MINISTER FOR THE ENVIRONMENT

Statement No. 000663

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

ROE HIGHWAY STAGE 7 EXTENSION
(SOUTH STREET IN CANNING VALE TO THE KWINANA FREEWAY IN LEEMING)

Proposal: Construction of Roe Highway Stage 7 from South Street in Canning Vale to connect with the Kwinana Freeway in Leeming over a distance of approximately 4.5 kilometres, as documented in schedule 1 of this statement.

Proponent: Main Roads Western Australia

Proponent Address: 1110 Hay Street
WEST PERTH WA 6005

Assessment Number: 1466

Report of the Environmental Protection Authority: Bulletin 1138

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

2 Proponent Commitments

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

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29th FLOOR, ALLENDALE SQUARE, 77 ST. GEORGE'S TERRACE, PERTH 6000 TELEPHONE: (08) 9220 5050 FACSIMILE: (08) 9221 4665/8
E-MAIL: judy-edwards@dpc.wa.gov.au

3 Proponent Nomination and Contact Details

3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.

3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

4-1 The proponent shall substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

1. the environmental factors of the proposal have not changed significantly;

2. new, significant, environmental issues have not arisen; and

3. all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Auditing and Performance Review

5-1 The proponent shall prepare an audit programme and submit compliance reports to the Department of Environment which address:

1. the status of implementation of the proposal as defined in schedule 1 of this statement;

2. evidence of compliance with the conditions and commitments; and

3. the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

5-2 The proponent shall submit a performance review report every five years after the start of operations, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, which addresses:

1. the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;

2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;

3. significant improvements gained in environmental management, including the use of external peer reviews;

4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and

5. the proposed environmental targets over the next five years, including improvements in technology and management processes.

5-3 The proponent may submit a report prepared by an auditor approved by the Department of Environment under the "Compliance Auditor Accreditation Scheme" to the Chief Executive Office of the Department of Environment on each condition/commitment of this statement which requires the preparation of a management plan, programme, strategy or system, stating that the requirements of each condition/commitment have been fulfilled within the timeframe stated within each condition/commitment.

6 Conservation Initiatives

6-1 Within 12 months following the issuing of the notice to the decision-making authorities under section 45(7) of the *Environmental Protection Act 1986*, the proponent shall implement the commitment to contribute to the acquisition of Lots 100 and 101 Gay Street, Huntingdale or an equivalent area of comparable ecological value, and for this land to be incorporated into the conservation estate to be managed by the Department of Conservation and Land Management, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.

6-2 Within 18 months following the issuing of the notice to the decision-making authorities under section 45(7) of the *Environmental Protection Act 1986*, the proponent shall construct the northerly alignment within Reserve 46226 (Jandakot Aa Lot 754, Dundee Street and Fern Leaf Court, Leeming), to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

6-3 Within 18 months following the issuing of the notice to the decision-making authorities under section 45(7) of the *Environmental Protection Act 1986,* the proponent shall demonstrate to the Minister for the Environment how the Mitigation and Offset Strategy (see attachment A) has been implemented.

7 Rehabilitation Plan

7-1 The proponent shall prepare a Rehabilitation Plan, in consultation with the Conservation Council of Western Australia, for all areas affected by the proposal.

The plan shall be prepared within two months of project approval and prior to commencement of construction in areas outside the areas shown shaded in figures 3a, 3b and 3c. (See note 4).

This Plan shall provide the framework to ensure that the site is left in an environmentally acceptable condition, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, the Department of Conservation and Land Management and the City of Melville.

The objective of this Plan is to stabilise and revegetate those areas within and outside the road reserve which have been disturbed during construction.

This Plan shall address:

1. rehabilitation of all disturbed areas;
2. completion criteria;
3. a rehabilitation schedule including timing;
4. restoration and revegetation requirements;
5. management measures (such as weed management);
6. monitoring and maintenance of rehabilitated areas for at least five years following completion;

7. remedial actions; and
8. community involvement and consultation.

7-2 The proponent shall implement the Rehabilitation Plan, in consultation with the Conservation Council of Western Australia, required by condition 7-1 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's rehabilitation responsibilities have been fulfilled.

7-3 The proponent shall make the Rehabilitation Plan required by condition 7-1 publicly available for a public comment period of two weeks prior to the Environmental Protection Authority finalising its consideration of the plan.

8 *Caladenia huegelii* Translocation and Monitoring Management Plan

8-1 Prior to commencement of translocation activities, the proponent shall prepare a *Caladenia huegelii* Translocation and Monitoring Management Plan, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, the Department of Conservation and Land Management and the Botanic Gardens and Parks Authority.

The objectives of this Plan are to:

- establish the baseline health condition of *Caladenia huegelii* prior to translocation undertaken as part of this proposal;
- establish a methodology to achieve translocation success of at least 50%;
- monitor and assess any changes in the health of the *Caladenia huegelii* population following translocation; and within the area immediately surrounding the Roe 7 corridor;
- monitor and assess the success of translocation; and
- compare net *Caladenia huegelii* mortality at potential impact monitoring sites with 'threshold' and 'limit' levels for net *Caladenia huegelii* mortality, within the zones of influence of road construction activities.

This Plan shall address the following:

1. the location of appropriate *Caladenia huegelii* potential impact monitoring sites and reference sites;
2. the number of plants and locations of plants to be translocated;
3. locations for translocation sites;
4. translocation methodologies to achieve translocation success of at least 50% of plants;
5. the location of appropriate monitoring sites and reference sites;
6. protocols and procedures for monitoring and quantitatively assessing the extent of successful translocation of *Caladenia huegelii* using appropriate *Caladenia huegelii* monitoring surveys at all of the potential impact monitoring sites;
7. calculations of statistical power of the monitoring procedures referred to in point 6 above to demonstrate that the procedures are appropriate to assess the extent of mortality against the 'threshold' and 'limit' levels;
8. contingencies and remedial actions;

9. reporting requirements; and
10. community consultation and involvement.

8-2 The proponent shall implement the *Caladenia huegelii* Translocation and Monitoring Management Plan required by condition 8-1.

8-3 The proponent shall make the *Caladenia huegelii* Translocation and Monitoring Management Plan required by condition 8-1 publicly available.

9 Environmental Reference Group

9-1 Prior to commencement of construction, the proponent shall establish an Environmental Reference Group to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The key functions of this group are:

- to help co-ordinate advice and comment from various agencies and stakeholders on the various plans and strategies to be developed and implemented; and
- to provide advice and comment on the implementation and fulfilment of the conditions and commitments as part of compliance reporting to the Chief Executive Officer of the Department of Environment (see condition 5).

The representation on the group will include the following:

- Community groups and representatives;
- Environmental groups;
- Local government authorities;
- Government agencies, including the Botanic Gardens and Parks Authority, the Department of Conservation and Land Management and the Department of Environment; and
- Other key stakeholders.

Procedures

1 Where a condition states "to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.

2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

Notes

1. The Minister for the Environment notes that the purchase of Lots 100 and 101 Gay Street, Huntingdale, or an equivalent area of comparable ecological value, will be undertaken by Government on behalf of Main Roads Western Australia and the Public Transport Authority.

2. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

3. Within this statement, to "have in place" means to "prepare, implement and maintain for the duration of the proposal".

4. Construction may commence in the areas shown shaded in figures 3a, 3b and 3c after the issuing of the notice to the decision-making authorities under section 45(7) of the *Environmental Protection Act 1986* (See condition 7-1).

5. For the purpose of this statement, where the conditions and commitments require certain actions "prior to construction", the pre-construction works identified as items 4 and 5 and shown shaded on figures 3a and 3c are excluded.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT

18 OCT 2004

Schedule 1

The Proposal (Assessment No. 1466)

The proposal involves the extension of Roe Highway from South Street in Canning Vale to the Kwinana Freeway in Leeming (see Figure 1 attached).

It includes the designing, construction and operation of a four lane highway from South Street to the Kwinana Freeway, with allowance for future widening to six lanes.

The proposal includes construction of all road pavements, access roads, drainage basins, drains, medians, grade separated interchanges, ramps, traffic signals, associated earthworks, Principal Shared Paths, other shared paths, road bridges, underpasses, culverts, lighting, noise barriers, fencing, landscaping and signs.

The key characteristics of the proposal are described in Table 1 below.

