2</td>
<td>15000</td>
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<tr>
<td>a) Supply and spread 75mm depth of garden bed areas</td>
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<td>$49,066.00</td>
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<td>77</td>
<td>69.00</td>
<td>75.00</td>
<td>$4,620.00</td>
<td>$5,775.90</td>
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<td>5. Footpaths</td>
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<td>a) 2.5m wide concrete footpath</td>
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<tr>
<td>b) Tree Planting (including disposal of site)</td>
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<td>77</td>
<td>69.00</td>
<td>75.00</td>
<td>$4,620.00</td>
<td>$5,775.90</td>
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<td>6. Site Furniture</td>
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<td>a) Bench seats</td>
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<td>$3,000.00</td>
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<td>7. Landscaping</td>
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<tr>
<td>a) Precinct Planting - Full EVC Planting</td>
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</tr>
<tr>
<td>i) Trees, shrubs, herbaceous &amp; turf</td>
<td>No</td>
<td>1500</td>
<td>$15.00</td>
<td>$18.00</td>
<td>$21,100.00</td>
<td>$25,480.00</td>
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<tr>
<td>ii) Shrub - Supply and install Tufted box @ 100mm</td>
<td>No</td>
<td>1000</td>
<td>$7.50</td>
<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
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<tr>
<td>iii) Groundcover - Supply and install Tufted box @ 100mm</td>
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<td>$7,500.00</td>
<td>$9,000.00</td>
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<tr>
<td>b) Type 2 Planting</td>
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<tr>
<td>i) Trees, shrubs, herbaceous &amp; turf</td>
<td>No</td>
<td>1500</td>
<td>$15.00</td>
<td>$18.00</td>
<td>$21,100.00</td>
<td>$25,480.00</td>
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<tr>
<td>ii) Shrub - Supply and install Tufted box @ 100mm</td>
<td>No</td>
<td>1000</td>
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<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
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<tr>
<td>iii) Groundcover - Supply and install Tufted box @ 100mm</td>
<td>No</td>
<td>1000</td>
<td>$7.50</td>
<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
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<tr>
<td>c) Type 3 Planting</td>
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<tr>
<td>i) Trees, shrubs, herbaceous &amp; turf</td>
<td>No</td>
<td>1500</td>
<td>$15.00</td>
<td>$18.00</td>
<td>$21,100.00</td>
<td>$25,480.00</td>
</tr>
<tr>
<td>ii) Shrub - Supply and install Tufted box @ 100mm</td>
<td>No</td>
<td>1000</td>
<td>$7.50</td>
<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>iii) Groundcover - Supply and install Tufted box @ 100mm</td>
<td>No</td>
<td>1000</td>
<td>$7.50</td>
<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
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<tr>
<td>d) Type 4 Planting</td>
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</tr>
<tr>
<td>i) Trees, shrubs, herbaceous &amp; turf</td>
<td>No</td>
<td>1500</td>
<td>$15.00</td>
<td>$18.00</td>
<td>$21,100.00</td>
<td>$25,480.00</td>
</tr>
<tr>
<td>ii) Shrub - Supply and install Tufted box @ 100mm</td>
<td>No</td>
<td>1000</td>
<td>$7.50</td>
<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
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<tr>
<td>iii) Groundcover - Supply and install Tufted box @ 100mm</td>
<td>No</td>
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<td>$9.00</td>
<td>$7,500.00</td>
<td>$9,000.00</td>
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<td>8. Hydroseeding</td>
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<tr>
<td>a) Hydroseeding in led areas</td>
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<td>5102</td>
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<td>$711,507.17</td>
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</tr>
</tbody>
</table>

**LANDSCAPE WORKS TOTAL (ex GST)** $580,783.69 $528,755.63

**Establishment Maintenance**

Maintenance (including but not limited to hard wear, cleaning, landscaping and servicing) Weeks: 15 21%

**MAINTENANCE TOTAL (ex GST)** $20,723.51 $27,861.17

**Provisional Rates**

**PROVISIONAL TOTAL: (ex GST)** $711,507.17 $956,586.30

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**Funding sources**

The proposed works are likely to be funded from a variety of sources and implemented over a number of years. Potential funding sources include:

- Surf Coast Shire programs
- Department of Planning and Community Development - Community Works Program
- Land developer contributions
- Landscape programs