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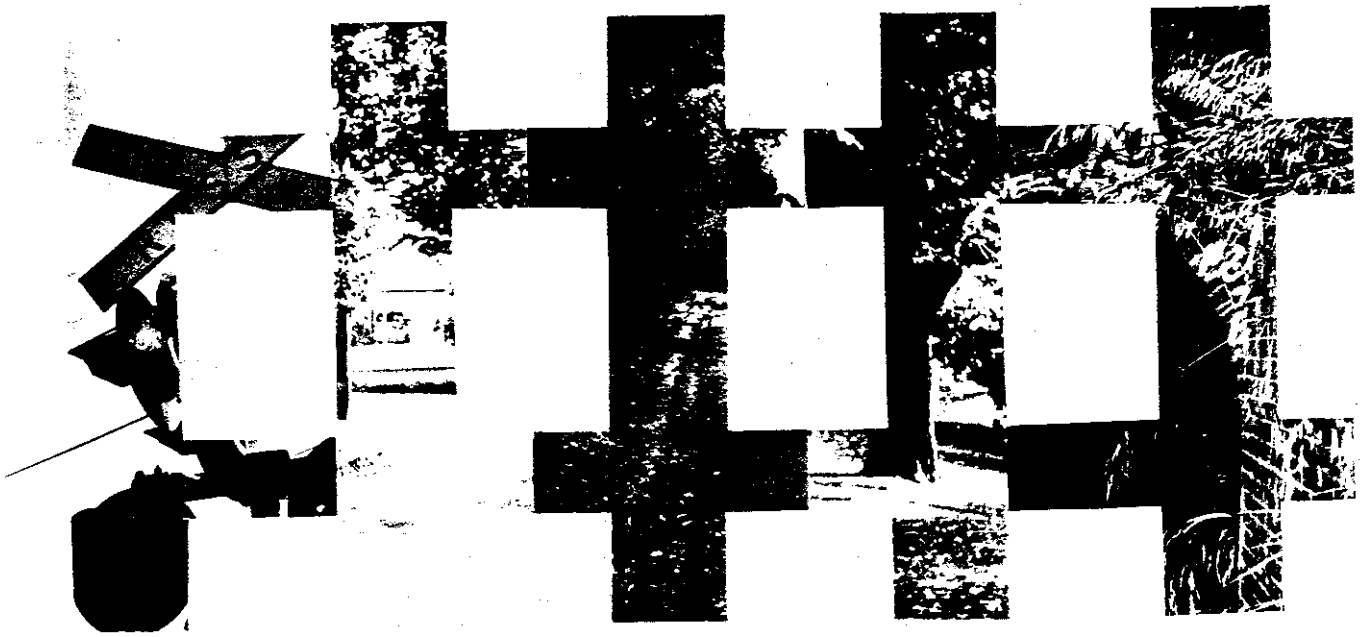
Cities of Boroondara and Whitehorse
and
Department of Sport and Recreation Victoria

Feasibility Study for Eastern Rail Trail



June 1996

Prepared by

PARKLINKS PTY LTD
ACN 086 881 847

In association with
Bicycle Victoria, Transport Research Centre RMIT
Mackintosh Consulting and Aspect Landscape Consultants

Foreword

The Eastern Rail Trail is an important link in the Principal Bike Network for Melbourne.

It is one of the four radial routes (Box Hill, Frankston, Epping and Williamstown) identified by the State Bicycle Committee to link the outer suburbs with the City. The strategic importance of these radial routes is their connections to the city and to other existing and proposed routes on the Principal Bike Network and routes on the Municipal Bicycle Network created by local Councils. Local government, the Public Transport Corporation and VicRoads have supported the concept of the Eastern Rail Trail.

The State Bicycle Committee is keen to develop shared bicycle and pedestrian trails on existing rail reserves. These radial connections provide the opportunity for the creation of circuits from five to ten kilometres where much of the recreational cycling is undertaken. The circuits provide access for local communities to facilities that connect to the rivers, creeks and the bay. Recreational facilities provide the opportunity for safe cycling for children and families.

The State Bicycle Committee sees the opportunity for a mix of facilities in the eastern corridor for both on-road and off-road use. Commuter cyclists will have the opportunity to use on-road routes as well as off-road routes in this corridor. This mix of facilities which allows for commuter and recreational cycling is a responsible approach to transport planning and a healthy community.

The Eastern Rail Trail report will provide the impetus for the development and recognition of cycling in this important corridor. The provision of facilities has strong community support and the continued recognition and implementation of on-road and off-road routes will increase the number of cyclists using them. There are enormous opportunities for the use of existing rail reserves for tourism, commuter and local recreational links across Victoria. It has been seen in other areas that when the facilities are provided the number of cyclists increases.

I commend the initiative of the City of Whitehorse and the City of Boroondara in developing the Eastern Rail Trail report.

Jane Nathan

Jane Nathan
Chair
State Bicycle Committee

Comment from the Whitehorse Bicycle Committee

"The Whitehorse Bicycle Committee strongly favours the development of a trail alongside the Belgrave Lilydale Railway from the Yarra River west of Hawthorn to Heatherdale Such a path would provide:

- a safe convenient, relatively high speed and largely off road route for commuting cyclists.
- a spine connecting many existing bike routes within the Cities of Whitehorse and Boroondara.
- a useful connection for many cyclists and pedestrians for trips to school, recreation facilities, shops and railway stations.

This would create new travel options for many people, thus enhancing liveability in our part of Melbourne.

Within the two cities which would be spanned by the path, demand for transport is greatest in the east west direction but the availability of safe, convenient cycling routes in this direction is very limited. Maroondah Highway and Canterbury Road are not attractive to most cyclists. The proposed Eastern Rail Trail would attract many more cyclists to try cycling to the city"

Executive Summary

A trail along the Ringwood Rail line has been suggested for many years and this study has been undertaken to determine the feasibility of a shared use trail.

From the preliminary assessment undertaken the trail is a feasible option and in fact could be developed immediately as a 23 Km on road route generally following the rail line. Minor works in the order of $100 000 would bring the existing route up to an acceptable standard and other works on maps and brochures would help to identify and promote the trail.

The 18 Km ultimate trail could be constructed generally along the edge of the Public Transport Corporation land and road and other reservations. The cost of this ultimate trail would be in the order of $3.9 M for a 3 m wide trail and associated bridges and underpasses. The cost reduces to under $3M if the path width is reduced. This is an achievable amount when considered over several agencies and a time frame of say ten years. The cost does not include allowance for purchase of any land.

There are several opportunities for funding of the trail including activities associated with the federation celebrations, Melbourne Parks and Waterways and VicRoads funding

A key element in the development of the Eastern Rail Trail in the future will be the agreement of the Public Transport Corporation to the works on their land and within the scope of the operational requirements for their service.

Funding from key trail and bicycle facility funding organisations such as Melbourne Parks and Waterways, State Bicycle Committee and VicRoads will also be required. Prior to this the Eastern Rail Trail will need to be identified on their strategic plans for the region.

Research into the potential users of the trail has indicated that the Eastern Rail Trail could provide a major facility for nearly 50 000 train commuters each day as well as a good proportion of the over 800 000 trips within the 3 Km corridor of the Eastern Rail Trail.

TABLE OF CONTENTS

Introduction

The Eastern Rail Trail is a shared use trail that has been available for the community to use for many years in a raw form. The trail was identified in the first editions of the Principal Bike Network prepared by the State Bicycle Committee. Components of the trail have been identified in the municipal bike plan for the municipalities that covered the area prior to amalgamation into the Cities of Whitehorse and Boroondara Council.

There are significant reasons for using the Eastern Rail Trail and there is a latent community need for a trail in the area for regional and local purposes and recreation and commuter purposes.

This study examines the feasibility of providing a shared footway along the railway line reserve from Heatherdale Station to the Yarra River. The study has been commissioned jointly by the Cities of Whitehorse Council and Boroondara Council, with funding from Sport and Recreation Victoria under the 1995/96 facility development Funding Program.

This report will form the basis of further action in detailing the development of the trail and in seeking further sponsorship and funding from State and Federal government agencies.

The establishment of a main east west shared footway through the Cities of Whitehorse Council and Boroondara Council is consistent with Councils corporate recreation and environmental strategies.

This study confirms the feasibility and provides an estimate of the future cost of the trail route from Heatherdale Station to the Yarra River.

The project has been managed by the Whitehorse Council Strategy and Economic Development Unit on behalf of the Cities of Whitehorse and Boroondara. Parklinks Pty Ltd in association with Aspect Landscape Consultants, Bicycle Victoria, Mackintosh Consulting and Transport Research Center at RMIT were appointed as the consultants for this study. The Consultants report to a Steering Committee comprising officers from both Cities and a bicycle user group representative from each municipality.

People in the Eastern Rail Trail Corridor

A corridor some three kilometres either side of the Eastern Rail Trail was considered in reviewing the demographic outlook for the area. This corridor virtually includes the entire Cities of Whitehorse and Boroondara and therefore is typical of these cities character.

Population Characteristics of the Corridor

Both Boroondara and Whitehorse have aging populations with the highest proportion of persons aged in the 20 - 29 and 40 - 49 age groups that generally indicates mature families with older children. The total population in the area is expected to stabilise with 150 000 in Boroondara and Whitehorse with 140 000.

The educational qualifications and income of the residents of the Eastern Rail Trail corridor are higher than the Melbourne average and reflect the demographics of the groups that potentially cycle.

Boroondara has a lower proportion of detached dwellings than the Melbourne average and a 40% higher proportion of flats and apartments. It can therefore be expected that the residents will require greater recreation opportunities such as trails.

Travel patterns in the area.

Specific research into the travel patterns of the people within the Eastern Rail Trail Corridor was undertaken by Transport Research Centre from RMIT using detailed travel survey data. This research identified that there are over 800000 people movements within the corridor each day. If only 1% used the Eastern Rail Trail it would still be Melbourne's busiest trail.

Nearly 50 000 people from the Eastern Rail Trail corridor catch the train each day and 8000 travel by train between Stations within the corridor. With development of the trail it is reasonable to expect a proportion would use the trail at some time as all are located within an easy cycle or walking distance. The trail will also generate its own patronage based on the experience at the Yarra Trail and St Kilda Bay Trail which are both attracting close to 0.5M users each year

Of the 800 000 trips, 32% are travelling to and from their home, 16 % are to buy something which could be catered for by the 30 shopping areas within one kilometre and 9% are for education much of which would be going to the 48 schools within one kilometre of the Eastern Rail Trail. There are 200000 walking trips and 17000 bicycle trips within the corridor each day with some 370000 car trips.

Regional significance of Eastern Rail Trail

The Eastern Rail Trail is regionally significant although it has not been identified in the two key strategic frameworks for Melbourne relating to trails and bicycle routes

Principal Bike Network

The Eastern Rail Trail was identified in the original Principal Bike Network developed in the late 1980's but has not appeared in subsequent versions. The latest Principal Bike Network plan indicates that Whitehorse Road and Canterbury Road are included.

Yarra Guide to Priorities for Melbourne's Open Space Network

The Yarra Guide to Priorities for Melbourne's Open Space Network produced by Melbourne Parks and Waterways identifies the priority areas where Melbourne Parks and Waterways Program funding will be given priority. The Melbourne Parks and Waterways Program allocates several million dollars in funding each year for the development of shared trails and other associated works.

The Eastern Rail Trail fills a significant gap in the trail network in this region as there are no east west trail links across the most populated areas of the region that include Whitehorse Council and Boroondara Council. The trail becomes the spine of the network in Whitehorse by linking many other trails in the city.

This is the challenge for the Eastern Rail Trail as the trail was not identified in the planning process yet it is able to service a major need for the region.

Metropolitan Trails Network

The Metropolitan Trails Network was first identified in the 1991 Open Space Strategy and sets out the major trail routes around Melbourne. The Eastern Rail Trail is not included on this network but because of the location and length of the Eastern Rail Trail it could easily form a significant component of this network.

The Eastern Rail Trail Experience

The Eastern Rail Trail will provide a variety of experiences to the users both now and in the ultimate stage.

The route passes through some of the most attractive and leafy suburbs of Melbourne and this will provide a recreation experience for users in an attractive setting. It is easy to imagine the trail in autumn with the leaves falling on a sunny day and family groups travelling to several popular nearby destinations such as Blacks Walk and Blackburn Lake.

The number of Commercial areas along the route and the many cafes and restaurants will make the Eastern Rail Trail an attractive gourmet trail. Particular areas that will attract trail users include the rustic charm of Maling Road and the many international restaurants at Box Hill and Station Street.

The ultimate trail will provide a glide path into the city with a smooth, continuous and safe route with a direct alignment to town as it follows the railway line. The route will provide a quick journey into the city and direct connections to numerous railway stations for dual mode travellers who do not want to cycle the whole distance.

The trail will provide a safe and secure section of school routes for students. The trail will provide an attractive alignment but will be distinctive in being highly visible from adjoining areas and the rail network and therefore will have more security than other trails. As an off road trail it will be inherently safer than the very busy nearby road system.

Proposed Eastern Rail Trail Actions

The Eastern Rail Trail although not marked as such already exists in the form of an on road route beside the rail line. The following actions identify methods of improving this route for short term use and developing the ultimate trail.

Immediate actions

Immediate actions that can be undertaken to improve the current on road route predominantly involve linemarking and installation of further signs to identify the trail.

The line marking along roads would clearly provide a bicycle facility on the road or a line which trail users could follow through circuitous sections. A distinctive coloured line based say on the Boorondara and Whitehorse Council corporate colours should be painted along the route to simplify following the trail.

Signs are required at each decision point along the route and therefore a sign would be required at virtually every intersection with further reassurance signs along longer stretches.

It is recommended that a standard metal finger board sign with railway characteristics be developed for the Eastern Rail Trail.

Pedestrian refuges, pram crossing and other works to develop the trail on a straight, smooth and continuous alignment that encourages use will be required.

The total cost for these works including maps and signage is in the order of $100 000.

Ultimate Trail construction

The ultimate trail will take several years to implement and requires the approval of the Public Transport Corporation.

The Public Transport Corporation has strict criteria for the establishment of a trail, along an operating rail service. In general no works can take place within 5 to 10 metres, fencing may be required near the rails and maintenance and liability responsibilities have to be accepted.

The total cost of ultimate works would be in the order of $3.9M for a 3 m trail.

The works would include trail construction and a distinctive coloured concrete is suggested for amenity, maintenance and identification reasons. Several sections of boardwalks, retaining walls and bridges and pedestrian lights are included in the works.

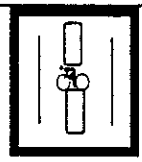
Typical Trail Treatments

Linemarking of Route

Painting of lines along roads to clearly identify bicycle routes. Painting of a follow line for the trail

Provide Signage

Install signs along route at most intersections and long sections in between



Construct Pedestrian refuge

Construct pedestrian refuges on roads to improve safety for people crossing

Improve Roundabout Access

Construct a roundabout for priority use of cyclists

Construct Trail

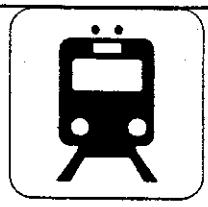
Construct a concrete trail

Install Pedestrian Lights

Install pedestrian or traffic lights to improve access and safety across road crossing

Construct Underpass

Construct an underpass for trail under existing bridges and roads



All works to be 5 to 10 m from operating railways

Construct Bridge

Construct a bridge over road to provide a safe crossing.