Table 1 - Key Proposal Characteristics

Element	Description
Length of highway	Approximately 4.5 kilometres.
Area of road reserve	Approximately 130 hectares.
Cross-section – *first stage* (two lanes in each direction)	3.0m shoulder, 2 x 3.5m lanes, 1.0m shoulder, 13m median (including median shoulders), 1.0m shoulder, 2 x 3.5m lanes and 3.0m shoulder.
Cross-section – *ultimate stage* (three lanes in each direction)	3.0m shoulder, 3 x 3.5m lanes, shoulder median, shoulder (width of all to be determined), 3 x 3.5m lanes and 3.0m shoulder.
Area of surfaced road	Approximately 18 hectares including interchanges (Stage 1).
Area of clearing	Approximately 62 hectares (including batters and drainage basins, and approximately 8 hectares of already degraded areas).
Caladenia huegelii directly affected by the proposed route	Approximately 74 individuals.
Area to be revegetated	Approximately 31 hectares (including batters and drainage basins).
Construction duration	Constructed over a period between October 2004 and March 2006 approximately.
Grade separated inter-sections	South Street, Karel Avenue, and Kwinana Freeway.

Bridges and Underpasses	Road bridges at South Street (two bridges), Karel Avenue and Kwinana Freeway; and pedestrian underpasses at South Street off-ramp and Karel Avenue.
General standard of design and construction	Design speed 70kph to 100kph – Austroads and Main Roads Western Australia standards.
Construction and materials source	Road constructed in cut and fill. Additional fill obtained from approved sources (eg sand mines) and suppliers.

Figures (attached)

Figure 1 – Roe Highway Stage 7 Alignment.
Figure 2 – Plan 1 - Offset and Interchange Banksia Conservation Areas Roe Highway Stage 7.
Figure 3a – Areas where construction may take place prior to preparation of the Rehabilitation Plan (See condition 7-1).
Figure 3b – Areas where construction may take place prior to preparation of the Rehabilitation Plan (See condition 7-1).
Figure 3c – Areas where construction may take place prior to preparation of the Rehabilitation Plan (See condition 7-1).

