Shoalhaven City Council

TRAFFIC IMPROVEMENT OPPORTUNITIES: ENSA & PRINCES HWY

Benchmarked cost comparisons of prospective major projects that would improve traffic flow through Nowra

Current Situation – Princes Hwy

Current traffic volumes have exceeded the capacity of the Princes Hwy. Significant constraints include;

- One major road north-south to accommodate all traffic through Nowra
- High peak hourly traffic movements (worse during holiday periods)
- Primarily a 4 lane corridor (once Nowra Bridge works are completed only 2.2km (20%) of the 10.6km through Nowra will be 6 lanes (remaining 80% will remain constrained)
- Modelling shows 6 continuous lanes required along full corridor (in addition to ENSA and HYSA)
- Kalandar St intersection critically affects traffic flow due to its large local catchment, including connections to coastal villages
- Numerous intersections and undulating longitudinal road geometry
- Inadequate local road connectivity

The ENSA Concept

- **Primary Objectives** – Removes up to 4,000vpd from the Highway (Stockland traffic) improving Highway traffic flow and conditions on local roads (both sides of the Highway), and reduces congestion on Kalandar Street by distributing traffic away from the intersection
- **Bonus Outcome** – Significantly reduces the volume of traffic rat-running on under-designed floodplain roads east of Princes Hwy which have high maintenance and high crash rates;
  - Terara Road – Comerong Island Road
  - Millbank Road
  - Jindy Andy Lane
- **ENSA Catchment –** Would become the primary route for vehicle trips between the Nowra CBD/Stocklands and:
  - Worrigee
  - Greenwell Point
  - Culburra Beach/Orient Point
  - Attractive option for Callala Bay/Callala Beach/Currarong
- **Critical link improving capacity east of the Highway** (in addition to improvements along Old Southern and Warra Warra Roads)

Related Concept Projects

- **Nowra Bypass to the west** – This is considered a long-term project by TfNSW and is unlikely to proceed for many years. (Not formally costed, but estimated $1B)
- **Increase the number of lanes on the Princes Hwy to 3 lanes both ways –** TfNSW has incrementally purchased properties along the corridor to establish a minimum 30m width to facilitate 6 lanes. Modelling indicates that to maintain reasonable levels of service a 6 lane corridor is required in addition to ENSA and HYSA. There is still some land acquisition required to extend the widened corridor through to Kalandar Street and beyond to Hillcrest Avenue. (Costed)
- **Widening the Princes Hwy to 4 lanes both ways –** Such is the importance of ENSA in the strategy that modelling indicates this option would be required if ENSA isn't constructed (ie if ENSA isn't constructed, a continuous 6 lane corridor alone would be inadequate). Would require significant road corridor widening, costly property acquisitions and would encounter physical constraints at the Kalandar Street intersection due to the proximity of the Nowra Cemetery and commercial properties to the east (Dan Murphys and Archer Resort). (Not costed)
- **Build a grade separated interchange (flyover) at Kalandar St –** Does not address the fundamental issue of the conflict caused by high volumes of vehicles interacting with the Princes Hwy at the Kalandar Street intersection. With no viable detour route, the construction of a flyover under traffic at this intersection would severely impact the community over many years with only marginal improvement in future traffic congestion at peak seasonal times. Does not satisfy either the primary objectives or the broader benefits of ENSA and HYSA (Costed).

Project Benefits

ENSA

As a stand alone project would realise a significant improvement in congestion at the Kalandar St intersection and would provide broader benefits both along the Princes Highway as well as broad local transport benefits. (HYSA provides similar relief and improved network performance, extending the benefits along the Highway and providing local traffic relief west of the Highway).

3-Lanes both ways Princes Hwy

As a stand alone project would provide needed improvements in traffic congestion along the broader Princes Highway corridor but provide little relief to traffic problems on the local road network. Congestion would remain on Kalandar St, problems would remain on the local network east of the Highway, and up to 4,000 vpd (Stockland traffic) would remain on the Highway and local CBD streets, preventing the benefits of the Highway capacity improvements through the town centre from reaching potential.