Construct Trail on Boardwalk

Construct a trail on boardwalk section

Construct Trail on retaining Wall

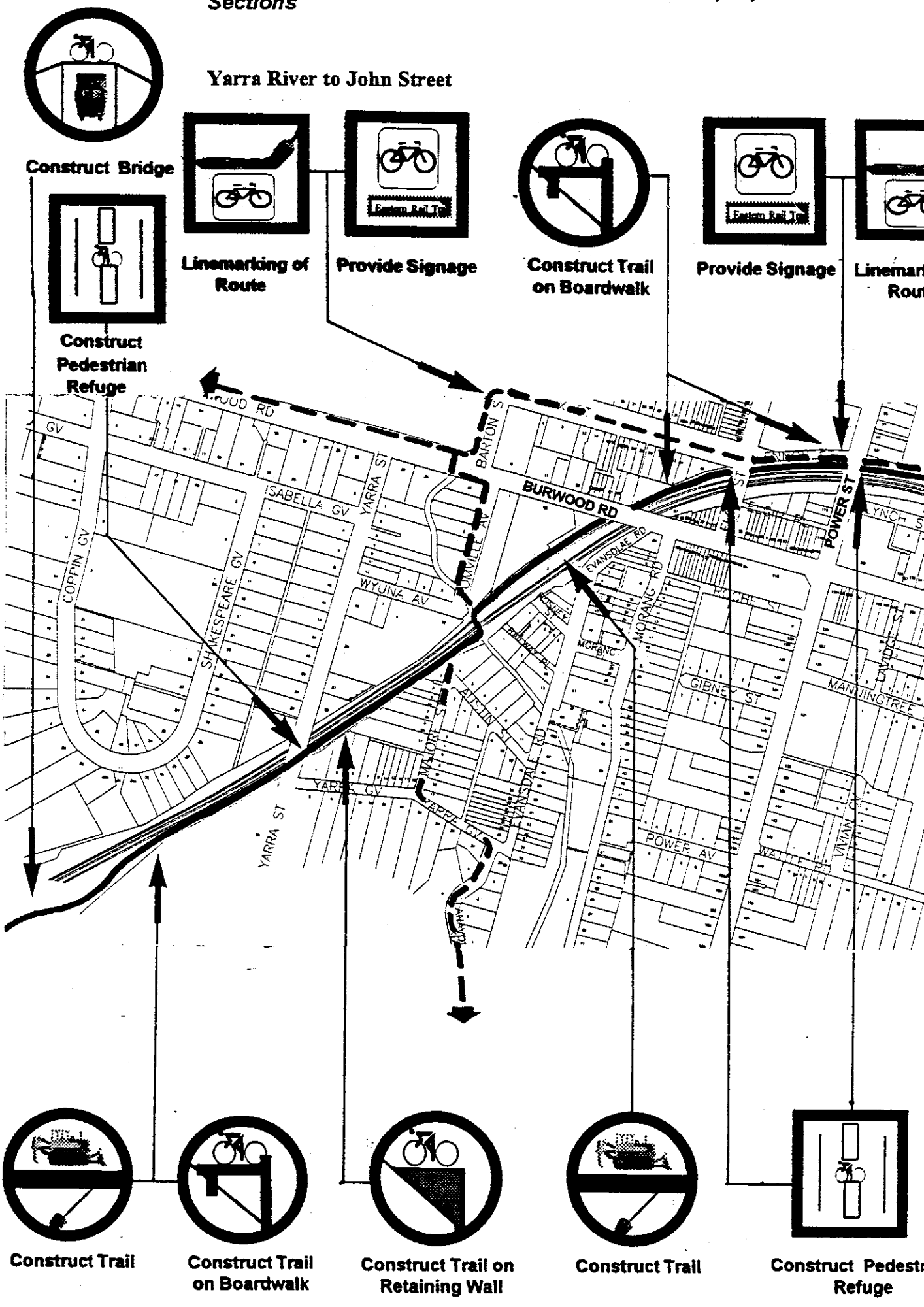
Construct a trail using a retaining wall in cut

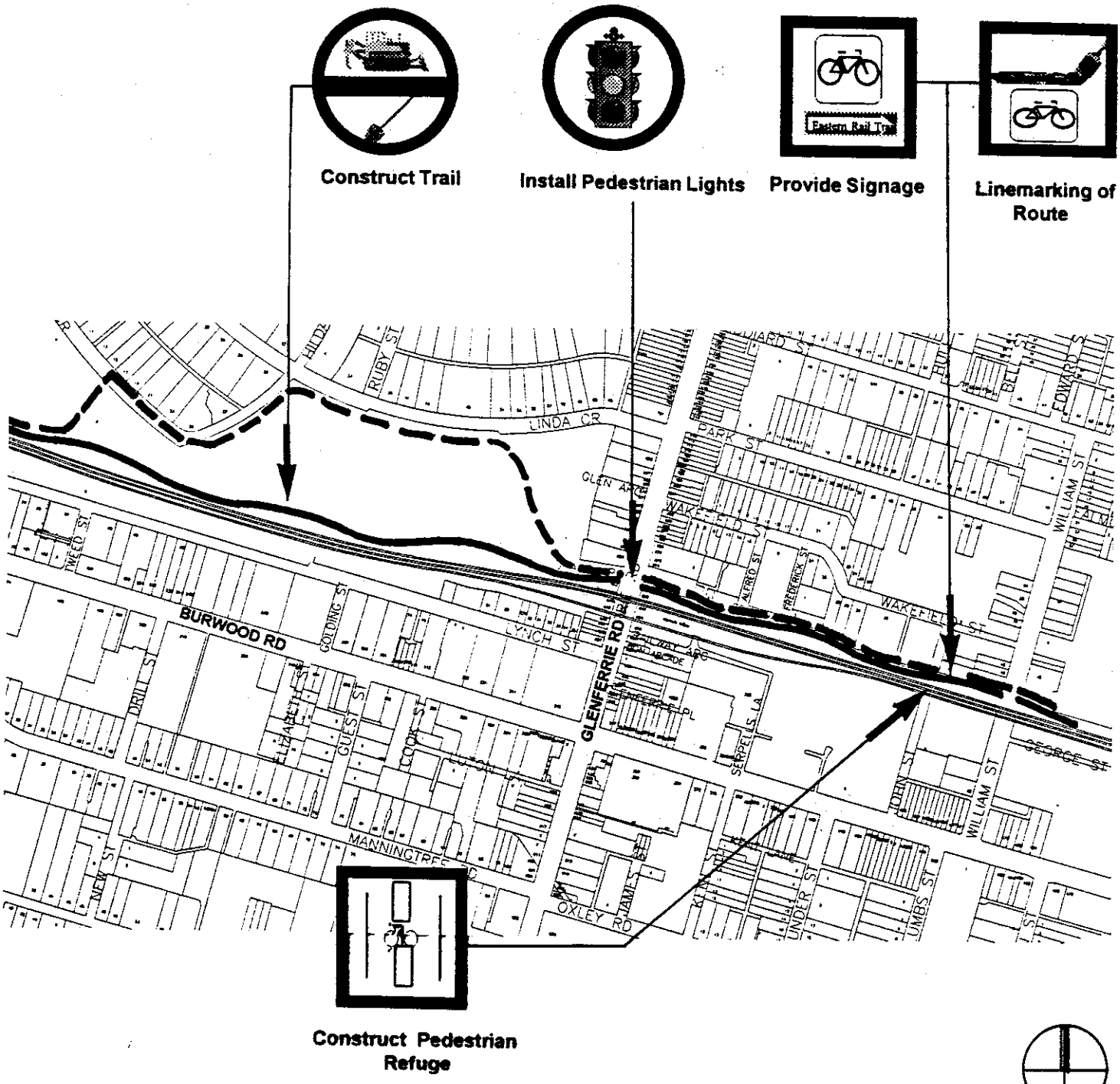
Construct Trail on retaining Wall

Construct a trail using a retaining wall in fill

Sections

Yarra River to John Street





KEY:

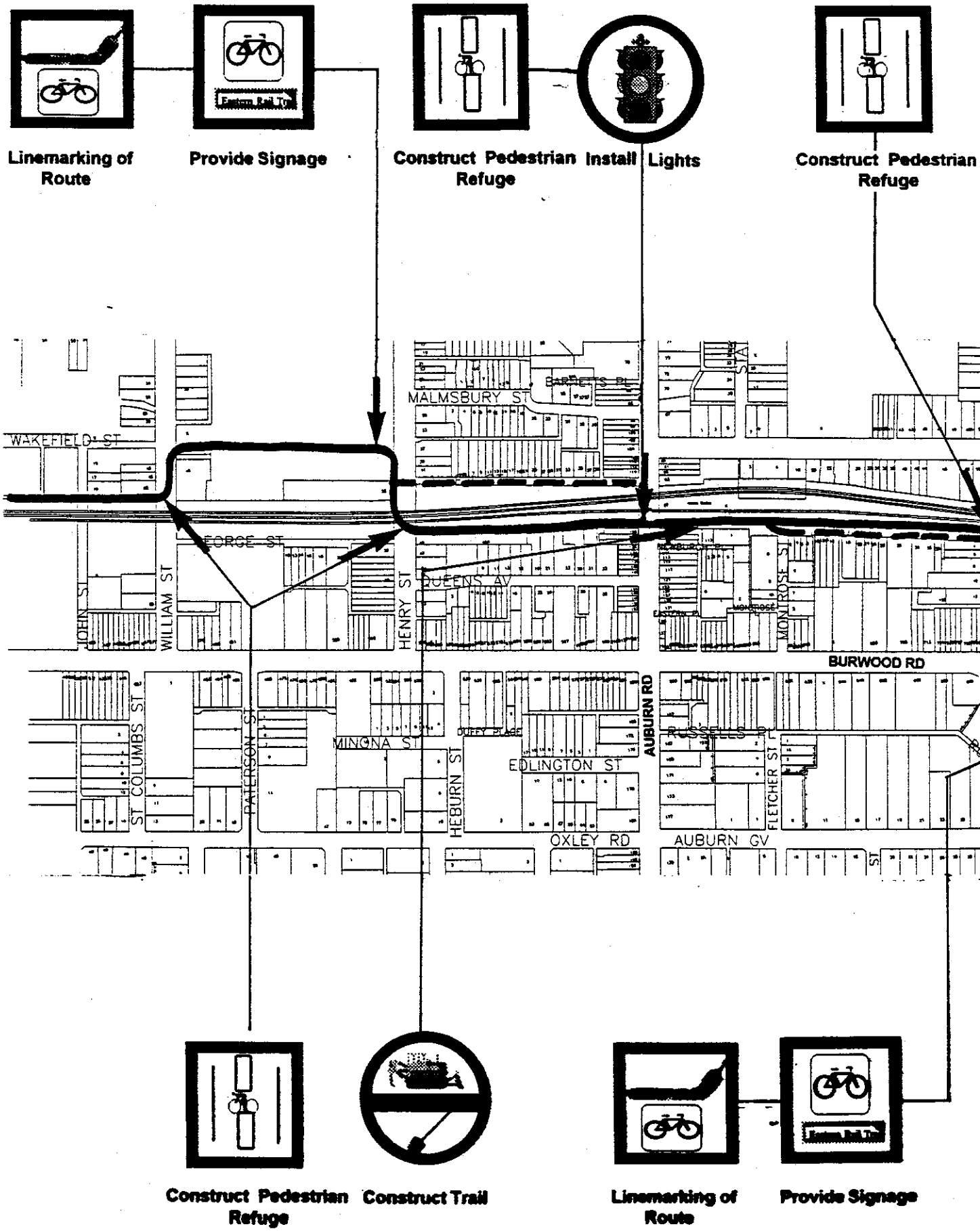
- Existing Trail Alignment
- Ultimate Trail Alignment
- Immediate Actions
- Ultimate Actions

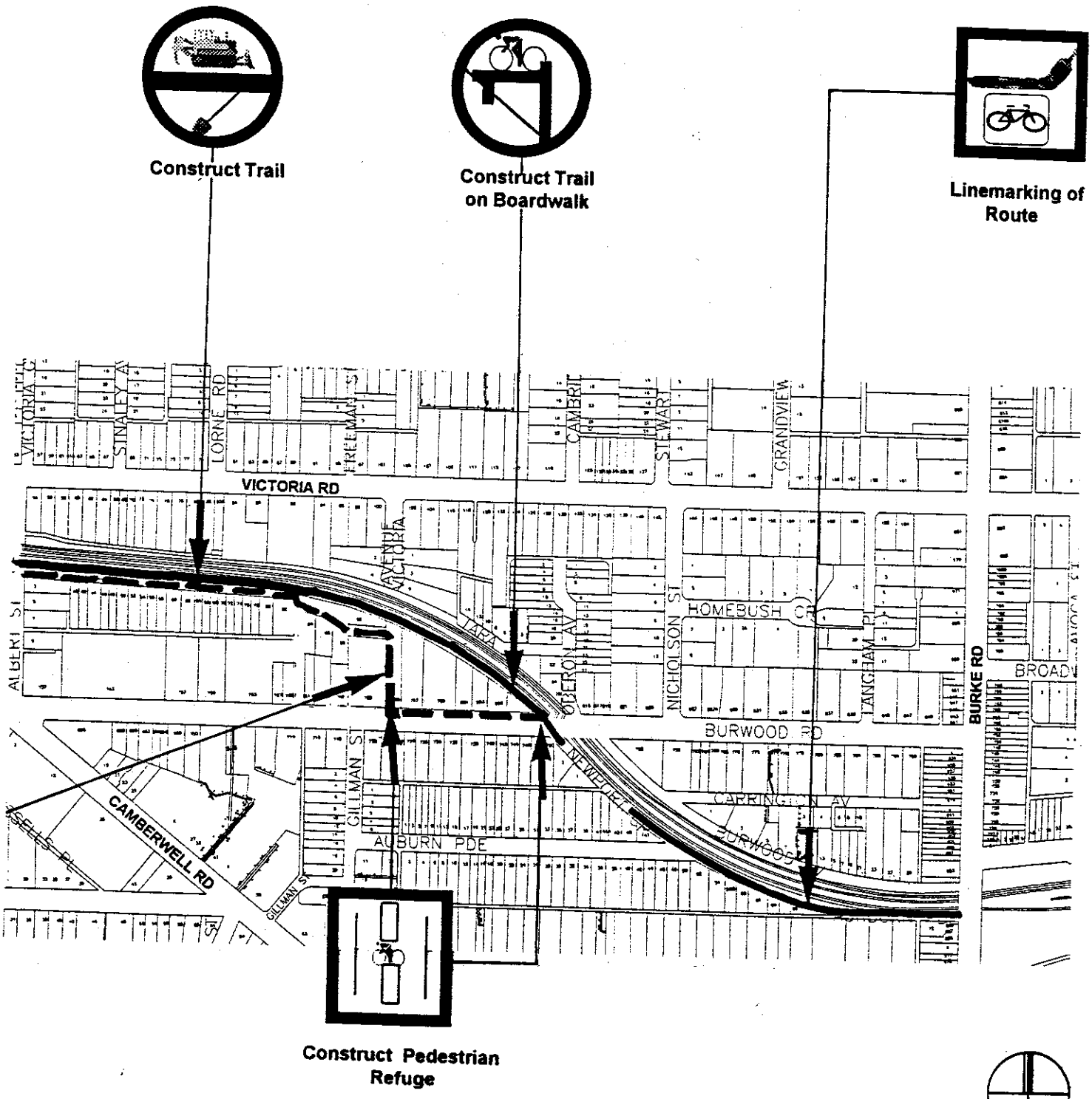
ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Yarra River to John Street


Linemarking of Route
Provide Signage
Construct Pedestrian Refuge
Install Lights
Construct Pedestrian Refuge
WAKEFIELD ST
MALMSBURY ST
BARTLETS PL
FORGE ST
QUEENS AV
JOHN ST
WILLIAM ST
HENRY ST
MONTROSE ST
BURWOOD RD
AUBURN RD
ST COLUMBS ST
PATERSON ST
MINONA ST
DUFFY PLACE
EDLINGTON ST
HEBURN ST
OXLEY RD
AUBURN GV
FLETCHER ST
Construct Pedestrian Refuge
Construct Trail
Linemarking of Route
Provide Signage



