

NEW LYNN STATION

*ANALYSIS OF MODAL TRANSFER
AND
CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN*

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1.0 Description of Site

The New Lynn Station is located within the New Lynn town centre, and provides an interchange between western line trains, and various bus services. The two railway platforms are located underground in an open-trench, while the five bus stop platforms are located at the street level. The main entrance to the station, is a building cornered by Totara Avenue, Memorial Drive, Clark Street and Rankin Avenue, with four of the bus stop platforms being located along Totara Avenue, while the other bus stop platform is located on Clark Street. An additional entrance to the station is located on Hetana Street, although this entrance only connects to the underground railway platforms. Aerial views of the location of the site from Auckland Council's geo maps is provided in *Figure 1* below. A 1km radius is also annotated on the left aerial.

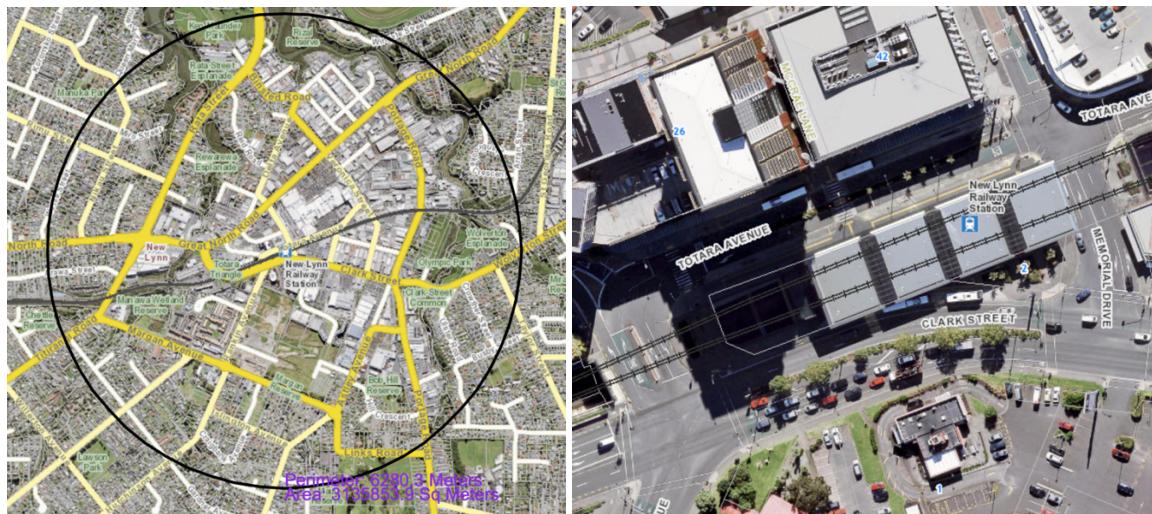


Figure 1 – New Lynn Station aerial views from Auckland Council’s Geo Maps

The two railway platforms are located side-by-side in an island layout. Inbound trains heading towards Britomart via Newmarket stop on Platform 1, while outbound trains heading towards Swanson or Henderson stop on Platform 2. The entire length of the railway platform island is provided with canopy-style shelters. The shelter does not extend all the way to the edges of the platforms however. There is ample seating spaces provided along the length of the platform, and these seats are all sheltered. Photos of the rail platforms are provided below.

