Table of Contents

Executive Summary E-1

1 Introduction 1–1

1.1 Project Overview 1–1

1.2 Project Proponent 1–6

1.3 Environment Effects Statement 1–6

1.4 Subject matter of the EES 1–9

1.5 Matters not addressed in the EES 1–19

1.6 Project Delivery 1–20

1.7 Project Approvals 1–22

1.8 Structure of the EES 1–23

2 Project Rationale and Benefits 2–1

2.1 Introduction 2–1

2.2 Previous Studies 2–2

2.3 Policy Context 2–3

2.4 Project Rationale 2–8

2.5 Project Benefits 2–18

2.6 Satisfying the Project Objectives 2–25

3 Legislative Framework and Approval Requirements 3–1

3.1 Introduction 3–1

3.2 Environment Effects Act 1978 3–2

3.3 Principal approvals 3–4

3.4 Secondary Approvals and Compliance 3–7

3.5 Major Transport Projects Facilitation Act 2009 3–10

4 EES Assessment Framework and Approach 4–1

4.1 Introduction 4–1

4.2 Draft EES Evaluation Objectives and Assessment Framework 4–1

4.3 Relevant Legislation and Policies 4–4

4.4 Approach to EES Specialist Studies 4–15

4.5 Environmental Risk Assessment 4–16

4.6 Scope of Specialist Studies 4–19

5 Project Development 5–1

5.1 Introduction 5–1

5.2 Project Options 5–5

5.3 Design Refinements 5–28

6 Project Description 6–1

6.1 Introduction 6–1

6.2 Design Requirements 6–5

6.3 Project Schedule and Delivery 6–5

6.4 Proposed Project Boundary 6–6

6.5 Project Precincts and Components 6–7

6.6 Construction Methodology 6–40

6.7 Operation and Maintenance 6–66

6.8 Waste, Spoil and Groundwater Management 6–66

6.9 Property Acquisition 6–68

6.10 Sustainability Principles and Approach 6–70

6.11 Urban Design Strategy 6–73

7 Community and Stakeholder Engagement 7–1

7.1 Introduction 7–1

7.2 EES Scoping Requirements 7–1

7.3 Engagement Principles and Goals 7–2

7.4 Consultation Approach 7–3

7.5 Stakeholders 7–5

7.6 Overview of Engagement 7–12

7.7 Response to Feedback 7–18

7.8 Ongoing Community and Stakeholder Engagement 7–35

8 Transport 8–1

8.1 Overview 8–1

8.2 EES Objectives 8–5

8.3 Legislation and Policy 8–5

8.4 Methodology 8–7

8.5 Existing Conditions 8–9

8.6 Risk Assessment 8–12

8.7 Impact Assessment 8–13

8.8 Precinct 1: Tunnels 8–19

8.9 Precinct 2: Western Portal (Kensington) 8–22

8.10 Precinct 3: Arden Station 8–28

8.11 Precinct 4: Parkville Station 8–32

8.12 Precinct 5: CBD North Station 8–39

8.13 Precinct 6: CBD South Station 8–44

8.14 Precinct 7: Domain Station 8–48

8.15 Precinct 8: Eastern Portal (South Yarra) 8–57

8.16 Precinct 9: Western Turnback (West Footscray) 8–61

8.17 Environmental Performance Requirements 8–61

8.18 Conclusion 8–68

9 Land Use and Planning 9–1

9.1 Overview 9–1

9.2 EES Objectives 9–2

9.3 Legislation and Policy 9–3

9.4 Methodology 9–8

9.5 Existing Conditions 9–9

9.6 Planning Approval Mechanism 9–12

9.7 Risk Assessment 9–13

9.8 Impact Assessment 9–14

9.9 Precinct 1: Tunnels 9–17

9.10 Precinct 2: Western Portal (Kensington) 9–21

9.11 Precinct 3: Arden Station 9–23

9.12 Precinct 4: Parkville Station 9–27

9.13 Precinct 5: CBD North Station 9–30

9.14 Precinct 6: CBD South Station 9–34

9.15 Precinct 7: Domain Station 9–37

9.16 Precinct 8: Eastern Portal (South Yarra) 9–41

9.17 Precinct 9: Western Turnback (West Footscray) 9–43

9.18 Early Works 9–44

9.19 Environmental Performance Requirements 9–46

9.20 Conclusion 9–50

10 Social and Community 10–1

10.1 Overview 10–1

10.2 EES Objectives 10–2

10.3 Legislation 10–3

10.4 Methodology 10–3

10.5 Existing Conditions 10–6

10.6 Risk Assessment 10–9

10.7 Impact Assessment 10–13

10.8 Precinct 1: Tunnels 10–16

10.9 Precinct 2: Western Portal (Kensington) 10–19

10.10 Precinct 3: Arden Station 10–21

10.11 Precinct 4: Parkville Station 10–23

10.12 Precinct 5: CBD North Station 10–25

10.13 Precinct 6: CBD South Station 10–27

10.14 Precinct 7: Domain Station 10–29

10.15 Precinct 8: Eastern Portal (South Yarra) 10–32