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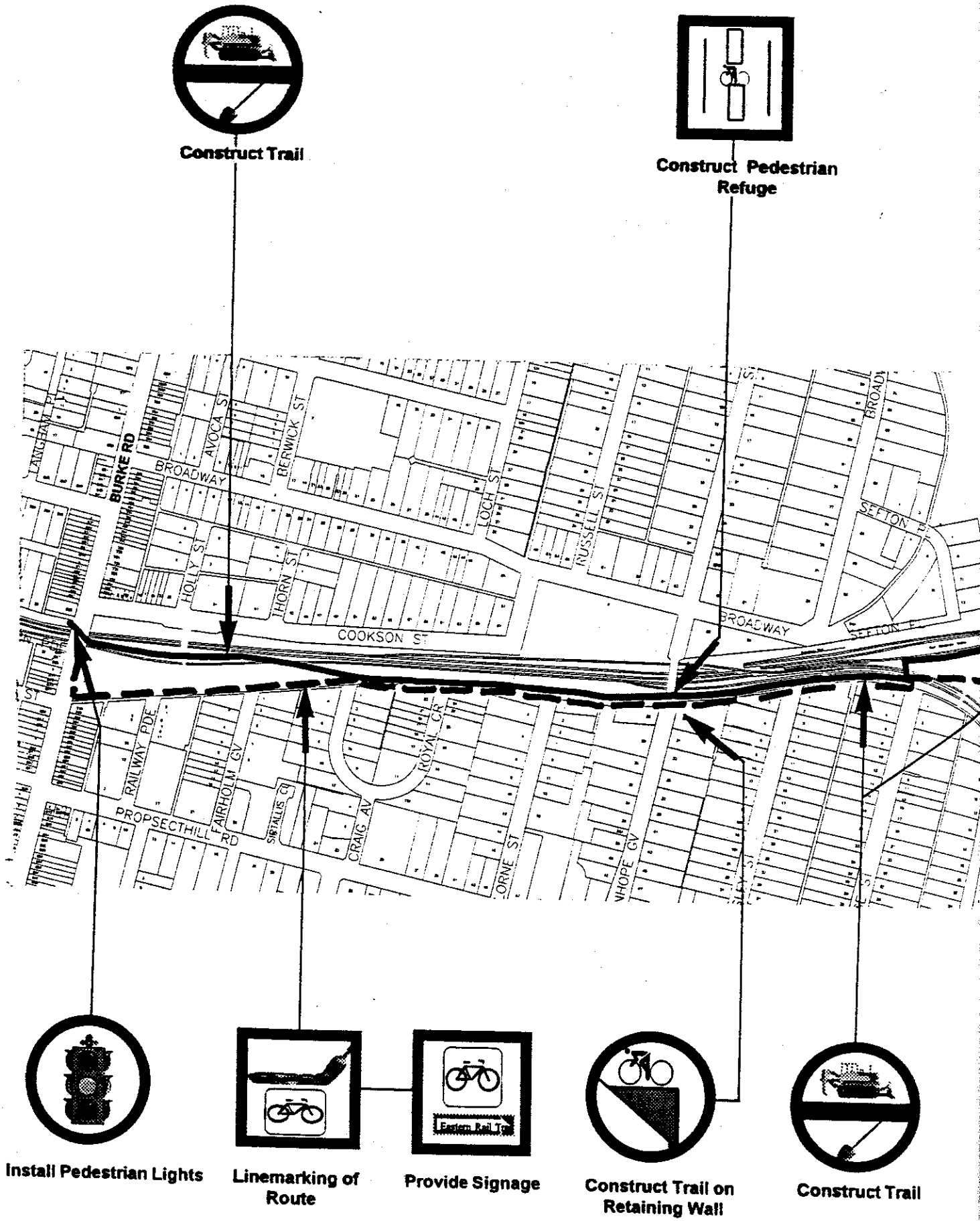
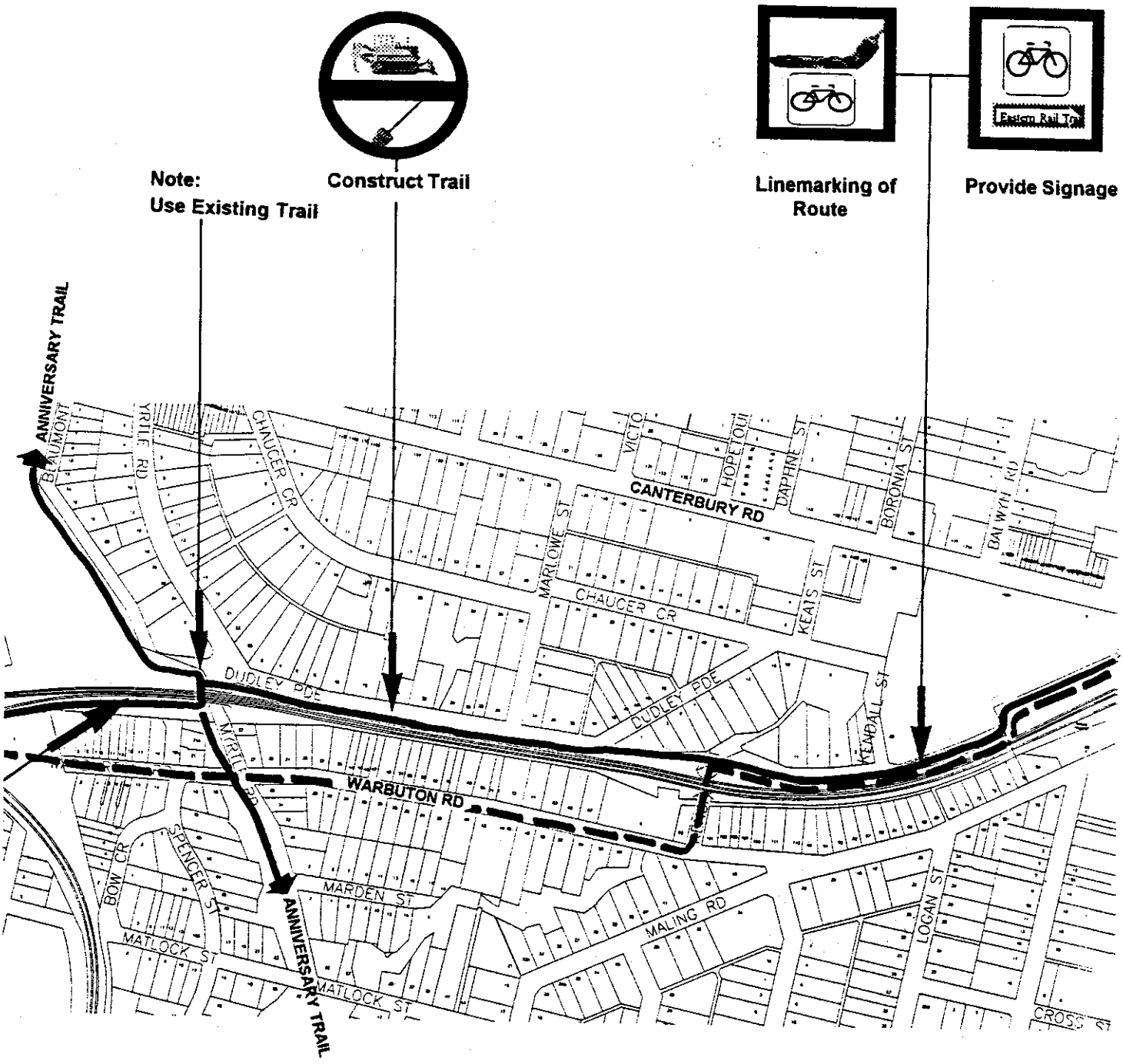
EASTERN RAIL TRAIL
Alignment Plan

Section - John Street to Burke Road


Construct Trail
Construct Pedestrian Refuge
BURKE RD
BROADWAY
AVOCA ST
BERWICK ST
LOCH ST
RUSSELL ST
HOLLY ST
THORN ST
COOKSON ST
SEFTON PL
RAILWAY PDE
FAIRHOLM GV
PROPSECTHILL RD
SIRTALLIS CL
CRAIG AV
ROYAL CR
ORNE ST
Eastern Rail Trail
Install Pedestrian Lights
Linemarking of Route
Provide Signage
Construct Trail on Retaining Wall
Construct Trail



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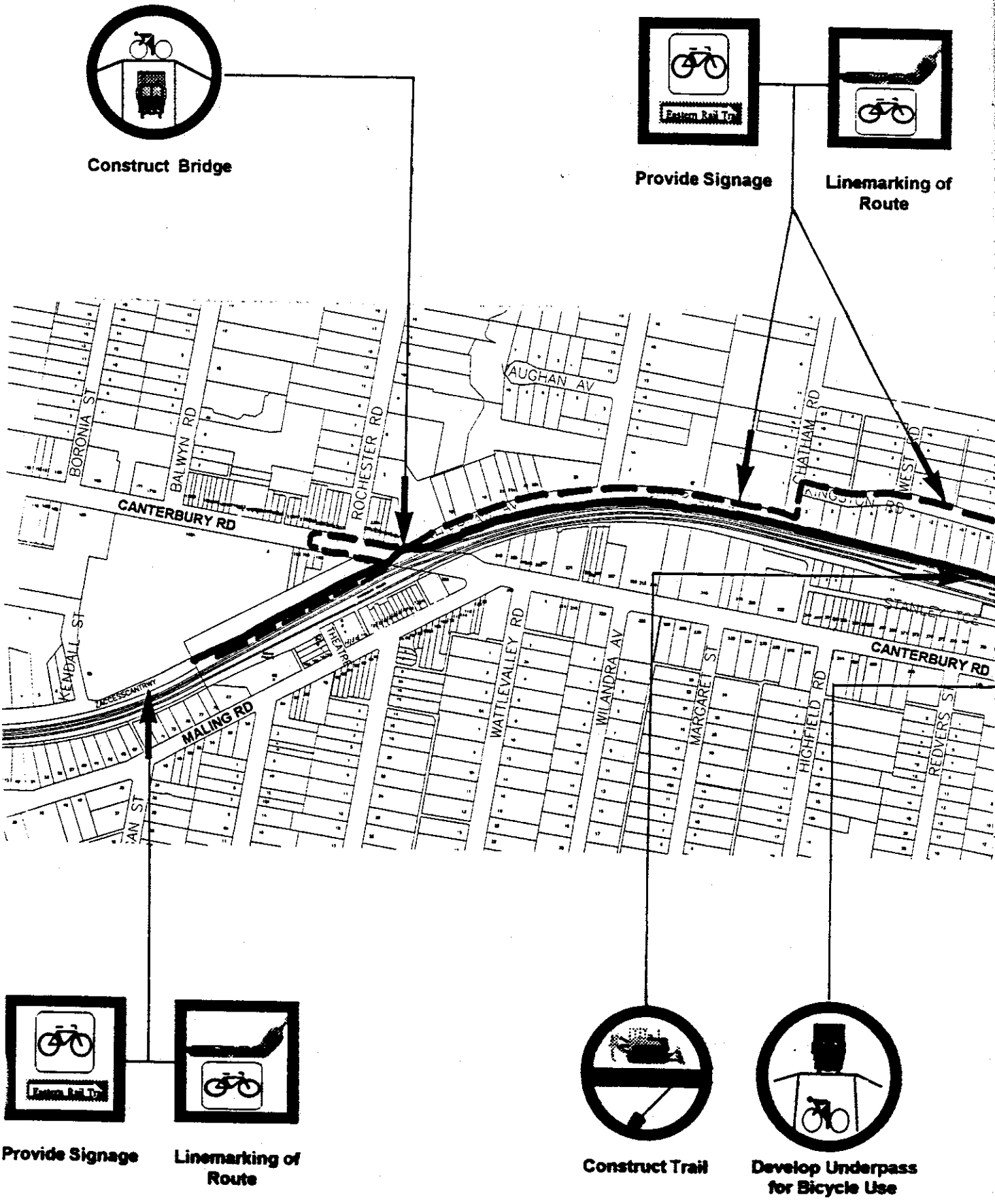
- Ultimate Actions

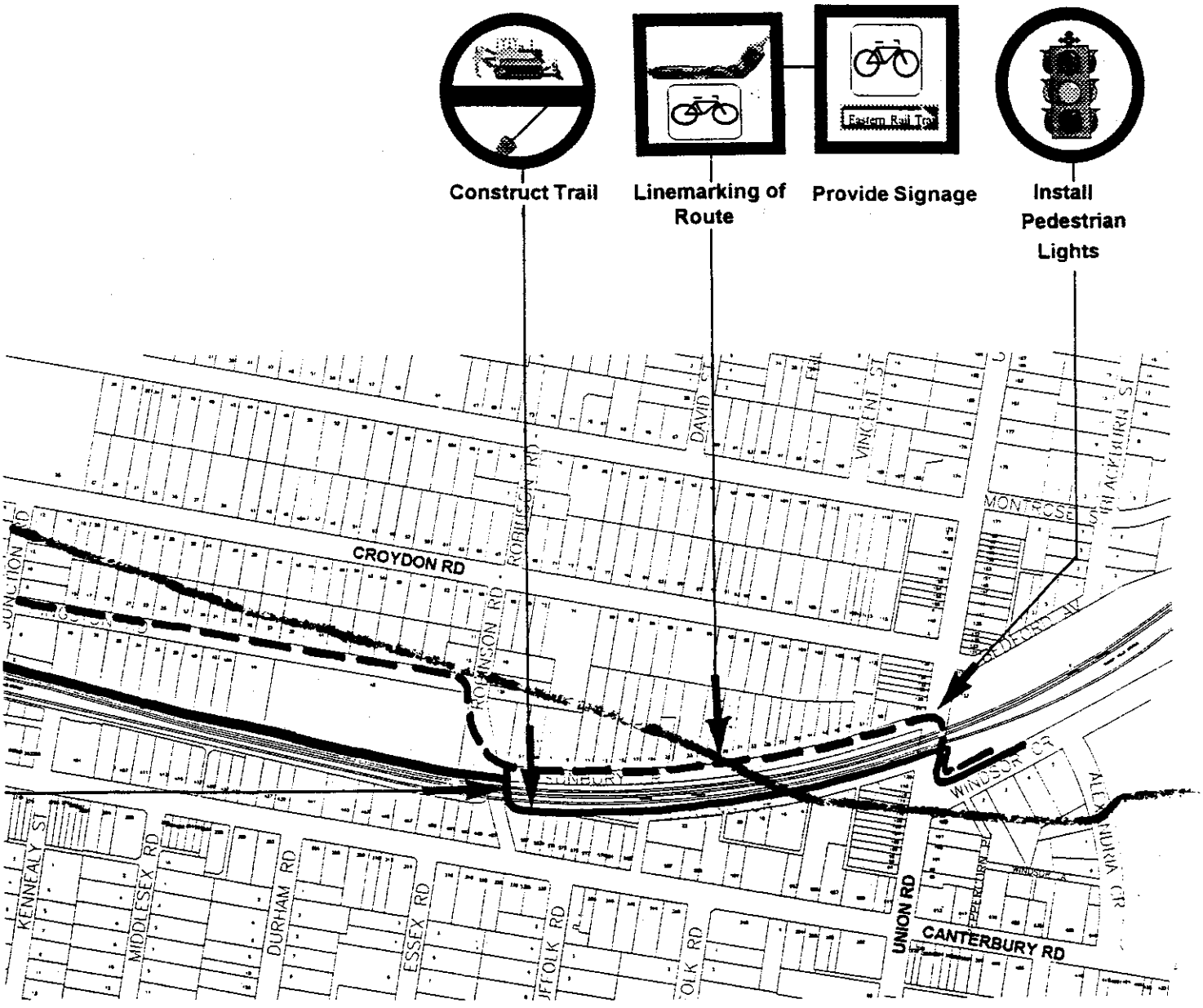
ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Burke Road to Canterbury Station


Construct Bridge
Provide Signage
Linemarking of Route
BORONIA ST
BALWYN RD
ROCHESTER RD
AUGHAN AV
CHATHAM RD
CANTERBURY RD
KEMBALL ST
MALING RD
WATTLEVALLEY RD
WILANDRA AV
MARGARET ST
HIGHFIELD RD
REDVERS ST
Provide Signage
Linemarking of Route
Construct Trail
Develop Underpass for Bicycle Use



