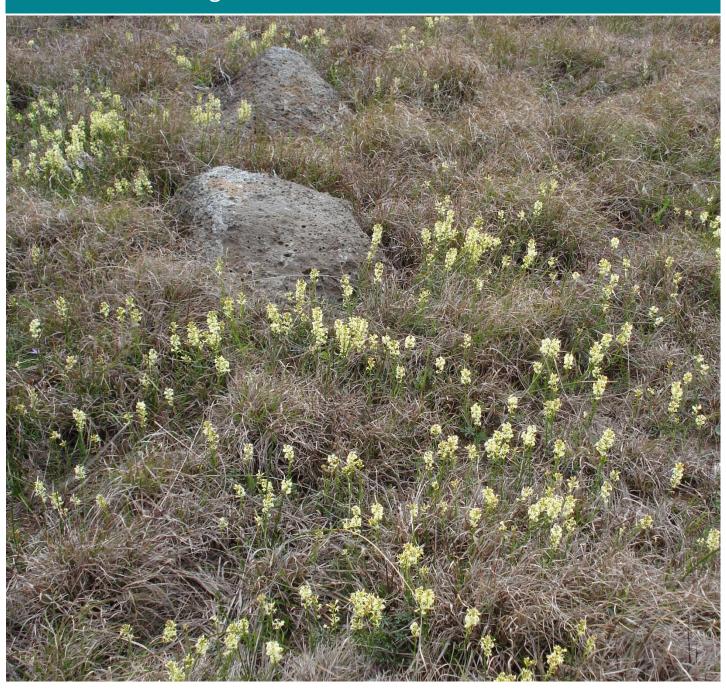
Monitoring and Reporting Framework

Melbourne Strategic Assessment



 $\hbox{$\mathbb O$}$ The State of Victoria Department of Environment, Land, Water and Planning 2015



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Introduction

The Melbourne Strategic Assessment (MSA) evaluates the impacts of the Victorian Government's urban development program for Melbourne on matters of national environmental significance (MNES) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and establishes conservation measures to mitigate these impacts. The MSA was conducted under the strategic assessment provisions of the EPBC Act.

The government's urban development program for Melbourne provides for:

- Urban development in four growth corridors within Melbourne's expanded 2010 Urban Growth Boundary (UGB)
- Urban development in 28 existing precincts within the 2005 UGB
- Development of the Regional Rail Link Corridor between west of Werribee and Deer Park (section
 2)
- Development of the Outer Metropolitan Ring Transport Corridor.

The strategic approach to environmental assessment undertaken through the MSA results in improved biodiversity outcomes for MNES by enabling earlier consideration of environmental matters in planning processes, better assessment of the cumulative impacts of developments and more strategic conservation measures.

The Victorian Government made commitments to the Commonwealth Government in relation to conservation measures, or program outputs, and program outcomes required to protect MNES. These are outlined in *Delivering Melbourne's Newest Sustainable Communities: Program Report* (Victorian Government, 2009).

The Commonwealth Environment Minister endorsed the program, as set out in the Program Report, in February 2010. The Commonwealth Minister subsequently approved the Regional Rail Link and urban development in the 28 existing urban precincts in July 2010 and urban development in three of the four growth corridors in September 2013.

The program outputs to be achieved as part of the MSA are:

- Urban and infrastructure development occurs in accordance with the Commonwealth approvals
- Program cost recovery is transparent and efficient
- A 15,000 hectare grassland reserve is established and managed
- A network of conservation areas within the UGB is protected and managed for MNES species and vegetation communities
- A 1,200 hectare Grassy Eucalypt Woodland reserve is established and managed outside the UGB
- 80 per cent of Grassy Eucalypt Woodland within the UGB is protected and managed
- 80 per cent of highest priority habitats for Golden Sun Moth, Spiny Rice-flower and Matted Flax-lily are protected and managed
- Important landscape and habitat areas for Southern Brown Bandicoot are protected and managed.

The program outputs and program outcomes are designed to mitigate the impacts of urban development associated with the program on matters of national environmental significance and state significance. The Victorian Government is responsible for ensuring the program outputs and outcomes effectively mitigate these impacts, including through adaptive implementation of the program where necessary.

The program is subject to a range of external factors outside the scope and control of the program that may influence the ability to successfully deliver the program outputs and outcomes. Examples of these external

factors are provided in Table 3. The Victorian Government cannot assume responsibility for the mitigation of impacts that are not associated with urban development and are outside the scope and control of the program.

The Department of Environment, Land, Water and Planning (DELWP) established a cost recovery model to fund the implementation of the program. The model establishes the habitat compensation fees to be collected from landowners who remove native vegetation and habitat for MNES within the growth corridors. Approximately \$986 million will be collected under the model over a 30 to 40 year period to fund the program.

The Victorian Government committed to preparing a Monitoring and Reporting Framework (MRF) for the MSA program to ensure compliance with the endorsed program and the conditions of the Commonwealth approvals. The MRF provides the framework for monitoring and reporting on progress in achieving the program outputs and outcomes. Consistent with the program report, the MRF provides for an adaptive management approach to enable improvements to the implementation of the program to be made where necessary to ensure the outputs and outcomes are achieved.

The MRF was prepared by DELWP in consultation with the Commonwealth Department of Environment (DoE), the Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR) and the Metropolitan Planning Authority (MPA).

The MRF applies to the following areas:

- The area covered by the MSA program within the UGB
- The conservation areas to be established outside the UGB, including the Western Grassland Reserves, Grassy Eucalypt Woodland Reserve and conservation areas on the Victorian Volcanic Plain
- The management area identified in the Sub-regional Species Strategy for the Southern Brown Bandicoot.

Purpose and scope of the Monitoring and Reporting Framework

The purpose of the MRF is to assist the Victorian Government to:

- Provide transparency in the implementation of the program
- Determine whether the conservation outcomes for MNES set out in the program report are being achieved
- Determine whether the processes and activities established to achieve the program outputs and program outcomes are efficient and effective
- Adaptively improve the implementation of the program where necessary to ensure the program outputs and program outcomes are achieved.

The MRF sets outs how the Victorian Government will monitor and report on activities, processes, program outputs and program outcomes established to deliver and implement the MSA. It does not cover activities and processes that are required under existing legislative obligations, policies or practices and that would have occurred irrespective of the MSA. These activities and processes are monitored and reported through existing arrangements.