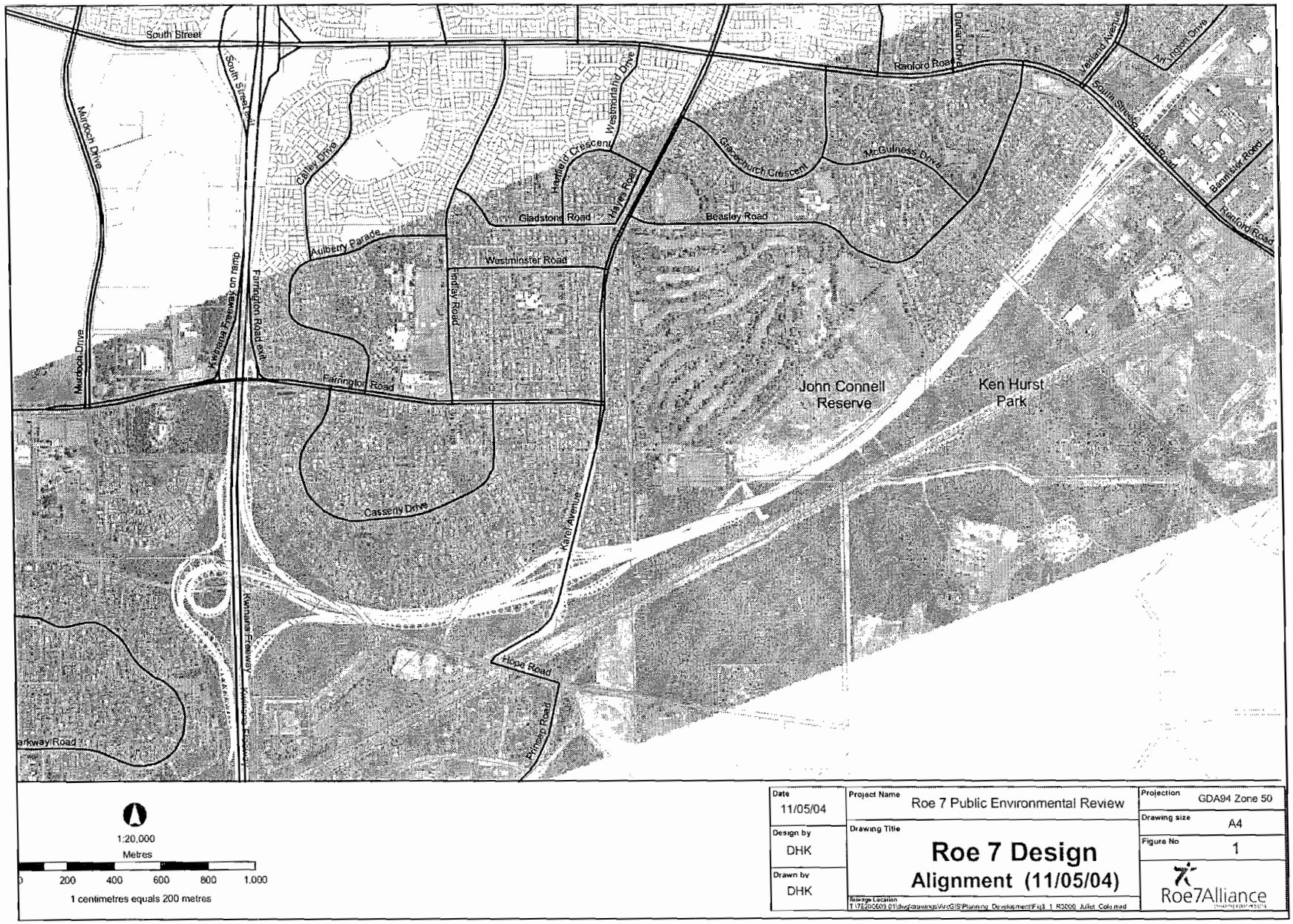

Figure 1: Roe Highway Stage 7 Alignment

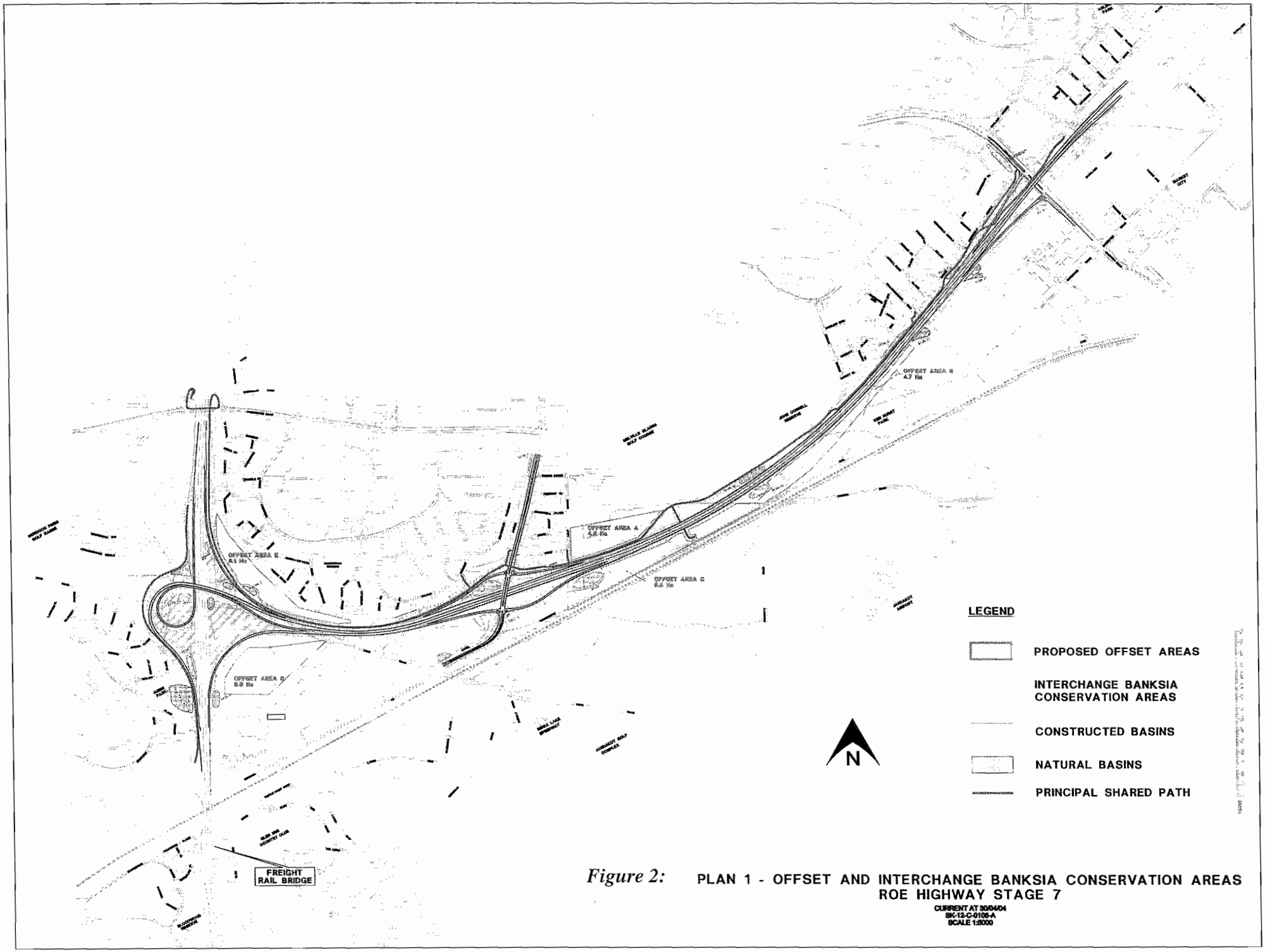

Figure 2: PLAN 1 - OFFSET AND INTERCHANGE BANKSIA CONSERVATION AREAS
ROE HIGHWAY STAGE 7

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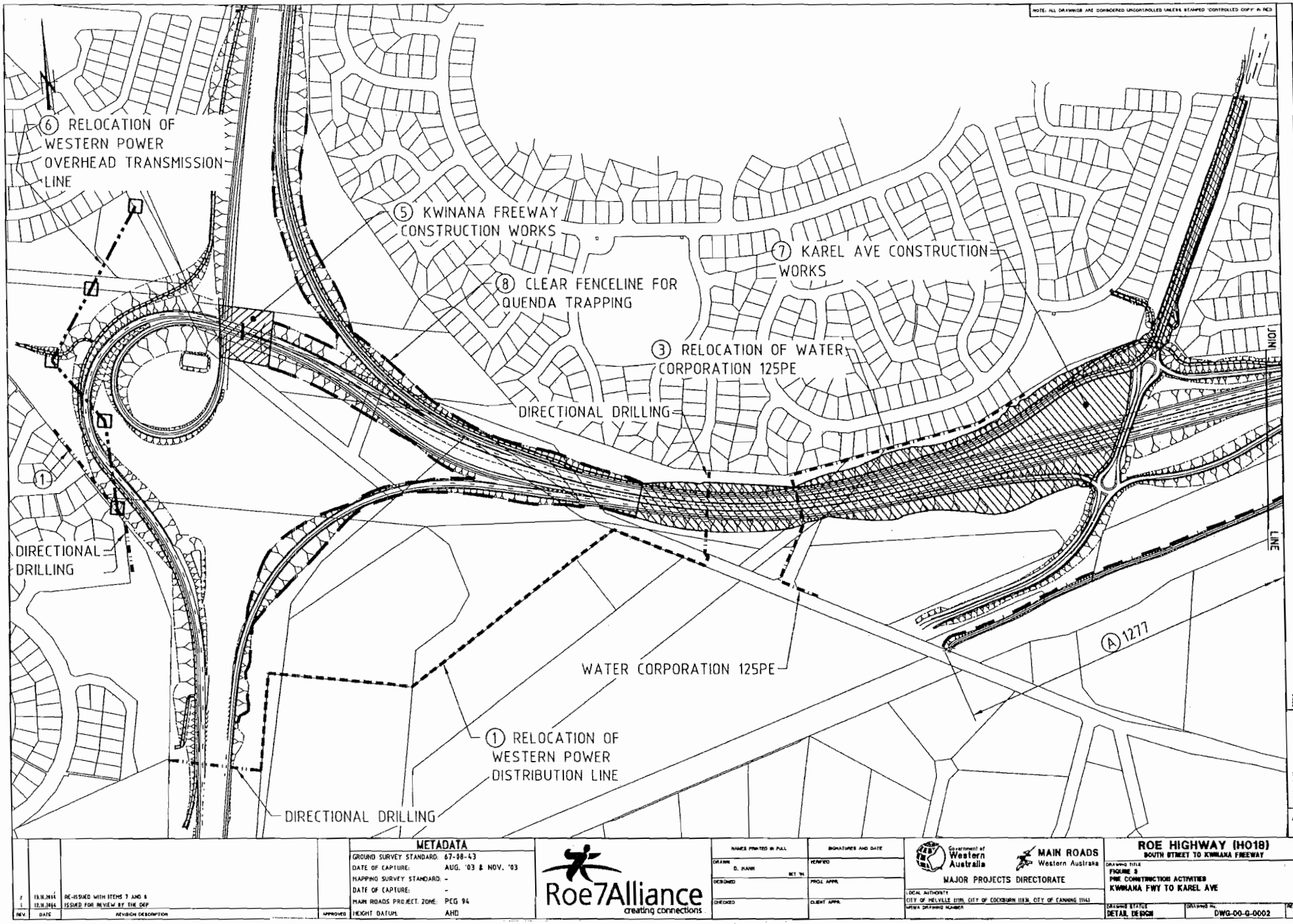

Figure 3a: Areas where construction may take place prior to preparation of the Rehabilitation Plan.

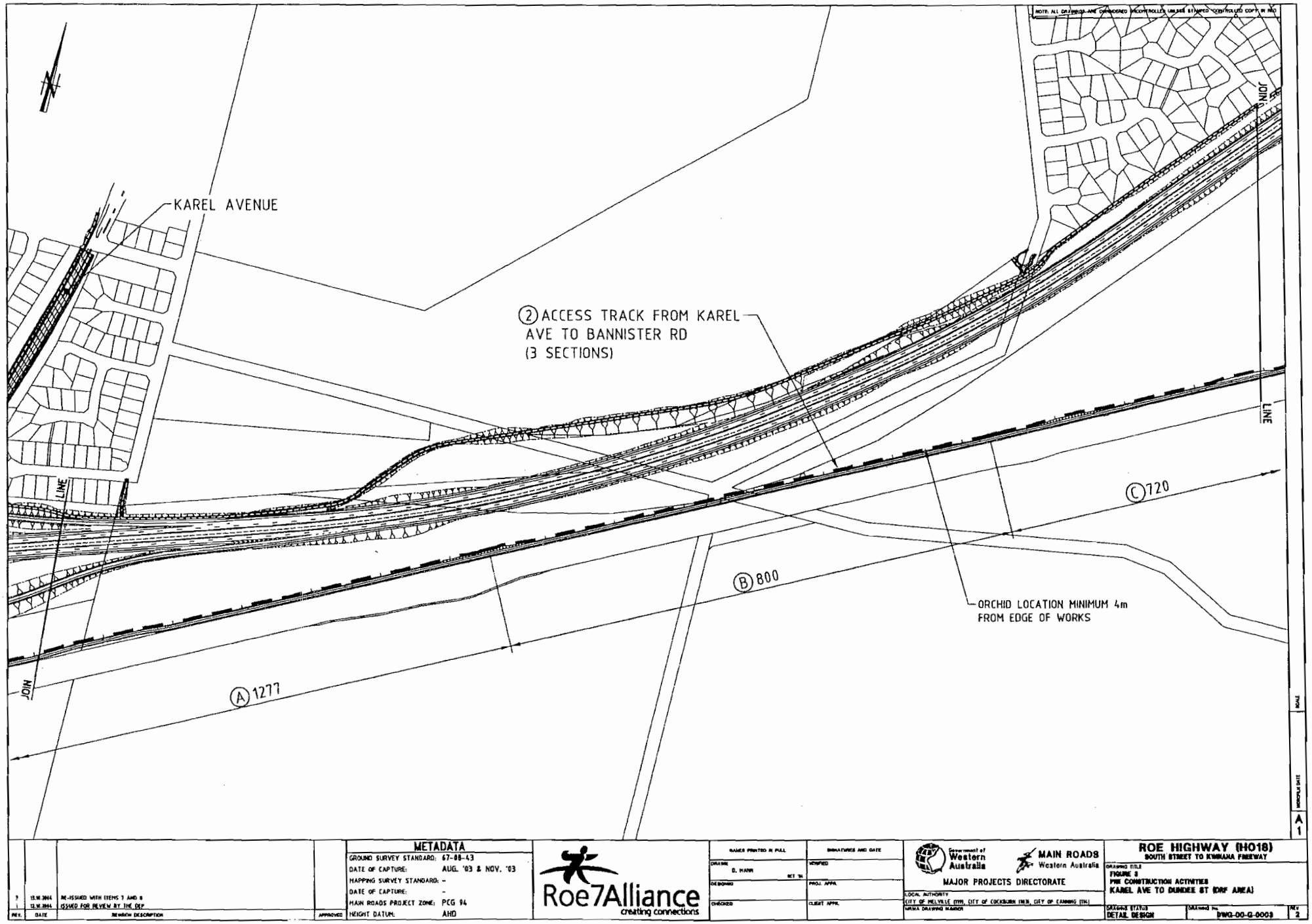

Figure 3b: Areas where construction may take place prior to preparation of the Rehabilitation Plan.