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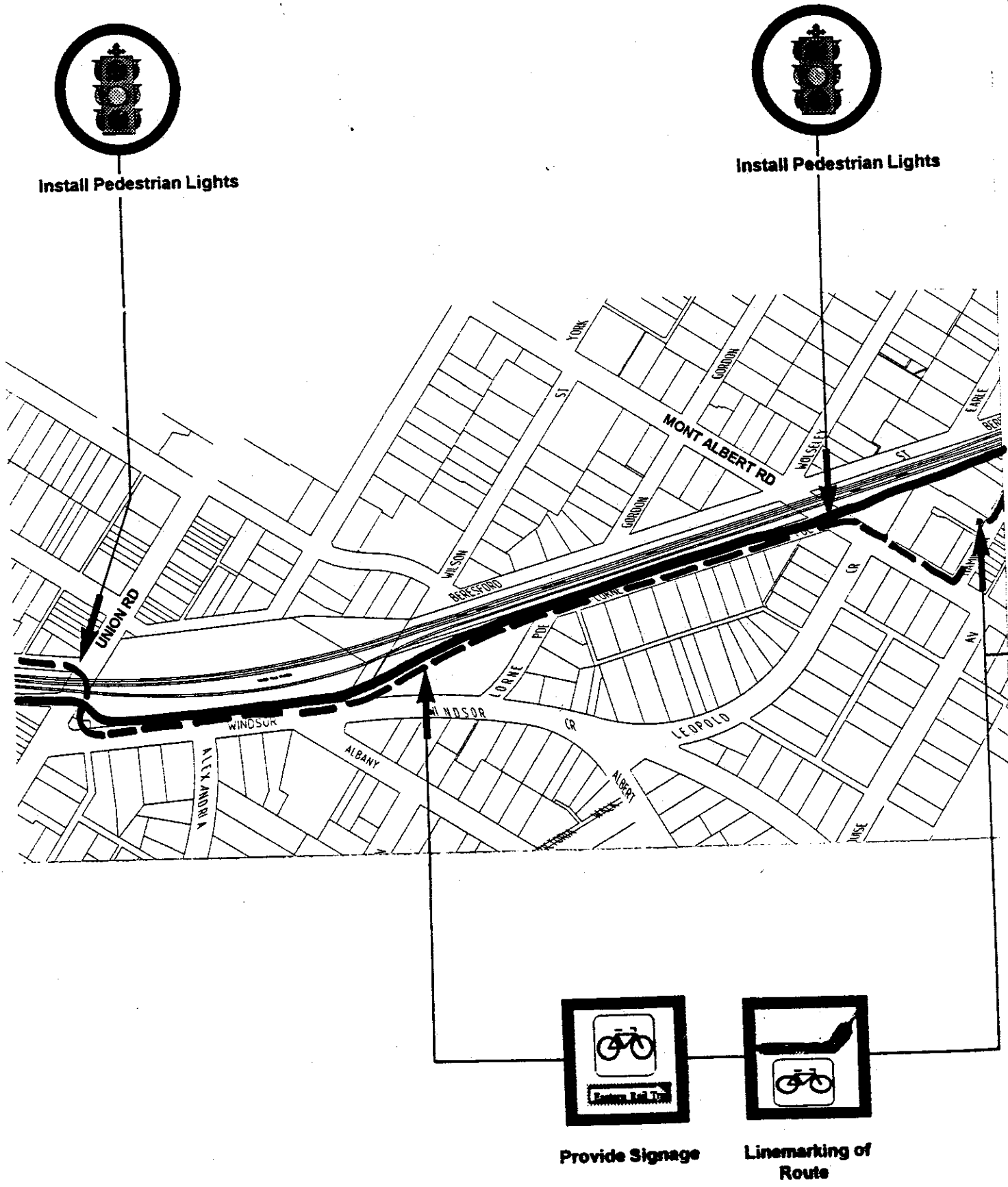
ASPECT LANDSCAPE CONSULTANTS PTY LTD

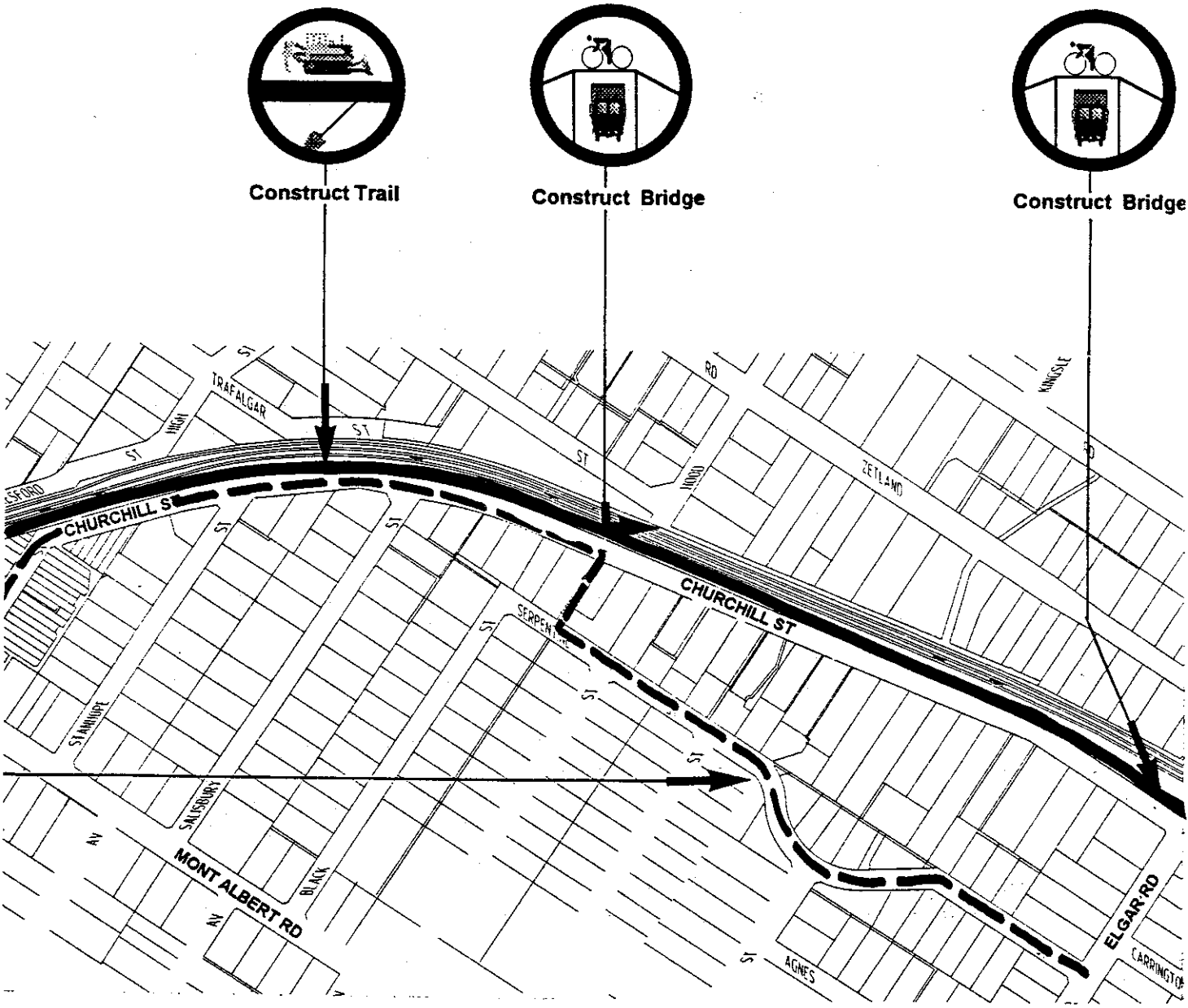
PARKLINKS

EASTERN RAIL TRAIL

Alignment Plan

Section - Canterbury Station to Union Road


Install Pedestrian Lights
Install Pedestrian Lights
UNION RD
MONT ALBERT RD
YORK
GORDON
WILSON
BOREHAM
TURNER
LORNE
WINDSOR
LEOPOLD
ALBANY
ALEXANDRA
ALBERT
Provide Signage
Linemarking of Route



KEY:

Existing Trail Alignment

Ultimate Trail Alignment

Immediate Actions

Ultimate Actions

ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL

Alignment Plan

Section - Union Road to Elgar Road

EASTERN RAIL TRAIL
Locality Plan

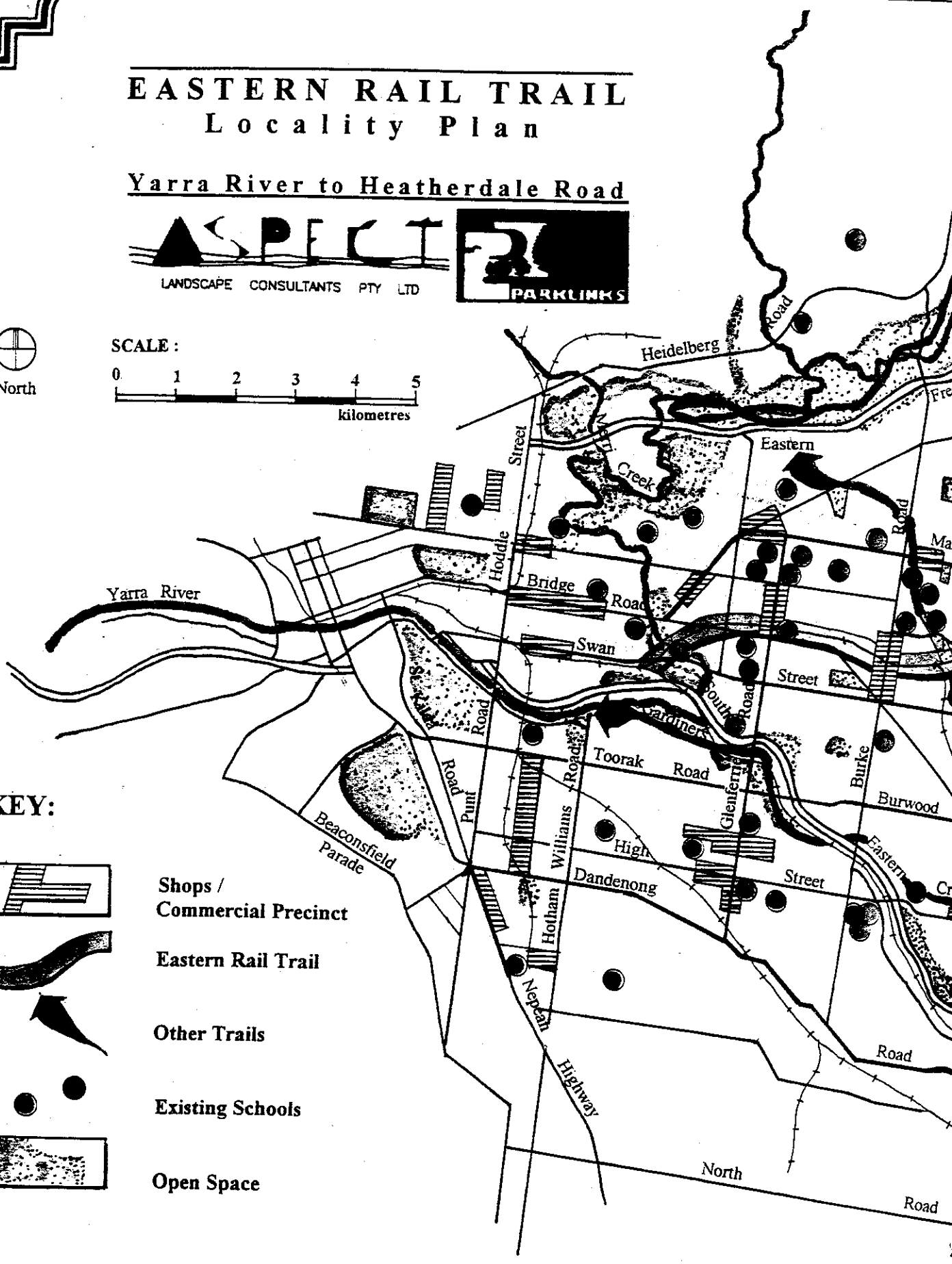
Yarra River to Heatherdale Road

ASPECT
LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

North

SCALE :
0 1 2 3 4 5
kilometres



KEY:

