

## Memorandum

**To:** South Rail Project Team

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**From:** [REDACTED]

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**Subject** South Rail – Design Framework Review

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This urban design evaluation has been prepared for the Rail detailed business case based on the guidance and principles established in the programme wide document - Te Tupu Ngātahi Design Framework (Design Framework).

The Design Framework takes a systems-based approach as the basis on which urban areas are organised and understood and pulls these apart as a series of layers; environment, social, built form, movement and land use, and cultural and sustainability values underpinning and spanning across these. In this way transport networks are not seen in isolation rather in terms of how they can contribute to the urban system as a whole.

The Design Framework provides measurable guidance for outcomes-based decisions throughout each phase of the programme delivery including:

- Option development
- Option evaluation
- Detailed business case preparation, and
- The corridor protection and consenting process.

There are 20 design principles that have been established within these layers to provide high level guidance on the attributes of responsive, resilient, sustainable and high-quality urban environments. Each preferred option has been evaluated against these 20 programme wide design principles based on the current design detail (Rev C). The record notes where an option is supportive of each of the design principles and where the option was assessed as being neutral or as an opportunity for development, this has been noted below as urban design recommendations that should be considered and developed in future design stages.

The intention of this evaluation is to provide a high level urban design overview that considers the current station interchange spatial arrangement and the active mode and rail corridor alignments. The urban design commentary will also identify design opportunities and refinements that should be considered at subsequent stages of the design and help to form the basis of future urban design specific consent conditions.



## DRURY CENTRAL STATION & INTERCHANGE PREFERRED OPTION

The proposed corridor alignment is supportive of the following Design Framework principles:

### Environment

- Support and enhance ecological corridors and biodiversity
- Minimise land disturbance, conserve resources and materials

### Social

- Adaptive
- Social cohesion

### Built Form

- Align with density
- Scaled to the surrounding context and urban structure

### Movement

- Connect nodes
- Connect modes
- Support access to employment and industry
- Prioritise active modes and public transport
- Support inter-regional connections and strategic infrastructure
- Support legible function

### Land Use

- Public transport directed and integrated into centres

The proposed corridor alignment is generally supportive of the Design Framework principles, those principles that scored neutral in their support include:

- **Support water conservation and enhance water quality in a watershed –**  
Future development and definition of the proposed stormwater retention pond at a future design stage is recommended to provide an appropriate interface with the surrounding land uses. There are also opportunities to explore an integrated urban storm water strategy that incorporates the existing Hingaia Stream tributary, the proposed rain garden stormwater treatment in the park n ride and plaza areas and stormwater treatment for the road network to deliver an integrated water quality treatment system.
- **Adapt to a changing climate and respond to the microclimatic factors of each area –**  
Provide further details and definition at future design stages of the proposed amenity planting and water sensitive design elements to demonstrate consideration of urban heat island effects in this future urbanized area.
- **Identity and place –**  
Future architectural design response of the station and interchange facilities will need to consider the underlying identity drivers of the surrounding context such as;
  - the landscape character drivers of the Hingaia Stream-tributary

- the urban space qualities of the Main centre and the surrounding high density land uses
  - cultural values and narratives
  - links with the Town Centre development and Drury Boulevard access which is within the designation but also proposed in the developer's masterplan as continuing on a bridge over the tributary toward the Town Centre then via a realigned Flanagan Road
- **Respect culturally significant sites and landscapes –**  
Explore opportunities for the betterment of the Hingaia Stream and tributary through an interface strategy that integrates the stream network as part of the station public realm and reinforces the identity drivers for the station and interchange.
- **Safety –**  
Future development of the final crossing points of the station access road intersections will reinforce the sense of personal safety and provide for equitable local connectivity and access for active modes. In particular, the provision of crossings is recommended to demonstrate connectivity for active modes for the;
    - pedestrian and cycleway at Drury Boulevard bus interchange
    - park n ride access intersections
    - Drury Boulevard / Waihoehoe road intersection,
    - pedestrian crossings at Great South Road / Waihoehoe intersection
    - potential mid block crossing across Great South Road and Waihoehoe Road West
- **Facilitate an appropriate interface between place and movement –**  
An urban integration strategy should be developed to coordinate with landowners in future stages to address interface issues and areas of localized fill batters. This will enable an appropriate interface with adjacent land uses that will provide for active edge permeability and enable local access and connectivity to be achieved, particularly to the Main centre and surrounding areas of high density.

