



The Green Corridor

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A Proposal to Keep the Railway Lands as a Continuous Green Corridor

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FOREWORD

A line may represent connection or division.

When the railway line was constructed over a century ago, by linking the heart of tiny Singapore to the vast continent of Eurasia it certainly symbolized Connectivity and Progress. Over the years it has acquired a rich patina of history not only as an important transport link but in the collective memory of people who have travelled to and from Singapore out of necessity or in search of adventure, romance or discovery.

In recent decades the railway line has come to be viewed as politically divisive and a thorny barrier to efficient land use planning. Simultaneously however, it still serves its function of connecting people and places and because it is one of the rare places on the island left untouched by development it has evolved its own intricate network of micro-ecosystems.

Here, the magical hand of time assisted by the exuberance of tropical nature and the ingenuity of man have created a kaleidoscopic patchwork of landscapes that can be briefly glimpsed from the train but only fully savoured when on foot.

Overgrown orchards, makeshift vegetable patches, pockets of rare ferns and orchids, forest, marshland and open grassland with their representative birdlife, improvised footpaths and bridges, miniature architectural gems and dioramas of the past are all strung out on the line like a treasure trail for nature lovers, photographers, hikers and a growing band of Singaporeans of all ages hungry for an authentic encounter with nostalgia.

Now that political differences over the railway have been successfully resolved, it is not surprising for public interest to be focused on the fate of the line. A growing wave of public concern reminiscent of that showed over the first National Library and over Tanjong Chek Jawa is rapidly gaining momentum in both the mainstream and online media.

The least challenging and most unimaginative “solution” would be for policy makers, planners and developers to parcel the land out as real estate, dismantle the line, erase the railway and its memory from the public domain and relegate it to textbook history.

That would be a costly mistake.

Much of Singapore’s natural and man-made heritage has been jettisoned as excess baggage in our rush to transform ourselves from a third to a first world country. A more inclusive and considered approach would have recognized their value as ballast in nation-building and sustainable development and while attempts are now being made to restore some of them at great expense (eg. the ecolink between Bukit Timah Nature Reserve and the Central Catchment) many are irretrievably lost.

This proposal for the KTM Railway should not be viewed as a barrier to development. After all, the railway has been a symbol of progress in the past and should continue to be so. Rather, we feel that by exploring more creative, sensitive and inclusive ways to utilize the railway and its land we would be enhancing rather than reducing its value.

In a country searching desperately for genuine icons it would be a tragedy to destroy this potent symbol of connectivity and inclusive progress.

Dr Geh Min
Immediate Past President
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by Dr Geh Min

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^The main lines of railway tracks, Tanjong Pagar - Woodlands and Jurong Lines

INTRODUCTION

For close a century, a railway links Singapore to the Malayan Peninsula; it crosses the Straits of Johore and runs (quite literally) through the heart of our island, terminating at its southern tip.