Components of the Monitoring and Reporting Framework

The key components of the MRF are:

- Program logic This describes the relationships between program activities and processes, program outputs and program outcomes and how activities are expected to lead to outcomes. It provides a framework for determining program assumptions, key evaluation questions and key performance indicators (KPIs)
- KPIs These have been developed for program outputs and program outcomes and will be used to
 measure progress against the achievement of the outputs and outcomes. In some cases multiple
 KPIs have been developed to provide a better understanding of the progress against the outcome
- Monitoring protocols These have been developed for each KPI and set out how monitoring will be undertaken, including where monitoring will occur, the types of data to be collected and the frequency of data collection
- Reporting Templates have been developed for program outputs and program outcomes and set out the matters that will be reported annually or five yearly against each output and outcome.
 These are also described in the Technical Protocols
- Evaluations Two types of evaluations will be undertaken as part of the MRF:
 - An evaluation of program implementation. This will be undertaken every 5 years to ensure that the program is being delivered efficiently and effectively
 - An evaluation of program impact. This will be undertaken subject to a review of the results of the monitoring of program outcomes every five years
 - Program evaluations will inform any necessary adaptive improvements to the implementation of the program
- Independent Auditor Auditors will be engaged in two phases during the first 10 years of the implementation of the program to audit compliance of the implementation of stages 2 and 3 with the endorsed program
- Compliance Strategy This document is to ensure that landowners and proponents undertake actions, such as urban and infrastructure development, in accordance with the program approvals and the planning mechanisms and processes established to implement the program and to ensure that the conservation areas established as part of the MSA are not degraded prior to being secured for conservation.

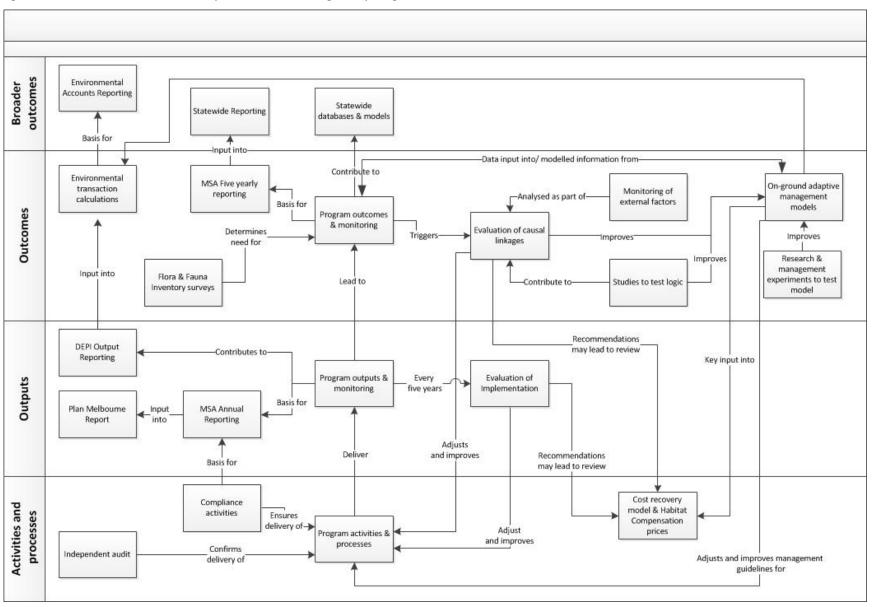
The components of the MRF are described in more detail in the following sections of this document.

Figure 1 provides a conceptual map of how the components of the MRF interact and relate to other program activities.

The MRF is supported by the following documents:

- Monitoring and Reporting Framework: Technical Protocols for Program Outputs This document outlines the KPIs for program outputs and describes the monitoring protocols that will be used for the collection of data
- Monitoring and Reporting Framework: Technical Protocols for Program Outcomes This document outlines the KPIs for measuring progress against the program outcomes, as well as other data collection requirements. It provides details of monitoring protocols and effort.

Figure 1: Interaction between the different components of the Monitoring and Reporting Framework



Adaptive management

Adaptive management refers to a program of monitoring and management that is adjusted over time as understanding of management improves. The MRF provides for the following key elements of an adaptive management approach (see Figure 1):

- Defining desired outcomes
- Addressing uncertainties through identification and where appropriate, testing of assumptions and external factors
- Establishing a program of monitoring to record changes in the condition or population of MNES and track progress in program delivery
- Undertaking research and management experiments to test and improve management models (the on-ground adaptive management models for ecological communities) and inform management options
- Re-assessing solutions and approaches through program evaluations.

The results of monitoring and program evaluations may lead to the adaptive improvement of the implementation of the program. This may occur through the following:

- Changes to program activities and processes, such as planning mechanisms, strategies and policies, research priorities, on-ground management actions, restoration activities and salvage and translocation priorities
- Amendments to the Biodiversity Conservation Strategy (BCS) and sub-regional species strategies
- Improvements to the logic underpinning the on-ground adaptive management models
- Changes to management standards and guidelines for conservation areas
- Amendments to program outputs and outcomes, with the agreement of the Commonwealth Government.

The MRF does not cover all aspects of on-ground adaptive management of land. These aspects will be addressed by undertaking additional work to detail management options for each asset and/or location.

Monitoring design principles

The monitoring described in the MRF and two supporting technical documents is guided by the following principles:

- Monitoring is driven by well-defined 'questions' that are specific, measurable and time-bound (Park et al. 2012)
- Monitoring is informed by defined conceptual models, wherever possible (e.g. on-ground adaptive management models for ecological communities, a metapopulation model for the Growling Grass Frog)
- Monitoring provides the necessary information by which the program outcomes can be evaluated against KPIs
- Monitoring is underpinned by rigorous statistical design, using the best available information
- Monitoring links to the adaptive management cycle (Lindenmayer and Likens 2009)
- Monitoring will be periodically reviewed to reflect advances in ecological understanding or improved sampling
- Monitoring will be efficient and cost effective.

Statistical power

It is good practice to undertake 'power analysis' in the design phase of an ecological monitoring program to determine the minimum sample size that should be adequate to detect a change or effect of a given size (Lawrence 1985; Legg and Nagy 2006). The appropriate sample size for monitoring an ecological asset depends on the variation in the data and the statistical test that is used (the type of test and degree of statistical significance applied).

The sample sizes for the monitoring of program outcomes are set out in *Monitoring and Reporting Framework: Technical Protocols for Program Outcomes*. These were estimated in a precautionary manner, using previous studies of similar parameters in similar (i.e. grassy) systems as a qualitative and informal guide to sample size. Early data collection will serve as a pilot study to determine the variance in each variable in each 'state' in each community, and the sampling effort may be adjusted as necessary as part of a review of the MRF.

The Melbourne Strategic Assessment (MSA) Program

Program logic

DELWP has developed a program logic for the MSA program that describes the overall relationships between program activities and processes, outputs and outcomes and how activities are expected to lead to outcomes.

The program logic is provided in Appendix 1.

The purpose of the program logic is to provide a framework for:

- Determining assumptions underpinning the program
- Determining key evaluation questions and key performance indicators
- Undertaking program evaluations and informing adaptive improvements to the implementation of the program
- Communicating with key stakeholders about the program.