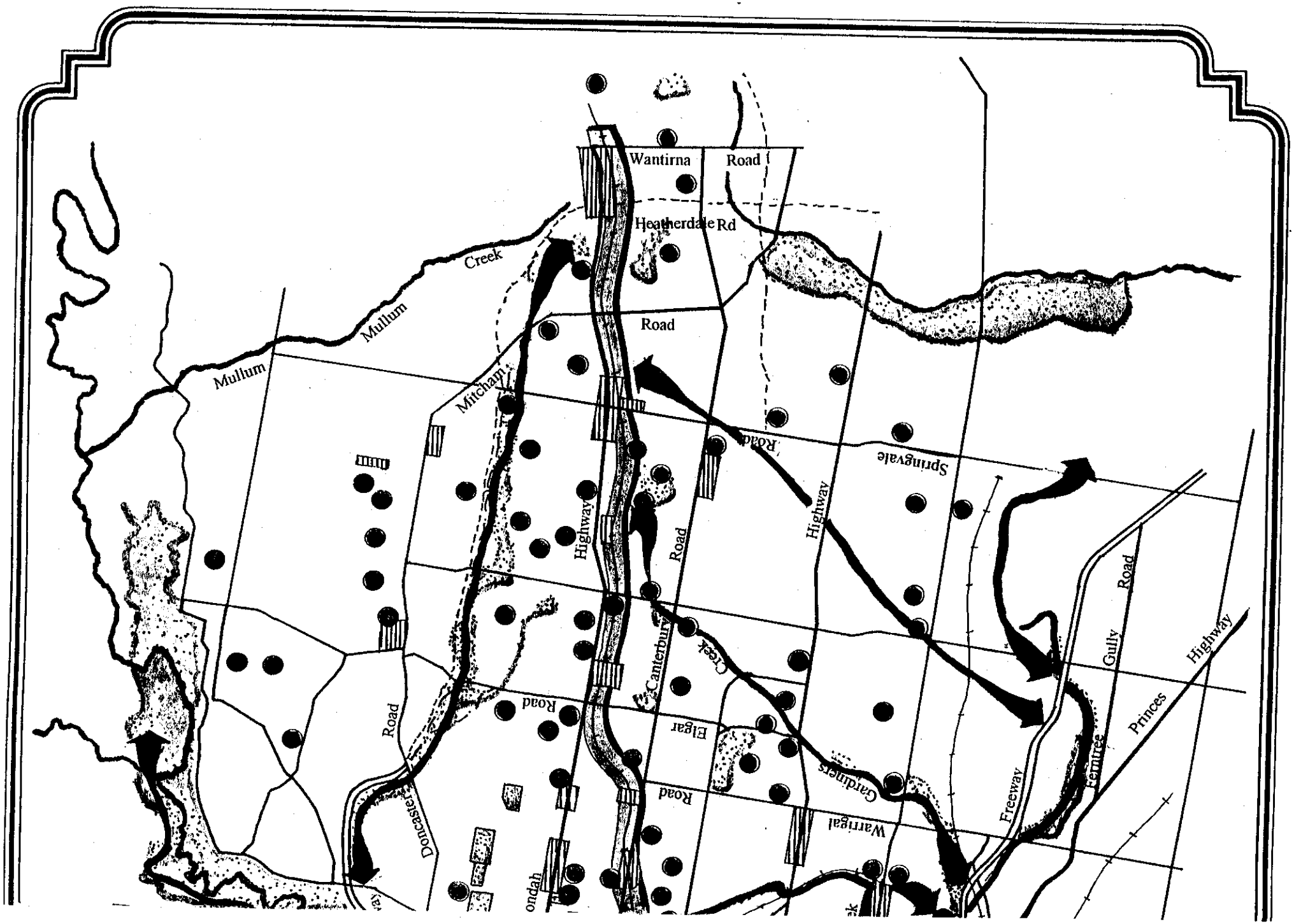
Shops / Commercial Precinct

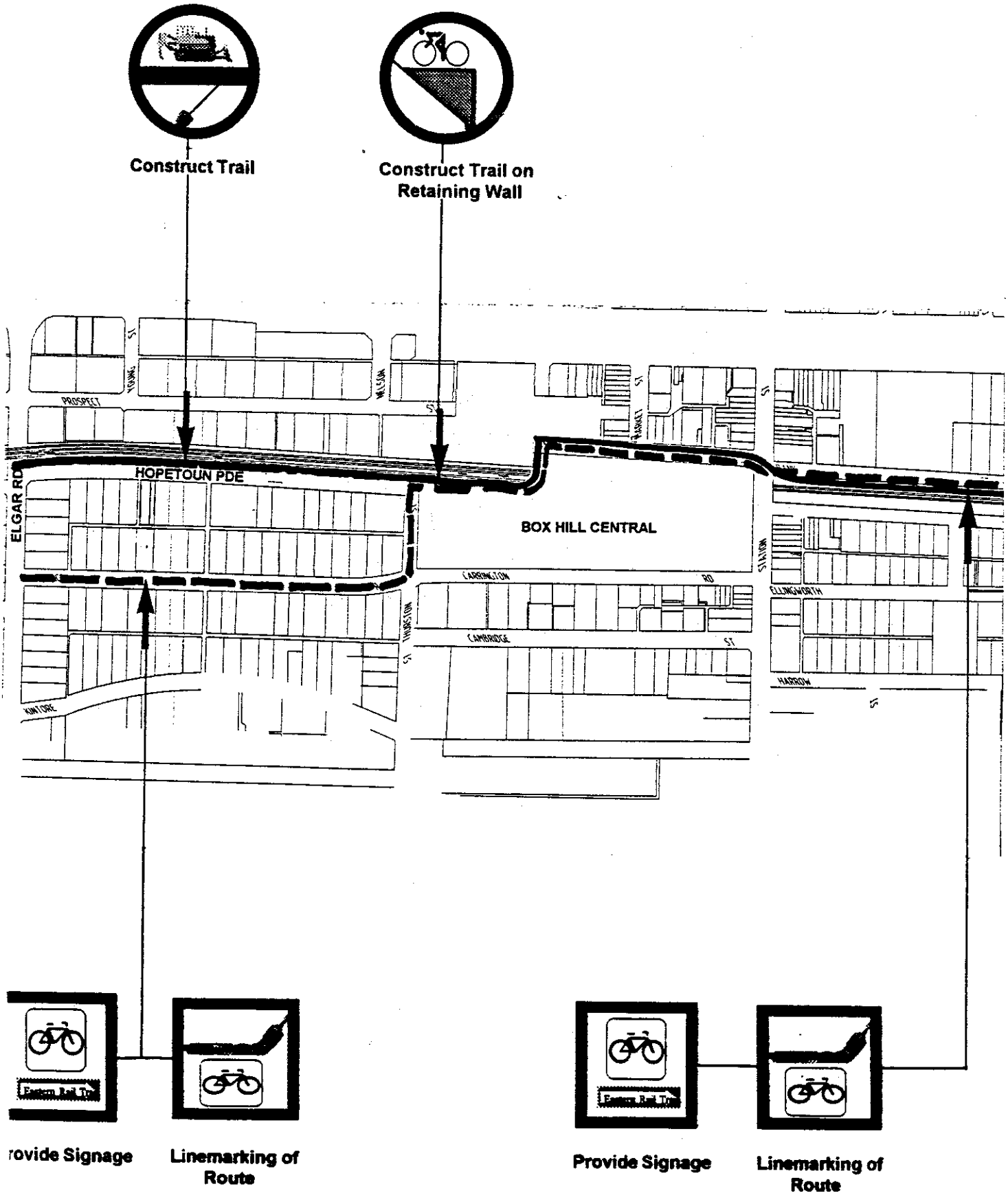
Eastern Rail Trail

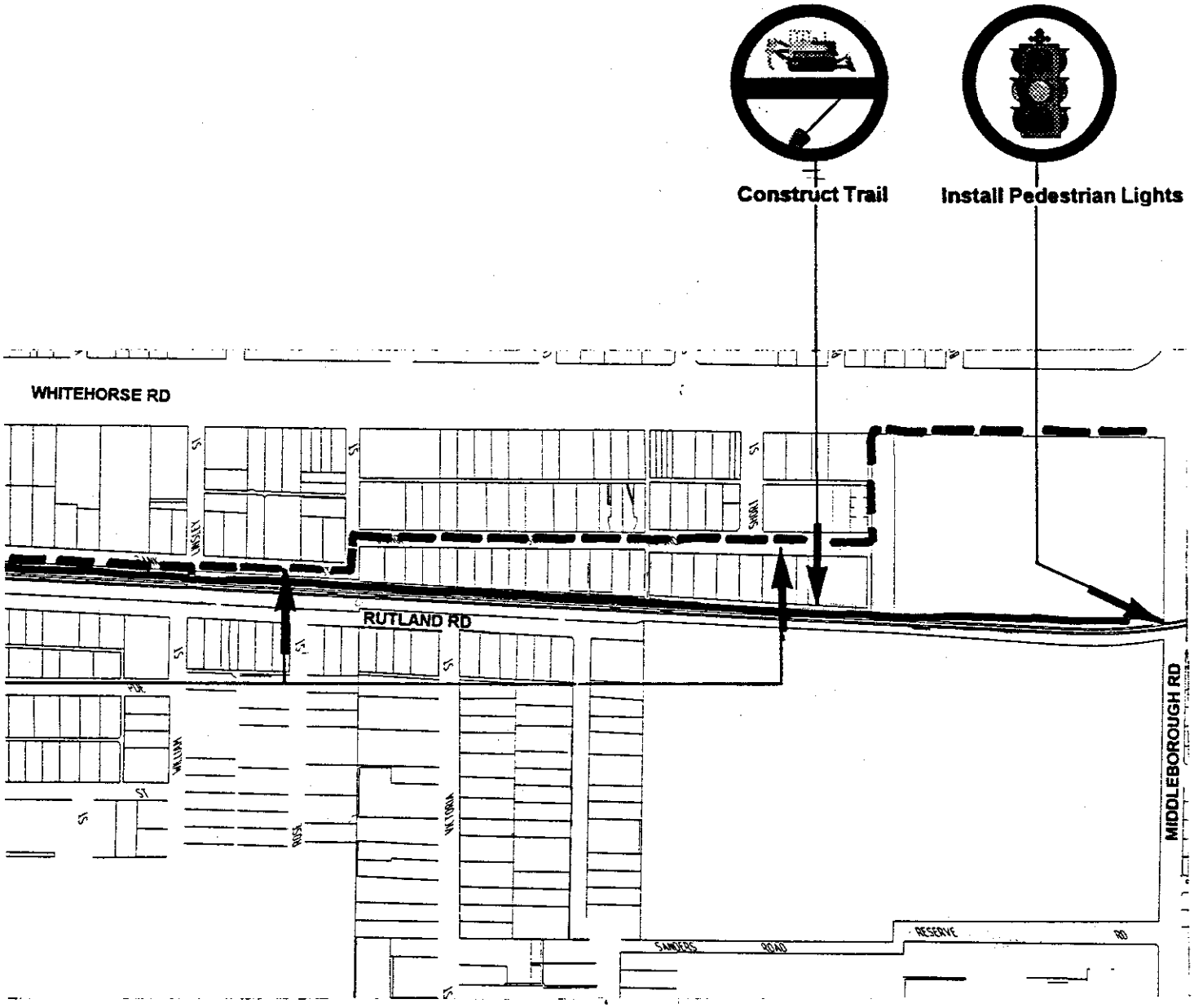
Other Trails

Existing Schools

Open Space


Wantirna
Road
Heatherdale Rd
Creek
Mullum
Mullum
Road
Mullum
Mitcham
Road
Springvale
Highway
Road
Highway
Canterbury
Creek
Road
Gully
Road
Highway
Road
Elgar
Princes
Road
Cardinia
Freeway
Wattle
Doncaster
Road
Wattlegal
Road
ondah


Construct Trail
Construct Trail on Retaining Wall
HOPETOUN PDE
ELGAR RD
PROSPECT
BOX HILL CENTRAL
CAMBRIDGE
HARROW
ELLINGWORTH
Eastern Rail Trail
rovide Signage
Linemarking of Route
Provide Signage
Linemarking of Route



KEY:

Existing Trail Alignment

Ultimate Trail Alignment

Immediate Actions

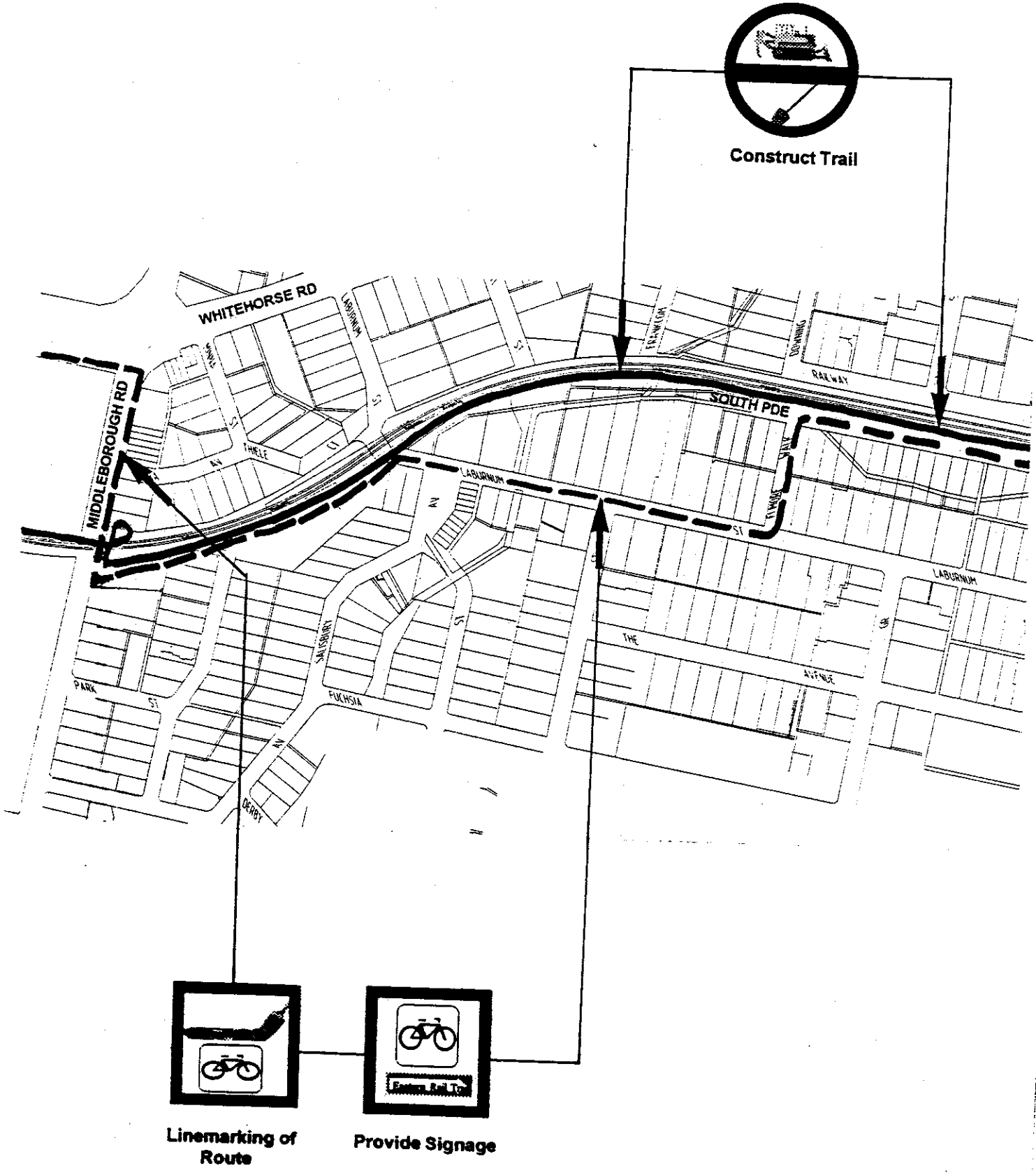
Ultimate Actions

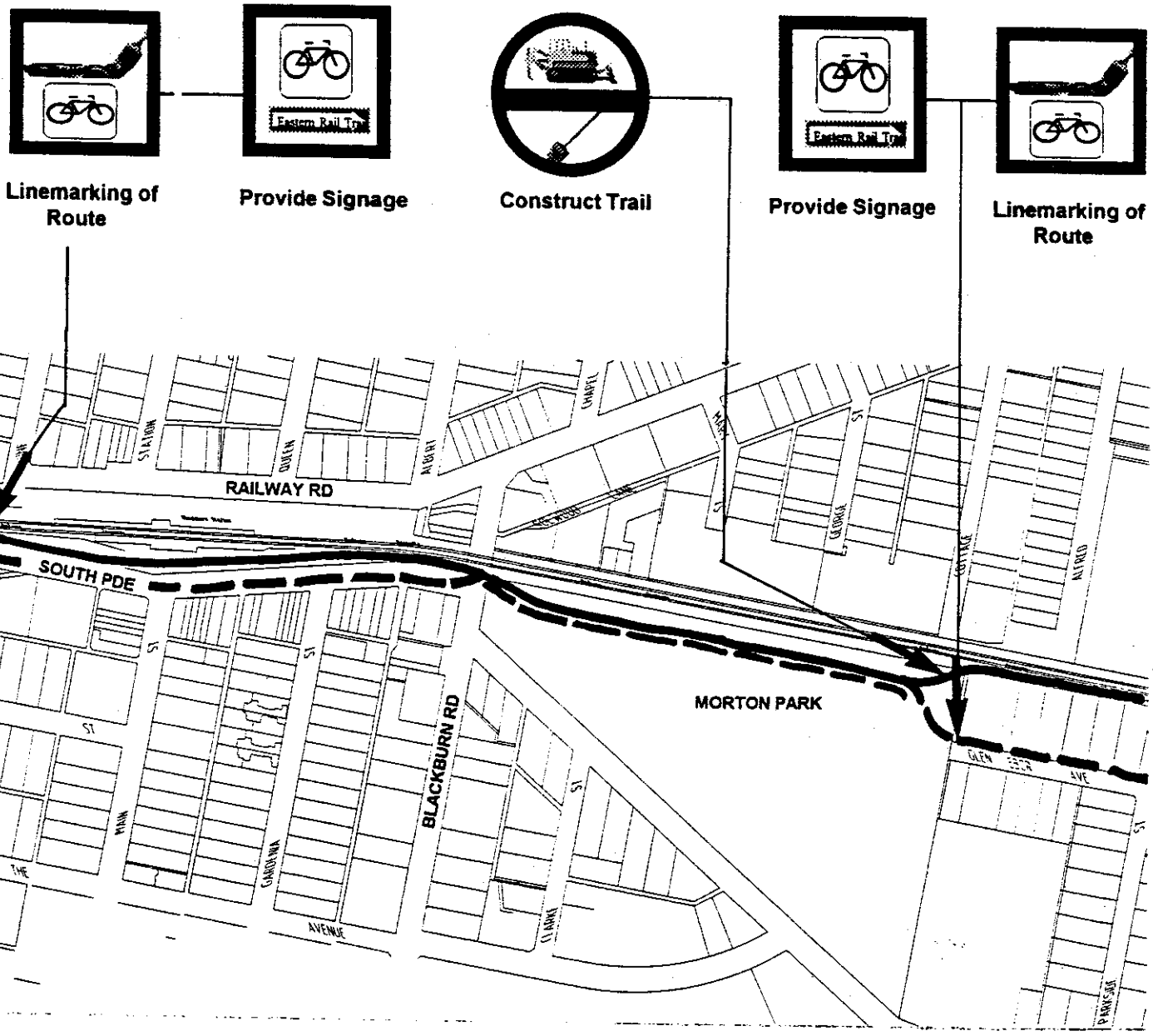
ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Elgar Road to Middleborough Road


Construct Trail
WHITEHORSE RD
MIDDLEBOROUGH RD
SOUTH PDE
RAILWAY
LABURNUM
THELE
PARK ST
FUCHSIA
DERBY
Linemarking of Route
Provide Signage