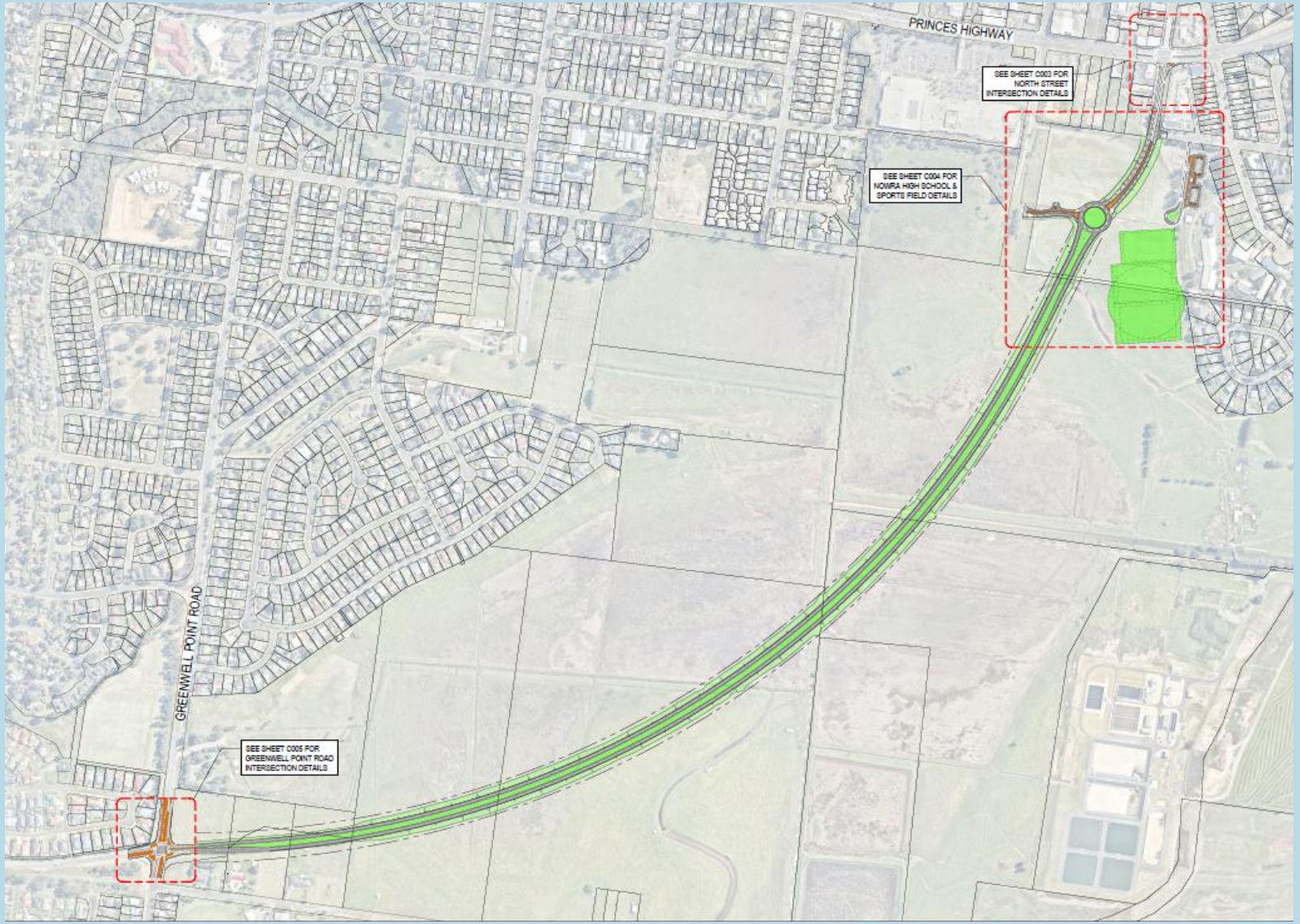
In combination with ENSA would address the long-term traffic congestion issues and compliment improvements across the broader traffic network.

In combination with a Kalandar St flyover would improve congestion at the Kalandar St intersection but not provide any broader traffic local network improvements.