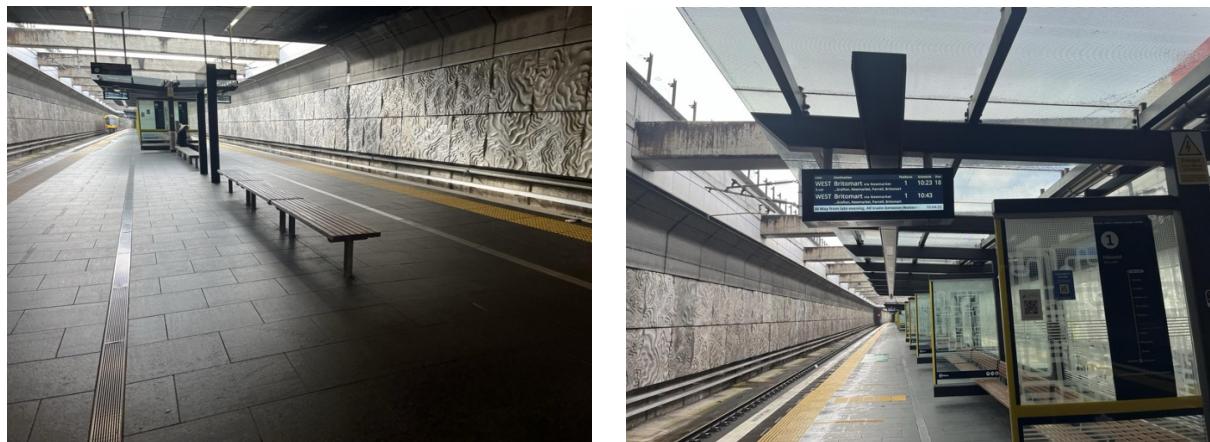


Figure 2 - Rail platforms 1 and 2

Four of the bus stop platforms are located along Totara Avenue. Platforms C and D are located on the same side as the New Lynn station building, while Platforms A and B are located on the opposite side. A pedestrian crossing is provided outside the entrance to the New Lynn station building, to allow commuters to cross between the bus platforms, as well as to access the New Lynn station building and its railway platforms. Platforms A and B are equipped with shelter that is cantilevered by the buildings that line them. Platforms C and D are also equipped with shelter, that cantilevers from the New Lynn station building. Adequate seating is provided for Platforms A,

B, C and D, in the form of benches. Platform E is located as part of a bus bay along Clark Street, and can be accessed via the New Lynn station building. The roof of the station building extends outward to shelter Platform E, and there is also two benches provided for seating. The bus routes served by each of these platforms are varied.



Figure 3 – Bus Platforms A (left), and E (right)

Platform A serves the 22N (City Centre via New North Road), 149 (Swanson via Rosebank), 191 (Lynfield via Avondale and Blockhouse Bay), and 670 (Otahuhu via Mt Roskill) bus routes. Platform B serves the 24B, 24R (City Centre via Blockhouse Bay and Owairaka, respectively), and 68 (Onehunga via Mt Roskill) bus routes. Platform C serves the 161 (Brains Park), 162 (Henderson via Glendene), 170 (Titirangi), 171 (Laingholm via Titirangi), 172 (Glen Eden via Titirangi), 186 (South Lynn Loop), and 195 (City Centre via Green Bay and Blockhouse Bay) bus routes. Platform D serves the 14 (Lincoln Road), 152 (Henderson via Glen Eden), and 154 (Henderson via Glen Eden) bus routes. Platform E serves the 18 (City Centre via Great North Road) bus route.



Figure 4 – Bus Platforms d (left), B (Right, Foreground), and C (Right, Background)

The timetabling for bus and train services at this interchange is tidal, varying during peak and off-peak hours. For western line trains travelling inbound towards Britomart, 6am to 9am, and 3pm to 6pm are considered to be peak hours, and during this time trains stop at Platform 1 roughly every 10 minutes. Similarly, for western line trains travelling outbound towards Henderson and Swanson, 7am to 9am, and 3pm to 7pm, are considered to be peak hours, and during this time trains stop at Platform 2 roughly every 10 minutes. From this, it is seen that a maximum of 20 trains will stop at New Lynn station during peak hours. During off-peak hours, trains will typically stop at each railway platform every 20 minutes.