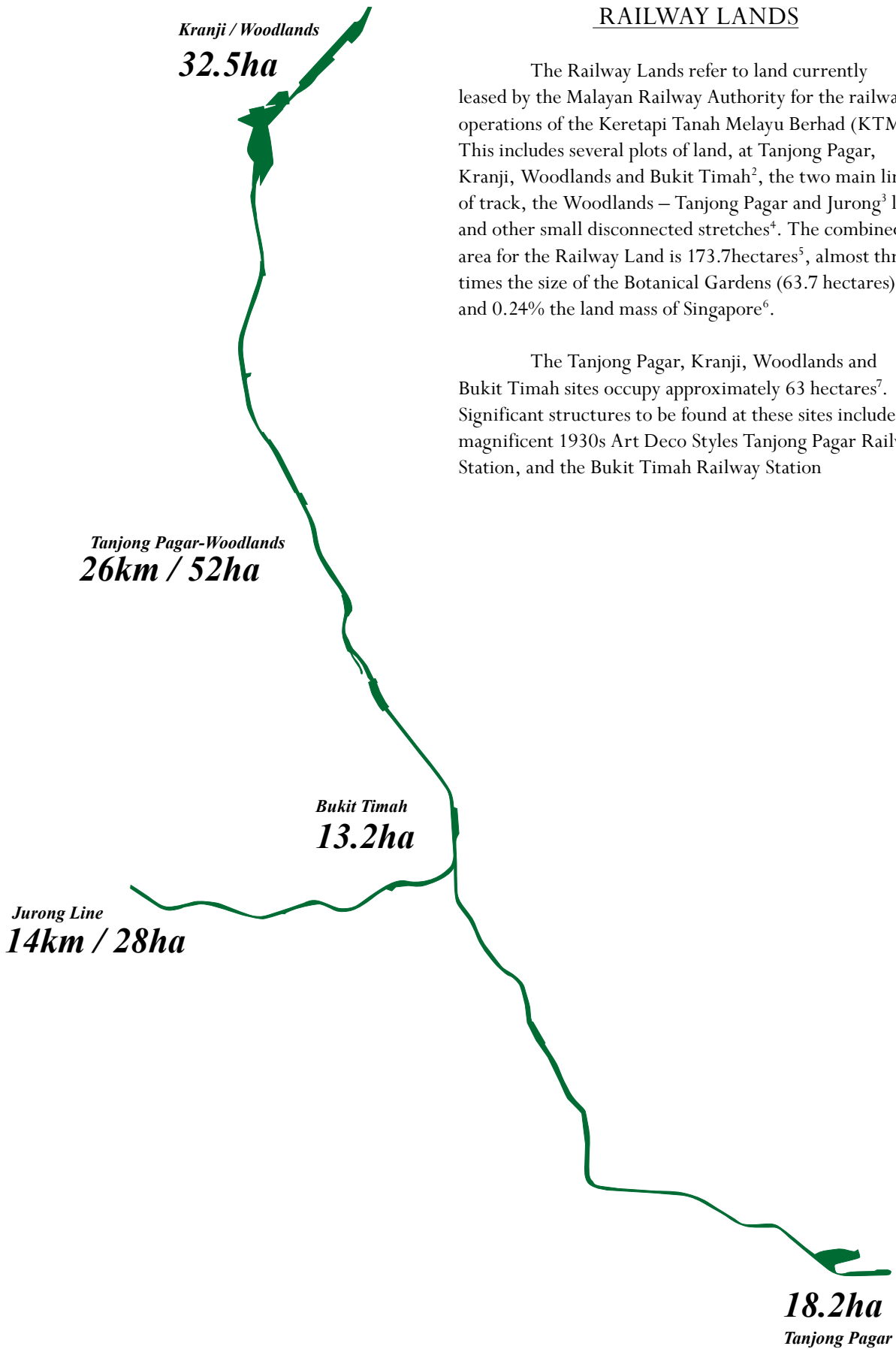
With the pending relocation of this railway service to the north (or possibly off our island completely), and an agreement to jointly develop the larger plots of railway land¹, the question of what is the future of the rest of the land – the railway track lands still needs to be addressed.

This document seeks to make a case for keeping the railway track lands as a continuous Green Corridor.

RAILWAY LANDS

The Railway Lands refer to land currently leased by the Malayan Railway Authority for the railway operations of the Keretapi Tanah Melayu Berhad (KTMB). This includes several plots of land, at Tanjong Pagar, Kranji, Woodlands and Bukit Timah², the two main lines of track, the Woodlands – Tanjong Pagar and Jurong³ lines and other small disconnected stretches⁴. The combined area for the Railway Land is 173.7hectares⁵, almost three times the size of the Botanical Gardens (63.7 hectares), and 0.24% the land mass of Singapore⁶.

The Tanjong Pagar, Kranji, Woodlands and Bukit Timah sites occupy approximately 63 hectares⁷. Significant structures to be found at these sites include the magnificent 1930s Art Deco Styles Tanjong Pagar Railway Station, and the Bukit Timah Railway Station





Skirting pass the Bukit Timah Nature Reserve



Cast iron railway bridge across the Sungei Ulu Pandan



Tanglin Halt on the left and Portsdown on the right

The combined length of the Tanjong Pagar – Woodlands and Jurong Lines is approximately 40 kilometres, occupying roughly 80 hectares.⁸