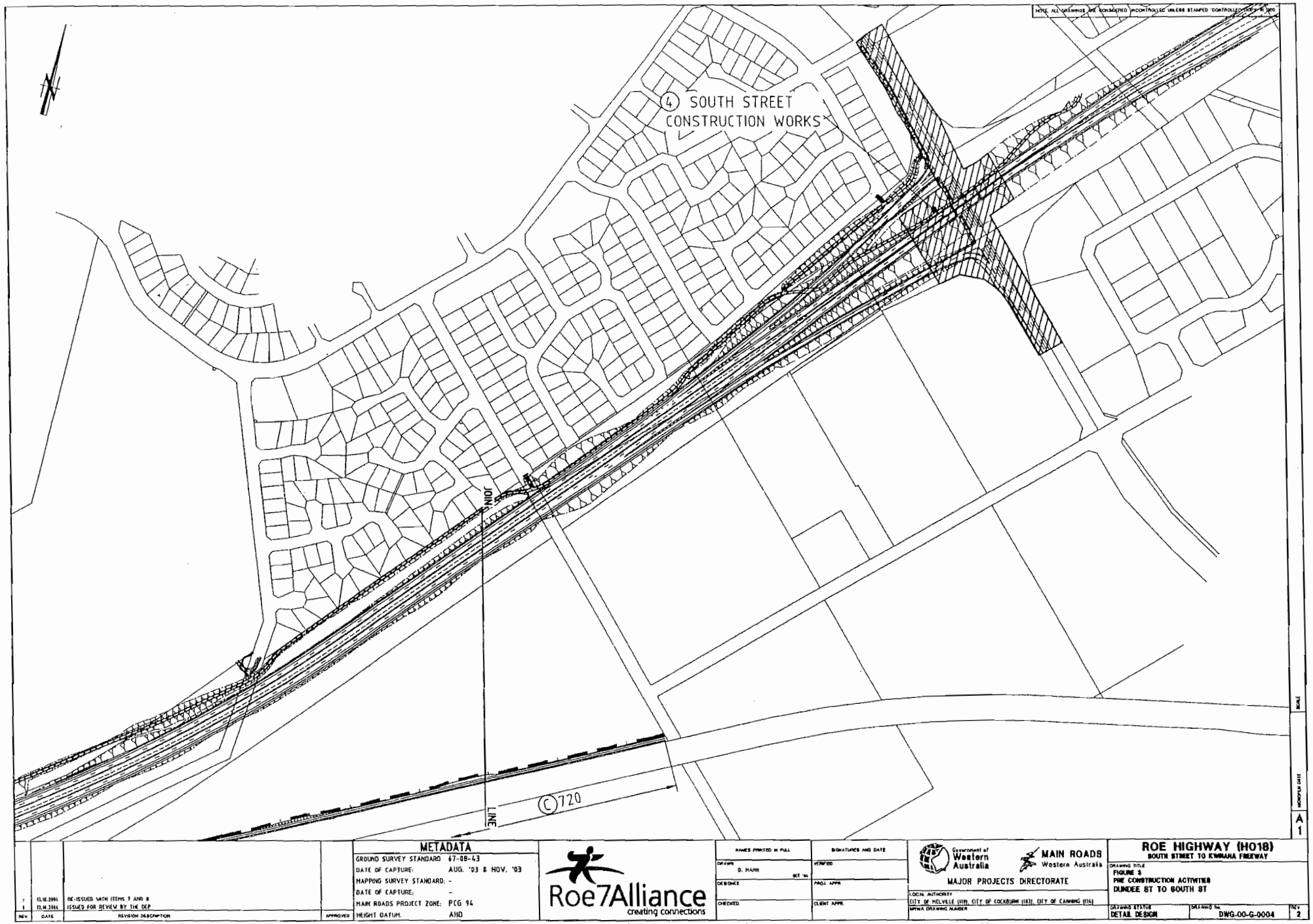

Figure 3c: Areas where construction may take place prior to preparation of the Rehabilitation Plan.

Figure 3 Key for Pre-Construction Activities

Ref	Proposed Works	Location / Chainage (MCE7 unless noted)	Length of works (m)	Degraded Area? (Y/N)	Area of Clearing (m2)	Comments
1	**Relocation of Western Power Distribution Line**					
	Thrust bore tunneling (directional drill) under from Hope Rd to Greenlea Ct	13030	100	N	0	No works within Roe Hwy reserve
	Trench, lay conduit and backfill along Hope Rd then SW along Western Power fence line on degraded track	12900 - 13030 & along WP fence line	1000	Y	0	1m easement from Western Power fence line.
	Thrust bore tunneling (directional drill) under Kwinana Fwy	1180 (MCF2)	150	N	0	
	Thrust bore tunneling (directional drill) along Tetlow Pl -> Stone Ct along back of fence line	-	250	N	0	Works beneath existing distribution overhead conductors
2	**Access Track between Karel Ave and Bannister Rd adjacent to railway line**	**Chainages are approx. for Roe Hwy**				**Temporary fencing alongside north side of track as per environmental commitments**
A	Section between Karel Ave and Orchids Area	13300 – 14600	1277	Y	0	Degraded track
B	Orchids Area	14600 – 15400	800	Y	0	Degraded track
C	Section between Bannister Rd and Orchids Area	15400 – 16000	720	Y	0	Degraded track
3	**Relocation of Water Corporation 125PE**					
	Trench, lay pipe and backfill along the degraded track at the back of the resident fence line West of Karel between Heatherlea Park and Tana Ct	13170 - 13560	400	Y	0	3.1m easement from fenceline
	Trench, lay pipe and backfill between Tana Ct and existing degraded track between Roe Hwy and Hope Rd	13170	80	N	240	Minimal clearing for access to required RL of new pipeline
	Trench, lay pipe and backfill along degraded track and Hope Rd	13170	150	Y	0	3.1m easement from road reserve boundary
4	**South St construction works**					
	Pavement widening	16850	55	Y	0	
	Footings – abutments and central pier	South St	N/A	Y	0	
5	**Kwinana Fwy construction Works**					
	Kwinana Fwy Footings - Abutments and Central Pier	Kwinana Fwy	N/A	Y	0	

Figure 3 Key for Pre-Construction Activities (continued)

Ref	Proposed Works	Location / Chainage (MCE7 unless noted)	Length of works (m)	Degraded Area? (Y/N)	Area of Clearing (m2)	Comments
6	**Relocation of Western Power Transmission Line**					
	132kV Transmission line ST-SF-81	West of Kwinana Fwy Interchange	500	N	210	Clearing required for access to power pole locations – does not include clearing between poles for overhead conductor stringing
7	**Karel Ave construction works**					
	Construction of new Karel Ave alignment	Karel Ave North of Roe Hwy	500	Y	0	
	Construction of Karel Ave temporary detour	13200	100	Y	0	
	Construction of Roe Hwy West of Karel Ave	12900 - 13700	800	N	12ha	Clearing footprint only
8	**Clear fence line for Quenda trapping**					
	To allow Quenda trapping prior to summer months	Kwinana Fwy - 12900	3000	N	0.72ha	1 pass 2.4m wide

Schedule 2

Proponent's Environmental Management Commitments

October 2004

Roe Highway Stage 7 Extension
(South Street in Canning Vale to the Kwinana Freeway in Leeming)

(Assessment No. 1466)

Main Roads Western Australia

ROE HIGHWAY STAGE 7 EXTENSION (SOUTH STREET IN CANNING VALE TO THE KWINANA FREEWAY IN LEEMING) – OCTOBER 2004 (Assessment No. 1466)

Note: The term "commitment" as used in this schedule includes the entire row of the table and its six separate parts as follows:

- a commitment number;
- a commitment topic;
- the 'action' to be undertaken by the proponent;
- the objective of the commitment;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

Note: The term "prior to construction" as used in this schedule excludes the pre-construction works (see Condition 7-1).

