Ref: GSBL253_CofA_Targeted Flora Survey_Millbrook Rd

[redacted]

23 August, 2016

Dear Sandra

Re: Targeted Flora Survey – Millbrook Road

The City of Albany (CoA) plans to undertake improvement works to widen and improve drainage along a section of Millbrook Road from approximately 3.4km to 6.5km east of Albany Highway. The CoA requested Great Southern Bio Logic to undertake a targeted Threatened Flora and priority ecological community search of the area to assist design of project works.

Accordingly, the proposed scope of work included:

- Desktop assessment of threatened flora species and communities based on Department of Parks and Wildlife (DPaW) data provided by the CoA and converted to shapefile format;
- Field survey to identify and record target species;
- Development of this letter report and associated site figures presenting the results of the survey; and
- Provision of associated spatial information (ArcGIS shapefiles).

The project area extends for approximately three km along the road reserve which is vegetated on both sides of the road. Known populations of Declared Rare flora (DRF) were the target of the survey, with areas between field marked DRF pegs being the survey focus area.

The vegetation within the road reserves included *Hakea* shrubland/woodland to the west and Jarrah, Marri and, *Eucalyptus staeri* sandy woodland in the east. An occurrence of the priority ecological community, *Banksia coccinea* Shrubland/*Eucalyptus staeri*/Sheoak Open Woodland also occurs in the project area.

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The vegetation within the study area is considered to be in very good to excellent condition according the Keighery Bush Forever vegetation condition scale (Keighery 1994).

Method

Prior to survey, the CoA provided DPaW Threatened Flora data of target species and communities within the project area. The CoA also provided a map of key target regions (Figure 1).

The botanical assessment was performed on 16 August 2016 by Great Southern Bio Logic. The survey methodology was undertaken with reference to the Environmental Protection Authority's Guidance Statement No.51 '*Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*' (EPA 2004).

The target species data provided by the CoA was converted to ESRI shapefiles and uploaded to a Magellan GPS for accurate field survey of the target populations. Vegetation within DRF markers located in the field was surveyed on foot by traversing survey areas in a zig zag formation to ensure full coverage of the extent. Where single or no markers occurred, the region surrounding the co-ordinate location was briefly observed.

The location of individual plants in the field was marked with pink flagging tape, including where plant deaths were recorded. Because of the vegetative form of *Banksia goodii*, the perimeter of population clusters was taped, creating a boundary around the clumping ground cover species. An orange spray paint mark was made on the road adjacent to the occurrences located.

Results and Discussion

The following populations of DRF were surveyed and the associated Figure 2 and shapefile show population locations and extents.

- *Banksia brownii Pop 3C*

DRF marker pegs were only present on the south side of Millbrook Road. No plants were located within the southern road reserve, however, two dead *Banksia* plants were located which may have been *Banksia brownii*. Four plants had been previously recorded from the area which now displays evidence of recent fire.

The locations of the dead plants have been taped in the field and spray paint markers placed on the road. A brief survey of the adjacent northern road reserve was also undertaken which failed to locate any of the species.

- *Banksia brownii Pop 3D*

Only one DRF marker peg was present at this sub-population, on the south side of Millbrook Road facing south into the road reserve. Three plants had been historically recorded at the site. No plants were located within the road reserve during this survey, however, up to three dead plants were located which may have been *Banksia brownii*. The locations of the plants have been taped in the field and spray paint markers placed on the road.

- *Banksia brownii Pop 3E*

The co-ordinate location for this population indicates a point now occurring within a cleared paddock. There were no plants recorded during recent historic surveys and none found during the present survey.

- *Banksia goodii Pop 1E*

This population is recorded as occurring on both north and south sides of Millbrook Road, with 18 plants estimated.

During the present survey, three patches of plants were located within the northern road reserve, with the estimated total number of plants being 100. Because of the low, spreading form of the species identification of individual plants was not possible. The extent of the occurrences was marked with tape and spray paint markers placed on the road adjacent to each.

Within the southern reserve, a further 25 plants were located.

- *Banksia goodii Pop 1F*

This population is recorded as occurring on both north and south sides of Millbrook Road, with 10 plants estimated. DRF pegs were not located on the northern reserve.

During the present survey, three patches of plants were located within the southern road reserve, with the estimated total number of plants being 47. Because of the low, spreading form of the species identification of individual plants was not possible. The extent of the occurrences was marked with tape and spray paint markers placed on the road adjacent to each. A brief survey of the adjacent northern reserve did not reveal any plants.