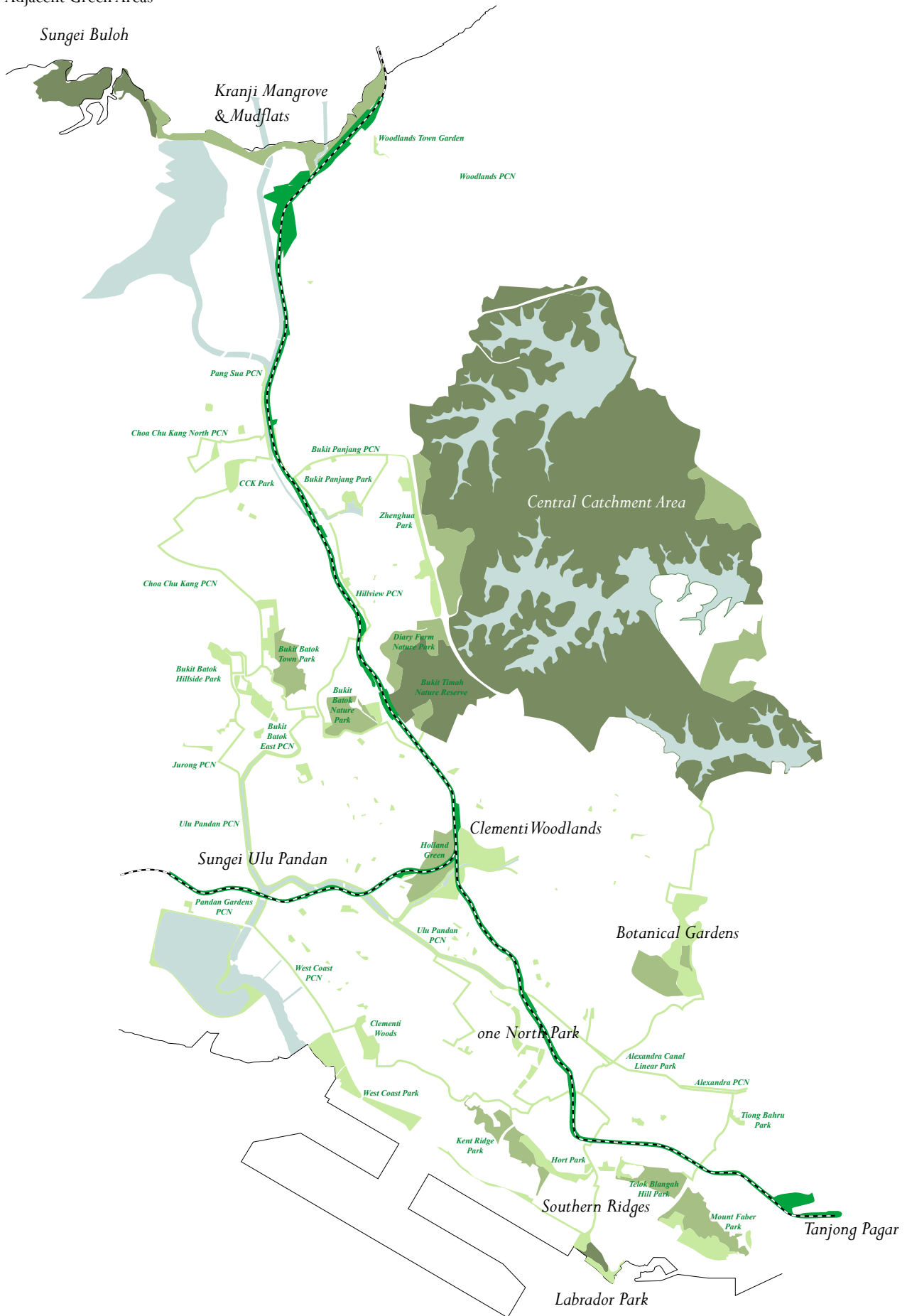
Notable structures to be found along the tracks include three large cast iron bridges at Bukit Timah across Bukit Timah Road, Upper Bukit Timah Road and the Ulu Pandan Canal.

In this document, we are interested in the land occupied by the railway tracks; which we will refer to as the Railway Lands.



Tall grass areas at Kranji

MAP A
Adjacent Green Areas



THE MOST WELL-CONNECTED GREEN CORRIDOR

The Railway Lands have long been perceived as a foreign entity, a residue of history⁹, and kept removed from the developmental character of rest of the island. Because of this, it has inadvertently provided a refuge for natural habitats and rural practices, most notably along the disused Jurong Line, where natural reforestation¹⁰ and small scale agriculture are occurring with refreshing vigour.

Singapore has urbanized rapidly around the Railway Lands; preserving an alternative landscape and simultaneously becoming ever more tightly woven into its natural and man-made networks.

It is difficult to describe the myriad landscapes of the Railway Lands on paper. In the following sections, we will attempt to do so, albeit in a small way, using maps and diagrams, photographs and text, to describe the rich and varied landscapes which the Railway Lands connect. And show how immensely valuable a resource to the nation it can be if kept as a Green Corridor.

It Connects Many Green Spaces Together.