A similar occurrence is observed with bus services at this interchange. As New Lynn station is largely a terminus for bus routes, it is easier to analyse its bus timetabling in terms of departures as opposed to arrivals. During the peak hours 6am to 9am, busses serving the 24B and 24R depart 5 minutes after each other continuously, effectively creating a 5 minute departure frequency for the 24 bus route. Outside of these peak hours, a 24B bus will depart 4 minutes after a 24R bus in general, and following this, the next 24B and 24R busses will depart 30 minutes after

their predecessors. The 18 bus route has a varying frequency throughout the day, however its lowest frequency only will get as low as every 15 minutes between 5am to 6:15am, but can reach as high as every 6 minutes between 7am to 9:30am. Some bus services that serve this station do not appear to have a tidal timetable, such as the 14 bus route, which stops at New Lynn roughly every 15 to 20 minutes throughout the entire day.

A map of the land use near New Lynn station is shown in *Figure 5* below. Land Use within the vicinity of the New Lynn station almost entirely consists of Metropolitan Centre Zones, shown as pink areas on the map. This is due to the high presence of shops and businesses nearby to the station. For example, Platforms A and B are bordered by the Totara Medical Centre building, which houses multiple medical facilities as well as restaurants, takeaways stores and other shops at its ground level. Just 100m away from the New Lynn station is Lynn Mall, a large shopping mall owned by Kiwi Property that houses multiple stores, eateries and a cinema. The high presence of shops and eateries near the New Lynn station increases its attractiveness as a destination for trips. It is also seen in the map, that there is a high number of zones marked as Terrace Housing and Apartment Building Zones, shown in dark brown. This suggests that the station is likely to also be utilised by commuters who are wanting to travel back to their places of residence.



Figure 5 - Land Use near New Lynn Station

2.0 Transfers at New Lynn Station

New Lynn station is an interchange, that allows for transfers across services, most notably between bus services and train services. There is strong evidence to suggest that transfers at New Lynn station are “planned” transfers.

2.1 Network Integration

New Lynn station provides numerous connections between bus and train public transport services. It also facilitates transfers to active modes of transport. Most notably, New Lynn station provides transfer between Auckland’s bus and train networks. The western line service that is provided by trains, is a linear route, travelling towards Britomart while going through the suburbs of Avondale, Mt Albert, Kingsland, Mt Eden, Grafton, Newmarket and Parnell, or travelling in the opposite direction towards Swanson and Henderson while going through the suburbs of Kelston, Glen Eden, Sunnyvale, Henderson and Ranui. It is seen that the western line service only passes through a limited amount of suburbs. In particular, suburbs that are located in the extreme south-west, and south-east of New Lynn are not accommodated by the train service alone. However, the bus routes that serve New Lynn station provide a vital connection to the suburbs that are not connected by the western line train service. For example, the 170, 171 and 172 bus routes provide a connection to Titirangi and Laingholm, while the 24B and 191 services provide connections to Blockhouse Bay and Lynfield, all of these suburbs otherwise inaccessible by train. It is seen that New Lynn station plays a pivotal role in Auckland’s public transport network, as it bridges the

gap between bus and train services and ensuring accessibility to suburbs that are not directly served by trains.

Aside from bus to train transfers, New Lynn station also serves as a hub for transfers between different bus services. As part of Auckland Transport's (AT's) recent redesign of the public transport network, the number of unique bus routes was decreased, in favour of improving connectivity between existing bus routes that cover greater distances. As part of this new public transport model, New Lynn station plays a vital role for bus transfers. For example, while there may not be a direct bus route for commuters wishing to travel from Blockhouse Bay to Henderson, there is instead the option of commuters travelling from Blockhouse Bay to New Lynn using the 24B or 191 bus routes, and then transferring at New Lynn to 154 or 162 bus routes, which travel to Henderson. Aside from this example, the wide variety of bus services that stop at New Lynn, make it clear that this station has been designed to be an active hub for bus transfers.

2.2 Fare Integration

New Lynn station is conveniently located at an overlap between the Isthmus and Waitakere fare zones. What this effectively means, is that if a user begins their public transport journey within either the Isthmus or Waitakere fare zones, and concludes it at New Lynn, they will only be charged for one stage of travel. As bus services that terminate at New Lynn generally originate within either, the Isthmus, or Waitakere fare zones, the zonal overlap allows for the fare of commuters to be minimised. Additionally, the western line trains primarily serve the Isthmus and Waitakere fare zones. Furthermore, if a commuter begins a journey in the Isthmus or Waitakere zone, and is changing between bus or train services at New Lynn, but ultimately ends up at a fare zone that is the same as their origin point, the zonal overlap will ensure that using New Lynn station as an interchange will not increase their fare.