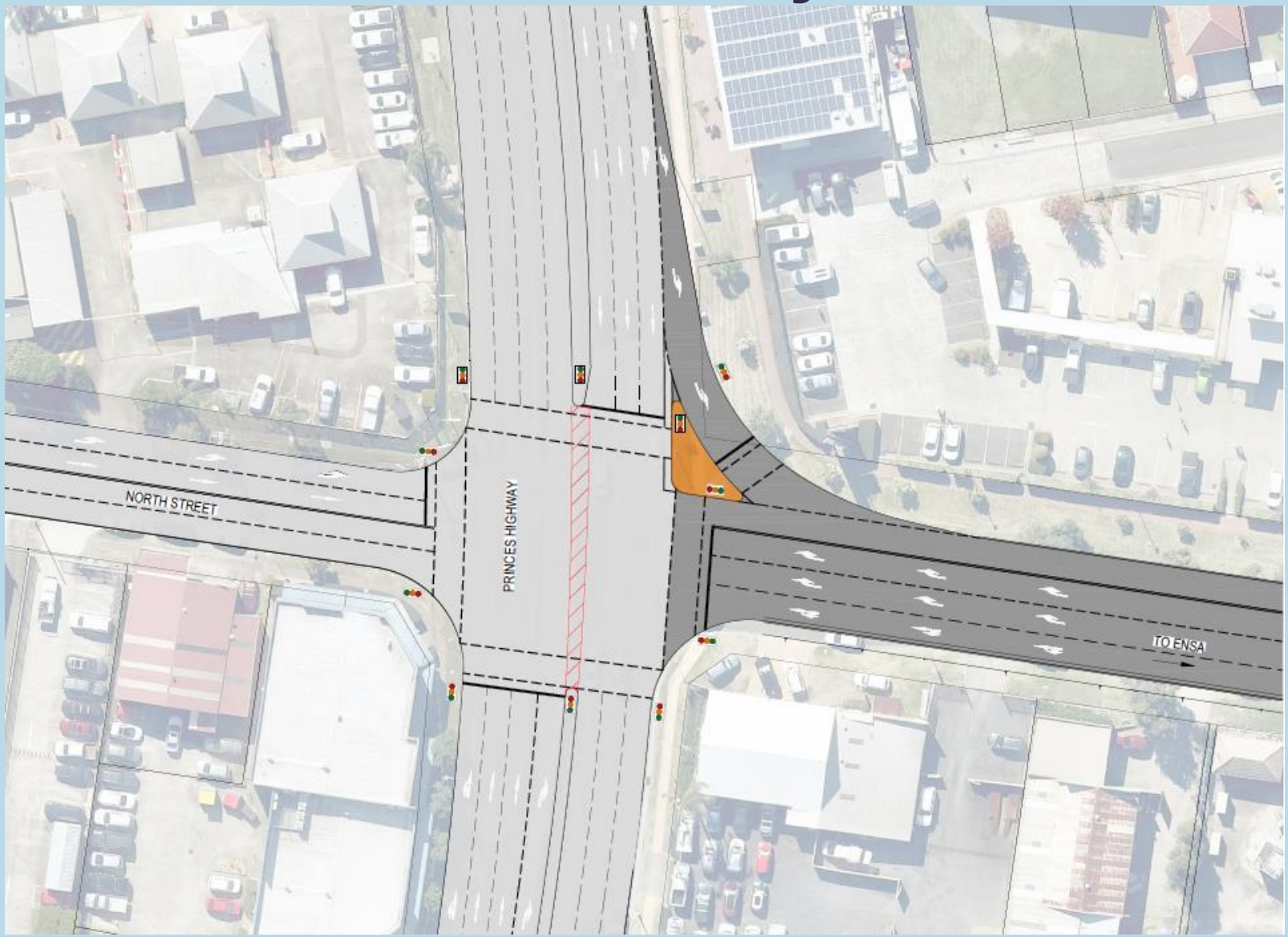
Grade-Separated Intersection at Kalandar Street (flyover)

As a stand alone project would realise only marginal improvements in traffic congestion due to unchanged traffic volumes interacting with the Princes Hwy at Kalandar St.