The program logic includes a number of outcomes:

- The composition, structure and function of Natural Temperate Grassland, Grassy Eucalypt Woodland and Seasonal Herbaceous Wetland improves
- No substantial negative change to populations of Button Wrinklewort, Large-fruit Groundsel,
 Maroon Leek-orchid, Matted Flax-lily, and Small Golden Moth orchid
- There is no substantial negative change to populations of Spiny Rice-flower and populations are self-sustaining
- Golden Sun Moth, Growling Grass Frog, Southern Brown Bandicoot and Striped Legless Lizard persist.

These will be achieved through the implementation of program outputs, including planning mechanisms and processes associated with urban and infrastructure development and the protection and management of grassland and grassy eucalypt woodland reserves outside the UGB and a network of 36 conservation areas within the UGB.

A summary of the key elements of the program logic, together with examples from the MSA is provided in Table 1.

Table 1: Program logic outline

| Program Logic | Definition | Example |
|------------------|---|--|
| Broader outcomes | Measurable contribution of delivering the outcomes to a long term statewide or nationwide objective | Our natural assets are protected and there is better planning of our water, energy and waste management systems to create a sustainable city |
| Program outcomes | Measurable impact of delivering the outputs leading to a change in status of an MNES within the program | The composition, structure and function of Natural Temperate Grassland improves |
| Program outputs | Direct results of the activities | A network of Conservation Areas within the Urban Growth Boundary is protected and managed for MNES species and vegetation communities |

| Program Logic | Definition | Example |
|--------------------------|--|---|
| Activities and processes | Processes, actions, products and events of the program | Precinct Structure Planning, land acquisition |
| Inputs | Materials, equipment, resources, legislation, etc. used to deliver the outputs | Funding, staff resources, time, contractors |

Program assumptions and external factors

The program logic and achievement of the program outcomes are underpinned by a number of assumptions which are provided in Table 2. The program assumptions have informed the identification of program risks and will form the basis for testing the program logic, undertaking program evaluations and adaptively improving the implementation of the program. In some cases, additional data may be collected as part of program evaluations to test the program assumptions.

Table 2: Program assumptions

MSA program assumptions

There is sufficient knowledge of species and vegetation communities to enable effective design of the urban growth area

The conservation measures proposed will mitigate the impact of urban development on MNES

The outcomes are not mutually exclusive. Occasionally the management of one species may conflict with management of another, however it is assumed that the conflict does not jeopardise the outcomes for either species overall

The Conservation Area network is sufficiently large and appropriately arranged (including across multiple tenures), such that it is able to support populations of the relevant species that fulfil the outcomes

Demographic extinction debts do not make extinction of the relevant species certain

Land management before protection does not remove or degrade the assets to the extent that the outcomes cannot be achieved

Management actions are available or possible which achieve the outcomes, without incurring unacceptable costs or risks (e.g. fire risk, excessive dollar costs)

Hydrological changes are managed such that sufficient wetland and floodplain habitat remains viable for the outcomes to be met

The program is subject to a range of external factors outside the scope and control of the program that may influence the ability to successfully deliver the program outputs and outcomes.

Examples of external factors relevant to the program are provided in Table 3.

The Victorian Government is responsible for ensuring the program outputs and outcomes effectively mitigate the impacts of urban development associated with the program on matters of national environmental significance and state significance, including through adaptive implementation of the program where necessary.

The Victorian Government cannot assume responsibility for the mitigation of impacts that are not associated with urban development and are outside the scope and control of the program.

External factors will be considered in program evaluations where monitoring indicates that program activities and processes and program outputs are not achieving the program outcomes. In some cases, additional data may be collected as part of program evaluations to assist in understanding the cause of any unexpected changes.

Table 3: External factors relevant to the program

External factors

The global financial economy and its impact on the Melbourne housing market may delay development thereby increasing the time until conservation areas are secured

Existing isolation of species populations, fragmentation and legacy issues resulting from past clearing and land use may affect the management and long term viability of species and habitat

Large scale ecological processes that are necessary to the outcomes may be jeopardised across the wider area (e.g. insect pollination, dispersal of mobile species)

Stochastic events such as fire, pest outbreak, etc. may impact on biodiversity values

The effects of climate change may result in loss of viable habitat for the relevant species to an extent that the outcomes cannot be achieved.

Program activities and processes

The Victorian Government will undertake a range of activities and processes to support the delivery of the program outputs and outcomes. The program report identifies that these will be implemented in four key stages:

- Stage 1 (program approval) This stage is complete and involved gaining approvals of the program.
 These approvals specified conditions for implementation of the remaining three stages of the program
- Stage 2 (process implementation) This stage involves the establishment of planning mechanisms and processes to implement the program, such as Growth Corridor Plans, conservation strategies, Precinct Structure Plans, Native Vegetation Precinct Plans, management plans, planning permits and the reservation of land for transport corridors and the Western Grassland Reserves
- Stage 3 (construction and works) This stage involves the construction of urban areas and transport infrastructure to implement the program in accordance with the planning mechanisms and processes established in stage 2 and approvals granted in stage 1
- Stage 4 (operation) This stage involves the operation and use of the land developed under the program, including urban activity, use of transport infrastructure and management of the conservation areas.

Monitoring and reporting

Monitoring and reporting of program activities and processes will occur through two main mechanisms, described more fully below; the Independent monitor and compliance strategy for the MSA program.

Independent monitor

The Victorian Government will engage auditors in two phases during the first 10 years of the implementation of the program. The role of the auditors is to:

- Audit compliance of the implementation of stages 2 and 3 with the endorsed Program
- Provide reasonable assurance to the Commonwealth Government that the Program is being implemented in accordance with the Program Report.

In stage 2, an auditor will be engaged to review the establishment of the planning mechanisms and processes to implement the program, such as Growth Corridor Plans, Precinct Structure Plans, and conservation strategies, against the requirements of the program report. This stage of the program will be audited in 2014 and in 2016.

In stage 3, an auditor will be engaged to review the construction of urban areas and transport infrastructure to implement the program against the requirements of the planning mechanisms and processes established in stage 2 and program approvals granted in stage 1. This stage of the program will be audited in 2017 and 2022.

The auditors will prepare reports on the results of the audits of stages 2 and 3 for the Victorian Government. The reports will identify any non-compliance, identify where any amendments to activities and processes were agreed between the Commonwealth Government and Victorian Government, and make recommendations to rectify any non-compliance.

The reports will be provided to the Commonwealth Government and publicly released.

Compliance strategy

DELWP will prepare a compliance strategy for the MSA program in consultation with MPA, DEDJTR and the Commonwealth Government. The purpose of the compliance strategy is to ensure that landowners and proponents undertake actions, such as urban and infrastructure development, in accordance with the program approvals and planning mechanisms and processes and that non-permitted actions do not occur both within and outside the conservation areas.

