# A New Heart for Parramatta

**For some time now Parramatta has been recognised as a logical location for a future High Speed Rail station given its centrality to greater Sydney.**

**However, Parramatta is also rapidly going vertical and is space constrained. A High Speed Rail station would seem to be enormously expensive and disruptive.**

This is an outline of **how Parramatta can be given a High Speed Rail station** and in the process:

- Completely rebuild and modernise the conventional station.
- **Remove the elevated rail line entirely from the City**.
- Do so with **minimal disruption** and in a logically staged manner.
- Do so efficiently and cost effectively.

The project has 3 main stages:

1. Create a new conventional station located under the new Town Square and divert the conventional rail line through this station.
2. Create a new High Speed station within the confines of the existing rail corridor and initially use it for a fast and high frequency east-west rail line connecting Parramatta with the Sydney CBD and to points west including the Western Sydney airport.
3. In due course, connect the Melbourne to Brisbane High Speed Rail line to the new High Speed station.

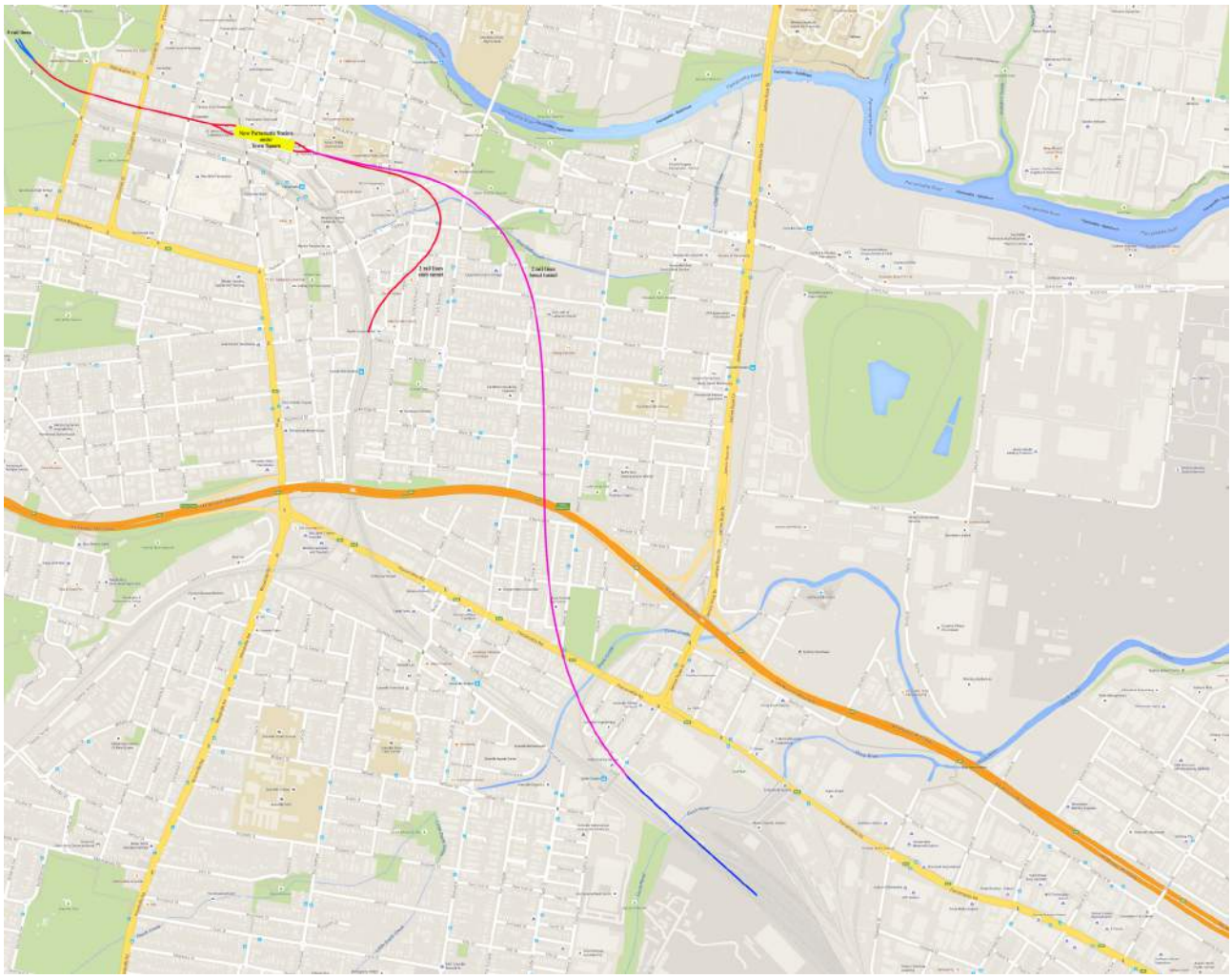
I've drawn some maps that illustrate the process step by step.