No.	Topic	Actions	Objectives	Timing	Advice From
1	Environmental Management System (EMS)	Prepare a construction EMS consistent with the core requirements of the ISO 14001 standard.	To manage relevant environmental factors during construction of the Roe Highway Stage 7.	Prior to construction.	
2	Environmental Management System (EMS)	Implement the construction EMS referred to in commitment 1.	Achieve the objectives of commitment 1.	During construction.	
3	Environmental Management Plan	Develop, as part of the Construction EMP, plans, guidelines and procedures to address and manage the following environmental issues: 1. noise and vibration; 2. dust; 3. construction traffic; 4. site stormwater and hazardous materials; 5. groundwater protection; 6. lighting control; 7. flora; 8. declared rare flora;	To manage and minimise the potential impacts of the construction phase of the Roe Highway Stage 7.	Prior to construction	CALM, WRC

No.	Topic	Actions	Objectives	Timing	Advice From
		9. pests and diseases; 10. fauna; 11. soil contamination; 12. Aboriginal and European heritage; 13. waste management; 14. air quality; 15. aesthetic; 16. fencing; and 17. weed management.			
4	Environmental Management Plan	Implement the Construction EMP referred to in commitment 3.	Achieve the objectives of commitment 3.	During construction.	CALM, WRC,
5	Vegetation Management Plan	Prepare a Vegetation Management Plan, in consultation with the Conservation Council of Western Australia, for the construction EMP; based on best practice and sound ecological principles. This will address: 1. demarcating clearing boundaries; 2. selective harvesting of site won organic material in order to avoid the spread of weedy species; 3. dieback requirements; 4. stripping, management and reuse of topsoil; 5. site preparation activities including decompaction, furrowing or other surface preparation and mulching; 6. documentation of a revegetation schedule providing details of the species to be used; where they will be used; propagule densities (seeding rates and/or planting density); and what type of seeding or planting regime will be employed; 7. optimal timing for all activities; 8. success criteria for revegetation; and	• Minimise the extent of clearing required for the project through design and rigorous management of construction activities. • Mitigate for the loss of significant vegetation.	Prior to construction	CALM City of Melville

No.	Topic	Actions	Objectives	Timing	Advice From
		9. management, maintenance, monitoring and remedial activities to ensure a successful outcome.			
6	Vegetation Management Plan	Implement the Vegetation Management Plan required by commitment 5, in consultation with the Conservation Council of Western Australia.	Achieve the objectives of commitment 5.	During and following construction	CALM City of Melville
7	Native Vegetation	Review the MRS road reserve boundary once construction is complete.	• Minimise the extent of clearing required for the project through design and rigorous management of construction activities. • Mitigate for the loss of significant vegetation	Within two years following construction	City of Melville, City of Cockburn, City of Canning, DPI, WAPC
8	Native Vegetation	Maximise the extent of conservation management of remnant native vegetation including, for example, through incorporation into Ken Hurst Park.	• Minimise the extent of clearing required for the project through design and rigorous management of construction activities. • Mitigate for the loss of significant vegetation	During construction	City of Melville, City of Cockburn, City of Canning, DPI, WAPC
9	*Caladenia huegelii* Conservation and Management Plan	Prepare a *Caladenia huegelii* Conservation and Management Plan which addresses: 1. the exact locations of all of the *C. huegelii* plants in the local population (combined survey data for 2002-2004 flowering seasons); 2. the numbers of plants to be translocated; 3. locations for translocation sites; 4. translocation methodologies and possible trial design for comparing methodologies;	• Minimise the impact on the significant flora species through design and rigorous management of construction activities. • Mitigate for the impacts on the population of DRF. • Ensure protection of the remaining population and its habitat.	Prior to construction	CALM, DEH, KPBG, City of Melville, F of KHP, WAOSG

No.	Topic	Actions	Objectives	Timing	Advice From
		5. logistics and materials required for implementation of the programme; 6. habitat remediation such as weed control; 7. consultation strategy development and implementation, and 8. monitoring and reporting requirements.			
10	*Caladenia huegelii* Conservation and Management Plan	Implement the *Caladenia huegelii* Conservation and Management Plan required by commitment 9.	Achieve the objectives of commitment 9.	Prior to and following construction	CALM
11	Mitigation and Offsets Strategy	Implement the Mitigation and Offsets Strategy (see attachment A).	Mitigate unavoidable impacts in respect of: • viability of populations of the Grand Spider Orchid (*Caladenia huegelii*); • extent, quality, connectivity and level of protection of remnant Banksia woodland; • access of local residents and others to areas of natural bush; and • extent, quality and level of protection of habitat used for feeding by Carnaby's Cockatoos (*Calyptorhynchus latirostri*).	Prior to project completion.	CALM, City of Canning, City of Cockburn, City of Melville, DPI, WAPC, Western Power, Public Transport Authority
12	Offset Areas	Have in place and make publicly available management plans for the offset areas (identified in attachment A) until these areas are appropriately transferred.	Mitigate unavoidable impacts in respect of: • viability of populations of the Grand Spider Orchid (*Caladenia huegelii*); • extent, quality, connectivity and level of protection of remnant	Prior to project completion.	CALM, City of Canning, City of Cockburn, City of Melville, DPI, WAPC, Western Power, Public Transport

No.	Topic	Actions	Objectives	Timing	Advice From
			Banksia woodland; • access of local residents and others to areas of natural bush; and • extent, quality and level of protection of habitat used for feeding by Carnaby's Cockatoos.		Authority
13	Fauna Management Plan	Prepare a Fauna Management Plan which addresses the issues associated with design and construction as they pertain to the protection of local fauna, and to mitigation of impacts on local fauna populations. This will address: 1. the link between the Fauna Management Plan and the Vegetation Management Plan; 2. fauna food plants to be incorporated in the revegetation; 3. design of fauna fencing; 4. design of underpasses for small fauna species, including any special revegetation requirements; 5. trapping and relocation of Quenda (*Isoodon obesulus*), including timing constraints; 6. management requirements for Kangaroos during the construction period; 7. monitoring and maintenance requirements for the fauna fencing in the long term, and 8. monitoring requirements for the fauna underpass.	• Minimise impacts on the threatened fauna species. • Ensure that the population of kangaroos affected by the project is appropriately managed through consultation with the City of Melville, the Golf Course managers and CALM.	Prior to construction.	CALM, City of Melville

No.	Topic	Actions	Objectives	Timing	Advice From
14	Fauna Management Plan	Implement the Fauna Management Plan required by commitment 13.	Achieve the objectives of commitment 13.	During and following construction.	CALM
15	Pest and Disease Management Plan	Have in place and make publicly available a Pest and Disease Management Plan for incorporation in the Construction EMP. This will address: 1. dieback cleandown requirements for entry onto the site and for internal movement of machinery and vehicles; 2. mechanism for treating small dieback infected areas; 3. disposal or burying of dieback infected soil; 4. selective clearing and topsoil harvesting to avoid retaining weedy material; 5. integration of all site works to achieve a dieback free site and to minimise the spread of weeds; and 6. landscaping to make use of species native to the area and to avoid use of aggressive introduced species which have the potential to become weeds.	• Protect the ecological integrity of remnant bushland within the MRS and of adjoining areas, including Ken Hurst Park, by preventing the spread of dieback and weeds. • Avoid introduction of aggressive plant species by selecting appropriate species, including species native to the project area, for use in revegetation and amenity plantings. • Contribute to the sustainability of remnant native vegetation within and adjacent to the MRS by supporting active weed eradication and dieback treatment programmes.	Prior to construction.	CALM City of Melville
16	Road Drainage Strategy	Design the Road Drainage Strategy in accordance with principles agreed with the DoE (including the WRC).	• Ensure no adverse impacts on the quality of the underground water supply. • Ensure no interference with quantity of water available to users of groundwater bores in the vicinity of the project. • Ensure no adverse impacts on the surrounding native vegetation.	Prior to construction.	WRC, CALM

No.	Topic	Actions	Objectives	Timing	Advice From
17	Road Drainage Strategy	Implement the Road Drainage Strategy required by commitment 16.	Achieve the objectives of commitment 16.	During construction.	WRC
18	Site Stormwater and Hazardous Materials Handling Management Plan	Have in place and make publicly available a Site Stormwater and Hazardous Materials Handling Management Plan to be incorporated in the project Construction EMP.	Achieve the objectives of commitments 16 and 19.	Prior to construction.	WRC
19	Asbestos Waste Management Strategy	Develop an Asbestos Waste Management Strategy to be implemented in the event that disturbance of the emplaced asbestos is unavoidable.	Ensure no adverse impacts from asbestos.	Prior to construction.	DOH, City of Melville
20	Dewatering Management Plan	1. Have in place and make publicly available a Dewatering Management Plan in the event that the need for dewatering cannot be avoided through design and operational management measures. 2. Discharge water from dewatering operations (if any) will be utilised for construction purposes as practicable.	Ensure no adverse impacts on the quality of the underground water supply.	During construction.	WRC, Water Corporation, City of Melville, City of Canning, City of Cockburn
21	Site Contamination-Soils Blending and Nursery Sites	Assessment for site contamination at the Soils Blending and Nursery Sites.	Ensure no adverse impacts on the quality of the underground water supply.	Prior to construction.	MRWA
22	Construction Traffic Management Plan	Have in place and make publicly available a Construction Traffic Management Plan, to be incorporated in the Construction EMP, addressing: 1. designation and implementation of	Minimise the effects of construction-related traffic in adjoining areas.	Prior to construction.	MRWA