Original Adopted ENSA Alignment

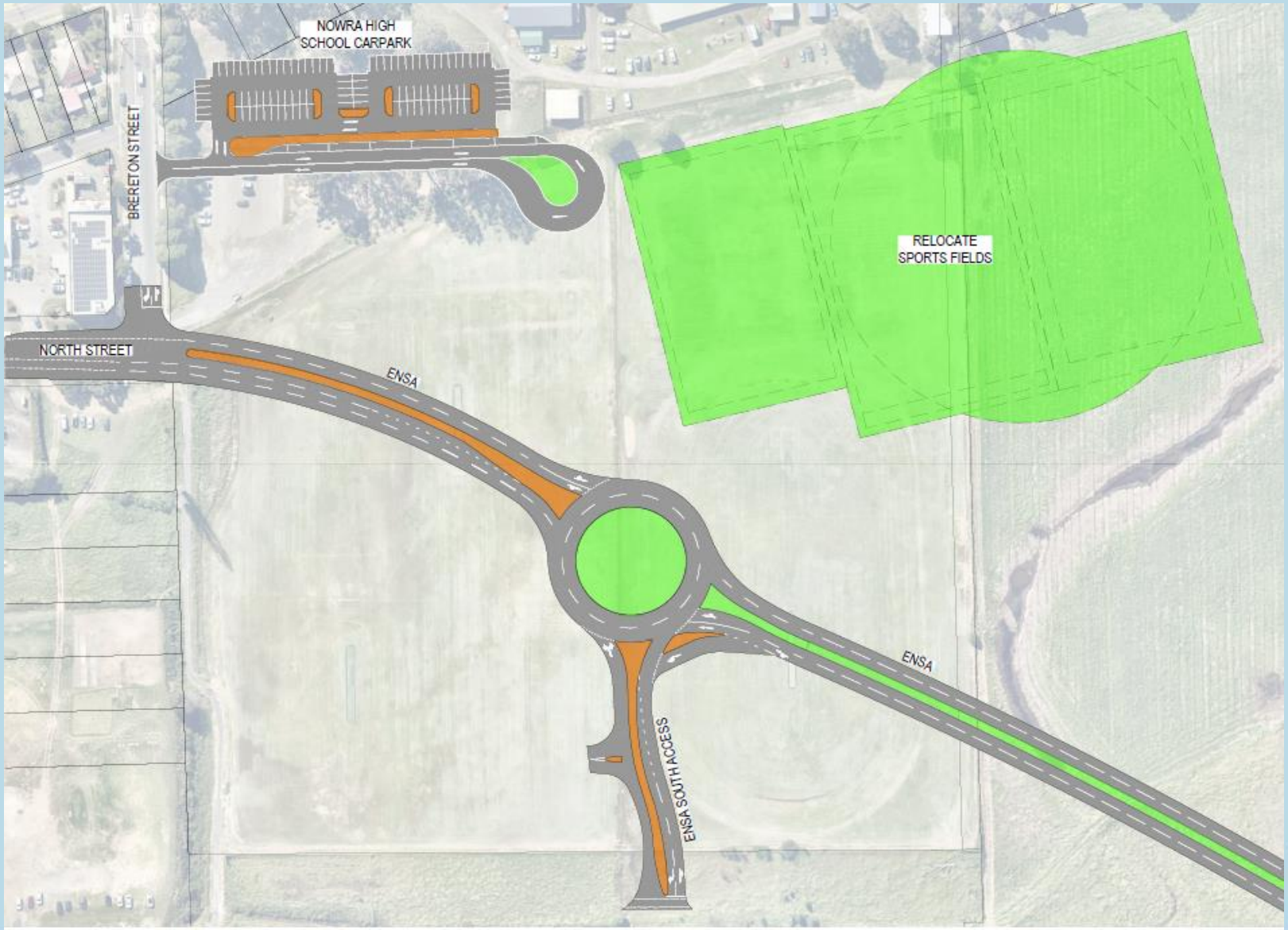


ENSA – Princes Hwy Intersection



ENSA – Stocklands – Nowra High

The original adopted ENSA alignment and local connections were modelled and designed around the original LEDA Holdings Pty Ltd DA. This will require some adjustment given change of hands and different development vision of Stockland.