**Stage 1A** involves construction of a new conventional station concurrently with and underneath the Parramatta Town Square. The surface level and service level would remain as intended. A pedestrian link would connect through to the High Speed station (see stage 2 below) and to the shopping precinct.

The new Parramatta station (yellow) would have 2 platform levels each designed as a center island. One level would service the express tracks. The other level would service the local tracks.

On opening the station will be connected to all four tracks to the west. Initially one platform level would allow through trains via the completed express tunnel (pink) which carries two tracks. The other platform level will initially allow terminating trains.

Note that a stub tunnel (red) carrying two tracks has been constructed from the new station to as close as possible to Harris Park station. This is to speed construction of stage 1B.



**Stage 1B** involves temporary closure of the Cumberland line and Harris Park station. Access to Parramatta from the south and from Granville or Clyde stations would be via interchange at Auburn or Lidcombe stations.

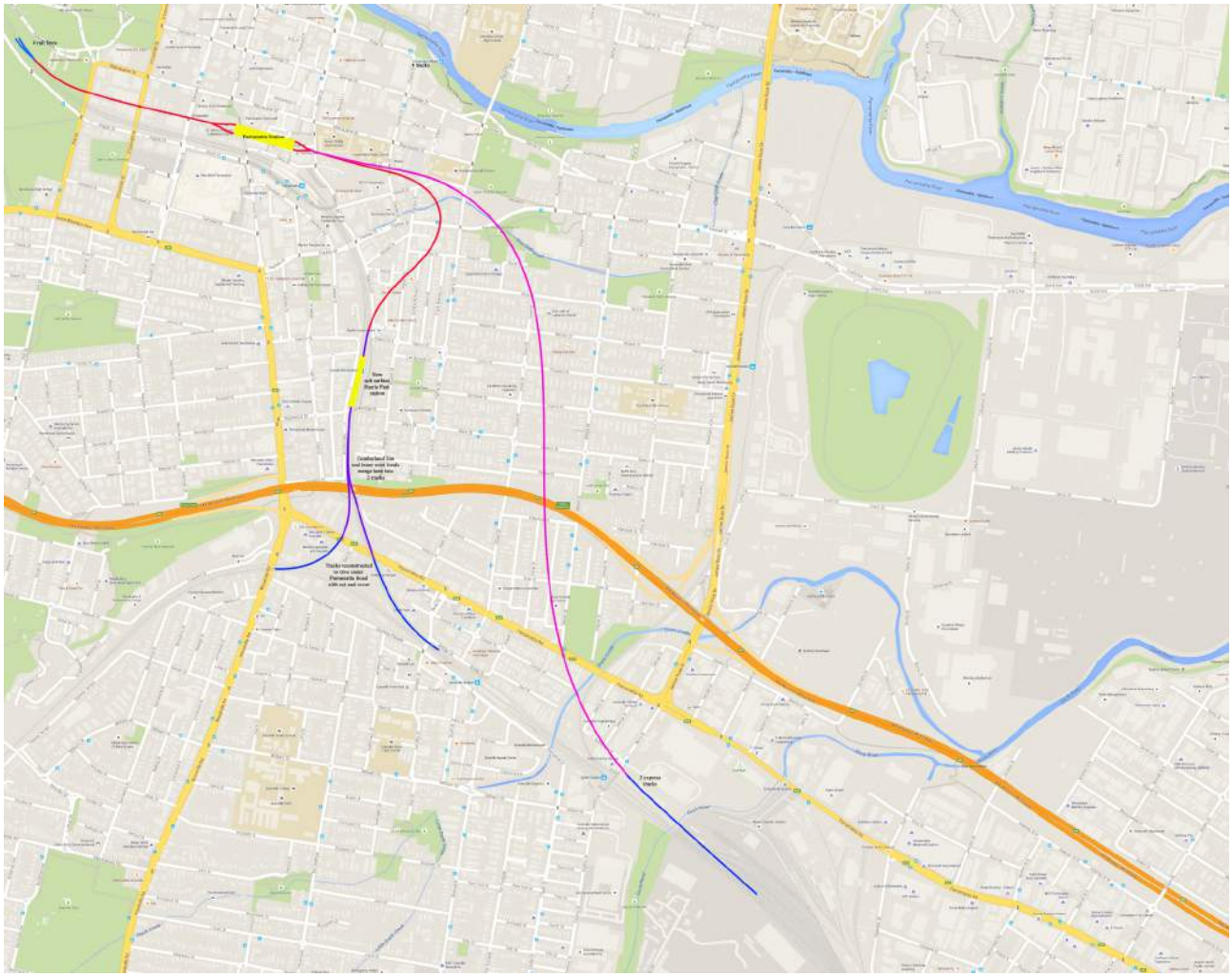
Harris Park station is reconstructed as a shallow sub surface station. It now services two tracks. The express tracks having been already diverted in stage 1A.