2.3 Information Integration

Extensive use of signage has been applied at the New Lynn station, both on the bus, and rail platforms, to clearly guide commuters to their desired destinations. The main station building is surrounded by three tall beacons that signal the stations location, as well as indicating the services provided by the station those being bus, train and active modes. A photo of one of the station beacons is provided in *Figure 6* below.



Figure 6 - Station Beacon Outside Building

On the railway platform level, signage is consistently provided to indicate the destinations of trains served by each platform. Additionally, the western exit of the station leading to the main station building, has clear signage to indicate that it leads to the New Lynn station bus platforms. This helps to reinforce the connection between busses and trains that this station seeks to bridge. Both of the railway platforms have electronic display screens, that show a real-time schedule of the trains that are going to stop at the station.

The bus stop platforms make similar use of signage in order to encourage transfers. Each of the five bus stop platforms are equipped with electronic display screens, that show a real-time schedule similar to those on the railway platforms. Signage is also provided at each of the bus stop platforms, to display the bus routes that are served by the platform, as well as a list of all the suburbs that are destinations for the bus routes served by the bus stop platform. The clear and effective usage of signage on the bus platforms, makes it easy for commuters to transfer between bus services, be it from another bus, or from the train.

2.4 Physical Integration of Stations

The physical design of New Lynn station plays a key role in the provision for efficient transfers between bus and train services. This is despite the fact that there is a separation between the bus platforms which are located on street level, and the rail platforms which are located underground. Escalators connect the rail platforms to the main station building and subsequently the bus platforms, allowing for a fast travel between the rail and bus platforms. For the less able-bodied, a lift is also provided, as is a set of stairs.

The rail platform is of an island platform design, in which both platforms 1 and 2 are located in a central island, while their respective train tracks are off the edges of the island. For those accessing the railway station following alighting from a bus, the island platform negates the need to spend time figuring out which set of escalators must be taken in order to reach the desired platform, as both platforms 1 and 2 are accessed by the same set of escalators.

Bus platforms A, B, C and D are laid out in a side-platform design, Platforms A and B being located on opposite sides of Totara Avenue to Platform C and D. However, to facilitate accessing these bus platforms, a pedestrian crossing is provided directly outside the entrance to the main station building, allowing commuters to safely cross Totara Avenue to reach their desired bus platform, as well as the railway platforms via the main station building.

Bus platform E, although isolated from the rest of the bus platforms, is still easily accessible from the main station building. As such, it is easy for commuters to transfer from bus or train services onto this platform.

2.5 Coordinated Schedules

The most notable example of coordinated schedules at the New Lynn station occurs during the peak hours. As explained earlier, the peak hours for western line train services are between 6am to 10am, and 3pm to 7pm, and similar peak hours are observed for the bus routes that serve this station. During these peak hours, trains typically stop in each direction of the platform every 10 minutes. Bus services at this station have varying frequencies during peak hours, but certain services such as the 24B and 24R, have a frequency as high as every 5 minutes at this time. For those who utilise New Lynn station to transfer from a 24 bus service onto a western line train during peak hours, this ensures that their waiting time during the transfer is minimised, as both, the 24 bus services, and the western line trains, are operating at a fairly high frequency during peak hours. A similar conclusion can be surmised for other bus routes that serve this station such as the 18 and 68 routes.

For bus routes that operate at a lower frequency during peak hours, such as the 152 and 154 which have a frequency of every 20 minutes at most, and the 161 and 191 which only stop at the station roughly once every hour, the high frequency of trains stopping at New Lynn station during this time, ensures that bus commuters will be able to board a train service as soon as they arrive. However, the same cannot be said for train commuters wishing to transfer to one of these bus routes, as the low frequency of these bus routes even during peak hours, will result in a significant amount of waiting time. This effectively weakens the ability of this station to provide an interchange between bus and train services.