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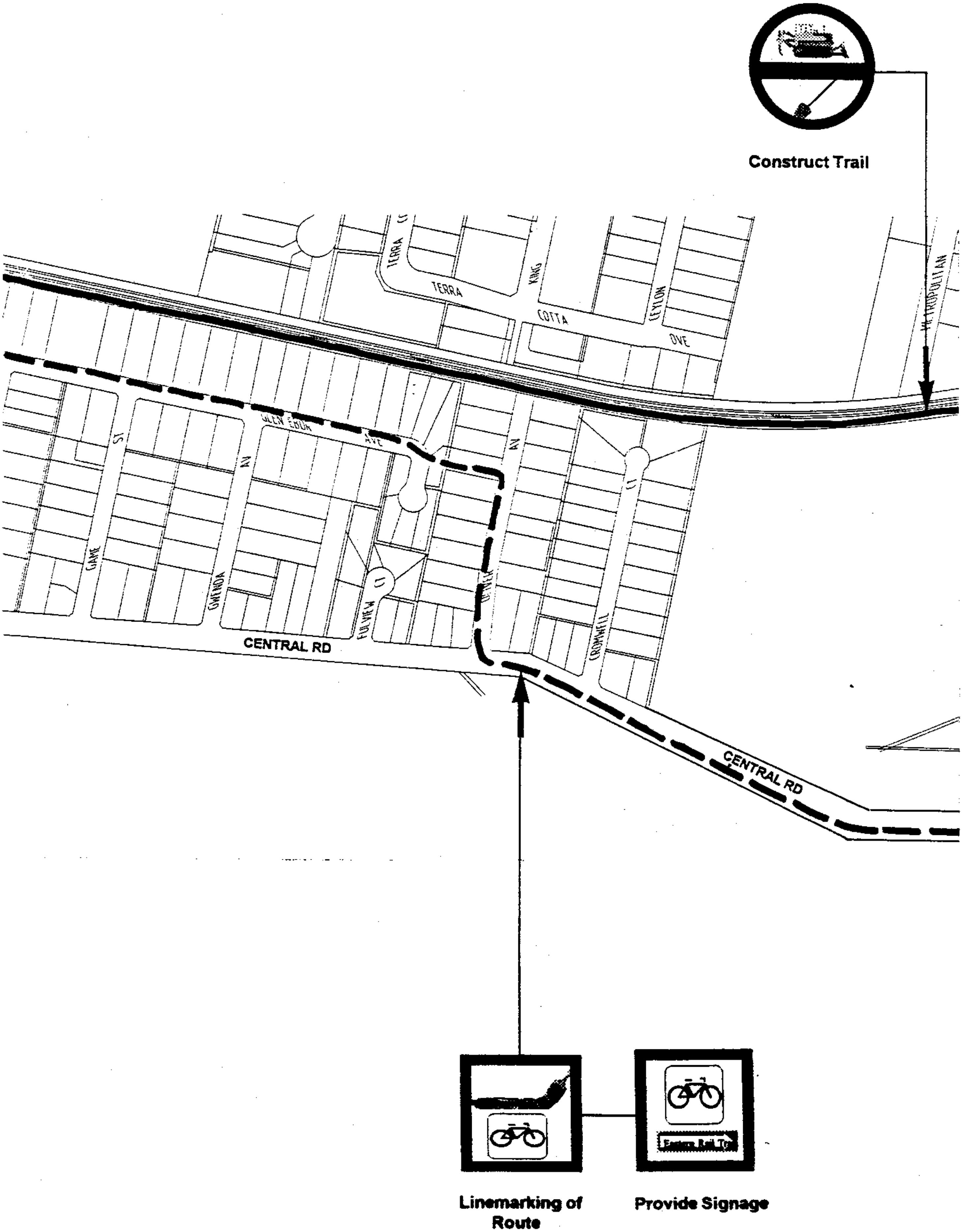
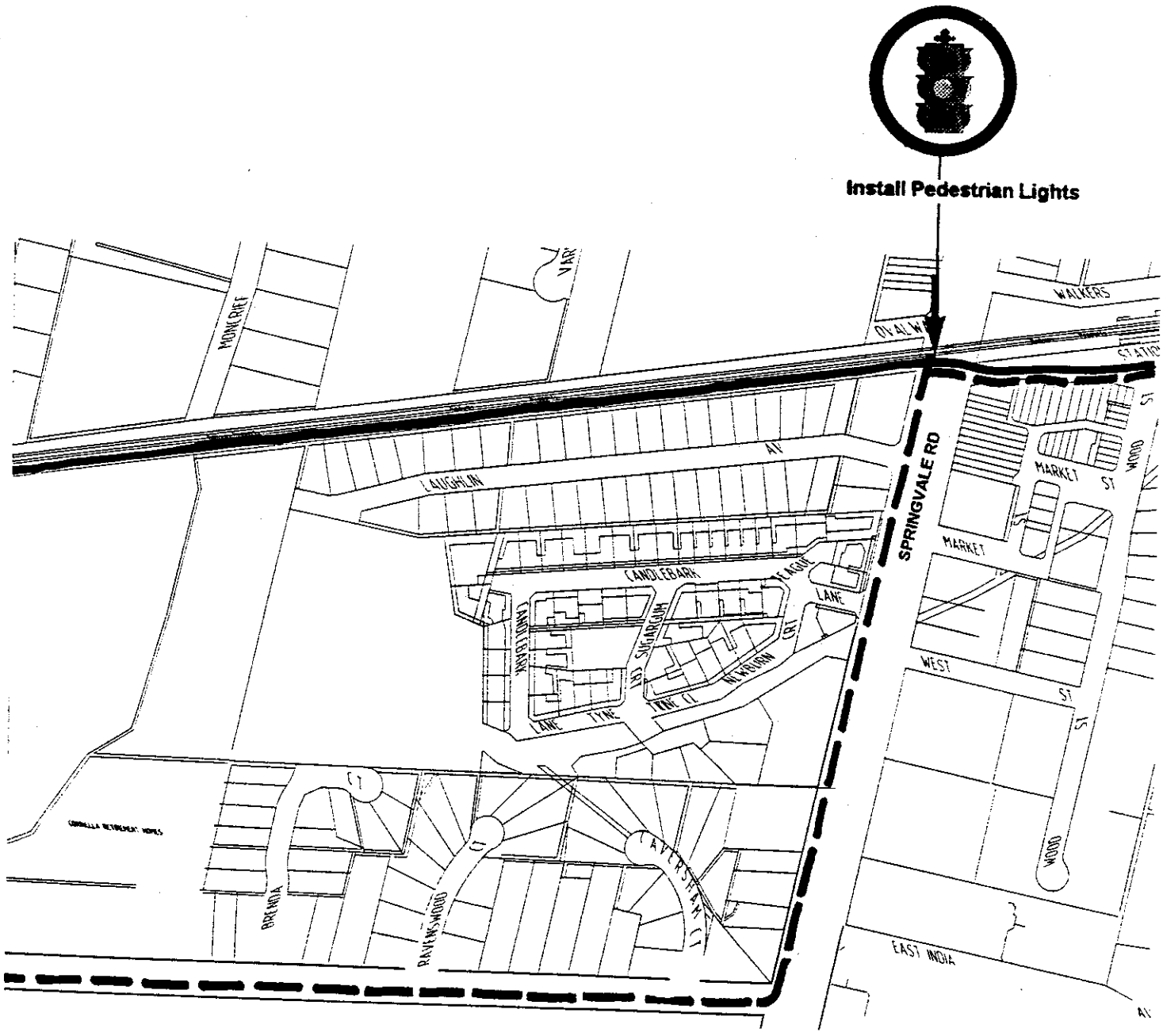
ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Middleborough Road to Morton Park


Construct Trail
TERRA
KING
COTTA
CEYLON
OVE
METROPOLITAN
GLEN EDON
AVE
ST
GAME
AV
GWENDA
CT
FULVIEW
CENTRAL RD
CROMWELL
CENTRAL RD
Linemarking of Route
Provide Signage
Eastern Rail Trail



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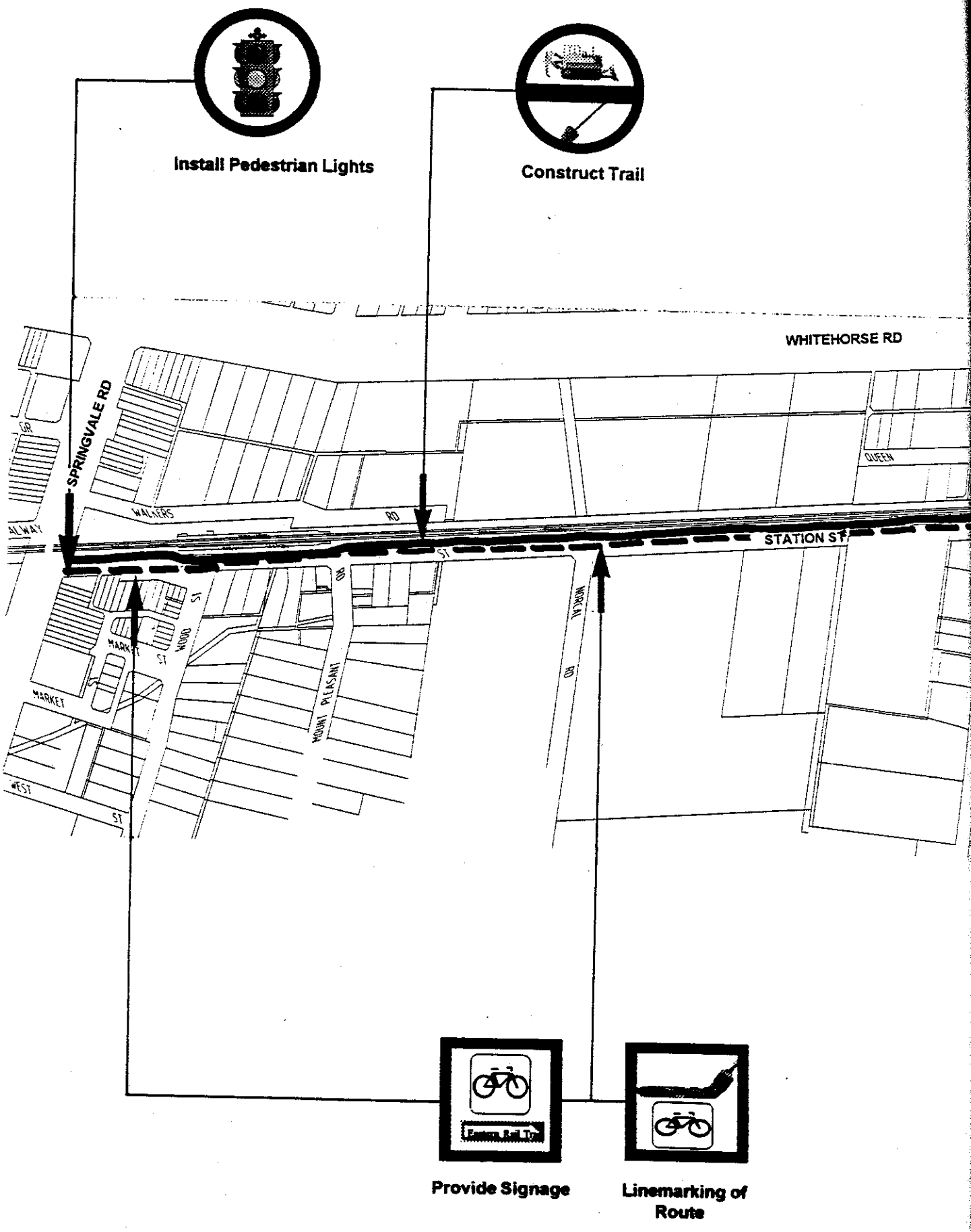
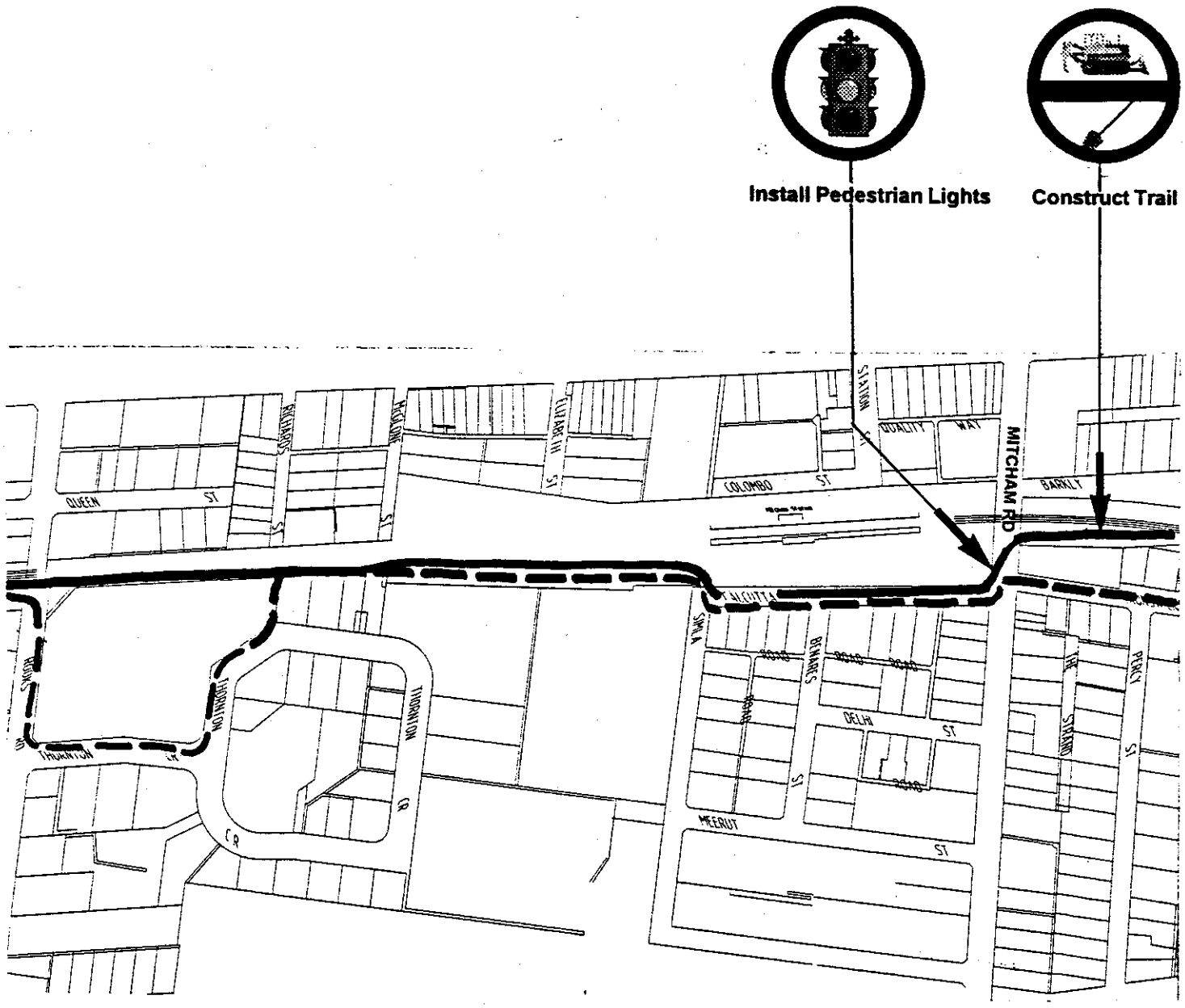
ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Morton Park to Nunawading Station


Install Pedestrian Lights
Construct Trail
WHITEHORSE RD
SPRINGVALE RD
WALKERS
RD
STATION ST
QUEEN
MARKET
ST
MOUNT PLEASANT
Provide Signage
Linemarking of Route