The Railway Land is already like a nature park; much of it a mix of secondary forest growth, grasslands, and small scale fruit and vegetable farms. Open areas are interspersed with canals, streams and marshland on both sides of the tracks¹¹.

< Map A shows the Railway Lands superimposed with a portion of the NParks Park Connector system. If the estimated length of the Railway Land is 40 kilometres, that would add 40% to the existing 100 kilometres of NParks Park Connector System. If the Railway Land were converted into a Green Corridor, it could lend the now dispersed and disconnected Park Connector System a Grand Spine. All along its length, the Railway Lands pass directly through or intersect with existing parks and park connectors. We can identify 6 main green areas that the Railway Lands connect.



View towards Portsdown



The railway tracks cutting through Bukit Timah Nature Reserve



Section of railway tracks skirting the AYE



Old Holland Road



Scenic vista of Clementi Woodlands



NSS Members taking a hike through the Clementi Woodlands

1. Southern Sector

In the South, the Railway Lands, via intersecting Park Connector Systems can link the Southern Ridges with the Botanical Gardens, one North Park and the Ulu Pandan park Connector. Areas skirting the Ayer Rajah Expressway, the railway lands can be a green cycling route into the City, and already it forms a welcome green buffer to adjacent light factories.

2. Clementi Woodlands

Heading north, the Railway Lands enter an area of significant secondary growth forest we shall refer to as Clementi Woodlands. These areas, though not a gazetted Nature Park or Reserve, would make a welcome addition to our Parks system. This large patch of green is also intersected by the disused Jurong Line. The Jurong Line has been disused for less than 20 years, yet it has developed unique micro-climates that have become sanctuaries for many rare plants such as giant tree ferns. It is a rare place on the island where rare species of ferns and orchids can thrive, due to the cool and humid climates. In the woodland areas, rare birds such as the Buffy Fish Owl and Changeable Hawk Eagle have been recorded.



Overgrown fruit plantations along the Juong Line



Giant tree ferns along the disused Jurong Line



View of Sungei Ulu Pandan taken from cast iron bridge

3. Jurong Line

The Jurong Line emerges from the Clementi Woodlands at Sunset Way, crossing the Ulu Pandan Canal via a majestic cast iron bridge. The railway not only intersects the popular jogging track along the Ulu Pandan Park Connector, the areas adjacent to the it have been adopted by nearby residents for use as fruit farms and vegetable plantations. Such small scale cultivation can be encouraged along other areas of the Railway Lands near housing estates as so Singaporeans can learn about food production. Some areas can even be converted into community managed allotments, giving people who live in apartments a chance to have a garden to call their own.



Extensive small-scale farming occurs along Sungei Ulu Pandan



The railway tracks through a section of forest at Upper Bukit Timah

4. Bukit Timah Nature Reserve

The railway lands cut through the Bukit Timah Nature Reserve and Bukit Batok Nature Park for a 2 kilometre stretch near the Hillview area. It could be a very convenient way of accessing these areas and can very simply be converted into a nature trail.

5. Bukit Panjang / Chua Chu Kang / Pang Sua

Beyond the Bukit Timah Nature Reserve, several Park Connectors (Hillview, Bukit Panjang, Chua Chu Kang and Pang Sua) run parallel to the Railway Lands. Combining all the Park Connectors with the Railway Lands in this area will allow for a wider Linear Park to be established.



Cast iron bridge over Upper Bukit Timah Road



Pang Sua Canal Park Connector, railway is on the other side of the canal



View of Sungei Mandai from railway tracks

6. Kranji / Mandai Mangrove & Mudflats

Finally in the North, the Railway Lands in Kranji forms part of a greater wetlands area; connecting Mandai Kechil (adjacent to the Customs House), Sungei Mandai and the coastal strip of Mandai Mangroves and Mudflats¹². This coastal strip between the railway line and the sea consists of extensive areas of mangroves and intertidal mudflats, forming a river estuarine system. The site contains one of the best examples of mixed mangrove stands and is rich in biodiversity.