The compliance strategy will set out:

- The types of processes and activities that will be targeted for compliance
- How compliance activities will be undertaken
- Roles and responsibilities of different government authorities in undertaking compliance
- Procedures for taking any action against non-compliance.

The results of compliance activities will be reported annually as part of the reporting on program outputs.

Public Reporting

The Program Report (*Delivering Melbourne's Newest Sustainable Communities*) commits to public reporting to assist transparency and public accountability. Monitoring under the Monitoring and Reporting Framework will be divided into two documents released at regular intervals to the public;

- Melbourne Strategic Asssessment: Output Progress Report- This document will outline the progress against KPIs for program outputs and will be released annually for the previous year
- Melbourne Strategic Assessment: Outcome Progress Report- This document will outline the
 progress against KPIs for program outcomes and will be released every five years for the previous
 five years.

Progress reports will be available to the public via the DELWP website. All documents will be published in accordance with the Victorian Government's accessibility requirements and will remain available for the life of the program.

Program outputs

Implementation of the program activities and processes are expected to lead to the delivery of eight program outputs:

- Urban and infrastructure development occurs in accordance with the Commonwealth approvals
- Program cost recovery and expenditure is transparent and efficient
- A 15,000 hectare grassland reserve is established and managed
- A network of conservation areas within the UGB is protected and managed for MNES species and vegetation communities
- A 1,200 hectare Grassy Eucalypt Woodland reserve is established and managed outside the UGB
- 80% of Grassy Eucalypt Woodland within the Urban Growth Boundary is protected and managed
- 80% of confirmed highest priority habitat for Golden Sun Moth, Spiny Rice-flower and Matted Flaxlily are protected and managed
- Important landscape and habitat areas for Southern Brown Bandicoot are protected and managed.

Key performance indicators

KPIs have been established and described for each program output.

The KPIs are set out in *Monitoring and Reporting Framework: Technical Protocols for Program Outputs*, and are summarised in Appendix 2.

Monitoring

Monitoring of the KPIs will be undertaken in accordance with the specifications in *Monitoring and Reporting Framework: Technical Protocols for Program Outputs*. This document sets out the types of monitoring activities that will occur, the types of data collected, the source of the data, the frequency of data collection, monitoring protocols, and responsibilities.

The key types of data that will be collected to monitor the program output KPIs are:

- Data from audits of samples of permits and other planning mechanisms from each local government area
- Data from contracts, land purchase forms, land security agreements, habitat compensation statements, land manager reports, native vegetation mapping, secondary approvals and third party notifications.

The collection of data will be undertaken on an annual basis.

DELWP will be primarily responsible for the collection of data. Other government authorities, such as local councils, will be responsible for collating and providing some data to DELWP on a regular basis.

The results of monitoring will be used to inform program evaluations for 'program implementation' and 'program impact'.

Reporting

Reporting on the monitoring of the program output KPIs will be undertaken on an annual basis in accordance with the reporting template in *Monitoring and Reporting Framework: Technical Protocols for Program Outputs*.

The reporting template requires reporting on the progress of the delivery of each KPI for the current reporting period and the overall progress of the delivery of each KPI to date where relevant.

DELWP will be responsible for preparing the annual progress reports. The reports will be provided to the Commonwealth Government and made available to the public via the DELWP webite.

Evaluation of program implementation

In order to ensure that the program is being delivered efficiently and effectively, the Victorian Government will undertake an evaluation of program implementation every five years. The first evaluation will occur in 2015.

The key evaluation questions that will form the basis for the evaluation are provided in Table 4.

The evaluation will aim to:

- Determine the effectiveness of program activities and processes to deliver program outputs
- Test assumptions made as part of the program logic
- Inform a review of the habitat compensation cost recovery model and prices
- Inform any necessary adaptive improvements to the implementation of the program.

The evaluation may lead to:

- Changes to program activities and processes, such as planning mechanisms, strategies and policies
- Amendments to the BCS and sub-regional species strategies, as part of the reviews of these strategies
- Changes to or development of new guidance and communications materials.

A report on the results of the evaluation and any recommendations for adaptively improving the implementation of the program will be prepared and publicly released.

Table 4: Key evaluation questions for an evaluation of implementation

| Category | Key evaluation questions |
|-----------------------|--|
| Justification/problem | Who benefits and how? |
| | How have environmental, economic and legislative conditions changed? |
| | Why does the program continue to be the best way to respond to the problem? Is the program supported by the stakeholders? |
| Effectiveness | What is the evidence of the program's progress towards its expected outcomes? |
| | What evidence is there that planned activities and outputs have been achieved? |
| | Have any unanticipated positive or negative outcomes occurred? |
| | Are the processes, strategies and activities the best way to achieve the objectives and outcomes of the program? What activities contribute most? Least? |
| | Is the program consistent with relevant best practice processes? |
| Funding/delivery | What delivery methods are used? Who carries them out and how well do they do so? |

| Category | Key evaluation questions | | |
|----------------|--|--|--|
| | Has the program been delivered within its scope, budget, within the expected timeframe, and in line with appropriate governance and risk management practices? | | |
| Risk | What would be the impact of ceasing the program (for example, service impact, jobs, community) and what strategies have been identified to minimise negative impacts? | | |
| Efficiency | Has the department demonstrated efficiency and economy in relation to the delivery of the program? | | |
| | Could the program or any components of the program be implemented more efficiently and achieve higher value through alternative delivery/ service provider mechanisms? | | |
| | How efficiently are stakeholder and department resources being used? | | |
| | What could be done differently to improve implementation of the program? | | |
| Program design | Is the program logic still valid? Is the treatment/outcome logic valid? | | |
| | Are the relationships and assumptions in the program logic linking outputs to outcomes valid? | | |
| | Are the KPIs and monitoring protocols still appropriate? | | |

Program Outcomes

Delivery of the program outputs are expected to lead to the delivery of the following program outcomes:

- The composition, structure and function of Natural Temperate Grassland, Grassy Eucalypt Woodland and Seasonal Herbaceous Wetland improves
- There is no substantial negative change to populations of Button Wrinklewort, Large-fruit Groundsel, Maroon Leek-orchid, Matted Flax-lily and Small Golden Moth Orchid
- There is no substantial negative change to populations of Spiny Rice-flower and populations are self-sustaining
- Golden Sun Moth, Growling Grass Frog, Southern Brown Bandicoot and Striped Legless Lizard persist.

Key performance indicators

KPIs have been established and described for each program outcome.

Additional data requirements have also been determined for each program outcome that will be used to support on-ground adaptive management and assist in determining cause and effect relationships, including the role of any external factors outside the control of the program that may influence the ability to achieve the program outcomes.