No.	Topic	Actions	Objectives	Timing	Advice From
		"haulage" routes to service the Roe 7 project; 2. compliance with the applicable traffic laws; 3. minimising as practicable project-related heavy vehicle movements; 4. regular inspection of the designated haulage routes in the vicinity of the project area and implementation of appropriate remedial actions as may be necessary; 5. preparation and implementation of an Out of Hours Haulage Plan in the event that heavy haulage operations need to occur beyond normal business hours; and 6. implementation of a system for the receipt and response to any public complaints arising from the transport of construction-related materials.			
23	Noise and Vibration Management Plan	Develop a Noise and Vibration Management Plan as part of the Construction EMP, addressing: 1. alternatives to use of reversing alarms on mobile plant; 2. limit construction to normal business hours (7am to 7pm Monday to Saturday) as realistic and compatible with operational requirements; 3. carry out pre-construction condition surveys of residential premises in close proximity to the works area to enable assessment of any subsequent damage potentially associated with ground vibration; 4. maximise separation between potentially noisy/vibration inducing activities and	• Ensure that the amenity of adjacent residential areas is not significantly impacted by either noise or vibration from construction of the highway. • Limit the noise and vibration experienced on sites neighbouring the project area during highway construction.	Prior to construction.	City of Canning, City of Melville City of Cockburn

No.	Topic	Actions	Objectives	Timing	Advice From
		nearby residential areas as practicable and consistent with operational requirements. 5. adopt construction techniques which will minimise the vibration experienced at residential premises in close proximity to the works area; 6. install noise protection barriers as early as practicable in the construction programme to reduce the noise experienced by residents; and 7. provide a timely and effective system for recording and responding to noise complaints.			
24	Noise and Vibration Management Plan	Implement the Noise and Vibration Management Plan required by commitment 23.	Achieve the objectives of commitment 23.	During construction.	City of Canning, City of Melville City of Cockburn
25	Traffic Noise	Provide noise attenuation barriers so that residential or other noise-sensitive premises adjacent to the alignment do not exceed the base level criteria of 63 dB(A) for day time noise levels and 55 dB(A) for night time noise.	Ensure that the amenity of adjacent residential areas is not significantly impacted by noise from operation of the highway.	Prior to construction.	MRWA, City of Canning, City of Melville City of Cockburn
26	Traffic Noise	Noise levels will be measured after opening of the highway extension, and any non-compliances where the measured noise levels do not comply with the base level criteria will be rectified.	Ensure that the amenity of adjacent residential areas is not significantly impacted by noise from operation of the highway.	Within two years following completion of construction	MRWA, City of Canning, City of Melville City of Cockburn
27	Traffic Noise Investigations	Identify a "best practice" approach to traffic noise mitigation (based on noise modelling already undertaken) in consultation with the DoE.	Ensure that the amenity of adjacent residential areas is not significantly impacted by either noise from construction or from operation of the highway.	Prior to construction.	MRWA, City of Canning, City of Melville City of Cockburn

No.	Topic	Actions	Objectives	Timing	Advice From
28	Traffic Noise Investigations	Implement the appropriate further investigations required by the outcome of commitment 26.	Ensure that the amenity of adjacent residential areas is not significantly impacted by noise or from operation of the highway.	Prior to construction.	MRWA, City of Canning, City of Melville City of Cockburn
29	Access to Ken Hurst Park	Provide safe access to Ken Hurst Park. This will involve continued liaison with the Community Reference Group, to determine the most suitable location and form of access.	• Ensure that the safety of residents is taken into account in the provision of cycling and walking facilities. • Provide access to Ken Hurst Park from residential / recreational areas on the north of the highway.	Prior to construction.	City of Canning, City of Melville
30	Construction-Related Dust	Have in place and make publicly available a Dust Management Plan, to be incorporated within the Construction EMP, which addresses the potential for dust and wind blown sand. Management actions are to include: 1. daily monitoring of levels of dust and windblown sand during construction; and 2. the dampening down of all work areas to ameliorate unacceptable levels.	• Ensure new cut and fill embankments are rapidly stabilised, and are not subject to excessive wind or water erosion. • Minimise the impacts on local air quality, and the nuisance aspects of windblown sand and dust.	Prior to construction.	City of Canning, City of Melville City of Cockburn.
31	Construction-Related Dust	Provide rapid stabilisation of disturbed areas or new embankments through timely and progressive mulching and revegetation.	Achieve the objectives of commitment 30.	During construction	MRWA
32	Construction-	Monitor stability of finished works, and rectify any	Achieve the objectives of	Within two years	MRWA

No.	Topic	Actions	Objectives	Timing	Advice From
	Related Dust	problem areas for the duration of the two year defects liability period.	commitment 30.	following completion of construction	
33	Management Visual Impacts	Minimisation of the visual prominence of the road formation and associated structures as practicable and consistent with operational and safety considerations through: 1. design measures (eg relating to physical dimensions, shape and colour of the formation and associated structures); 2. landscaping and rehabilitation planting programmes; and 3. minimisation of the risk of light spill into adjacent residential areas from route and PSP illumination as practicable and consistent with relevant standards and operational and safety considerations.	Ensure that visual amenity of the area is not significantly affected by implementation of the proposal.	Prior to construction.	City of Melville City of Canning City of Cockburn
34	Management of Access Severance	Facilitation of access within the corridor accommodating the Roe 7 extension through the following: 1. establishment of a continuous PSP along the northern side of the route and connection of this path to the existing local Principal Shared Path network; 2. provision for north-south movement across the route at Karel Avenue; and 3. consultation with the Cities of Canning and Melville regarding the provision of formal access to Ken Hurst Park.	• Ensure that the safety of residents is taken into account in provision of cycling and walking facilities. • Facilitation of access within the corridor.	Prior to construction.	City of Melville City of Canning City of Cockburn
35	Residential amenity.	Minimisation of other impacts on residential amenity through:	Ensure that the safety of residents is taken into account in provision of	Prior to construction.	City of Melville City of Canning

No.	Topic	Actions	Objectives	Timing	Advice From
		1. maximisation of the separation between the Principal Shared Path along the northern side of the proposed route and adjoining residential properties as practicable; 2. establishment of screen walls and landscaping between the Principal Shared Path and adjoining residential properties.	cycling and walking facilities.		City of Cockburn
36	Sustainability Strategy	Prepare a Sustainability Strategy aimed at maximising sustainability outcomes in the construction phase of the highway and associated infrastructure, in line with 'The Western Australian State Sustainability Strategy'. This Strategy will address the following: 1. establishing sustainability principles in purchasing and contracting; 2. ensuring efficient energy and water use; 3. minimising waste and encouraging recycling; and 4. providing for industry and community partnerships.	Ensure that sustainability principles are incorporated, as far as practicable, into the construction phase of the highway.	Prior to commencement of construction.	
37	Sustainability Strategy	Implement the Sustainability Strategy required by commitment 36.	Achieve the objectives of commitment 36.	During construction.	
38	Weed Management Plan	Prepare a Weed Management Plan, in consultation with the Conservation Council of Western Australia, for incorporation in the Construction EMP.	• Minimise the risk of weed introduction or spread of weeds. • Protect the ecological integrity of remnant bushland within the	Prior to construction	CALM City of Melville

No.	Topic	Actions	Objectives	Timing	Advice From
			MRS and of adjoining areas, including Ken Hurst Park, by preventing the weeds. • Contribute to the sustainability of remnant native vegetation within and adjacent to the MRS by supporting active weed eradication.		
39	Weed Management Plan	Implement the Weed Management Plan required by commitment 38, in consultation with the Conservation Council of Western Australia.	Achieve the objectives of commitment 38.	During and following construction	CALM City of Melville

Abbreviations:

CALM	Department of Conservation and Land Management
DEH	Commonwealth Department of the Environment and Heritage
DoE	Department of Environment
DOH	Department of Health
DPI	Department for Planning and Infrastructure
F of KHP	Friends of Ken Hurst Park
BGPA	Botanic Gardens and Parks Authority
PSP	Principal Shared Path
WAPC	Western Australian Planning Commission
WRC	Water and Rivers Commission
WAOSG	Western Australian Orchid Society Group

Attachment A

Summary of Key Characteristics of Proponent's Mitigation and Offset Strategy

October 2004

Roe Highway Stage 7 Extension
(South Street in Canning Vale to the Kwinana Freeway in Leeming)

(Assessment No. 1466)