For example, during the evening peak period, trains from Britomart travelling towards Swanson will stop at New Lynn station roughly every ten minutes between “hh:05” to “hh:55” during this time. Meanwhile, the 162 bus service has a frequency of roughly every twenty minutes between “hh:13” to “hh:53” during

this time. It's clear that there is no coordination in this instance, since the two situations commuters could find themselves in when attempting to make this transfer (either missing the 162 as it departed two minutes before the train arrived and subsequently having to wait 20 minutes for the next one, or having to wait 8 minutes for the next bus service). For peak hour services, it is imperative that possible journeys are considered when designing timetables. In this case, the fact that most commuters would be travelling from the city centre (Britomart) towards New Lynn in the evening peak, and then transferring to a bus service at New Lynn, should've been considered, to ensure that train services arrive in advance to bus services, or in such a way that the timetable minimises waiting time.

Coordination is particularly poor for the 170 and 171 bus routes, which travel towards Titirangi and Laingholm during the evening peak hours. These bus services depart New Lynn station roughly every hour, but often at "hh:15". As this is also a potential time for a western line train to arrive at the station during the evening peak, and so effectively makes it near to impossible for a transfer to be made from a train to this bus service, if a commuter takes a train that is to arrive at New Lynn at 3:15pm for example. However, this problem can be mitigated if the commuter were to take an earlier train that arrived at 3:05pm instead, and instead wait 10 minutes before the 170 or 171 arrives, but a better solution would be to slightly offset the 170 and 171 timetables from the western line trains timetable, possibly by 2 to 3 minutes, so that a commuter who has alighted the train, has sufficient waiting time to reach the bus platforms and board busses serving the 170 or 171 bus routes.

However, with that being said, it is likely that the reason for the lack of coordination on services such as the 152, 154, 161 and 162, is that their mutual destinations of Glen Eden and Henderson respectively, are already served by railway stations further down the line, and so priority for coordination was given to bus routes that connect to locations that don't already have a train station, such as the 24 bus routes that pass through Blockhouse Bay and Owairaka on route to their destination. This same reasoning cannot be applied to the 170 and 171 bus routes, that serve suburbs that are otherwise isolated in terms of accessibility via public transport.

From this, it's easy to conclude that transfers at New Lynn station are "planned" transfers, as the network, fare, information and physical integrations are of a high level of service for commuters, and ensures that they have reliable means of transferring between train and bus services. While the coordinating of schedules may not be perfect at this station, there are still many instances where the train and bus service timetables complement each other in a way that maximises the efficiency of transfers. Going forth, it is worth considering the usage of this transport terminal by commuters who use the 152, 154, 161 and 162 bus services, and especially those who use the 170 and 171 bus routes, and if any improvements in timetabling must be made in order to better accommodate transfers between bus and train services.

3.0 Crime Prevention Through Environmental Design Audit

A CPTED Audit was carried out at the station, and its surroundings. It was generally seen with the New Lynn Station, that facilities located closer to the main station building tended to have better CPTED principles applied. In contrast, popular walking routes, and other areas in the vicinity of the station are lacking in this area.

Direct presence of other members of public on bus platforms A, B, C and D contributes to the perceived safety of these parts of the New Lynn station. These bus platforms serve the most popular bus routes in terms of usage, and so there is often a high presence of people present on these platforms. The shops present behind Platforms A and B also result in a high presence of people in this area, as customers are constantly travelling through. Additionally the road these platforms are located along, Totara Ave, is a popular walking route for pedestrians travelling towards Lynn Mall, and the shops on the western end of New Lynn. The footpath width along Platforms A to D is also wide enough to accommodate those waiting for a bus to arrive, those just passing through the area, and also those with mobility needs. The station building and its cantilevered shelters are also equipped with lights, that improve visibility of the station for commuters during nighttime.