10.16 Precinct 9: Western Turnback (West Footscray) 10–34

10.17 Early Works 10–35

10.18 Environmental Performance Requirements 10–35

10.19 Conclusion 10–42

11 Business 11–1

11.1 Overview 11–1

11.2 EES Objective 11–5

11.3 Legislation and Policy 11–6

11.4 Methodology 11–9

11.5 Existing Conditions 11–11

11.6 Risk Assessment 11–13

11.7 Impact Assessment - Summary 11–14

11.8 Metropolitan Impact 11–18

11.9 Early Works Impact 11–18

11.10 Precinct 1: Tunnels 11–19

11.11 Precinct 2: Western Portal (Kensington) 11–20

11.12 Precinct 3: Arden Station 11–22

11.13 Precinct 4: Parkville Station 11–24

11.14 Precinct 5: CBD North Station 11–28

11.15 Precinct 6: CBD South Station 11–30

11.16 Precinct 7: Domain Station 11–35

11.17 Precinct 8: Eastern Portal (South Yarra) 11–37

11.18 Precinct 9: Western Turnback (West Footscray) 11–38

11.19 Environmental Performance Requirements 11–39

11.20 Conclusion 11–43

12 Air Quality 12–1

12.1 Overview 12–1

12.2 EES Objective 12–2

12.3 Legislation and Policy 12–3

12.4 Methodology 12–4

12.5 Existing Conditions 12–6

12.6 Risk Assessment 12–8

12.7 Impact Assessment 12–9

12.8 Precinct 1: Tunnels 12–14

12.9 Precinct 2: Western Portal (Kensington) 12–16

12.10 Precinct 3: Arden Station 12–18

12.11 Precinct 4: Parkville Station 12–23

12.12 Precincts 5 and 6: CBD North Station and CBD South Station 12–25

12.13 Precinct 7: Domain Station 12–27

12.14 Precinct 8: Eastern Portal (South Yarra) 12–37

12.15 Precinct 9: Western Turnback (West Footscray) 12–38

12.16 Environmental Performance Requirements 12–38

12.17 Conclusion 12–41

13 Noise and Vibration 13–1

13.1 Overview 13–1

13.2 EES Objective 13–4

13.3 Legislation and Policy 13–4

13.4 Methodology 13–6

13.5 Noise and Vibration Levels and Criteria 13–11

13.6 Existing Conditions 13–21

13.7 Risk Assessment 13–24

13.8 Impact Assessment 13–26

13.9 Precinct 1: Tunnels 13–34

13.10 Precinct 2: Western Portal (Kensington) 13–40

13.11 Precinct 3: Arden Station 13–44

13.12 Precinct 4: Parkville Station 13–46

13.13 Precinct 5: CBD North Station 13–52

13.14 Precinct 6: CBD South Station 13–56

13.15 Precinct 7: Domain Station 13–60

13.16 Precinct 8: Eastern Portal (South Yarra) 13–63

13.17 Precinct 9: Western Turnback (West Footscray) 13–67

13.18 Environmental Performance Requirements 13–68

13.19 Conclusion 13–83

14 Historical Cultural Heritage 14–1

14.1 Overview 14–1

14.2 EES Objectives 14–3

14.3 Legislation and Policy 14–4

14.4 Methodology 14–5

14.5 Existing Conditions 14–8

14.6 Risk Assessment 14–8

14.7 Impact Assessment 14–13

14.8 Precinct 1: Tunnels 14–15

14.9 Precinct 2: Western Portal (Kensington) 14–27

14.10 Precinct 3: Arden Station 14–29

14.11 Precinct 4: Parkville Station 14–32

14.12 Precinct 5: CBD North Station 14–37

14.13 Precinct 6: CBD South Station 14–41

14.14 Precinct 7: Domain Station 14–49

14.15 Precinct 8: Eastern Portal (South Yarra) 14–56

14.16 Precinct 9: Western Turnback (West Footscray) 14–58

14.17 Early Works 14–60

14.18 Environmental Performance Requirements 14–61

14.19 Conclusion 14–73

15 Aboriginal Heritage 15–1

15.1 Overview 15–1

15.2 EES Objectives 15–2

15.3 Legislation and Policy 15–2

15.4 Methodology 15–3

15.5 Existing Conditions 15–5

15.6 Risk Assessment 15–9

15.7 Impact Assessment 15–9

15.8 Precinct 1: Tunnels 15–10

15.9 Precinct 2: Western Portal (Kensington) 15–12

15.10 Precinct 3: Arden Station 15–12

15.11 Precinct 4: Parkville Station 15–13

15.12 Precinct 5: CBD North Station 15–14

15.13 Precinct 6: CBD South Station 15–15

15.14 Precinct 7: Domain Station 15–15

15.15 Precinct 8: Eastern Portal (South Yarra) 15–16

15.16 Precinct 9: Western Turnback (West Footscray) 15–17

15.17 Early Works 15–17

15.18 Environmental Performance Requirements 15–17

15.19 Conclusion 15–19

16 Landscape and Visual 16–1