The following principles were identified as not relevant to the corridor:

- Strategic corridors as urban edges

## **DRURY WEST STATION & INTERCHANGE PREFERRED OPTION**

The proposed corridor alignment is supportive of the following Design Framework principles:

### **Environment**

- Support and enhance ecological corridors and biodiversity
- Minimise land disturbance, conserve resources and materials

### **Social**

- Adaptive



- Social cohesion

### Built Form

- Align with density
- Scaled to the surrounding context and urban structure

### Movement

- Connect nodes
- Connect modes
- Support access to employment and industry
- Prioritise active modes and public transport
- Support inter-regional connections and strategic infrastructure
- Support legible function

### Land Use

- Public transport directed and integrated into centres

The proposed corridor alignment is generally supportive of the Design Framework principles, those principles that scored neutral in their support include:

- **Support water conservation and enhance water quality in a watershed –**  
Future development and definition of the proposed stormwater retention pond at a future design stage is recommended to provide an appropriate interface with the surrounding land uses. There are also opportunities to explore an integrated urban stormwater strategy that incorporates the existing Ngakoroa Stream headwater network, the proposed rain gardens, stormwater treatment in the park n ride and the plaza areas as well as the stormwater treatment for the road network to deliver an integrated water quality treatment system.
- **Adapt to a changing climate and respond to the microclimatic factors of each area –**  
Provide further details and definition at future design stages of the proposed amenity planting and water sensitive design elements to demonstrate consideration of urban heat island effects in this future urbanized area.
- **Identity and place –**  
The future architectural design response of the station and interchange facilities will need to consider the underlying identity drivers of the surrounding context such as;
  - the landscape character drivers of the Ngakoroa stream and tributary
  - the urban space qualities of high-density land uses and the Western Centre
  - cultural values and narratives
- **Respect culturally significant sites and landscapes –**  
Explore opportunities for the betterment of the Ngakoroa Stream tributary and interface with the Active Modes Corridor (AMC) and station plaza area through an interface strategy that integrates the stream network as part of the station public realm and reinforces the identity drivers for the station and interchange.

- **Safety –**  
Future development of the final crossing points at the intersection to the SH22 Northern Connection will reinforce the sense of personal safety and ensure equitable local connectivity and access for active modes.
- **Facilitate an appropriate interface between place and movement –**  
An urban integration strategy should be developed to coordinate with landowners in future stages to address interface issues. This will enable an appropriate interface with adjacent land uses that will provide for active edge permeability and ensure local access and connectivity can be achieved, particularly to surrounding areas of high density land uses.

The following principles were identified as not relevant to the corridor:

- Strategic corridors as urban edges

## PAERATA STATION & INTERCHANGE PREFERRED OPTION

The proposed corridor alignment is supportive of the following Design Framework principles:

### Environment

- Support and enhance ecological corridors and biodiversity
- Minimise land disturbance, conserve resources and materials

### Social

- Adaptive
- Social cohesion

### Built Form

- Align with density

### Movement

- Connect nodes
- Connect modes
- Support access to employment and industry
- Prioritise active modes and public transport
- Support inter-regional connections and strategic infrastructure
- Support legible function

### Land Use

- Public transport directed and integrated into centres

The proposed corridor alignment is generally supportive of the Design Framework principles, those principles that scored neutral in their support include:



- **Support water conservation and enhance water quality in a watershed –**  
 Future development and definition of the proposed storm water retention ponds is recommended to provide an appropriate interface with the surrounding land uses. There are also opportunities to explore an integrated urban storm water strategy that incorporates the existing Oira Stream network, the proposed rain gardens stormwater treatment in the park n ride and the plaza areas as well as stormwater treatment for the road network to deliver an integrated water quality treatment system.
- **Adapt to a changing climate and respond to the microclimatic factors of each area –**  
 Provide further details and definition at future design stages of the proposed amenity planting and water sensitive design elements to demonstrate consideration of urban heat island effects in this future urbanized area.
- **Identity and place –**  
 Future architectural design response of the station and interchange facilities will need to consider the underlying identity drivers of the surrounding context such as;

  - the landscape character drivers of the Oira Stream and tributary
  - the urban space qualities of high-density land uses and the adjacent town centre
  - cultural values and narratives
- **Respect culturally significant sites and landscapes –**  
 Explore opportunities for the betterment of the Oira Stream and tributaries through an interface strategy that integrates the stream network as part of the station public realm and reinforces the identity drivers for the station and interchange.
- **Safety –**  
 Further development of the final crossing points at the SH22 Southern Connection intersection with the Station Access Road and the Sim Road intersection link into the station will reinforce the sense of personal safety and deliver equitable local connectivity and access for active modes.
- **Facilitate an appropriate interface between place and movement –**  
 An urban integration strategy should be developed in coordination with landowners in future stages to address interface issues and areas of localized fill batters. This will enable an appropriate interface with adjacent land uses that will provide for active edge permeability and deliver local access and connectivity can be achieved, particularly to the Main centre and surrounding areas of high density.

The following principles were identified as an opportunity for further development:

- **Scaled to the surrounding context and urban structure -**  
 Future consideration of the spatial scale and configuration of the park and ride is recommended to ensure that it provides an appropriate response to the potential needs of the adjacent precinct functions.