The Western line starting at the Granville bridge will be reconstructed as two tracks and regraded to dive under Parramatta Road. The existing dip in Parramatta Road under the rail bridge will be removed.

The Cumberland line starting at the Woodville Road bridge will be reconstructed and regraded to dive under Parramatta Road. This may involve raising a section of Parramatta Road slightly.

North of Parramatta Road the existing rail lines will be reconstructed below grade using cut and cover construction (purple). The new rail alignment will be connected with the stub tunnel just north of the new Harris Park station.

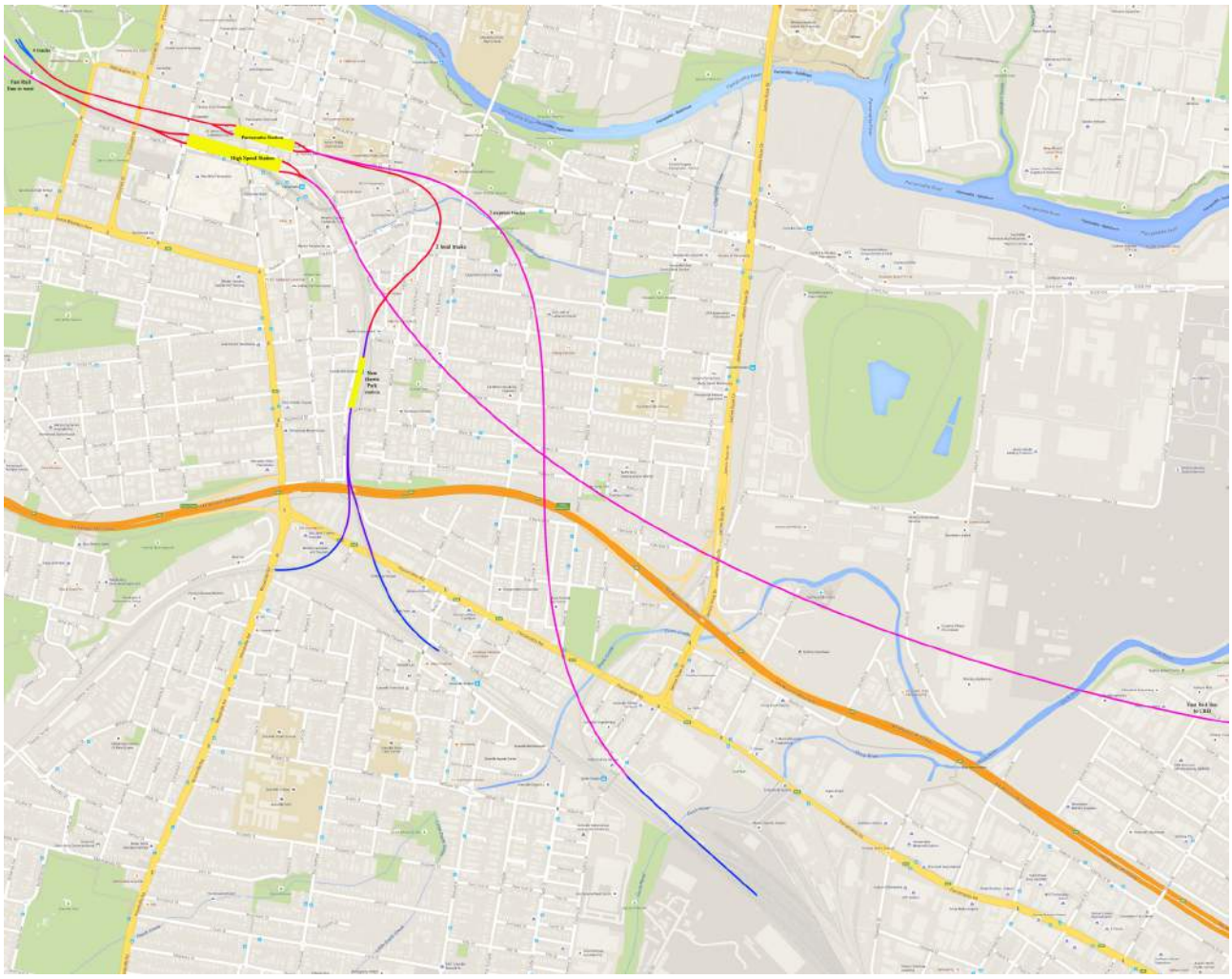
On completion of stage 1B normal operations are restored. One platform level of the new Parramatta station will service express stopping patterns. The other level will service local stopping patterns including trains to the Cumberland line and to Granville and Clyde.