16.1 Overview 16–1

16.2 EES Objectives 16–3

16.3 Legislation and Policy 16–4

16.4 Methodology 16–6

16.5 Existing Conditions 16–7

16.6 Risk Assessment 16–11

16.7 Impact Assessment 16–14

16.8 Precinct 1: Tunnels 16–20

16.9 Precinct 2: Western Portal (Kensington) 16–23

16.10 Precinct 3: Arden Station 16–24

16.11 Precinct 4: Parkville Station 16–26

16.12 Precinct 5: CBD North Station 16–29

16.13 Precinct 6: CBD South Station 16–31

16.14 Precinct 7: Domain Station 16–34

16.15 Precinct 8: Eastern Portal (South Yarra) 16–37

16.16 Precinct 9: Western Turnback (West Footscray) 16–39

16.17 Environmental Performance Requirements 16–39

16.18 Conclusion 16–42

17 Surface Water 17–1

17.1 Overview 17–1

17.2 EES Objectives 17–3

17.3 Legislation and Policy 17–4

17.4 Methodology 17–5

17.5 Existing Conditions 17–8

17.6 Risk Assessment 17–13

17.7 Impact Assessment 17–14

17.8 Precinct 1: Tunnels 17–18

17.9 Precinct 2: Western Portal (Kensington) 17–19

17.10 Precinct 3: Arden Station 17–21

17.11 Precincts 4 and 5: Parkville Station and CBD North Station 17–24

17.12 Precinct 6: CBD South Station 17–25

17.13 Precinct 7: Domain Station 17–27

17.14 Precinct 8: Eastern Portal (South Yarra) 17–28

17.15 Precinct 9: Western Turnback (West Footscray) 17–30

17.16 Early Works 17–31

17.17 Environmental Performance Requirements 17–31

17.18 Conclusion 17–38

18 Groundwater 18–1

18.1 Overview 18–1

18.2 EES Objective 18–3

18.3 Legislation and Policy 18–4

18.4 Methodology 18–6

18.5 Existing Conditions 18–7

18.6 Risk Assessment 18–14

18.7 Impact Assessment 18–16

18.8 Precinct 1: Tunnels 18–19

18.9 Precinct 2: Western Portal (Kensington) 18–25

18.10 Precinct 3: Arden Station 18–26

18.11 Precinct 4: Parkville Station 18–27

18.12 Precinct 5: CBD North Station 18–29

18.13 Precinct 6: CBD South Station 18–30

18.14 Precinct 7: Domain Station 18–33

18.15 Precinct 8: Eastern Portal (South Yarra) 18–33

18.16 Precinct 9: Western Turnback (West Footscray) 18–34

18.17 Early Works 18–35

18.18 Environmental Performance Requirements 18–35

18.19 Conclusion 18–39

19 Ground Movement and Land Stability 19–1

19.1 Overview 19–1

19.2 EES Objective 19–4

19.3 Legislation and Policy 19–5

19.4 Background 19–5

19.5 Methodology 19–8

19.6 Risk Assessment 19–16

19.7 Evaluation Criteria 19–18

19.8 Impact Assessment 19–20

19.9 Precinct 1: Tunnels 19–23

19.10 Precinct 2: Western Portal (Kensington) 19–30

19.11 Precinct 3: Arden Station 19–31

19.12 Precinct 4: Parkville Station 19–31

19.13 Precinct 5: CBD North Station 19–32

19.14 Precinct 6: CBD South Station 19–34

19.15 Precinct 7: Domain Station 19–35

19.16 Precinct 8: Eastern Portal (South Yarra) 19–36

19.17 Precinct 9: Western Turnback (West Footscray) 19–37

19.18 Environmental Performance Requirements 19–37

19.19 Conclusion 19–42

20 Contaminated Land and Spoil Management 20–1

20.1 Overview 20–1

20.2 EES Objective 20–2

20.3 Legislation and Policy 20–3

20.4 Methodology 20–5

20.5 Existing Conditions 20–6

20.6 Risk Assessment 20–9

20.7 Impact Assessment Overview 20–10

20.8 Precinct 1: Tunnels 20–18

20.9 Precinct 2: Western Portal (Kensington) 20–20

20.10 Precinct 3: Arden Station 20–23

20.11 Precinct 4: Parkville Station 20–25

20.12 Precinct 5: CBD North Station 20–27

20.13 Precincts 6 and 7: CBD South Station and Domain Station 20–28

20.14 Precinct 8: Eastern Portal (South Yarra) 20–30

20.15 Precinct 9: Western Turnback (West Footscray) 20–32

20.16 Early Works 20–32

20.17 Environmental Performance Requirements 20–33

20.18 Conclusion 20–38

21 Biodiversity 21–1

21.1 Overview 21–1

21.2 EES Objectives 21–2

21.3 Legislation and Policy 21–3

21.4 Methodology 21–5

21.5 Existing Conditions 21–6

21.6 Risk Assessment 21–13

21.7 Impact Assessment 21–14

21.8 Precinct 1: Tunnels 21–16