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Existing Trail Alignment

Ultimate Trail Alignment

Immediate Actions

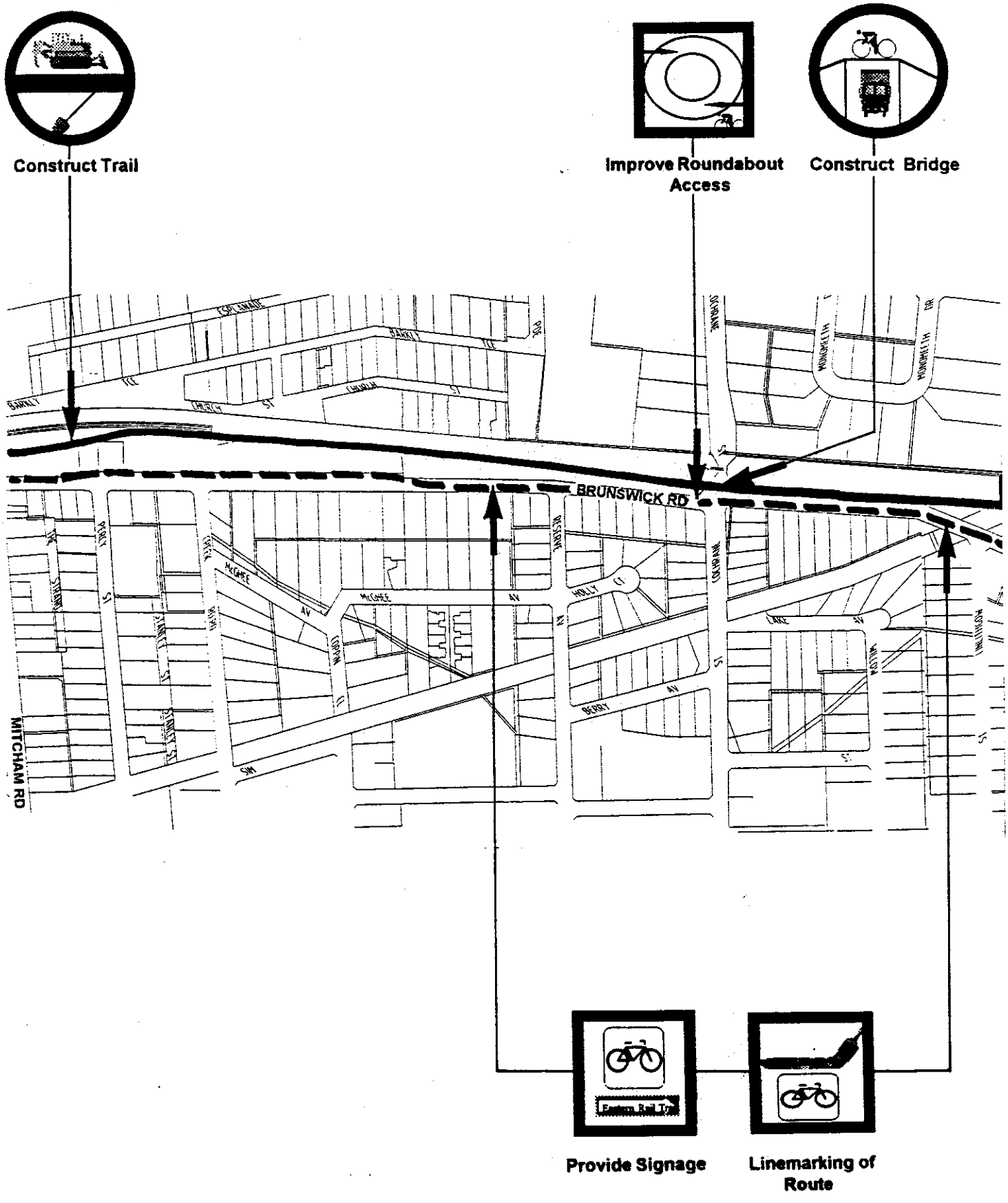
Ultimate Actions

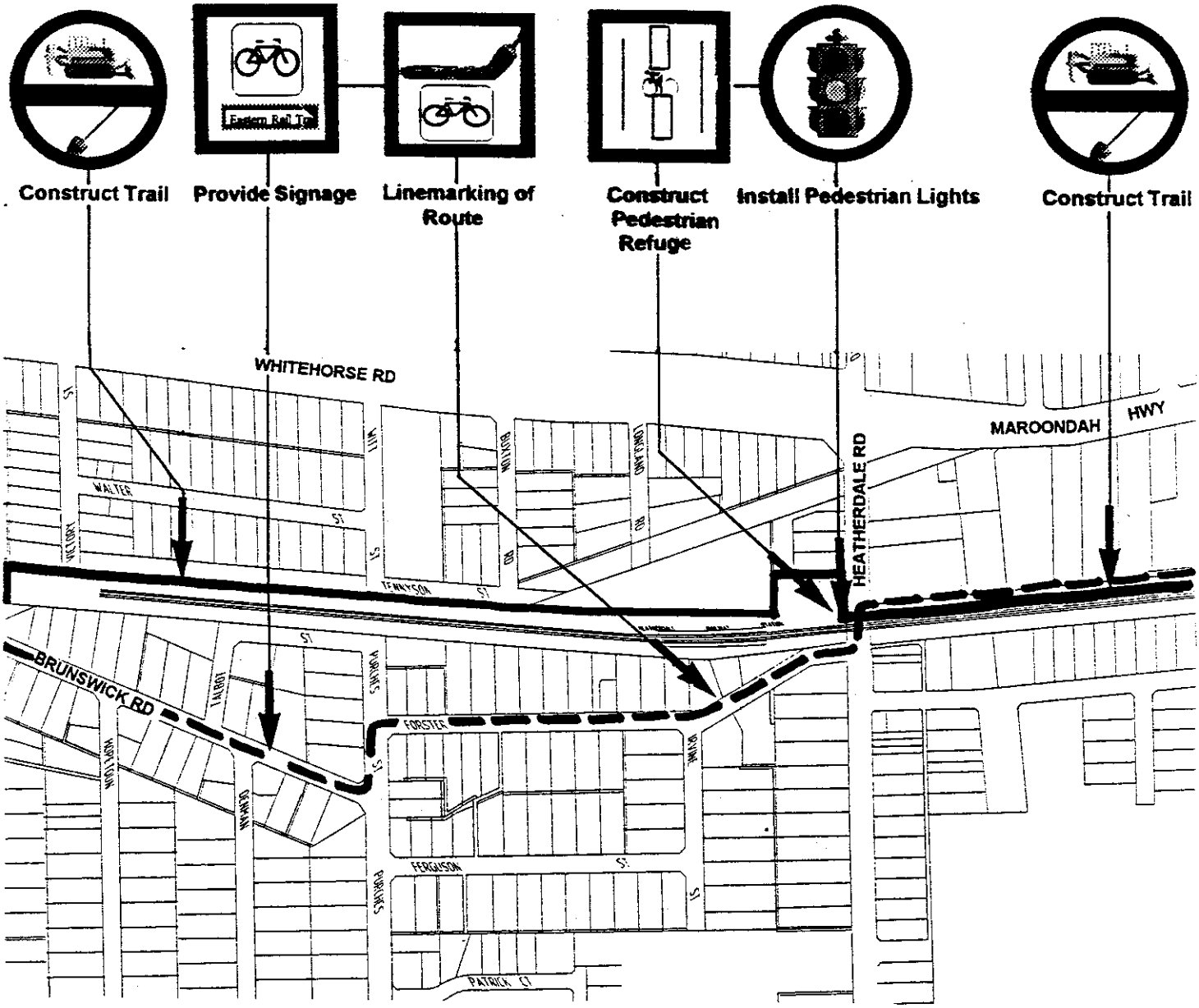
ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Nunawading Station to Mitcham Road


Construct Trail
Improve Roundabout Access
Construct Bridge
BRUNSWICK RD
MITCHAM RD
Provide Signage
Linemarking of Route



KEY:

- Existing Trail Alignment
- Ultimate Trail Alignment
- Immediate Actions
- Ultimate Actions

ASPECT LANDSCAPE CONSULTANTS PTY LTD

PARKLINKS

EASTERN RAIL TRAIL
Alignment Plan

Section - Mitcham Road to Heatherdale Road

Road Crossings

	Existing Trail	Ultimate Trail
Yarra Street	Pedestrian refuge	Pedestrian Refuge
Burwood Road Hawthorn	Existing crossing	Path under bridge
Elgin Street	Pedestrian refuge	Path under bridge
Power Street	Pedestrian Refuge	Path under bridge
Glenferrie Road	Use existing traffic lights	Move traffic lights
John Street	Pedestrian Refuge	Pedestrian Refuge
William Street	Pedestrian refuge	Pedestrian refuge
Henry Street	No Action required	No action Required
Auburn Road	Pedestrian Refuge	Traffic Signals
Albert Street	Pedestrian Refuge	Pedestrian refuge
Burwood Road Auburn	Pedestrian Refuge	Pedestrian refuge
Burke Road	Use existing Traffic Signals	Traffic Signals
Stanhope Grove	Pedestrian Refuge	Path under bridge
Myrtle Road	Use existing trail	Use existing Trail

	Existing Trail	Ultimate Trail
Kendal Street	Use existing trail	Bridge over
Canterbury Road	Use existing lights	Bridge
Robinson Road	Signage	Bicycle underpass
Union Road	Traffic signals	Overpass
Mont Albert Road	Use existing signals	Traffic Signals
Elgar Road	Existing Traffic signals	Bridge
Station Street	Use existing underpass	Use existing underpass
Middleborough Road	Use existing traffic Signals	Bridge
Laburnum Street	Pedestrian refuge	Bridge Over
Blackburn Road	Modify existing traffic signals	Modify traffic signals
Springvale Road	Use existing traffic signals	Overpass
Rooks Road	Traffic signals	Traffic signals
Mitcham Road	Traffic signals	Traffic signals
Cochrane Street	Roundabout improvement	Bridge over
Heatherdale Road	Traffic signals	Traffic signals

Previous Studies

Components of the Eastern Rail Trail have been identified in the bicycle strategies for the five former municipalities that now comprise the Cities of Whitehorse and Boroondara.

Nunawading Bicycle Strategy

The Nunawading Bicycle Strategy by City of Nunawading in 1991 identified the Eastern Rail Trail as a major link in the Metropolitan network and also included components within Nunawading that could serve as trail links within the City. The Plan also identified accident locations along Maroondah Highway and Canterbury Road as well as routes to schools which could be serviced by the Eastern Rail Trail

Box Hill Bicycle Strategy

The Box Hill Bicycle Strategy by Loder and Bayly in 1988 identified components of the Eastern Rail Trail within Box Hill and also recommended the use of the Mall and loading bay at Box Hill central for bicycle access. The Plan also identified accident locations along Maroondah Highway and Canterbury Road as well as routes to schools which could be serviced by the Eastern Rail Trail

Camberwell Bicycle Strategy

The Camberwell Bicycle Strategy "Making Camberwell a Place for Cyclists" by GHD in 1992 identified components of the trail and works to improve the access along the trail. The Plan also identified accident locations along Maroondah Highway and Canterbury Road as well as routes to schools.

Hawthorn Bicycle Strategy

The Hawthorn Bicycle Strategy by GHD in 1992 identified components of the Eastern Rail Trail mainly as off road sections adjacent to the rail line. The Plan also identified accident locations along Maroondah Highway and Canterbury Road as well as routes to schools

Kew Bicycle Strategy

The Plan identified accident locations along Barkers Road on the boundary of the Eastern Rail Trail corridor

Action Program

The initial works could be undertaken immediately by undertaking inexpensive linemarking, signage and minor road and trail improvements. The major cost of this stage will be for the development of appropriate maps and a program aimed at promoting awareness and use of the trail.

The following table shows an indicative program for implementation of works for the ultimate trail over a ten year program. In reality each section would not be undertaken over a single year but the many components of the section would be individually implemented as funds permit.

The proposed program establishes a priority order for works with the focus being on sections which are currently the most dangerous or circuitous.

The most critical section is between Elgar Road and Middleborough Road which contains two of the most dangerous crossings in Middleborough Road and Elgar Road and a major diversion around Box Hill cemetery. The existing alignment avoids these two road crossings near the rail line because of the danger. The focus on this reach will also provide the trail into the Box Hill shopping area, stations and schools which are likely to be major attractors.

Indicative Action Program Table

	Cost for initial development 1996 / 1997	Cost for ultimate development	Years for Ultimate Works									
			1	2	3	4	5	6	7	8	9	10
Yarra River to John Street	$ 10,000	$ 700,000										
John Street to Burke Road	$ 5,000	$ 290,000										
Burke Road to Canterbury Station	$ 6,000	$ 500,000										
Canterbury Station to Union Road	$ 3,000	$ 310,000										
Union Road to Elgar Road	$ 4,000	$ 190,000										
Elgar Road to Middleborough Road	$ 6,000	$ 530,000										
Middleborough Road to Morton Park	$ 4,000	$ 215,000										
Morton Park to Nunawading Station	$ 3,000	$ 250,000										
Nunawading Station to Mitcham Road	$ 5,000	$ 225,000										
Mitcham Road to Heatherdale Road	$ 9,000	$ 380,000										
Contingency 10%	$ 5,500	$ 359,000										
Maps and promotion	$ 39,500											
Total for trail works	$ 100,000	$ 3,949,000										