**Stage 2** involves construction of the new High Speed station as an underground station below the former rail corridor east of Marsden Street. Initially construction will involve reconfiguring the bus interchange and reconfiguring access between the new conventional station under Parramatta Town Square and Westfield.

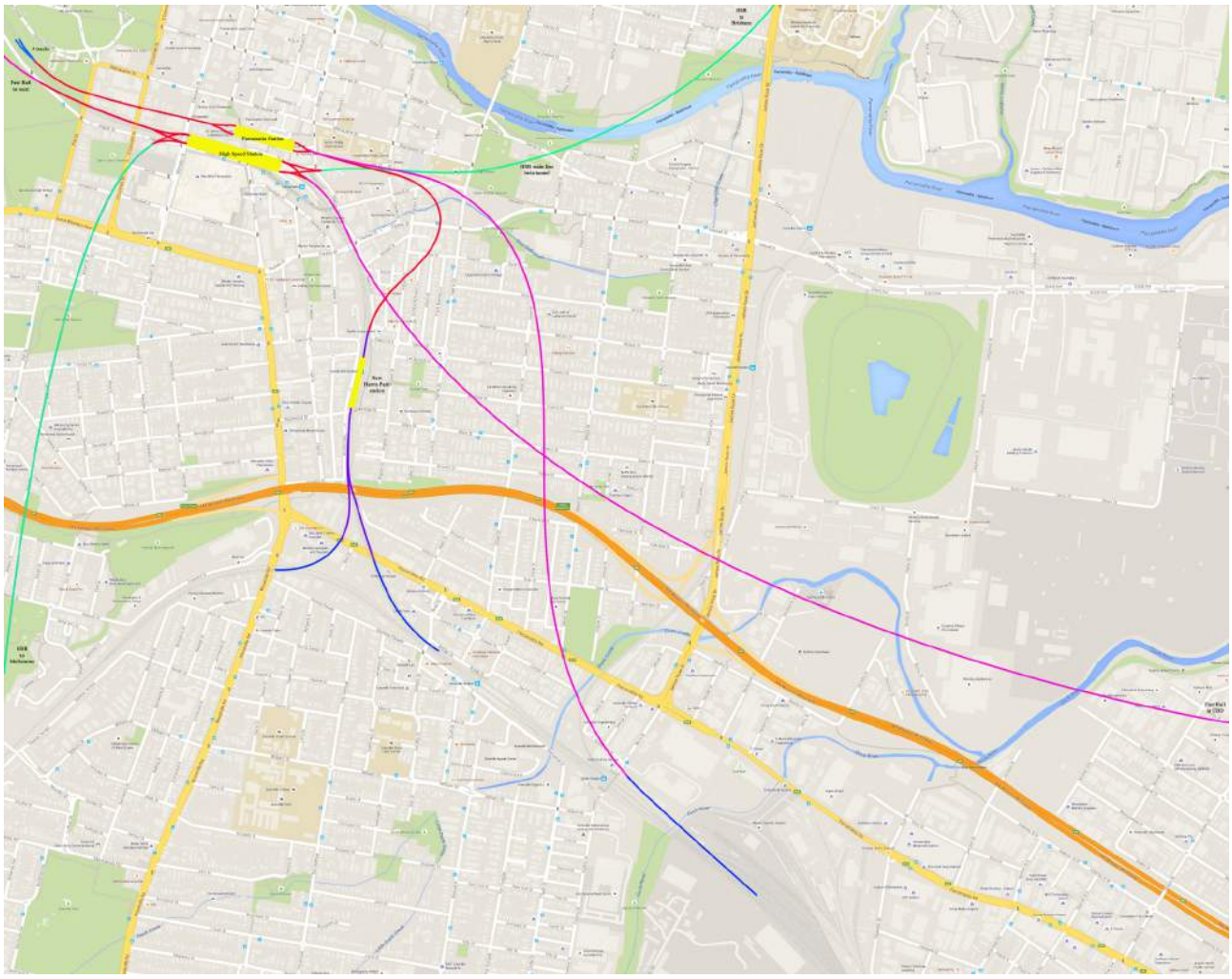
The new High Speed station will have 3 main platform levels, each with a center island and 2 tracks. The center island configuration allows a number of high speed lifts to form the basis of vertical transport. The main station box will be 300m long to accommodate the length of future long distance High Speed trains.