Good examples of mature mangrove at Kranji

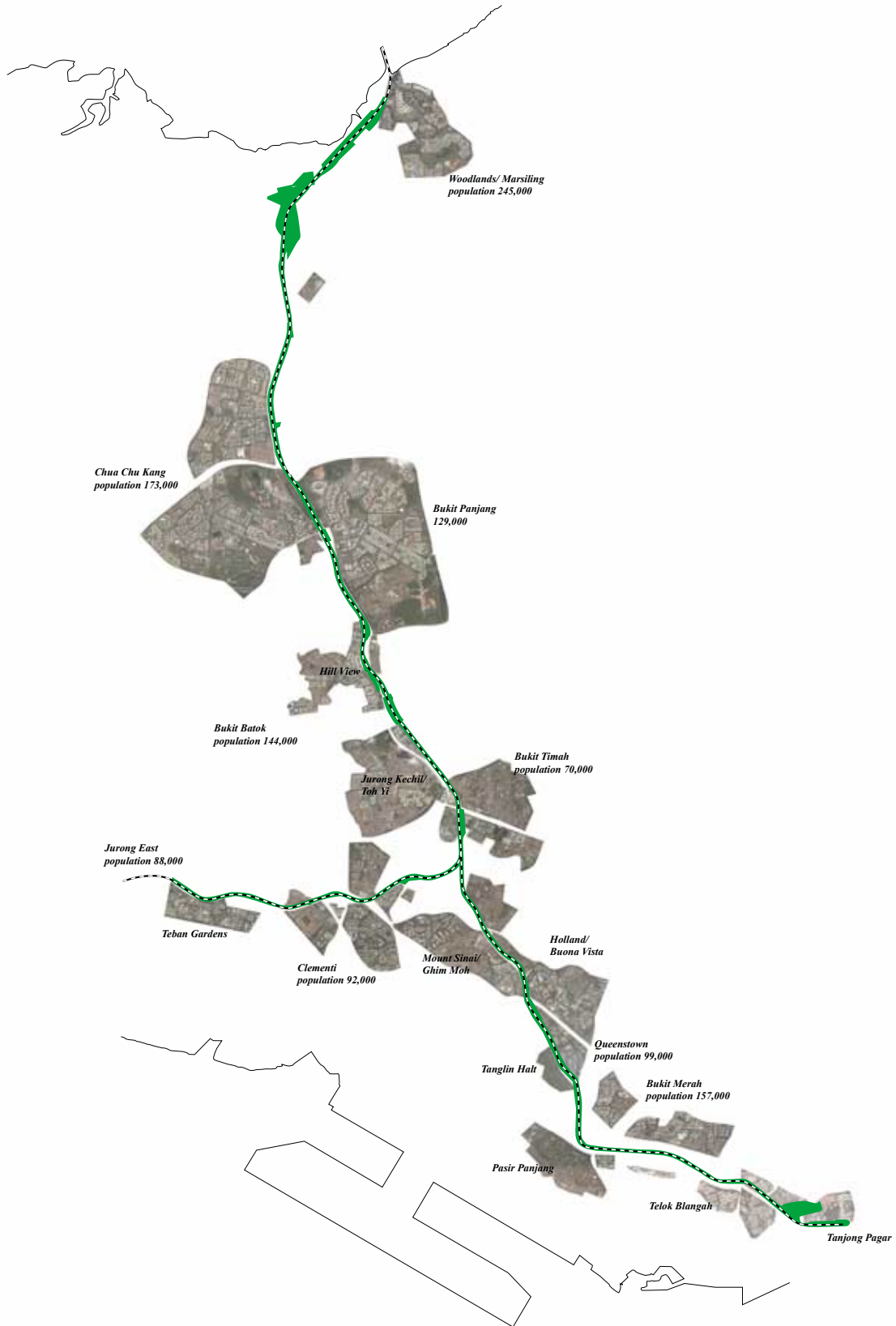


Mandai mudflat with Johor Bahru in the distance

Although this area theoretically falls out of the Railway Lands per se, it is one example of the new green areas that the Railway Land can connect.¹³

Preserving the Railway Land as a Green Corridor will not only make it possible for Singaporeans to hike from the wetlands in Kranji to Rainforests in Bukit Timah and the hilltops of Henderson through a continuous nature trail; the Green Corridor is also important for preserving our Natural Heritage by acting as a connector for flora and fauna movement across the island, to some extent mitigating the effects of the fragmentation of our Nature Reserves.

MAP B
Adjacent Population Centres





A well managed fruit and vegetable garden near Commonwealth

It Connects Many People Together

<Map B on the adjacent page shows how Singapore has developed around the Railway Lands. The Railway Lands are immediately at the doorstep of major population centres. This Green Corridor has the potential to directly or almost directly serve 1.2 million people living in estates along the entire stretch of railway¹⁴.