The KPIs are set out in *Monitoring and Reporting Framework: Technical Protocols for Program Outcomes,* and are summarised in Appendix 3.

Monitoring

Monitoring of the KPIs will be undertaken in accordance with the specifications in *Monitoring and Reporting Framework: Technical Protocols for Program Outcomes*. This document sets out the types of monitoring activities that will occur, where monitoring will occur, the types of data collected, data sources (storage), the frequency of data collection and monitoring protocols.

The key types of data that will be collected to monitor the program outcome KPIs are:

- Full or partial counts of the number of individuals of a species in a defined area
- Presence/absence of a species in a defined area over a defined level of search effort
- Quality (or condition) of an ecological community, measured, for example, by the abundance of weeds, abundance of excess soil nutrients or distribution of sites among 'states' in a defined 'statetransition' model
- The heterogeneity in structure of an ecological community across space, measured by the proportion of area in different structural categories.

Monitoring of relevant conservation areas will be progressive as the conservation areas are secured for conservation. The collection of data will generally be undertaken on an annual basis.

DELWP will be primarily responsible for the collection of data.

The results of monitoring will be used to inform program evaluations for 'program impact', as well as inform amendments to the on-ground adaptive management models.

Reporting

Reporting on the monitoring of the program outcome KPIs will be undertaken on a five-yearly basis in accordance with the *Monitoring and Reporting Framework: Technical Protocols for Program Outcomes.* This reporting period has been chosen to allow for appropriate interpretation of the results and account for natural changes to populations or ecological communities associated with weather and climate or ecological characteristics and external factors beyond the control of the program.

Reporting on each KPI will begin at the next five yearly report after monitoring of the KPI begins, which will occur once the land containing the natural asset to be monitored as part of the KPI has been secured for conservation or the implementation of the program has commenced (e.g. Southern Brown Bandicoot).

DELWP will be responsible for preparing the five-yearly reports. The reports will be provided to the Commonwealth Government and made available to the public via the DELWP webite.

Evaluation of program impact

DELWP will review the results of the monitoring of program outcome KPIs every five years. Should the results indicate that a program outcome is not being achieved; the Victorian Government will undertake an evaluation of program impact.

The key evaluation questions that will form the basis for the evaluation are provided in Table 5.

The evaluation will aim to:

- Determine the effectiveness of program activities and processes to deliver the program outcome
- Test assumptions made as part of the program logic and on-ground adaptive management models
- Determine the influence of external factors outside the control of the program
- Inform any necessary adaptive improvements to the implementation of the program.

The evaluation may lead to:

- Amendments to program outputs and outcomes, and their KPIs, with the agreement of the Commonwealth Government
- Changes to program activities and processes, such as research priorities, on-ground management actions, restoration activities and salvage and translocation priorities
- Improvements to the logic underpinning the on-ground adaptive management models
- Changes to management standards and guidelines for conservation areas.

A report on the results of the evaluation and any recommendations for adaptively improving the implementation of the program will be prepared and publicly released.

Table 5: Key evaluation questions for an evaluation to determine cause and effect relationships

| Category | Key evaluation questions |
|-------------------------|---|
| Change in state | What is the current state of the species/community? What is the magnitude, timing and rate of change in the species/community? Is there a difference in the state of species/communities in different conservation areas? |
| Contribution of program | To what extent were the changes directly or indirectly a result of the program? To what extent have the planned interventions and outputs been delivered? |

| Category | Key evaluation questions | | | | | |
|-----------------|---|--|--|--|--|--|
| interventions | How were the interventions delivered? | | | | | |
| | To what extent do the program interventions meet best practice standards? | | | | | |
| | How time critical are the interventions? Is there a time lag between the impact of development on the species and the program interventions? | | | | | |
| Contribution of | Were other factors which may have impacted on the outcome realised? | | | | | |
| other factors | Were similar trends observed outside the program area and without similar interventions? | | | | | |
| | Did any ecological processes occur that may influence the species/ community? Is there any data/evidence to attribute changes to other causes | | | | | |
| | Was development of adjacent areas designed and delivered to limit impact on the species/community? | | | | | |
| | Were there any other unexpected outcomes? | | | | | |
| Program design | Is the program logic still valid? Is the treatment/outcome logic valid? | | | | | |
| | Are the relationships and assumptions in the program logic linking outputs to outcomes valid? | | | | | |
| | Is the monitoring program appropriate to measure this level of change? | | | | | |
| | Are the KPIs and monitoring protocols still appropriate? | | | | | |

Roles and responsibilities

DELWP will be primarily responsible for co-ordinating the implementation of the MRF, including monitoring, reporting and the evaluations of program implementation and, where necessary, program impact.

A number of other public authorities are responsible for collating and providing data to DELWP to track progress against KPIs and will play a major role in program evaluations.

The roles of other public authorities in implementing the MRF are summarised in Table 6.

Table 6: Roles of other public authorities in implementing the MRF

| Public authority | Role | | |
|------------------|---|--|--|
| MPA | Consultation and input into implementation evaluations | | |
| | Review of MRF | | |
| | Collating data required for planning scheme amendments, precinct structure plans, permits issued for urban development, and cultural heritage | | |
| DEDJTR | Collating data required for transport projects | | |
| | Collating data required for quarries and mines | | |
| Melbourne Water | Collating data required for urban water management | | |
| Councils | Collating data required for planning scheme amendments, precinct structure plans and permits issued for urban development | | |
| Land managers | Collating data or reporting to DELWP on land management activities | | |

Timelines

The timelines for the key stages of the MRF are set out in Table 7.

Table 7: Timeframes for monitoring and reporting

| MRF task | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 |
|---------------------------------------|----------|------------|-----------|---------|----------|-------|-------|-------|-------|-------|
| Monitoring of KPIs* | | | | | | | | | | |
| Independent audit of Stage 2 | | | | | | | | | | |
| Independent audit of Stage 3 | | | | | | | | | | |
| Output report* | | | | | | | | | | |
| Outcome report* | | | | | | | | | | |
| Evaluation of program implementation* | | | | | | | | | | |
| Evaluation of program impact* | Triggere | ed by revi | ew of out | come mo | nitoring | | | | | |
| Update conservation strategies * | | | | | | | | | | |

^{*}On-going tasks

Review

The MRF and two supporting technical documents will be reviewed by DELWP as necessary, in consultation with the Commonwealth DoE, DEDJTR and the MPA, following program evaluations. Reviews of the MRF may lead to:

- Amendment of the Program Logic
- Amendment of program assumptions or external factors
- Update of monitoring protocols, for example, where:
 - o new survey techniques become available
 - o modification is required to the sampling effort for a given species or community, if preliminary data suggest an adjustment is necessary to detect the relevant changes
 - changes are required to the spatial distribution of monitoring effort for a given species or community, if inventory information provides new information about its distribution.