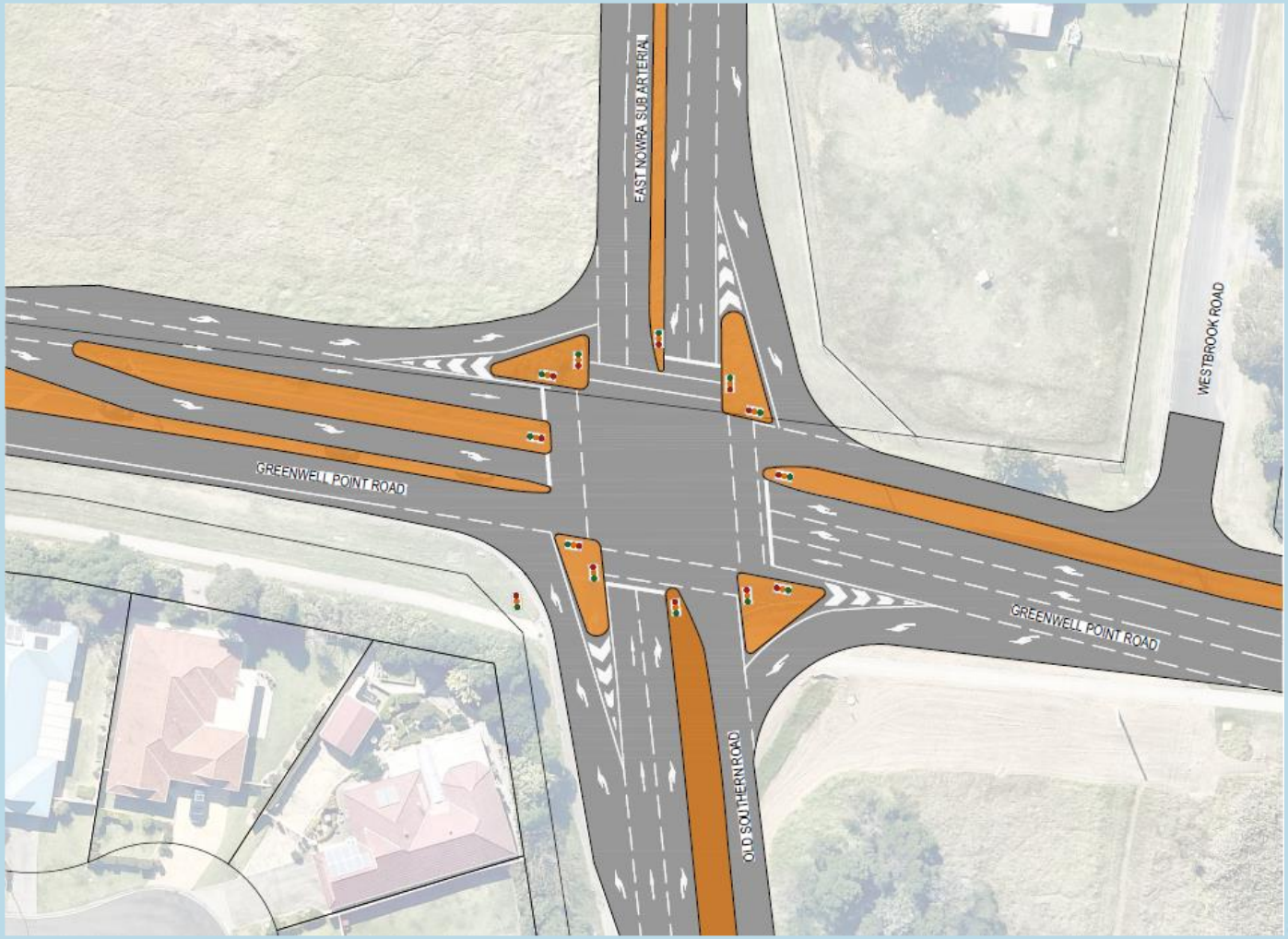


ENSA – Greenwell Point Road Intersection

ENSA

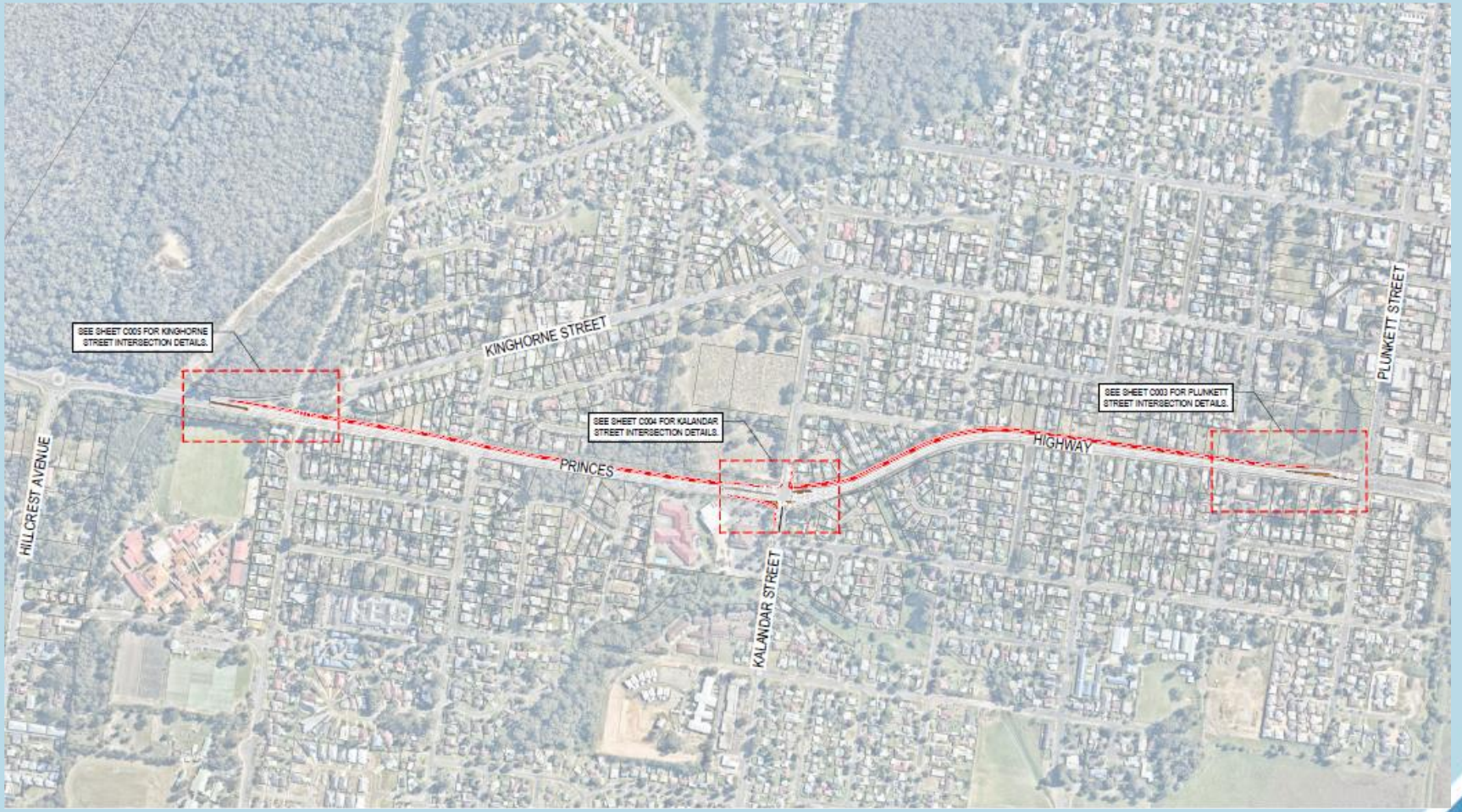
Including intersections

Cost	$53.3M
Contingency	40%
Total cost	$74.6M

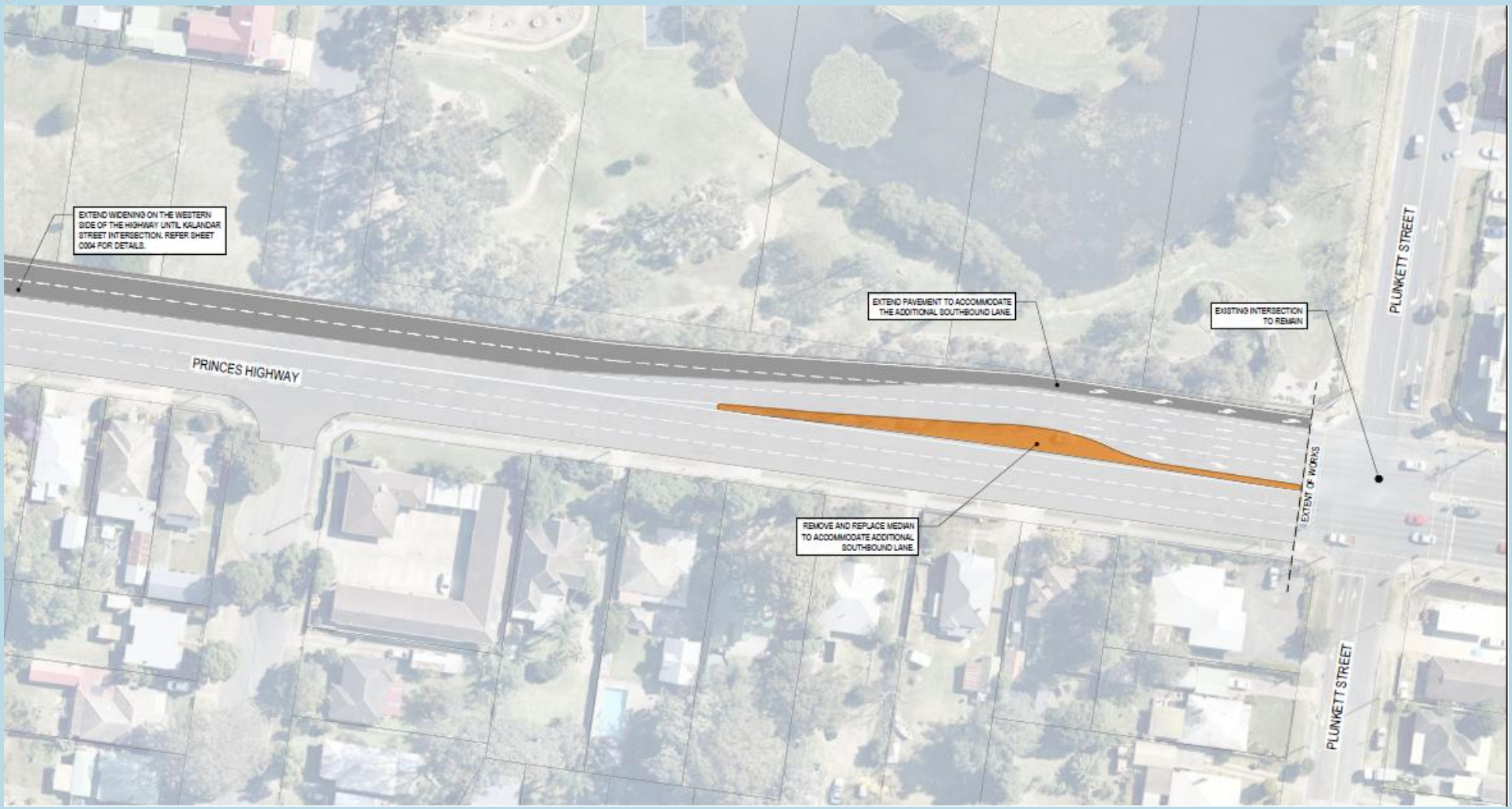


Princes Hwy – 3 Lanes Both Ways (Kinghorne to Plunkett section)

Modelling indicates once Nowra Bridge works are completed only 2.2km (20%) of the 10.6km through Nowra will be 6 lanes (remaining 80% will remain constrained) Ie approx. 8.5km will require a 6 lane formation.



Princes Hwy – South of Plunkett St



Princes Hwy – Kalandar St Intersection

Princes Hwy Transition at Kinghorne St

Princes Hwy

Widening to 3 lanes

Cost	$36.4M
Contingency	60%
Total cost	$58.2M

Kalandar Street Intersection