21.9 Precinct 2: Western Portal (Kensington) 21–20

21.10 Precinct 3: Arden Station 21–22

21.11 Precinct 4: Parkville Station 21–24

21.12 Precinct 5: CBD North Station 21–25

21.13 Precinct 6: CBD South Station 21–26

21.14 Precinct 7: Domain Station 21–27

21.15 Precinct 8: Eastern Portal (South Yarra) 21–28

21.16 Precinct 9: Western Turnback (West Footscray) 21–30

21.17 Early Works 21–31

21.18 Environmental Performance Requirements 21–31

21.19 Conclusion 21–37

22 Greenhouse Gas 22–1

22.1 Overview 22–1

22.2 EES Objective 22–4

22.3 Legislation and Policy 22–4

22.4 Sustainability Performance Targets 22–7

22.5 Methodology 22–7

22.6 Risk Assessment 22–13

22.7 Impact Assessment 22–14

22.8 Environmental Performance Requirements 22–22

22.9 Conclusion 22–24

23 Environmental Management Framework 23–1

23.1 Introduction 23–1

23.2 Scoping Requirements and EMF Structure 23–3

23.3 Governance Framework 23–4

23.4 Roles and Responsibilities 23–6

23.5 Risk and Impact Assessment 23–9

23.6 Environmental Performance Requirements 23–9

23.7 Environmental Management Documentation 23–54

23.8 Evaluating Environmental Performance Outcomes 23–60

23.9 Contingency Measures 23–62

24 Conclusion 24–1

24.1 Overview 24–1

24.2 Melbourne Metro Concept Design and Environmental Performance Requirements 24–1

24.3 Project Evaluation against the Scoping Requirements 24–2

24.4 *Transport Integration Act 2010* 24–12

24.5 Next Steps 24–20

24.6 Conclusion 24–21

Glossary and Abbreviations

Technical Appendecis Folder Number

Appendix A Planning Scheme Amendment and Associated Documentation 1–14

Appendix B Environmental Risk Assessment Report (Risk Register) 1–14

Appendix C Community and Stakeholder Feedback Summary Report 1–14

Appendix D Transport 2–14

Appendix E Land Use and Planning 3–14

Appendix F Social and Community 4–14

Appendix G Business 4–14

Appendix H Air Quality 4–14

Appendix I Noise and Vibration 5 & 6–14

Appendix J Historical Cultural Heritage 7–14

Appendix K Aboriginal Heritage 8–14

Appendix L Landscape and Visual 8–14

Appendix M Urban Design Strategy 8–14

Appendix N Surface Water 9–14

Appendix O Groundwater 10–14

Appendix P Ground Movement and Land Stability 11–14

Appendix Q Contaminated Land and Spoil Management 12–14

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong 13–14

Appendix S Arboriculture: City of Stonnington 13–14

Appendix T Terrestrial Flora and Fauna 13–14

Appendix U Aquatic Ecology and River Health 13–14

Appendix V Greenhouse Gas 14–14

Appendix W Sustainability Principles and Approach 14–14

EES Map Book

Table of Contents

Volume 1

Executive Summary

1 Introduction

2 Project Rationale and Benefits

3 Legislative Framework and Approval Requirements

4 EES Assessment Framework and Approach

5 Project Development

6 Project Description

7 Community and Stakeholder Engagement

8 Transport

9 Land Use and Planning

Volume 2

10 Social and Community

11 Business

12 Air Quality

13 Noise and Vibration

14 Historical Cultural Heritage

15 Aboriginal Heritage

16 Landscape and Visual

Volume 3

17 Surface water

18 Groundwater

19 Ground Movement and Land Stability

20 Contaminated Land and Spoil Management

21 Biodiversity

22 Greenhouse Gas

23 Environmental Management Framework

24 Conclusion

Glossary and abbreviations

Table of Contents

Volume 1

Executive Summary

1 Introduction

2 Project Rationale and Benefits

3 Legislative Framework and Approval Requirements

4 EES Assessment Framework and Approach

5 Project Development

6 Project Description

7 Community and Stakeholder Engagement

8 Transport

9 Land Use and Planning

Volume 2

10 Social and Community

11 Business

12 Air Quality

13 Noise and Vibration

14 Historical Cultural Heritage

15 Aboriginal Heritage

16 Landscape and Visual

Volume 3

17 Surface water

18 Groundwater