The following principles were identified as not relevant to the corridor:

- Strategic corridors as urban edges

## ACTIVE MODES CORRIDOR PREFERRED OPTION

The proposed corridor alignment is supportive of the following Design Framework principles:

### Environment

- Minimise land disturbance, conserve resources and materials
- Adapt to a changing climate and respond to the microclimatic factors of each area

### Social

- Identity and place
- Respect culturally significant sites and landscapes
- Adaptive corridors
- Social cohesion

### Built Form

- Align corridors with density
- Corridor scaled to the surrounding context and urban structure

### Movement

- Connect nodes
- Support access to employment and industry
- Prioritise active modes and public transport
- Support inter-regional connections and strategic infrastructure

The proposed corridor alignment is generally supportive of the Design Framework principles, those principles that scored neutral in their support include:

- **Support and enhance ecological corridors and biodiversity**  
Details of the ecological management strategy of the corridor is not fully resolved and should be reviewed for landscape integration opportunities with stream networks.
- **Support water conservation and enhance water quality in a watershed**  
Future development and definition of the proposed stormwater swales within the rail corridor and adjacent to riparian zones is recommended. Swale management and interface with sensitive riparian zones in the Whangapouri, Oira, Ngakoroa and Hingaia catchments and with the surrounding land uses is recommended to deliver an integrated water quality treatment system.

- **Safe corridors**

Further design detail of local road crossing points and at intersections with proposed arterial corridors (SH22 North, Central, South connections and the Pukekohe Urban Arterial) is recommended at future design stages. Crossing point design should reinforce the sense of personal safety and deliver equitable local connectivity and access for active modes.

- **Facilitate an appropriate interface between place and movement**

An urban integration strategy should be developed in future stages to address interface issues with bridging structures, retaining walls and ramp connections to proposed urban arterials (SH22 North, Central, South connections and the Pukekohe Urban Arterial) as well as to areas of localized cut and fill batters.

- **Support legible corridor function**

Future design detail of underpass type environments (at Sutton Road, SH1, Great South Road, proposed Pukekohe Urban Arterial, Central and Northern Connection road overbridges and McPherson Road) is recommended to deliver a safe and convenient movement corridor that provides modal definition and integrates with adjacent structures, landscape and stormwater strategies.

Future definition and resolution of the active modes alignment along existing roads within Pukekohe is required to minimise any conflicts with private driveway crossings.

The following principles were identified as an opportunity for development:

- **Connect modes**

Future design development is recommended to demonstrate connectivity of the proposed active modes network into the wider local active mode networks;

- Pukekohe Paerata Paths Plan from the Franklin Local Board)
- Pukekohe Rail Station
- Potential direct connection on the eastern side of the rail corridor in collaboration with KiwiRail.

Similarly, consider future design development of other connections to the local active mode networks;

- Pukekohe Paerata Paths Plan from the Franklin Local Board at Tuhimata / Paerata and the Paerata Rise development,
- Future Drury west developments
- P2B project at SH1 Drury Interchange

The following principles were identified as not relevant to the corridor:

- Public transport directed and integrated into centres
- Strategic corridors as urban edges



## FOUR TRACKING RAIL CORRIDOR PREFERRED OPTION

The proposed corridor alignment is supportive of the following Design Framework principles:

### Environment

- Minimise land disturbance, conserve resources and materials
- Adapt to a changing climate and respond to the microclimatic factors of each area

### Social

- Identity and place
- Respect culturally significant sites and landscapes
- Safe corridors

### Built Form

- Align corridors with density
- Corridor scaled to the surrounding context and urban structure

### Movement

- Connect nodes
- Connect modes
- Support access to employment and industry
- Prioritise active modes and public transport
- Support inter-regional connections and strategic infrastructure
- Support legible corridor function

### Land use

- Public transport directed and integrated into centres

The proposed corridor alignment is generally supportive of the Design Framework principles, those principles that scored neutral in their support include:

- **Support and enhance ecological corridors and biodiversity**  
Details of the ecological management strategy of the corridor is not fully resolved and should be reviewed in coordination with the active modes corridor for landscape integration opportunities with stream networks.
- **Support water conservation and enhance water quality in a watershed**
- Future development and definition of the proposed stormwater swales within the rail corridor and adjacent to riparian zones is recommended. Swale management and interface with sensitive riparian zones in the Whangapouri, Oira, Ngakoroa and Hingaia catchments and with the surrounding land uses is recommended to deliver an integrated water quality treatment system.

- **Social cohesion**  
Investigate opportunities to further define and develop grade separated crossings at future design stages to demonstrate connectivity across the corridor and address potential severance issues between future urban areas.
- **Facilitate an appropriate interface between place and movement**  
An urban integration strategy should be developed in future stages to address areas of localized cut and fill and ensure interface elements such as retaining walls are appropriately considered. This will enable an appropriate interface with adjacent land uses within existing urban environments as well as future urban environments.

The following principles were identified as not relevant to the corridor:

- Adaptive corridors
- Strategic corridors as urban edges