Grade Separated Interchange

Kalandar St

Grade separated interchange

Cost	$83.0M
Contingency	50%
Total costs	$124.5M

Cost Estimate Summary

The three options are summarised below

Description	Project Cost	Contingency	Total Project Cost including Contingency
ENSA including intersections	$53.3M	40%	$74.6M *(BCR meets TfNSW criteria)*
Princes Hwy widening to 3 lanes Plunkett St to Hillcrest Ave	$36.4M	60%	$58.2M
Grade separated interchange Princes Hwy and Kalandar St	$83.0M	50%	$124.5M

Conclusions

- Based on traffic modelling and these cost estimates, the recommended outcome is the construction of both ENSA, HYSA, and the widening of the Princes Hwy to 3 lanes both ways (continuous through Nowra Bomaderry), then a longer term Bypass.
  - **Stage 1:** Construct ENSA to address the fundamental problem of reducing traffic volumes at the Kalandar St intersection, removing traffic from the Highway and local roads, and extending benefits to the surrounding local road network.
  - **Stage 2:** Widen Princes Hwy to be 3-Lanes both ways
- The Kalandar St flyover is a costly option that would deliver only marginal improvements to the traffic congestion on the Princes Hwy. Construction of the flyover would be problematic under normal traffic conditions, severely congesting the Princes Hwy for an extended period of time.
- Widening of the Princes Hwy to 4 lanes is not considered to be a practical solution given widening constraints (and is not supported by modelling, if ENSA is constructed).
- Next Step: Engagement with TfNSW