Commonwealth DoE approval will be required where amendments to program logic may lead to changes to program commitments.

Appendix 1: Program Logic

| | ٠ | | |
|--|----|--|---|
| Inputs | | Activities | Participation |
| n order to deliver our set of activities we need the following: | wi | order to address our problem we ill accomplish the following ctivities: | In order to deliver these activities we need participation from the following groups: |
| Commonwealth Approval under the EPBC Act Appropriate authorizing environment with legislation and head of power Guidance, processes and protocols for urban development Governance Good relationships and co-operation with partners Communications Funding Staff and staff time Equipment and supplies Data on distribution and location of species and vegetation communities Research and scientific base | Si | Biodiversity Conservation Strategy Sub regional species strategies Policy development Stakeholder engagement Conservation area concept plans Guidance note and forms MSA legislation developed Policy advice statutory planning Precinct Structure Planning Kangaroo management and environmental management plans Regulation of urban and infrastructure development Compliance rogram Management Collection of habitat compensation fees Trust fund developed Agreement development Native Vegetation Information Management System (NVIM) onservation measures Secure land for conservation Manage conservation land Bayesnet modelling of vegetation states and transition Construct and restore species habitat Research into species and vegetation communities management Salvage and translocation of species | Policy and legislation Commonwealth Government Victorian Government Department of Environment , Land, Water and Planning (Legal, Environment & |

| Outputs | Outcomes | Broad outcomes |
|---|--|--|
| We expect that if accomplished these activities will lead to the following outputs: | We expect that if accomplished these outputs will lead to the following outcomes: | We expect that if accomplished these outcomes will contribute to the following broader outcomes: |
| Urban and infrastructure development occurs in accordance with Commonwealth approval Program cost recovery and expenditure is transparent and efficient A 15,000 hectare grassland reserve is established and managed A network of Conservation Areas within the Urban Growth Boundary is protected and managed for MNES species and vegetation communities A 1,200 ha grassy eucalypt woodland reserve is established and managed outside the Urban Growth Boundary 80% of Grassy Eucalypt Woodland within the Urban Growth Area is protected and managed 80% of confirmed highest priority habitats for Golden Sun Moth, Spiny Rice-flower and Matted Flax-lily are protected and managed Important landscape and habitat areas for Southern Brown Bandicoot are protected and managed | The composition, structure and function of Natural Temperate Grassland, Grassy Eucalypt Woodland and Seasonal Herbaceous Wetland improves No substantial negative change to populations of Button Wrinklewort, Large-fruit Groundsel, Maroon Leek-orchid, Matted Flax-lily, and Small Golden Moth orchid Populations of Spiny Rice-flower are self-sustaining Golden Sun Moth, Growling Grass Frog, Southern Brown Bandicoot and Striped Legless Lizard persist | Ecologically sustainable development through the conservation and ecologically sustainable use of natural resources Our natural assets are protected and there is better planning of our water, energy and waste management systems to create a sustainable city Conservation measures achieve appropriate mitigation of impacts on biodiversity |

Public land managers

Appendix 2: Key Performance Indicators for Program Outputs

Key performance indicators for the outputs that the Melbourne Strategic Assessment expects to achieve