Detailed Action Program

Section	Existing Location	Ultimate Location	Length along rail line	Length of existing route	length of ultimate route	Cost for initial development 1996 / 1997	Cost for ultimate development
Yarra River to John Street							
West bank Yarra River to east Bank Yarra River		Rail bridge abutments	80	1800	80	$ 3,900	$ 300,000
East bank Yarra River to Yarra Street		Edge of PTC land	300		300	$ -	$ 57,000
Yarra Street to Domville Street	Along existing path		210	210			$ 47,250
Domville Street to Burwood Rd	Domville Street	Edge of PTC land	180	300	180	$ 750	$ 22,500
Burwood Rd to Bign Street	Barton St and Lennox St	Edge of PTC land	130	340	130	$ 770	$ 58,500
Bign St Ramp		Edge of PTC land					$ 31,500
Bign Street to Power Street	Lennox St path		130	130	130	$ 665	$ 58,500
Power Street to Grace Street		Edge of PTC land	660	900	660	$ 2,250	$ 82,500
Grace Street to Glenferrie Road	Grace Street		500	500	500	$ 550	
Glenferrie Road	Existing Ped lights		20	20	20		$ 45,000
Glenferrie Road to John Street	Along Swinburne walkways		250	250	250	$ 725	
			2460	*4450*	*2250*	*$ 9,610*	*$ 702,750*
John Street to Burke Road							
John Street to Central Gardens	Central Gardens		100	160	160	$ 680	
Central Gardens to Henry Street			210	210	210	$ 405	$ 5,000
Henry Street to Auburn Road		Edge of PTC land south	210	210	210	$ 405	
Auburn Road			20	20	20	$ 500	$ 45,000
Auburn Road to Monrose Street	Walkway	Walkway	110	110	110	$ 355	
Monrose Street to Access lane to Burwood Road	Lilydale Grove	Edge of PTC land	420	420	420	$ 810	$ 52,500
Access Lane to Burwood Road	Access lane	Edge of PTC land	220	320	220	$ 760	$ 99,000
Burwood Road			20	20	20	$ 500	$ 45,000
Burwood Road to Burke Road	Newport Crescent	Newport Crescent	380	400	400	$ 800	
Burke Road			20	20	20		$ 45,000
			1710	*1890*	*1790*	*$ 5,215*	*$ 291,500*
Burke Road to Canterbury Station							
Burke Road to Royal Crescent	Existing path south	Edge of PTC land south	240	310	240	$ 755	$ 69,000
Royal Crescent to Footbridge East Camberwell	Existing path	Edge of PTC land south	540	540	540	$ 1,370	$ 119,070
East Camberwell to Myrtle road	North side of Rail	Edge of PTC land south	250	300	280	$ 1,250	$ 35,000
Myrtle Road to Kendal Street	Dudley Street	PTC land north& bridge	400	400	400	$ 500	$ 110,000
Kendal Street to Canterbury Gardens	Existing Path	Existing Path	250	250	250	$ 425	$ 15,625
Canterbury Gardens to Canterbury Road	Canterbury Gardens/ Rail carpark	gardens and carpark	220	260	260	$ 730	
Canterbury Road		Bridge	40	100	40	$ 650	$ 150,000
			1940	*2160*	*2010*	*$ 5,680*	*$ 498,695*
Canterbury Station to Union Road							
Canterbury Road to Chatham Road	Shierlaw Avenue		340	340	340	$ 470	$ 42,500
Chatham Road to Junction Road	Kingston Road	Edge of PTC land north	180	200	180	$ 400	$ 22,500
Chatham Station			15	15	15	$ 308	
Junction Road to Robinson Road	Kingston Road	Under Chatham Station and rear	365	400	365	$ 500	$ 59,495
Robinson Road to Union Road	Sunbury Crescent	Edge of PTC land north	360	360	340	$ 480	$ 42,500
Union Road		Bridge	20	20	40	$ 500	$ 150,000
			1280	*1335*	*1280*	*$ 2,658*	*$ 316,995*
Union Road to Elgar Road							
Union Road to Lorne Parade	Windsor Crescent	Surrey Hills Carpark	410	410	410	$ 805	
Surrey Hills station to Mont Albert Road	Lorne Parade	Edge of PTC land south	230	230	230	$ 715	$ 28,750
Mont Albert Road to Mont Albert Station	Hamilton Street	Edge of PTC land south	200	260	200	$ 730	$ 25,000
Mont Albert Station	Churchil St		50	50	50	$ 325	
Mont Albert station to Elgar Road	Churchil/ Serpentine St	Edge of PTC land south	820	820	800	$ 1,010	$ 137,500
			$ 1,710	*$ 1,770*	*$ 1,690*	*$ 3,585*	*$ 191,250*
Elgar Road to Middleborough Road							
Elgar Road			20	20	40	$ 500	$ 150,000
Elgar Road to Thurston Street	Carrington Street	Edge of PTC land south	400	400	380	$ 500	$ 69,160
Thurston street to Station Street	Box Hill Central		370	420	420	$ 810	
Station street to Linsley street	Banks street	Edge of PTC land north	400	400	400	$ 500	$ 50,000
Linsley Street to Barcelona Street	Rutland Street	Edge of PTC land north	380	400	400	$ 500	$ 50,000
Barcelona Street to Middleborough Road	Barcelona, Sweetland	Edge of PTC land north	500	1070	480	$ 2,335	$ 60,000
Middleborough Road		Bridge	20	20	40	$ 500	$ 150,000
			2070	*2730*	*2160*	*5645*	*529160*
Middleborough Road to Morton Park							
Middleborough Road to Laburnum Street	Salisbury/Blacks Walk	Existing Path south	270	700	260	$ 1,800	
Laburnum Street		Bridge over South	20	20	30	$ 500	112500
Laburnum Street to Elmore Walk	Laburnum Street	Edge of PTC land south	380	480	380	$ 840	$ 47,500
Elmore Walk to Blackburn Road	South Parade	Edge of PTC land south	630	630	630	$ 915	$ 55,125
Blackburn Road			20	20	20		
			1320	*1850*	*1320*	*$ 4,965*	*$ 216,125*
Morton Park to Nunawading Station							
Blackburn Road to Glen Ebor Avenue	Morton Park Trails		380	410	410	$ 301	$ 51,250
Glen Ebor Avenue to Oliver street	Glen Ebor Avenue	Edge of PTC land south	570	570	570	$ 885	$ 71,250
Oliver Street to Springvale Road	Central Avenue	Edge of PTC land south	990	1620	990	$ 2,310	$ 123,750
Springvale Road		Use exist. lights	40	40	40		$ -
			1980	*2640*	*2010*	*$ 3,496*	*$ 246,250*
Nunawading Station to Mitcham Road							
Springvale Road to Pleasant Road	Station Street		250	250	250	$ 725	
Pleasant Road to Rooks Road	Station Street		590	590	590	$ 895	$ 73,750
Rooks Road			20	20	20	$ 500	$ 45,000
Rooks Road to Sims Street	Thornton Cres and MW path	Edge of PTC land south	490	1000	490	$ 2,000	$ 61,250
Sims Street to Mitcham Road	Calcutta Street		220	220	220	$ 710	
Mitcham Road			20	20	20	$ 500	$ 45,000
			1590	*2100*	*1590*	*$ 5,330*	*$ 225,000*
Mitcham Road to Heatherdale Road							
Mitcham Road to Cochrane Street	Brunswick Street	Edge of PTC land south	830	830	820	$ 715	$ 102,500
Cochrane Street			10	10	20	$ 5,000	$ 75,000
Cochrane Street to Melb Water Pipetrack			150	150	150	$ 375	$ 18,750
Melb Pipetrack to Heatherdale Road	Forster Street	Edge of PTC land north	640	800	640	$ 1,300	$ 100,000
Heatherdale Road			20	20	20	$ 500	$ 45,000
Heatherdale Road to Scoresby Freeway reservation	PTC carpark	Edge of PTC land south	320	320	320	$ 760	$ 40,000
			1970	*2130*	*1970*	*$ 8,650*	*$ 381,250*
Maps and Promotion						$ 35,000	
Total works			*18030*	*23955*	*18070*	*$ 88,323*	*$ 3,587,375*
Total with Contingency of 10%						$ 97,155	$ 3,947,773

Maintenance Requirements

There are four major agencies with maintenance responsibilities along the Eastern Rail Trail. Currently VicRoads and the Councils have maintenance responsibility for the roadways along the trail route. The Public Transport Corporation has responsibility along the rail reserve. There are several other bodies with minor responsibilities such commercial and government land owners.

Maintenance responsibility will need to be determined at the commencement of the development of the trail. The initial work in identifying the existing trail will not incur a significant new expense for maintenance as the works themselves are relatively inexpensive and in reality are just a new use of existing facilities. A 10% allowance for replacement and maintenance of the trail would cost $10 000 per year spread over several maintenance agencies.

Maintenance of the ultimate trail will only be minimal if the trail is constructed in a low maintenance material such as reinforced concrete and with low maintenance landscaping.

The maintenance of the ultimate concrete trail will require regular edge clearing, weeding and improvement of the landscaping works and maintenance of the lights and bridges. Signage will need to be regularly replaced and maintained and linemarking will need to be regularly refreshed.

Landscape Elements

The trail will need to develop it's own landscape style and characteristics but the following criteria have already been identified.

- The trail should stand out and a distinct colour line initially and ultimately a colour concrete trail is recommended.
- Planting will be required along the trail and because of limited space in many areas the style will require vertical growth rather than a horizontal growth.
- Fencing of a distinct and attractive style which also meets the PTC safety and maintenance requirements must be developed.

Distinct signage and park furniture such as seating must be developed to give a continuous characteristic style.

Users of the Eastern Rail Trail

There are numerous people who already use short sections of the Eastern Rail Trail but the potential use is significant and a major increase in patronage is possible with only minor works identifying the rail trail.

Commuting

While some cyclists already use routes along the general alignment of the proposed Eastern Rail Trail, it has only recently been recognised as a potentially significant commuter route. The closer it can be positioned to the railway the better it can serve this purpose. Testing of the existing alignment by Whitehorse Bicycle Users Committee members has identified that the trail provides a lower stress route with less challenging hills and was just as quick if not quicker than other routes.

Schools

There are 48 schools and educational institutions operating within one kilometre of the Eastern Rail Trail. These schools include major centres such as Swinburne University as well as numerous private schools in the area.

Swinburne University and Boroondara Council have a major problem with parking for students and the State Bicycle Committee and Bicycle Victoria have already initiated a Ride to Campus campaign at the University to help promote cycling. The Eastern Rail Trail is already identified as a major route used by University students.

The Eastern Rail Trail has the potential to service the needs of the students and because it is a more visible trail than other off road trails will provide increased security.

The connections to individual schools will need to also be developed to provide a totally safe and secure route to school for students.

Railway Stations

There are 15 railway Stations located along the Eastern Rail Trail. There are currently nearly 50 000 people a day using the train service along the corridor and 8000 use the train service to access Stations within the corridor.

Car parking is a major issue and cost for the Public Transport Corporation with demand for parking spaces exceeding supply. A

small change to peoples travel patterns to cycle to Stations will reduce the demand for costly parking and there is considerable scope to promote a modal change from cars to use of the trail along with a train ride.

Shopping areas.

There are 30 major shopping and commercial areas within one kilometre. There are 280 000 trips (34%) within the corridor each day for buying, pick up and delivering and to eat and drink.

There are several major areas that could attract a cult following and develop a trail cappuccino culture. The Maling Road shopping area already has a reputation and Box Hill Central and surrounding area has many fine restaurants that could be the focus of a trail destination similar to Southbank on the Yarra River trail.

Recreation facilities

Within one kilometre of the Eastern Rail Trail there are over 60 areas of parks and open space which could easily cater for the recreation needs of the 32 000 recreation and exercise trips each day within the corridor

Major recreation features such as Blackburn Lake, Ringwood Lake, Dandenong Valley Parks and the Yarra River Parks could all be easily accessible through links to the Eastern Rail Trail.

Recreation and Trail Circuits

The Eastern Rail Trail connects or could connect to numerous other trail and linear open space systems in the area. These include the Koonung Creek Trail, Gardiners Creek Trail, Yarra River, Dandenong Creek, Bushy Creek, Melbourne Water Pipe track from Heatherdale to Syndal and the Anniversary Trail.

The extension of the Eastern Rail Trail along the rail line to Ringwood would pick up the extensive trail system along the rail line between Ringwood and Belgrave which already covers a distance of some 17 kilometres.

There are also connections to the trail possible along the Healesville Freeway Reservation between Gardiners Creek and Dandenong Creek.

Development of the Eastern Rail Trail will connect these other trails and create a return circuit that adds a further recreation value to the other trails.

Table of Trips within 3 Km of Rail

Provided by Transport Research Centre from RMIT using the VITAL data of travel surveys from residents in the area.

Trips with Origin Destinations within 3km of rail lines

Total No. of Trips

Sum of allfitpwgt	Mode													
Purpose	Missing Data	Walking	Bicycle	Taxi	Car - as driver	Car - as passenger	Train	Tram	School Bus	Other Bus	Motor Bike	Truck	Other	Grand Total
Missing Data	205	2,140	0	0	580	506	0	447	0	319	0	209	0	4,407
To accompany someone	0	11,967	0	0	5,892	30,134	0	0	0	0	0	0	1,692	49,685
To buy something	0	44,366	4,128	367	62,397	17,162	1,400	1,027	0	1,311	0	0	0	132,158
Something to pick-up or deliver	0	11,101	153	0	28,690	8,023	502	381	0	0	0	838	529	50,216
Someone to pick-up or deliver	0	3,133	465	0	49,660	11,465	0	0	0	0	0	0	237	64,960
To eat or drink	0	12,257	452	524	11,788	8,652	223	249	0	66	0	0	196	34,408
For education	0	6,436	1,192	0	3,357	14,713	1,418	2,896	484	1,137	0	0	0	31,631
For work purposes	0	17,095	404	0	49,771	6,013	229	1,064	0	304	153	1,283	1,423	77,737
To go home	710	55,934	7,351	1,239	116,587	67,475	2,876	4,652	0	3,472	153	0	1,366	261,814
Other (NEC)...	0	1,602	0	0	1,356	853	0	0	0	0	0	0	0	3,810
Cange mode (NEC)	0	299	0	0	192	0	0	0	0	0	0	0	0	491
For childcare	0	777	0	0	246	1,355	0	0	0	0	0	0	0	2,378
Volunteer/Community activity	0	615	0	0	641	136	0	0	0	0	0	0	0	1,392
Religious	0	1,947	0	0	2,866	4,517	0	0	0	0	0	0	0	9,331
Personal business (eg banking)	348	6,725	121	0	9,615	3,338	0	0	0	395	0	0	0	20,542
Medical/Dental purposes	0	882	0	233	3,660	2,624	267	166	0	145	0	0	0	7,978
Stay overnight	0	926	0	165	0	225	0	0	0	0	0	0	0	1,316
Visit someone	0	2,870	430	0	10,132	6,878	209	0	0	33	0	0	0	20,350
Socialising (Pubs, Clubs etc)	0	1,131	0	322	1,342	1,237	0	0	0	0	0	0	0	4,033
Participate in sport	0	3,810	1,453	0	4,342	3,811	420	0	0	299	0	0	0	14,134
To watch sport	0	489	0	0	996	439	880	0	0	0	0	0	0	2,804
Participate in concert, musical, band etc	0	0	0	0	165	242	0	0	0	0	0	0	0	407
To watch concert, musical, band etc	152	680	0	0	915	1,575	0	476	0	0	0	0	0	3,798
Other recreational (eg. exercise)	0	6,712	810	0	2,672	1,622	0	0	0	0	0	0	0	11,815
Browsing, window-shopping	0	1,186	0	0	1,746	301	0	0	0	0	0	0	0	3,456
Returning to other house	0	2,152	484	0	0	819	0	0	0	0	0	0	0	1,069
To meet/wait for someone	0	262	0	0	0	808	0	0	0	0	0	0	0	3,066
Walking the dog	0	3,066	0	0	0	0	0	0	0	0	0	0	0	822,418
Grand Total	1,416	200,359	17,440	2,849	369,607	194,923	8,423	11,359	484	7,481	305	2,330	5,442	

Source Victorian Activities Travel Survey

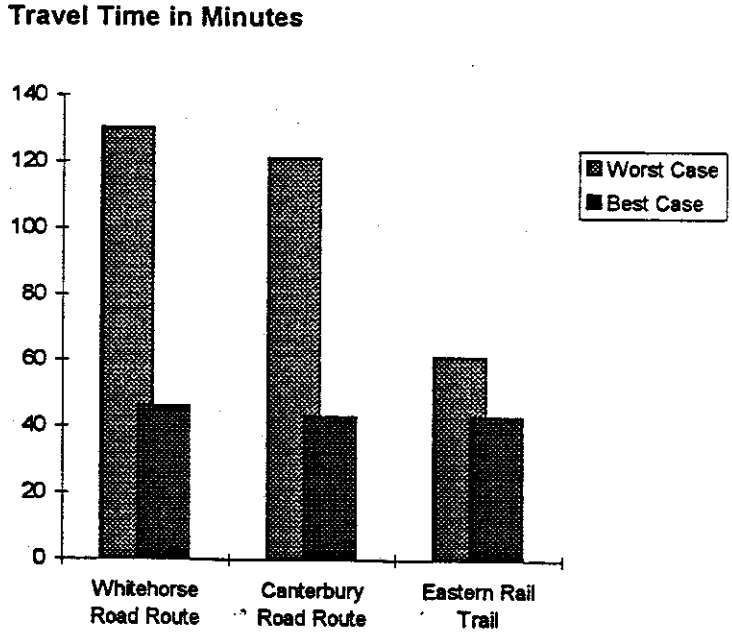
Prepared by the Transport Research Centre 135/96

Travel Time

The Eastern Rail Trail has the potential to considerably reduce the travel time for cyclists travelling all the way into the City or parts thereof as well as reducing the time for dual mode travellers using the Rail service.

The Eastern Rail Trail will ultimately provide a continuous glide path with overpasses and underpasses and only nine sets of traffic lights. Compared to the Whitehorse Road and Canterbury Road which have about 40 each there could be a considerable time saving without counting the easier grades, alignment and more direct route to destinations.

The following chart was developed considering a travel speed of 25 Km/ hr for the best case and a worst case scenario of a 2 minute delay with acceleration and deceleration at every light encountered. The travel times could also apply to vehicles as well as bicycles.



Conclusions and Recommendations

The Eastern Rail Trail is a feasible trail that will cater for both commuter and recreation cyclists and other users including pedestrians. The trail is already available for use by cyclists and with minor works in the order of $100 000 could be clearly identified and developed for further use.

There is considerable scope for development of the trail for additional use because of the large population in the railway corridor.

The region is demographically inclined to use of the trail and minor improvements and promotion of the trail could lead to a significant increase in use.

The following recommendations are made to facilitate development of the trail.

- Councils adopt the Eastern Rail Trail as a major trail in the region and ensure the future development is secured through recognition in the planning processes.

- Approaches be made to the State Bicycle Committee, Public Transport Corporation, Melbourne Parks and Waterways and VicRoads to have the trail included in strategic planning for the region and to facilitate funding.

- Boroondara Council and Whitehorse Council allocate sufficient funds in association with other agencies to enable the improvement of the existing trail. These funds to include funding for maps and promotion material.

- Maintenance agreements be prepared with responsible agencies for the various sections of the trail.

- Detailed planning and design be undertaken with the Public Transport Corporation on the sections of ultimate trail for three major diversions at Box Hill Cemetery (including a bridges over Middleborough Road and Elgar Road), Thornhill Road and Central Road.

- Planning, design and approvals be prepared for sections of trail in a staged process and funding applications be made to appropriate bodies.

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