Areas near population centres can be transformed into parks and recreational areas, or better yet, given over to community gardening and farming, as it is already occurring spontaneously in several areas of the Railway Lands.¹⁵

Schemes such as the Communities in Bloom¹⁶ Project, supported by NParks can take root in the Green Corridor. Continuous stretches of community managed gardens and farms would be a welcome form of recreation for the elderly and also teach our future generations about basic food production.

There are currently scenic vistas of forests and rivers, canals and wetlands right at our doorstep. The construction of simple walking trails, lighting, resting points and directional signage would make all of this accessible and inviting to hundreds of communities nearby.

A pedestrian link between communities could also enhance neighbourliness and a sense of “kampong”¹⁷ atmosphere along the Green Corridor.



A section of track next to Ghim Moh Estate

Planatation of pandan and bananas at a disused section of the Jurong Line near Teban Gardens



A Clean and Green Transport Route

Singapore aspires to be a leading Eco-City in South East Asia, if not the world. Pollution from urban transportation and traffic jams are common problems in major cities in the world. One way to solve this urban evil is to encourage cycling as an alternative means of transport. Cycling partially solves transportation needs and provides recreation. The cities of New York and London, both metropolises, are implementing cycling routes for commuting. In the Singapore context, URA is looking to introduce more cycling paths; and present park connectors are used mainly used by cyclists, not pedestrians. A worthwhile proposal is to make provisions for both pedestrians and cyclists to commute north-south of Singapore using the Railway Park, just like the East Coast Park where cyclists commute from the eastern part of the island to the CBD, away from the motor vehicles. Map C shows the Green Corridor superimposed with surrounding transportation networks.

The Green Corridor is a more direct link from the North of the island to the South than either the Bukit Timah Expressway or the North South MRT Lines. It is also mostly continuous, save for the few level crossings at Upper Bukit Timah. With creative planning, the Railway Land can be converted, without a high level of investment, into a grand pedestrian and cycling route through the heart of Singapore.

A cycling and pedestrian path can be built on either side of the railway tracks. For cyclists, a network of branch off lanes from the Green Corridor into Residential or Commercial areas with exits and entrances can be created where there is demand. This allows cyclists to cycle from their homes in Chua Chu Kang or Bukit Panjang to the City. Likewise, someone living in the City may wish to cycle all the way to the Bukit Timah Nature Reserve, entering from paths created behind Rail Mall.

Even the existing railway tracks should not be put to waste. It is feasible for the tracks to accommodate certain low speed forms of trams, powered by clean energy sources or even human power. A system of trams or trains can serve as a form of leisure travel along the scenic Green Corridor¹⁸.

Of course the Green Corridor is a natural spot for conducting all forms of Sports and Recreational Activities¹⁹. The continuous length of the Green Corridor can host all forms of long distance running/cycling activities without the need for troublesome road closures.

With increasing numbers of Singaporeans adopting a healthy and active lifestyle, there is an urgent need to provide spaces conducive to such activities. The Green Corridor allows not just a place to play sports and exercise, it also opens up spaces for gardening, fishing and camping.

Increasing the amount of greens spaces for recreation is imperative if we seek to increase our population and improve our standards of living at the same time.



A mountain biker using a trail next to a section of tracks near Old Holland Road

PRESERVING HISTORY

The railway line is a physical historical record of the relationship between Singapore and Malaysia. These 2 countries were once one and the same country called Malaya. There was no border until 1965. This railway line serves as a reminder of this historical fact. The whole stretch of the railway line can be turned into an outdoor 'museum' with 'walking commentary'. Because of its linearity, points of historical interests can be planned along the route to educate the public about life in the 50s, 60s and up to the 70s. The remaining shacks, part of existing natural landscape, and abandoned train stations along the track are ideal points of interests.

The most obvious of which is the Tanjong Pagar Railway Station. This 1920s architectural gem is an obvious candidate for reuse be it a hotel, museum or integrated with any potential new developments at the existing railway yards.

Other notable structures worth preserving are the Bukit Timah Railway Station, and the cast iron railway bridges across Bukit Timah Road, Upper Bukit Timah Road and Ulu Pandan Canal respectively. Other small structures, such as rail crossing stations and tunnel crossings are all worth preserving and can easily be converted into shops, cafes, rest areas and facilities for hikers and cyclists.