Platform E does not have the same level of direct presence of other members of public as the other bus platforms do. This is due to it being fairly isolated in terms of location, being located on the side of the station building that does not connect to shops. Although there may be indirect presence of other members of public present, in the form of vehicular commuters, as it is located alongside Clark Street, it is not likely that there will be a lot of vehicles travelling through this road during the nighttime, effectively reducing the perceived safety of Platform E. Additionally, Platform E is the least utilised of the four bus platforms, as it only serves one bus route. This further contributes to the lack of presence of commuters along this platform. However, much like the other four platforms, there is ample lighting provided on this platform from the station building, as well as a wide footpath that can accommodate multiple types of pedestrians.

The underground rail platforms on the other hand, do not provide as much natural surveillance as the bus platforms, aside from peak-hours when they are used heavily by commuters. The underground rail platforms are naturally isolated, as they are located 7m underground in an open trench, effectively having zero visibility to those on the roads, shops and eateries above. Particularly during the nighttime, the underground rail platforms are likely to be perceived as unsafe, as they will lack natural surveillance. During the daytime, the rail platforms have natural lighting from the sun. During nighttime, there lighting provided on the rail platforms, however it is likely to be perceived as subliminal, and therefore may not help create an atmosphere of safety. However, the cleanliness of the railway platforms, and the fact that they are maintained regularly increases the visual aesthetic of the station, which also makes it likely to be perceived as safe. The artistic designs on the glass walls of the shelters are particularly notable (shown below in *Figure 7*). Furthermore, orange “safety points” are located on both ends of the railway platform, providing passengers a safe zone for them to seek help in the event of an emergency, or if they are feeling unsafe. A photo of one of these safety points is shown below in *Figure 8*. The rail platforms are also equipped with camera-based surveillance.



Figure 7 – Artistic design on glass shelter



Figure 8 - Safety Point

Outside of the station itself, a CPTED audit was carried out along popular walking routes near the station. Most notably, the newly constructed New Lynn to Avondale Shared path was audited.

The New Lynn to Avondale Shared Path provides users of active modes of transport, such as cycling and walking, with a connection between the New Lynn and Avondale station. It starts at Avondale Station, and ends directly outside the New Lynn station building. A key issue that was observed with this shared path, was that as it approached the New Lynn station, it had an increasingly decreasing amount of visibility from the public. This means that it lacks natural surveillance, and so can potentially be a hotspot for criminal activity, reducing its perceived level of safety. Some parts of this shared path also do not appear to be well maintained, further reducing its perceived level of safety.

For users who are less able-bodied, this new shared path is theoretically the best option for accessing the station, as the footpath on Totara Avenue between Veronica Street, Hetana Street and Memorial Drive, is extremely narrow. On the contrary, the new shared path is very wide, allowing it to accommodate multiple active mode users, including cyclists, pedestrians and all sorts of people with mobility needs. However, the aforementioned lack of visibility and poor maintenance of the shared path, reduces its viability as an option for the able-bodied,

effectively putting them at a disadvantage when accessing New Lynn station. Photos of the New Lynn to Avondale Shared Path are provided in *Figure 9* to *Figure 11* below.



Figure 9 - This section of the cycle path has a total lack of visibility, additionally, the wooden panels on the right that replace smashed glass panel, do not make the path look like it has been maintained well



Figure 10 - Narrow Footpath on Veronica Street. Alternative route to the shared path, although not deemed suitable for mobility-needs pedestrians.



Figure 11 - Another section of the cycle path that has not been well maintained



Figure 12 - Great North Road to McNaughton Way Shared Path is Lacking in Natural Surveillance, and has no Lighting Installed

There is another shared path for cyclists and pedestrians located 400m from the New Lynn station, connecting Great North Road to McNaughton Way. During both, the daytime and nighttime, this path is highly lacking in natural surveillance, as it is secluded from view. Although during the daytime, it appears to be an attractive path in design, relying on natural elements of nearby trees and greenery as well as natural lighting, this is not the case in the nighttime, where there is no natural lighting, or any form of lighting installed along the path. A photo of the path is provided in *Figure 12* above.