19 Ground Movement and Land Stability

20 Contaminated Land and Spoil Management

21 Biodiversity

22 Greenhouse Gas

23 Environmental Management Framework

24 Conclusion

Glossary and abbreviations

Table of Contents

Volume 1

Executive Summary

1 Introduction

2 Project Rationale and Benefits

3 Legislative Framework and Approval Requirements

4 EES Assessment Framework and Approach

5 Project Development

6 Project Description

7 Community and Stakeholder Engagement

8 Transport

9 Land Use and Planning

Volume 2

10 Social and Community

11 Business

12 Air Quality

13 Noise and Vibration

14 Historical Cultural Heritage

15 Aboriginal Heritage

16 Landscape and Visual

Volume 3

17 Surface water

18 Groundwater

19 Ground Movement and Land Stability

20 Contaminated Land and Spoil Management

21 Biodiversity

22 Greenhouse Gas

23 Environmental Management Framework

24 Conclusion

Glossary and abbreviations

Table of Contents

Technical Appendices – 1 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 2 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 3 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 4 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 5 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 6 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 7 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 8 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 9 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 10 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 11 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 12 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 13 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices – 14 of 14

Appendix A Planning Scheme Amendment and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Community and Stakeholder Feedback Summary Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: City of Melbourne, Port Phillip and Maribyrnong

Appendix S Arboriculture: City of Stonnington

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Principles and Approach

EES Map Book

Table of Contents

Technical Appendices  
1 of 24

Appendix A Planning Scheme and Associated Documentation

Appendix B Environmental Risk Assessment Report (Risk Register)

Appendix C Consultation and Engagement Report

Appendix D Transport

Appendix E Land Use and Planning

Appendix F Social and Community

Appendix G Business

Appendix H Air Quality

Appendix I Noise and Vibration

Appendix J Historical Cultural Heritage

Appendix K Aboriginal Heritage

Appendix L Landscape and Visual

Appendix M Urban Design Strategy

Appendix N Surface Water

Appendix O Groundwater

Appendix P Ground Movement and Land Stability

Appendix Q Contaminated Land and Spoil Management

Appendix R Arboriculture: John Patricks

Appendix S Arboriculture: Tree Dimensions

Appendix T Terrestrial Flora and Fauna

Appendix U Aquatic Ecology and River Health

Appendix V Greenhouse Gas

Appendix W Sustainability Assessment Report

EES Map Book

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 1 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 2 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 3 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 4 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 5 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 6 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 7 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 8 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 9 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 10 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 11 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 12 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 13 OF 14

Melbourne Metro Rail Project

ENVIRONMENT EFFECTS STATEMENT

TECHNICAL APPENDICES 14 OF 14