Tanjong Pagar Railway Station



Cast iron bridge across Bukit Timah Road

Murals at the Tanjong Pagar Railway Station





Old Railway Signage

If preserved appropriately, the Railway Land can become a potential site for UNESCO World Heritage listing as it already meets some of the criteria.²⁰

“Correct and appropriate preservation includes the protection, management, authenticity, and integrity of the site as a coherent cultural landscape which demonstrates significant interaction between people and the natural environment.”²¹



Bukit Timah Railway Station



Bukit Timah Railway Station with a view of the tracks heading into the Clementi Woodlands

CASE STUDIES

It is not uncommon for abandoned railway lines to be converted into parks and gardens. We can find several conversions of such railway infrastructure into successful linear parks.

Promenade Plantée, Paris

From the late 1980s through the mid-1990s, the city of Paris successfully converted the 19th-century elevated Viaduc Daumesnil, in the 12th Arrondissement, near the Bastille, into a pedestrian walkway called the Promenade Plantée. Rail traffic had stopped on the viaduct in 1969. The 3-mile linear park, designed by Philippe Mathieu and Jacques Vergely, is lavishly planted and offers stairs and elevators for access. Retail spaces, designed by Patrick Berger, were created in the spaces under the masonry arches supporting the structure. The project as a whole helped revitalize the surrounding neighbourhood, inspiring new residents and businesses to come to the area.



Promenade plantée (walk with trees) also known as the Coulée verte is a 4.5 km-long (2.8-mile) elevated park in the 12th arrondissement of Paris, France. It is a rail trail, constructed on an abandoned 19th-century railway viaduct, which connected the Bastille area to the eastern suburbs of Paris, and ceased operation on December 14, 1969. Conversion to park took place between 1987 and 2000.

Le Jardin de Reuilly along the Promenade Plantée



Promenade de Plantee

Highline Park



The Highline Park, New York

The Highline is an elevated rail deck that runs along Manhattan's West Side. Construction on the 13 mile deck began in 1929 and was complete in 1934. In the 1950s, competition from interstate trucking caused a decline in traffic along the railway. In the 1960s, parts were torn down and it was finally shut down in 1980. Although many portions of land beneath the deck were bought up by private developers, residents actively lobbied for the preservation and reinstatement of the railway on the line.

In 1990, Friends of the Highline was founded. They advocated the preservation and reuse of the deck as an open public space. Through the support of politicians, community and civil groups in the city, Friends of the Highline managed, after several legal battles, to convince the City to support the project.

It was proved that such a project was worth funding even in the difficult economic situation at the time; tax revenues would significantly offset the costs of preserving the Line and opening it to the public.

In January 2003, Friends of the High Line (FHL) launched Designing the High Line, an open, international, ideas competition, soliciting innovative proposals for the High Line's reuse. In October 2004, a Steering Committee made up of representatives from the City of New York and Friends of the High Line selected the team of Field Operations and Diller Scofidio + Renfro to begin design work on the High Line.

By 2006, the Friends of the Highline had successfully lobbied New York City to buy over the Highline from the Railroad, allowing the Highline to be set aside as a trail with public right of way.

Construction of the highline commenced in the middle of 2006 with the first sections opened to the public early this year. Already anticipating the positive influence of the elevated park, areas around the Highline are seeing new development and a buzz in construction of new projects.



Sections of the Highline Park have opened, sparking economic revival in adjacent areas.



Aerial view of a portion of the Highland Park. The design overlays new landscape with existing railway infrastructure.

MAP D
Complete Composite of all maps





CONCLUSION (AND A CASE AGAINST PARTITION)

A case keeping of the Railway Lands as a Green Corridor is also a case against the partitioning of the Railway Land. It is understandable from a commercial stand point, to develop parts of the Railway Land that are very wide, such as the railway yards behind the Tanjong Pagar Railway Station or even stretches at Tanglin Halt next to the Biopolis. Even so the future planning of developments on these larger plots should include green links through them to ensure continuity of the Green Corridor.

It makes very little sense to try and sell of small chunks of the narrow railway track lands for the benefit of a small number of private owners, when, as we have to demonstrated, keeping it as a continuous Green Corridor can benefit a sizeable portion of Singaporeans. It makes economic sense too, as demonstrated by the Highline in New York City where the conversion of a once disused section of railway track, has transformed a poor part of the city into much sought after real estate (increasing tax revenues at the same time).

There are so many compelling reasons to preserve the Railway Land as a Green Corridor. It is readymade Nature Corridor, Recreational Space, Eco-friendly transport route all rolled into one. It is a valuable piece of ecological and historical heritage that should be preserved for future generations of Singaporeans.