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|---|---|---|---------------------|--|
| | Per cent of gazetted planning scheme amendments to introduce a Precinct Structure Plan consistent with the Commonwealth approvals | Collated data from review for consistency of each planning scheme amendment | Program files | Department of Environment, Land, Water and Planning |
| | Per cent of program area with gazetted Precinct Structure Plans | Collated data from each gazetted Precinct Structure Plan | Program files | Department of Environment, Land, Water and Planning |
| Urban development | Per cent of gazetted precincts with Native Vegetation Plans (or equivalent plans) | Collated data from each gazetted Precinct Structure Plan | Program files | Department of Environment, Land, Water and Planning |
| proceeds in accordance with the Commonwealth approvals and mechanisms and processes specified in the Program Report and BCS | Number of non-compliances with Native Vegetation Plans (or equivalent plans) | Collated data from compliance programs and third party notifications | Compliance programs | Department of Environment, Land, Water and Planning |
| the Hogium Report and Bes | Per cent of conservation areas in gazetted precincts with Conservation Area Concept Plans (or equivalent plans) | Collated data from each gazetted Precinct Structure Plan | Program files | Department of Environment, Land, Water and Planning |
| | Per cent of permits with conditions consistent with the Commonwealth approvals | Collated data from random sample of permits in each local government area | Random sample | Department of Environment, Land, Water and Planning |
| | Number of non-compliances with permit conditions associated with the Commonwealth approvals | Collated data from compliance programs and third party notifications | Compliance programs | Department of Environment, Land, Water and |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|--------|--|--|---------------------|---|
| | | | | Planning |
| | Number of approved adjustments to conservation area boundaries | Collated data from each Commonwealth and DELWP approval | Program files | Department of Environment, Land, Water and Planning |
| | Number of approved development or works in conservation areas | Collated data from each Commonwealth and DELWP approval | Program files | Department of Environment, Land, Water and Planning |
| | Number of cases of illegal removal of native vegetation and habitat within conservation areas | Collated data from compliance programs and third party notifications | Compliance programs | Department of Environment, Land, Water and Planning |
| | Number of cases of illegal removal of native vegetation and habitat outside conservation areas | Collated data from compliance programs and third party notifications | Compliance programs | Department of Environment, Land, Water and Planning |
| | Per cent of gazetted precincts with approved Integrated Water Management Plans | Data collected from each approved Integrated Water Management Plan | Program files | Metropolitan Planning Authority |
| | Number of non-compliance with approved Environmental Management Plan for the Regional Rail Link (section 2) affecting matters of national environmental significance | Collated data from compliance programs and third party notifications | Program files | Department of Economic Development, Jobs, Transport and Resources |
| | Per cent of gazetted precincts with approved Cultural Heritage Management Plans | Data collected from each approved Cultural Heritage Management Plan | Program files | Metropolitan Planning Authority |
| | Per cent of approved work plans consistent with the prescriptions or Biodiversity Conservation Strategy for Melbourne's Growth Corridors | Data collected from each approved works authority and work plan | Program files | Department of Economic Development, Jobs, Transport and Resources |
| | Number of non-compliances with approved | Collated data from compliance programs and third | Program files | Department of |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|--|---|---|-------------|--|
| | work plans affecting matters of national environmental significance | party notifications | | Economic Development, Jobs, Transport and Resources |
| | Revenue | Collated data from financial report | BMS | Department of Environment, Land, Water and Planning |
| | Expenditure | Collated data from financial report and contracts | BMS | Department of Environment, Land, Water and Planning |
| | Number of habitat hectares provided as offset | Collated data from Habitat Compensation Statements | NVIM | Department of Environment, Land, Water and Planning |
| Program cost recovery and expenditure is transparent and efficient | Number of hectares of GSM habitat with offset met | Collated data from Habitat Compensation Statements | NVIM | Department of Environment, Land, Water and Planning |
| | Number of hectares of GGF habitat with offset met | Collated data from Habitat Compensation Statements | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of habitat compensation obligation met | Collated data from Habitat Compensation Statements | NVIM | Department of Environment, Land, Water and Planning |
| | Number of staged obligation agreements | Collated data from agreements | NVIM | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|---|--|--|---------------|--|
| | Number of Works in Kind Agreements | Collated data from agreements | NVIM | Department of Environment, Land, Water and Planning |
| | Value of Works in Kind Agreements | Collated data from agreements | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of offsets provided to development within the Melbourne Urban Development Policy area | Collated data from agreements | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of offsets provided from changes to Conservation Area boundaries | Collated data from agreements | NVIM | Department of Environment, Land, Water and Planning |
| | Parcels under interim management | Collated data from contracts, agreements and associated reports | Program files | Department of Environment, Land, Water and Planning |
| The 15,000 hectare grassland reserve is established and managed outside the Urban Growth Boundary | Number of landowners participating in interim management | Collated data from contracts, agreements and associated reports | Program files | Department of Environment, Land, Water and Planning |
| | Units of interim land management (DELWP Standard Outputs) | Collated data from contracts, agreements and associated reports | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|--|---|---|---------------|--|
| | Per cent of reserve secured | Calculated from hectares of land acquired | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of EPBC-listed community secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of Ecological Vegetation Class secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions and contracts | | Parks Victoria |
| | Hectares of land secured | Collated data from notification of completed land purchase forms and Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| A network of Conservation Areas within the Urban | Per cent of conservation area secured | Calculated from hectares of land secured | Program files | Department of Environment, Land, Water and Planning |
| Growth Boundary is protected and managed for MNES species and vegetation communities | Hectares of land secured through purchase/ transfer by the Crown | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured through vesting in a public authority and permanent protection agreement on-title with management plan | Collated data from notification of completed land transfer forms and Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured through permanent protection agreement on-title with management plan | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|--|---|--|---------------|--|
| | Hectares of land secured through permanent protection agreement on-title | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of EPBC-listed community secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of Ecological Vegetation Class secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Number of key populations secured | Species inventory | Program files | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions, Works in Kind Agreements and contracts | Program files | Department of Environment, Land, Water and Planning |
| A 1,200 hectare Grassy Eucalypt Woodland Reserve protected and managed | Hectares of land secured | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |
| | Per cent of reserve secured | Calculated from hectares of land acquired | Program files | Department of Environment, Land, Water and Planning |
| | Total hectares secured through purchase by the Crown | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured through permanent protection agreement on-title with management plan | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|--|--|--|---------------|--|
| | Hectares of land secured through permanent protection agreement on-title | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of EPBC-listed community secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of Ecological Vegetation Class secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions and contracts | Program files | Department of Environment, Land, Water and Planning |
| 80% of Grassy Eucalypt Woodland within the UGB is protected | Hectares of Grassy Eucalypt Woodland secured | Calculated from data from notification of completed land transfer forms and Agreements for permanent protection on-title and Hectares of EPBC listed community | Program files | Department of Environment, Land, Water and Planning |
| | Per cent of Grassy Eucalypt Woodland secured | Calculated from Hectares of Grassy Eucalypt Woodland secured | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of high priority habitat protected | Calculated from data from notification of completed land transfer forms and Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| 80% of high priority habitat for Golden Sun Moth protected and managed | Per cent of high priority habitat protected | Calculated from Hectares of highest priority habitat secured | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured | Collated from notification of completed land purchase forms and agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|---|---|--|---------------|--|
| | Hectares of high priority habitat secured through purchase by the Crown | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured through permanent protection agreement on-title with management plan | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of EPBC-listed community secured | Vegetation mapping GIS files | DELWP - NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of Ecological Vegetation Class secured | Vegetation mapping GIS files | DELWP - NVIM | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions and contracts | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of high priority habitat protected | Calculated from data from notification of completed land transfer forms and Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| 80% of the high priority habitats for Spiny Rice- flower protected and managed | Per cent of high priority habitat protected | Calculated from Hectares of highest priority habitat secured | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured | Collated from notification of completed land purchase forms and agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured through purchase by the Crown | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|--|---|--|---------------|--|
| | Hectares of land secured through permanent protection agreement on-title with management plan | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of EPBC-listed community secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of Ecological Vegetation Class secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions and contracts | Program files | Department of Environment, Land, Water and Planning |
| 80% of the highest priority habitats for Matted Flax-lily is protected and managed | Hectares of highest priority habitat protected | Calculated from data from notification of completed land transfer forms and Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Per cent of highest priority habitat protected | Calculated from Hectares of highest priority habitat secured | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of highest priority habitat secured outside the UGB | Calculated from data from notification of completed land transfer forms and Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Per cent of highest priority habitat secured outside the UGB | Calculated from Hectares of highest priority habitat secured | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of land secured through purchase by the Crown | Collated data from notification of completed land purchase forms | Program files | Department of Environment, Land, Water and Planning |

| Output | Key Performance Indicator | Data collection | Data source | Responsibility |
|---|---|--|---------------|--|
| | Hectares of land secured through permanent protection agreement on-title with management plan | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of EPBC-listed community secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Hectares of Ecological Vegetation Class secured | Vegetation mapping GIS files | NVIM | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions and contracts | Program files | Department of Environment, Land, Water and Planning |
| | Hectares of private land with management agreement | Collated data from Agreements for permanent protection on-title | Program files | Department of Environment, Land, Water and Planning |
| Important landscape and habitat areas for Southern Brown Bandicoot are protected and managed | Hectares of public land with management agreement | Collated data from Agreements management on public land and contracts | Program files | Department of Environment, Land, Water and Planning |
| | Hectares under landscape scale predator control program | Collated data from land manager reports and data submissions and contracts | Program files | Department of Environment, Land, Water and Planning |
| | Units of land management (DELWP Standard Outputs) undertaken | Collated data from land manager reports and data submissions and contracts | Program files | Department of Environment, Land, Water and Planning |