Priority Ecological community

The Priority Ecological community *Banksia coccinea* Shrubland/*Eucalyptus staeri*/Sheoak Open Woodland also occurred within the project area, at approximately 4.1km east of Albany Highway. The extent of the community was mapped in the field and is provided as a shapefile with this report. The extent of the community at the junction of Millbrook Road was marked with tape and spray paint on the adjacent road.

There was some death of *Banksia coccinea* and *Hakea* sp within the community, however, this appeared to be a staged death which is not indicative of *Phytophthora* dieback. Seedlings were also apparent. Overall the community was in very good condition in accordance with the Keighery scale (Bush Forever, 1994).

Regards

Meredith Spencer
Environmental Scientist

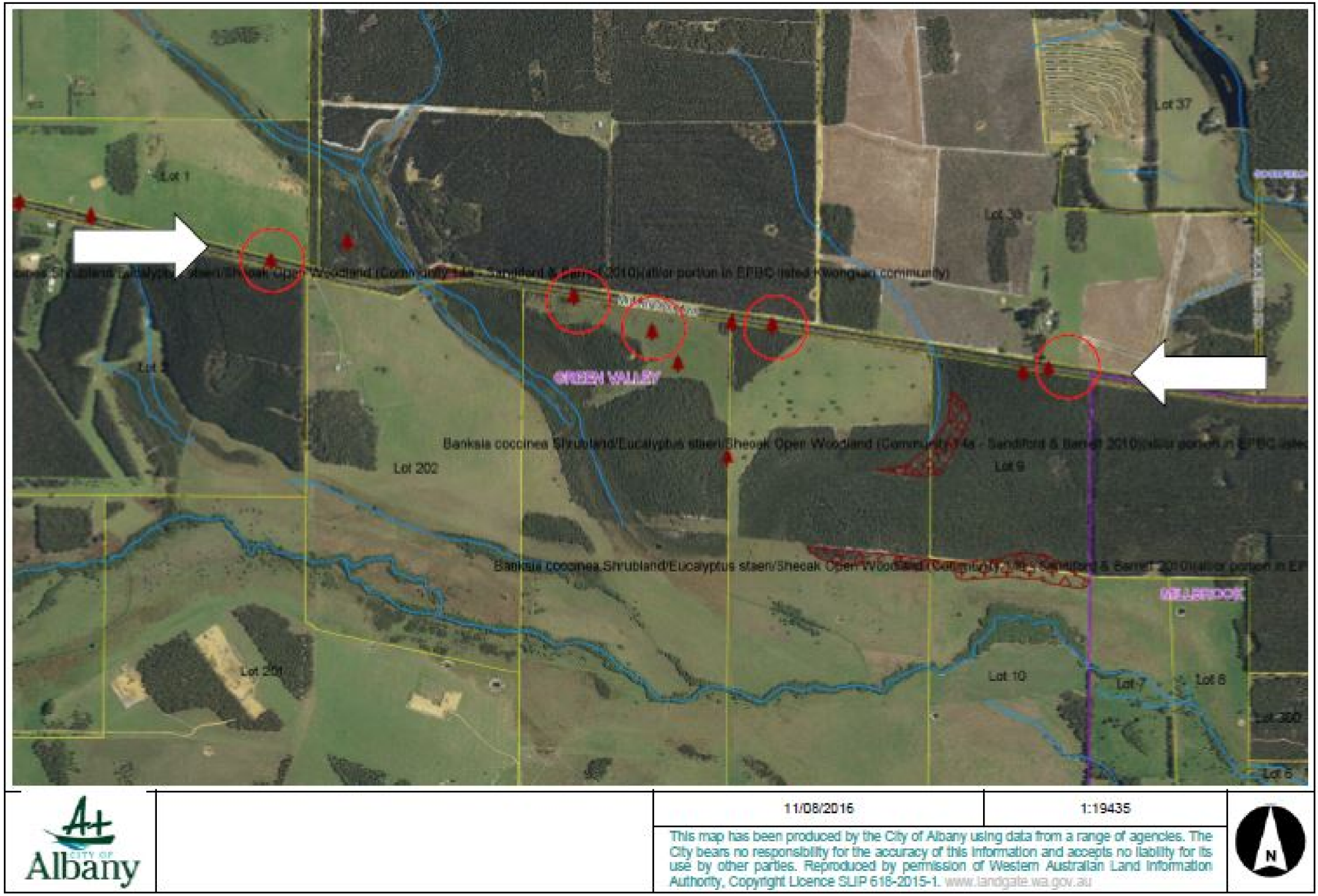

Figure 1 - Target survey areas

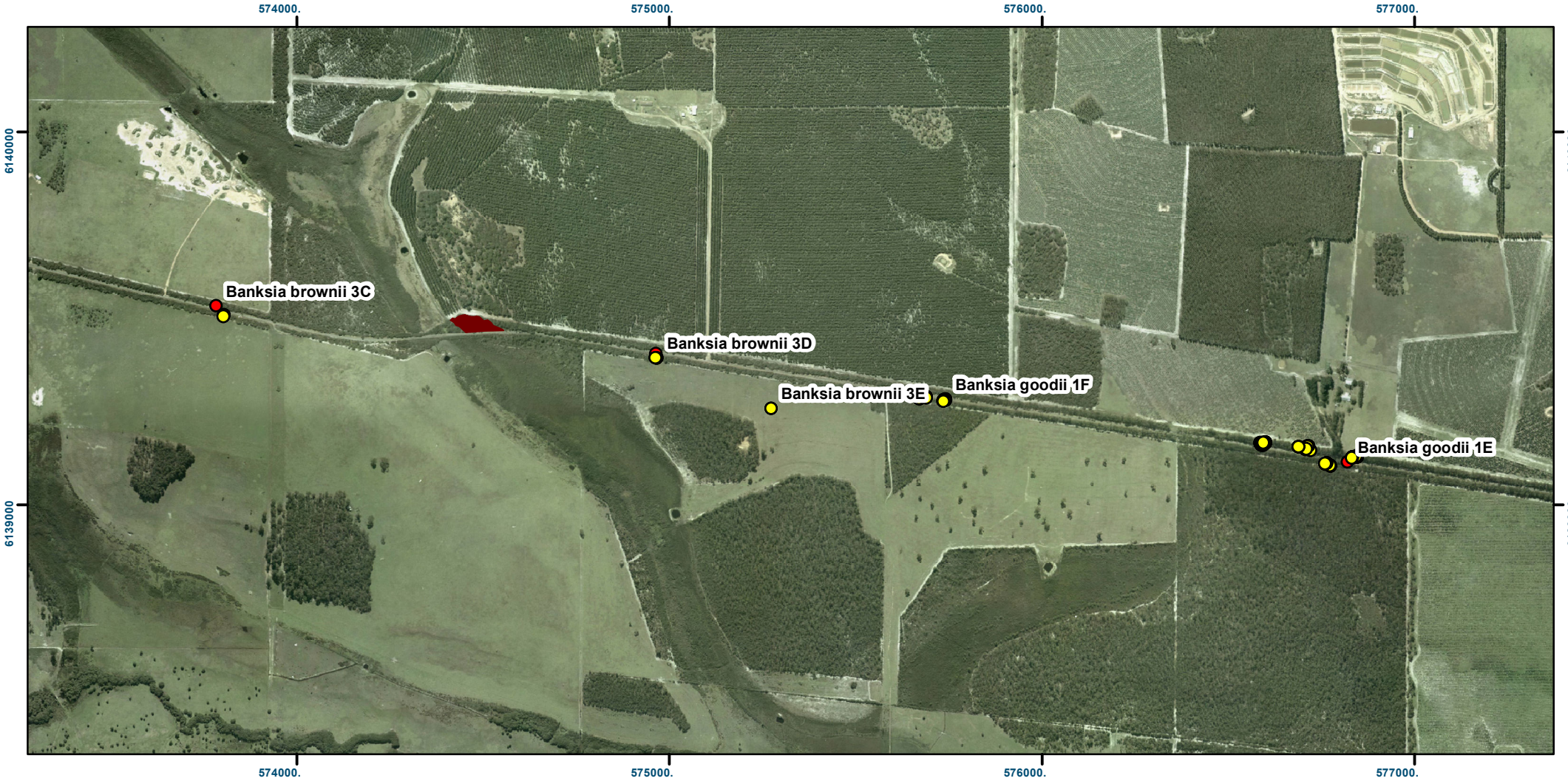

Figure 2: Target flora and communities survey - Millbrook Road - locations of Declared Rare Flora and priority ecological community

Great Southern Bio Logic
environmental solutions

Ref: GSBL253
Date: 23-Aug-16

Targeted flora and communities survey at Millbrook Road, 3.4km to 6.5km east of Albany Highway, prepared for the City of Albany, August, 2016

LEGEND

- Declared Rare Flora
- Priority Ecological Community

N

0 250 Meters

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator

1:15,000