Clementi Woodlands

ENDNOTES

1. A joint statement from the leaders of Singapore and Malaysia was issued on 24th May 2010, outlining the broad agreement by both parties to a solution to the problem of Malayan Railway Authority (MRA) Lands in Singapore. Under the agreement, MRA land would be developed jointly by Singapore and Malaysia. Railway and Customs & Immigration operations would be moved to the Woodlands Train Check Point (WTCP) with the option of a complete withdrawal of railway services to Johor in the future.
2. "The three parcels of land in Tanjong Pagar, Kranji and Woodlands and three additional pieces of land in Bukit Timah (Lot 76-2 Mk 16, Lot 249 Mk 4 and Lot 32-10 Mk 16) will be vested in M-S Pte Ltd for joint development, which in turn, could be swapped, on the basis of equivalent value for pieces of land in Marina South and/or Ophir-Rochor. Both sides will conduct their respective valuations and Prime Minister Lee will visit Kuala Lumpur within a month with a proposal for the land swap for Malaysia's consideration." Joint Statement by Prime Minister Lee Hsien Loong and Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak at the Singapore-Malaysia Leader's Retreat on 24 May 2010
3. The Jurong Line, completed in 1965, served as an extension into the then newly constructed Jurong Industrial Estate. It failed to generate adequate traffic and was closed in the early 1990s. It has since been partially dismantled.
4. There are various small tracts of land that were previously built to connect industrial estates but these have long been abandoned and are disconnected from the main railway lines. Examples maybe found around Depot Road, Alexandria and Sembawang.
5. The Sun (Malaysia), 29 June 2010. "Tg Pagar land was leased to KTM".
6. As of the year 2010, Singapore is 710 square kilometres. www.singstat.gov.sg
7. The Straits Times, 13 June 1991. "Rail Development the Best Thing for Ties".
8. All lengths and areas have been approximated on calculations using maps on Google Earth software. The width of land occupied by the tracks varies along its length, to attain the figure of 80 hectares; this document assumes an average width of 10 meters on either side of the tracks, a figure that will have to be further verified with archival maps and land surveys.
9. Railway Land Swap : New Light on an Old Issue, Yang Razali Kassim 9 July 2010, RSIS Commentaries
10. There are good stands of Terentang (*Camposperma auriculata*) along the Jurong Line and along Clementi Road near the canal along Maju Road. Terentang is frequently associated with reversion to primary forests.
11. The NSS is currently conducting biodiversity surveys of the Railway Land; results will be announced in the near future.
12. This area was formerly part of Kranji Nature Reserve, which was de-gazetted in 1968.
13. It would link the Railway Land as Green Corridor to an extended intertidal coastal nature corridor, skirting the coast from Woodlands to Mandai, Kranji and onward to the Sungei Buloh Wetland Reserve.
14. Population numbers approximated from "Census of Population 2010 Advance Census Release", Singapore Department of Statistics
15. There are very good examples of spontaneous gardens and small scale farms developing along the Jurong Line near Sunset Way, Teban Gardens, Pandan Gardens and Tanglin Halt. These are all near major housing estates.
16. Community In Bloom (CIB) is a program, launched in 2005, that aims to foster a gardening culture among the people in Singapore. CIB facilitates and guides residents, students and workers in Singapore to set up and sustain their community gardening projects where they can gather to plant and care for their own favourite plants including flowers, herbs, spices, vegetables and fruit trees.
CIB program is a collaboration with partners including Town Councils, Housing Development Board, People's Association, National Library Board, Non-Governmental Organisations, and the private sector who provide a range of support such as – land use, garden set-up, grassroots liaison, gardening talks and other initiatives. CIB aspires to link-up all gardeners and community gardening groups islandwide into a self-sustaining National Gardening Movements,
Communities in Bloom Brochure, www.nparks.gov.sg
17. Incidentally, the Mandai Mangroves housed the last coastal 'Kampong' in Singapore Kampong Fatimah. Perhaps this Kampong can be recreated as an attraction along the Green Corridor.
18. In fact many disused railway lines in the UK have been converted into low cost tramlines, with simple rolling stock powered by conventional automobile engines. The trams are run local town councils.
19. Incidentally, the length of the tracks is roughly that of a marathon.
20. a. to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design; b. to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history; c. to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change; d. to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.
Criterion for Selection, World Heritage, <http://whc.unesco.org/en/criteria/>
21. World Heritage and Biodiversity: How World Heritage Sites Contribute to Biodiversity Conservation Around the World, whc.unesco.org/uploads/activities/documents/activity-618-10.ppt