Main Roads Western Australia

1. Engineering Design Modifications – avoidance of environmental impacts

Table 1. Engineering design modifications

Action	Effect
Reduce the median width between South St and John Connell Reserve by approximately 4.5m over a distance of approximately 1300m.	**Reduction in clearing of native vegetation.** Disturbance footprint reduced by approximately 5850 m^2.
Additional reduction in median width (4.5m reduction) over approximately 4000 m length of road.	**Reduction in clearing of native vegetation.** Disturbance footprint reduced by approximately 18000 m^2.
Combine the direct loop and semi direct loop ramps together and increase the median width (by 200mm). Relocate the shoulders to the median side for the loop and semi-direct loop ramps.	**Reduction in clearing of native vegetation.** Reduces the amount of clearing by combining batters. Increases safety by providing better sight distance and providing amore forgiving driving environment. Also allows the PSP to be placed close to the road embankment. Estimated reduction in clearing of vegetation is 1500 m^2.
Construct the Principal Shared Path (PSP) adjacent to road shoulder wherever possible through residential areas rather than adjacent to the residential properties.	**More effective noise control. Reduced visual impact. Reduced habitat fragmentation. Reduction in clearing of native vegetation.** Allows noise barriers to be located closer to noise source, so that barriers will be more effective and less visually intrusive. This also minimises the impact on residents immediately adjacent the Highway as it minimises the construction work next to their boundaries. Estimated reduction in clearing is approximately 7000 m^2. It is noted that not all of the reduction occurs in excellent quality bush, as the vegetation in proximity to residential properties has suffered varying degrees of disturbance.
Place the vertical road alignment as close as possible to the existing ground level through the area where Declared Rare Flora is found, to minimise the batter widths and thus reduce the amount of clearing.	**Reduction in clearing of native vegetation. Avoidance of DRF.** The approximate reduction in the disturbance footprint is 6000 m^2.
Adopt more stringent construction control to reduce works envelope to 1m buffer, instead of 3m clearing envelope conventionally used by Main Roads. Stockpile fill, mulch, topsoil and other materials outside road reserve, to minimise disturbance to native vegetation.	**Reduction in clearing / disturbance of native vegetation.** The approximate area of reduction in disturbance to vegetation achieved by stockpiling materials outside the road reserve is 20,000 m^2. Approximate cost - $300,000
Adopt northern alignment for portion of highway south of John Connell Reserve.	**Reduction in clearing of good quality native vegetation. Avoidance of DRF.** Disturbance occurs in more degraded areas of bush. Estimated reduction in number of orchids directly impacted is about 20. Approximate cost - $500,000
Where ground elevations permit, retain vegetation in areas proposed for infiltration of storm water runoff.	**Reduction in clearing of native vegetation.** Approximate extent of undisturbed infiltration basins is 11,400 m^2.

2. Impact Reduction Measures

Table 2. Impact reduction measures (operational and management controls)

Action	Effects
Where earthworks are required to provide sufficient storage capacity for infiltration of runoff, basins will be revegetated using dampland species of local provenance. Once established, these areas should provide similar ecosystem functions to those of naturally occurring damplands. Minimise alterations in pre-construction hydrology by implementing Drainage Management Strategy.	**Maintenance of ecological function. Minimise risk of altered hydrology affecting remnant vegetation or DRF.** Approximate extent of recreated damplands is 29,000 m^2.
Negotiate access for haulage and construction traffic along rail service corridor.	**Reduced impact on Residential Amenity**. Reduces the need for construction vehicle movements through residential streets. The resulting reduction in traffic is expected to be of the order of 50 trucks per day over a nominal 12 week construction period.
Schedule construction works to avoid ground disturbance during orchid flowering period. (Requires segregation of orchid habitat and double handling of some earthen materials.)	**Allows salvage of DRF.** Allows for salvage and translocation of *Caladenia huegelii*. Approximate cost - **$100,000**
Conduct additional spring surveys to locate *Caladenia huegelii* and translocate plants likely to be directly impacted by construction works, in accordance with research methodology outlined in the *Caladenia huegelii* Conservation and Management Plan.	**Allows salvage of DRF. Contributes to knowledge of *Caladenia huegelii* biology**. The translocation will be carried out as a controlled experiment to enable rigorous assessment of the factors influencing success of translocation. This knowledge will be important when transplanting plants grown in the laboratory and glass house to selected field sites. Approximate cost - **$32,000**
Adopt landscape design incorporating local species, including seed and other propagules from local area. Where possible, salvage mature tree species and reuse. Use any surplus plants or progagules for bush regeneration. Provide maintenance and monitor success of landscaped areas. Avoid planting of food species in close proximity to carriageway to minimise risk of road kill.	**Maintain or restore habitat (including food source) for fauna. Contribute to project aesthetics.** The landscaping will rehabilitate approximately 30 ha of the land disturbed during highway construction. About 10 ha of the landscaped area will involve plantings which seek to emulate the banksias woodland system that currently exist in the area. The proposed landscaping design includes establishment of approximately 6000 Banksia trees (of local species and local provenance), which when mature, will provide food to support a population of approximately 25 cockatoos (assumes a 4-month long feeding season). Approximate cost - **$1,265,000**

Action	Effects
Selectively clear and stockpile topsoil and mulch from construction footprint to prevent spread of dieback or weeds in project area. Dispose of weedy or dieback affected materials to appropriate landfills. Carry out weed control and dieback protection following construction, in accordance with the project Vegetation Management Plan.	**Protection of remnant vegetation.** Preventing the spread of dieback and weeds is critical to the protection of Ken Hurst Park and other areas of remnant bush adjoining the road reserve. Approximate cost - **$55,000**
Develop and implement Fauna Management Plan. Provide appropriate fencing to exclude animals from highway Trap and relocate quendas prior to ground disturbance in order to minimise fauna deaths. Provide fauna underpasses to allow movement of small fauna beneath highway. Monitor animal movements and recolonisation of rehabilitated areas.	**Minimise harm to fauna during and after construction.** The management plan provides for excluding animals from areas prior to disturbance (to minimize trauma and injury to fauna. Permanent fencing will be provided to prevent access of kangaroos and other macrofauna to the roadway. The plan also includes provision for small fauna connections to allow movement across (beneath) the highway. Funds are provided to monitor the success of the Fauna Management Plan. Approximate cost - **$70,000**
Develop and implement Noise Management Plan. Provide noise barriers to ensure compliance with Noise Regulations. Monitor effectiveness of noise control measures.	**Control noise impacts.** Approximate cost - **$1,000,000.**
Develop and implement Construction Environmental Management Plan.	**Ensure compliance with project and regulatory requirements. Provides basis for enforcement or corrective actions.**

3. Environmental Offsets

Table 3. Summary of offsets to address unavoidable project impacts.

Offset	Benefit
Place covenant approximately 4 5 hectares of land near Fern Leaf Court and place into conservation estate. Transfer land from Commissioner for Main Roads to a Class A Crown Reserve, vested in the City of Melville, and included as part of John Connell Reserve. • Land is not currently included in any Bush Forever site. • Current zoning is "Parks & Recreation". • *Caladenia huegelii* is known to occur on land (approximately 13 plants) and on adjoining Unallocated Crown Land to the north (approximately 16 plants). • Bandicoots (quenda) reported to occur in area. *Land corresponds to parcel A shown in Figure 1.*	**DRF offset.** Protects known population of *Caladenia huegelii* (in the order of 20 plants). Population was discovered during Roe 7 surveys of area in 2003. **Habitat offset.** Preserves good quality habitat for quendas and other small fauna currently residing in area. Protects banksias woodland used for feeding by Carnaby's Cockatoos. **Remnant vegetation.** Provides publicly accessible area of good quality vegetation for nature study and enjoyment by local residents. ***Approximate value $1,000,000***

Offset	Benefit
Land rationalisation to allow approximately ~4.7 ha of Main Roads land south of Roe 7 to be incorporated into Ken Hurst Park. Transfer ownership to a Class A Crown Reserve to be managed as part of Ken Hurst Park. *Land corresponds to parcel B shown in Figure 1.*	**Habitat / remnant vegetation offset.** Increases area of good quality remnant vegetation within Bush Forever site. Fencing provided by Main Roads will help control access to protected bushland, reducing damage from trail bikes, motor vehicles, etc. ***Approximate value $500,000***
Land rationalisation of approximately 6.3 hectares of land currently owned by Commissioner of Main Roads to allow incorporation into Ken Hurst Park. Transfer ownership to a Class A Crown Reserve to be managed as part of Ken Hurst park. *Land corresponds to parcel C shown in Figure 1 (estimated conservation area excludes land potentially affected by use for drainage infiltration).*	**Habitat / remnant vegetation offset.** Increases area of good quality remnant vegetation within Bush Forever site. Helps maintain east-west bush corridor. Preserves good quality Banksia woodland used for feeding by Carnaby's cockatoos. ***Approximate value $500,000***
Land rationalisation and covenanting of approximately 6.5 hectares of land currently owned by Commissioner of Main Roads and land owned or vested in Western Power or transfer to Crown Land vested in an appropriate management agency. *Land corresponds to parcel D shown in Figure 1.*	**Habitat / remnant vegetation offset.** Increases area of good quality remnant vegetation preserved for conservation purposes. Preserves good quality Banksia woodland used for feeding by Carnaby's cockatoos. ***Approximate value $2,000,000***
Place covenant over an area of approximately 5.1 ha of remnant bushland in the vicinity of the Roe 7/Kwinana Freeway interchange. *Land corresponds to parcel E shown in Figure 1.*	**Habitat / remnant vegetation offset.** Increases area of good quality remnant vegetation managed for conservation purposes. Preserves good quality Banksia woodland used for feeding by Carnaby's cockatoos. ***Approximate value $1,000,000***
Contribution (funding and in-kind) for restoration of degraded areas in road reserve or in adjoining bush areas.	**Remnant vegetation offset.** Allows revegetation and other restoration works to improve condition of ~5 hectares bush in proximity to Roe 7 highway. ***$190,000*** (does not include value of in-kind support, eg. seed, mulch etc.).
Contribute to orchid research by Kings Park Botanical Gardens (genetic research into *Caladenia huegelii* propagation).	**DRF offset.** Aims to increase viability of threatened species through 5-year programme of targeted genetic and ecological research to enable successful *ex-situ* conservation of *Caladenia huegelii*. Includes research into pollinators and symbionts of *Caladenia huegelii* (to complement translocation efforts.) ***$__ To be arranged to ensure adequate funding is provided to carry out the 5-year research programme.***