Initially the upper platform level will be used for the Fast rail line from the CBD through Parramatta and to the west. The other platform levels will later service the main north-south High Speed Rail line to Melbourne and Brisbane. One level for trains heading south and one level for trains heading north. This configuration will allow a dwell time of 5 minutes given a timetable of 18 trains per hour on the main High Speed Rail line.



**Stage 3** sees the introduction of long distance High Speed Rail service. Note that the High Speed Rail line involves twin tunnels. Because of their relative depth they will pass under the tunnels created in stage 1A in the general vicinity of Little Street.

The twin tunnels are drawn as a single green line.



**Some further considerations**.

The concept is designed so that each stage adds value in its own right. Stage 1A/1B can be seen as an upgrade of the existing network. But it also paves the way for the later stages and it frees the corridor making construction a lot less disruptive than the alternatives which would involve mining under and building over the existing station.

The Council would have to ensure that there is planning to allow a below grade linkage between the two stations and also a reinstated linkage to Westfield. The new station would also allow a better designed transport interchange.

**The major benefit to the City of Parramatta is to remove the elevated rail line that divides the city in two.** The concept also integrates the new conventional rail station with the Town Square and Civic precinct. If well designed it should provide greatly improved pedestrian access between the Civic precinct and the shopping precinct.

It would be expected that the former station site would be extensively redeveloped. However **much of the former rail land would return to public use. This opens up many opportunities including pedestrian paths and green space. It also allows for a much grander Civic precinct**.

On an operational level, this revision sticks closely to the current system with the exception that Harris Park, Granville and Clyde can only be serviced by trains using the local track pair. The design has been done with light a light rail link to Clyde/Granville in mind. And that light rail line would presumably also take over the Carlingford line.

The design has as far as possible been done to avoid building foundations. The tunnels do intersect with the Macquarie Street parking site and this is slated for development. The Council will need to ensure the design of these structures are compatible.

A final note. Conventional thinking on major rail stations assumes long dwell times. That's probably a luxury that isn't available given the limited space. Instead what I'm proposing is a highly efficient station that handles large numbers of passengers quickly. It may not have the style of a large airport inspired station complex but it will provide rapid interchange.

A High Speed Rail station is never going to be inexpensive, but this proposal allows for a High Speed Rail station to be built cost effectively relative to the prospect of building a fully specified High Speed Rail station in the CBD.

Russel Lunney
17/06/2015

Image files are available on request.
(Revision 2)