Appendix 3: Key Performance Indicators for Program Outcomes

Key performance indicators for the outcomes that the Melbourne Strategic Assessment expects to achieve

| Outcome | Key Performance Indicator | Data collection | Data source | Responsibility | |
|---|---|--|----------------|--|--|
| | Hectares making transitions between states | Mapping undertaken between August and December undertaken every five years compared to previous reporting period | | | |
| | Cover of native perennial herbs | Estimated cover of perennial herbs in all 20 X 20 m plots in NTG states monitored in spring annually | - | | |
| The composition, | Diversity of native perennial herbs | Estimated diversity of native perennial herbs in all 20 x 20 m plots in NTG states monitored in spring annually | NVIM | | |
| structure and function of Natural | Cover of Kangaroo Grass (Themeda triandra) | Estimated cover of Kangaroo Grass in 20 x 20 plots in NTG states monitored in spring annually | | Department of Environment, Land, Water and Planning | |
| Temperate Grassland improves | Cover of native perennial grasses (excluding Kangaroo Grass) | Estimated cover of native perennial grasses (excluding Kangaroo Grass) in all 20 x 20m plots in NTG states monitored in spring annually. | | | |
| | Per cent of plots that have bare ground cover between 25-75% | Per cent of rapid monitoring plots in the target cover range monitored in pring annually | | | |
| | Per cent of all perennial vegetation comprised of weeds | Per cent of perennial vegetation which is composed of weeds in permanent 20 x 20 m plots collected in spring annually compared to the original per cent cover in that plot in the year of acquisition. | - | | |
| | Hectares making transitions between states | Mapping undertaken between August and December undertaken every five years compared to previous reporting period | | | |
| The composition, structure and | Cover of native perennial herbs | Estimated cover of perennial herbs in all 20 X 20 m plots in GEW states monitored in spring annually | - | Department of Environment, | |
| function of Grassy Eucalypt Woodland improves | Diversity of native perennial herbs | Estimated diversity of native perennial herbs in all 20 x 20 m plots in GEW states monitored in spring annually | NVIM | Land, Water and Planning | |
| | Cover of target species(<i>Themeda triandra, Poa</i> spp. Austrostipa mollis) | Estimated cover of target grass species in all 20 x 20 plots in GEW states monitored in spring annually | | | |

| Outcome | Key Performance Indicator | Data collection | Data source | Responsibility |
|--|---|--|----------------|--|
| | Relative abundance of woodland structural types | Per cent of 50 x 50 m plots in the target cover range for each woodland structure category, monitored in spring annually. | | |
| | Per cent of plots with Eucalypt recruits | Per cent of 50 x 50 m plots with Eucalypt recruits monitored in spring annually | | |
| | Per cent of all perennial vegetation composed of perennial weeds | Per cent of perennial vegetation which is weeds in permanent 20 x 20 m plots collected in spring annually compared to the original per cent cover in that plot in the year land is secured. | | |
| | Diversity of native perennial herbs during spring- summer | Estimated diversity of native perennial herbs collected in spring- summer annually in each wetland >three ha compared to the mean diversity for that wetland five years after land is secured. | | |
| The composition, structure and function of Seasonal | Diversity of all native herbs during drawdown | Estimated diversity of all native herbs collected one month after observed peak water level in each wetland >three ha compared to the mean diversity for that wetland for drawndown events within the first five years of land being secured. | • | Department of Environment, |
| Herbaceous Wetlands (freshwater) improves | Per cent of all perennial vegetation during Spring- Summer composed of weeds | Per cent of vegetation which is perennial weeds in each wetland >three ha in extent monitored in spring-summer annually compared to the original per cent in that wetland in the year land is secured | | Land, Water and Planning |
| | Per cent of all perennial vegetation during drawdown composed of weeds | Per cent of vegetation which is perennial weeds in each wetland >three ha in extent monitored one month after observed peak water level compared to the original per cent in that wetland in the first drawdown event after the land is secured | | |
| No substantial negative change to populations of Button Wrinklewort | Average annual population count over last five years | Calculated from annual population counts using transects monitored between November and December | VBA | Department of Environment, Land, Water and Planning |
| No substantial negative change to populations of Large-fruit Groundsel | Average annual population count over last five years | Calculated from annual population counts using transects monitored between September 1st and November 30th | VBA | Department of Environment, Land, Water and Planning |
| No substantial negative change to populations of Maroon Leek-orchid | Count of individuals emergent at least once over a five year period | Calculated from annual population counts to locate emergent individuals monitored between September 1st and October 31st | VBA | Department of Environment, Land, Water and Planning |

| Outcome | Key Performance Indicator | Data collection | Data source | Responsibility |
|---|---|--|---|--|
| No substantial negative change to populations of Matted Flax-lily | Average annual population count over last five years | Average calculated from annual population count using transects monitored between October to January | VBA | Department of Environment, Land, Water and Planning |
| No substantial negative change to populations of Small Golden Moths Orchid | Count of individuals emergent at least once over a five year period | Calculated from annual population counts using transects to locate emergent monitored between September 1 st and October 31 st | VBA | Department of Environment, Land, Water and Planning |
| No substantial negative change to populations of Spiny Rice-flower , and populations are self-sustaining | Five year annual average population density | Calculated from annual population counts using transects monitored between May to August | | Department of Environment, Land, Water and Planning |
| | Number of years that recruits form over 10% of the population over a 10 year period | Calculated from annual population counts for each conservation area using plots monitored between May to August | VBA | |
| Golden Sun Moth persists | Proportion of monitored sites that are occupied | Calculated from transects to identify occupied sites, conducted between November and January annually | VBA | Department of Environment, Land, Water and Planning |
| Growling Grass Frog persists | Projected risk of extinction for each Conservation Area, estimated using a stochastic patch-occupancy model for Growling Grass Frog metapopulations | Predictions of extinction risk from the stochastic patch occupancy model, incorporating all available occupancy and habitat data for each Conservation Area. | VBA | Department of Environment, Land, Water and Planning |
| Southern Brown Bandicoot persists | Proportion of monitored sites that are occupied | Calculated from camera trap surveys conducted every five years | VBA | Department of Environment, Land, Water and Planning |
| Striped Legless Lizard persists | Proportion of permanent monitoring plots that are occupied | Calculated from tile grid surveys conducted between November and December annually | Department of Environment, VBA Land, Water and Planning | |

Appendix 3: Key Performance Indicators for Broader outcomes

Key performance indicators for the broader outcomes that the Melbourne Strategic Assessment will contribute to

| Broad Outcome | Key Performance Indicator | Melbourne Strategic Assessment Data contribution | Reporting |
|--|---------------------------------------|--|--|
| Ecologically sustainable development through the conservation and ecologically sustainable use of natural resources | Progress against outcomes | Output progress report and five yearly outcome reports | Nation-wide reporting undertaken by Department of Environment |
| Our natural assets are protected and there is better planning of our water, energy and waste management systems to create a sustainable city | Progress against outputs and outcomes | Output process report and five yearly outcome reports | Melbourne Reporting undertaken by Metropolitan Planning Authority |
| Conservation measures achieve appropriate mitigation of impacts on biodiversity | Progress against outputs and outcomes | Output progress report and five yearly outcome reports | State-wide reporting undertaken by Department of Environment, Land, Water and Planning |