Offset	Benefit
Matching funding to City of Melville for implementation of Ken Hurst Park Management Plan.	**Remnant vegetation offset.** Supports protection of near pristine remnant vegetation, including DRF, by providing funds to allow fencing of the park, limit access to designated paths, provide dieback control, weed control, etc. Consistent with established park management plan (September 2003). ***$10,000***
Provision of connectivity to Ken Hurst Park through either contribution to upgrade of access track running parallel to rail services road (between Karel Ave and Bannister Road) or pedestrian underpass.	**Connectivity offset.** Improves access to Ken Hurst Park for bush maintenance and fire fighting, thereby reducing risk of vegetation decline. ***$200,000***
In-kind support to City of Melville for use in Perth Biodiversity Initiatives, including environmental education initiatives.	**DRF / remnant vegetation offset.** Helps raise local awareness of the value of native vegetation and DRF. Provides support for protection of locally significant vegetation. ***$10,000***
Contribution towards securing of "at risk" population of *Caladenia huegelii* on parcel of land at Gay St and Warton Road, Huntingdale (or towards securing equivalent natural values).	**DRF offset.** ***$__ To be arranged***
Facilitate and secure the population of *Caladenia huegelii* located at Fraser Road, Jandakot within the conservation estate.	**DRF offset**

Abbreviations:

DRF = Declared Rare Flora

Attachment to Statement 663 – Change to Proposal.

Proposal: Roe Highway Stage 7 Extension (South Street in Canning Vale to the Kwinana Freeway in Leeming)

Proponent: Main Roads Western Australia (project managers: Roe 7 Alliance)

Change: To broad scale map (Figure 1) in schedule 1, and more detailed descriptions in subsequent documentation.

From:

Element	**Quantities/Description**
Area cleared	42.15 ha of approved total of 54 ha
Karel Avenue Alignment	Karel Avenue T-junction with Hope Road. Ken Hurst Park access from Hope Road.

To:

Element	**Quantities/Description**
Area cleared	Additional 1.35 ha, total
Karel Avenue Alignment	Karel Avenue realigned to meet Hope Road, with a round-about at intersection with Berrigan Drive, grade separated bridge crossing over rail line. Ken Hurst Park access from Karel Avenue. Previous alignment constructed and called Linesman Lane.

Attachment: small scale Figure 1 - proposed Karel Berrigan connection

Approval Date: 22/9/05

Attachment to Statement 663 – Change to Proposal.

Proposal: Roe Highway Stage 7 Extension (South Street in Canning Vale to the Kwinana Freeway in Leeming)

Proponent: Main Roads Western Australia (project managers: Roe 7 Alliance)

Change: To broad scale map (Figure 1) in schedule 1, and more detailed descriptions in subsequent documentation. Change to Offset package.

From:

Element	**Quantities/Description**
Area cleared	42.15 ha of approved total of 54 ha
Karel Avenue Alignment	Karel Avenue T-junction with Hope Road. Ken Hurst Park access from Hope Road.
Offset package	Offset Area D, 6.5 ha, shown in Figure 2

To:

Element	**Quantities/Description**
Area cleared	Additional 1.35 ha, total
Karel Avenue Alignment	Karel Avenue realigned to meet Hope Road, with a round-about at intersection with Berrigan Drive, grade separated bridge crossing over rail line. Ken Hurst Park access from Karel Avenue. Previous alignment constructed and called Linesman Lane.
Offset package	Offset Area D, 7.72 ha, additional area of *Banksia* woodland, shown in Figure 2

Attachment: small scale Figure 1 - proposed Karel Berrigan connection
Figure 2 – Offset Area D

Approval Date: 11/10/05

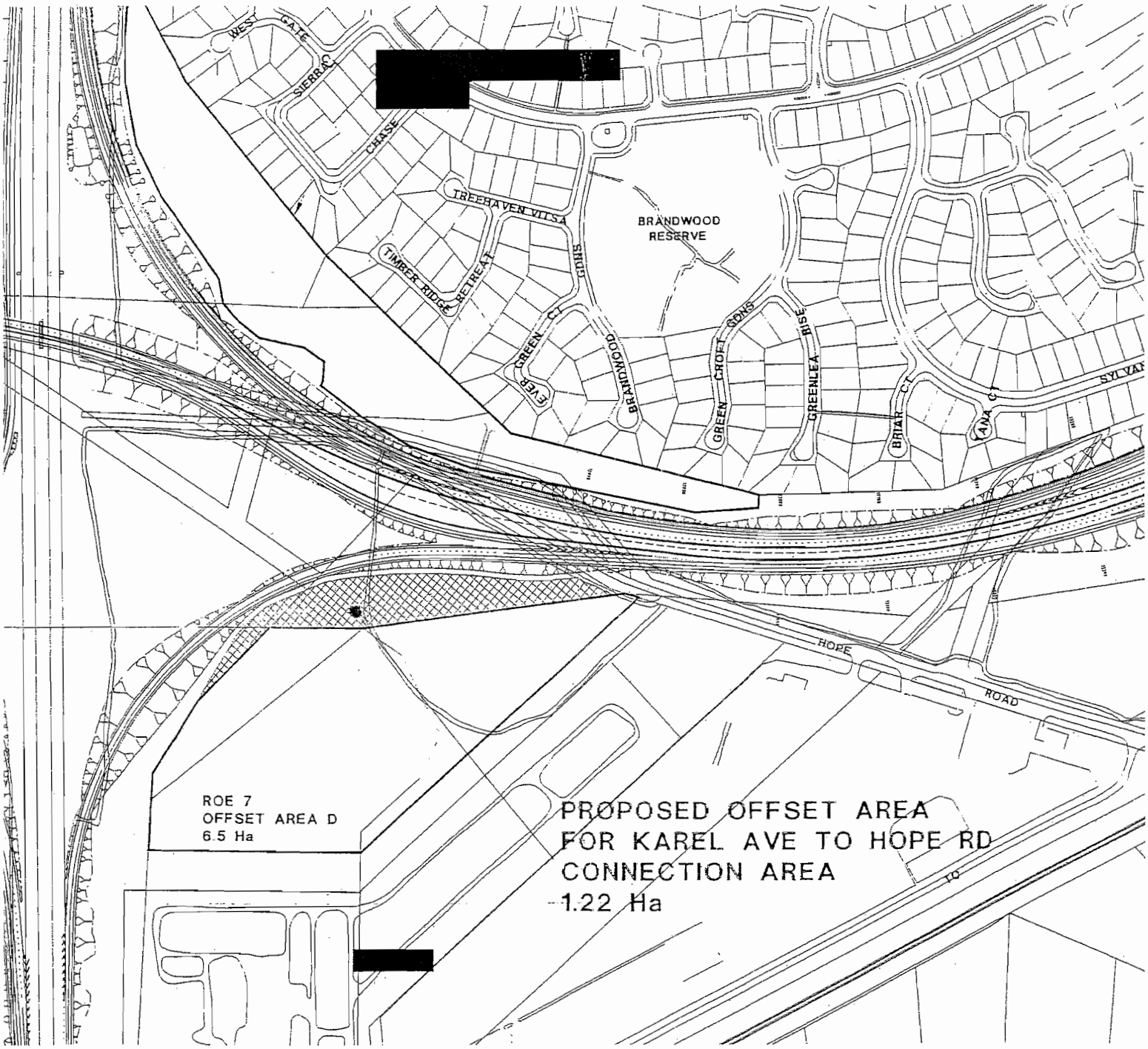

Figure 2. PROPOSED OFFS

KAREL AVE TO HOPE

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