

Hampton Park Hill Precinct Infrastructure Report



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Executive Summary

The Hampton Park Hill Development Precinct (The Precinct) is located around the Hallam Road waste and resource recovery hub in Hampton Park in the City of Casey. Stantec has been engaged by City of Casey to conduct an assessment of the existing drainage and utility services infrastructure to cater for the envisaged development of the precinct.

This report describes the existing trunk drainage and utility services infrastructure in the vicinity of the precinct, and its capacity to cater for development of the precinct based on authority advice at this time.

Stormwater

The site is located within the three different Melbourne Water Drainage Scheme zones, Hampton Park East Extension DS, Lyndhurst North DS and Lyndhurst South DS. The Hampton Park East Extension DS zone includes a floodway and area of inundation along the River Gum Creek. Melbourne Water has advised that retarding basins will most likely be required to retard peak stormwater flows from the proposed development.

Water Supply:

Potable water supply reticulation is available in the existing developments adjacent to the precinct with larger mains located South-West of the precinct adjacent to Hallam Road and North West along Ormond Road. South East Water has advised that it will be necessary to construct four new 300mm diameter reticulated drinking water mains in order to cater for the proposed development.

Sewerage:

Sewer reticulation mains are available in the existing developments adjacent to the precinct with the largest main located North East of the precinct adjacent to The Parkway Reserve. Other potential points of connection are located South of the precinct along Kettle Street and South East on the corner of South Gippsland Hwy and Hallam Road.

South East Water has advised that there is some spare capacity in the existing 525 mm dia sewer along the north and east boundaries of the precinct. SEW has cited the unknown future topography of the site once the landfill is no longer operational, and as such have not confirmed if there is sufficient capacity/grade in this main to service the entire development or whether multiple discharges are required. Further advice has been sought from SEW regrading the capacity of other existing sewers for multiple discharges.

Electricity:

High voltage electrical infrastructure is available adjacent to the precinct boundary with feeder lines to the South West and North East of the precinct.



According to AusNet the current electricity infrastructure is close to capacity. The South Western feeder is scheduled to have an additional transformer installed which will increase supply capacity and potentially have enough capacity to cater for the development. Augmentation of existing infrastructure will most likely be required.

Overhead electricity transmission lines that run through the precinct restrict development within the easement over these assets.

Telecommunication

NBN fibre optic cables are available adjacent to the site with a line connecting to the existing infrastructure in the North-West of the precinct. NBN is yet to advise if there is sufficient capacity in its network to service future development in the precinct.

Gas Supply:

Larger existing high-pressure gas reticulation infrastructure is available to South West of precinct along Evans Road and North and North East of the precinct along Ormond Road. Confirmation for the capacity and potential points of connection has been sought from APA but not yet received.

A gas transmission pipeline is aligned through the South West corner of the precinct in a 20.1 m wide easement within which there are constraints on development. A buffer zone extends 240 m either side of the pipeline within which sensitive uses are discouraged.



1.0 INTRODUCTION

The City of Casey is undertaking the review of the Hampton Park Hill Development Plan to ensure that it reflects the future State – level significant waste and resource recovery activities within the precinct and to provide a high-level framework for guiding development of the precinct.

City of Casey is committed to providing safe, reliable, and efficient drainage and utility services infrastructure to meet the growing needs of its community. To this end, Stantec has been engaged by Council to assess the current state of drainage and utility servicing infrastructure for the precinct, and to identify any necessary upgrades or modifications required to support the proposed development.

As part of this assessment, Stantec has reviewed the records of existing authority assets and other available background information. We have also requested authority advice regarding the availability and capacity of their services networks to cater for the development of the site and their future planning strategies to extend or upgrade their network in the vicinity of the landholding.



2.0 EXISTING CONDITIONS

The Hampton Park Hill Development Plan applies to land located in and surrounding the Hallam Road waste and resource recovery hub in Hampton Park. The site is bound by Ormond Road and Central Road to the North, the Melbourne Water open drain to the East (River Gum Creek), Glasscocks Road to the South, and Hallam Road/ South Gippsland Highway to the West.



Figure 1 - Locality Plan (https://online.melway.com.au/melway/)

The precinct currently accommodates an overhead transmission powerline from the North East to the South West of the site within an approximate 155m wide easement. An underground gas transmission pipeline runs along the South Western side of the site within a 20.1 m wide easement. The gas transmission pipeline had a buffer zone extending 240 m either side of the pipeline. These easements and the buffer zone are shown on Figure 2.

The site has a total area of approximately 265 ha. A significant portion of the land within the precinct is used for waste and resources recovery including a landfill, waste sorting and recycling and construction and demolition recycling. In the North West section of the precinct there is an existing concrete batching plant, soil stockpiling and garden supplies facility and to the South West there is a construction and demolition processing facility (C&D processing) and a nursery to the West.



Melbourne Water's Drainage Scheme indicates that the precinct contains three main catchments. The Eastern half of the land falls towards the East to the River Gum Creek and the remainder falls towards the South-West and West. The creek is an existing floodway which encompasses a large portion of the Eastern area of the precinct and is currently affected by the Urban Floodway zone and Land Subject to Inundation Overlay as shown in Figure 2.



Figure 2 - Development Plan Extents (Draft Hampton Park Hill Employment Dev Plan - July 2022)



3.0 DEVELOPMENT PLAN

The predominant current land use in the precinct are the waste and resource recovery facilities which is valuable and well-located infrastructure servicing the City of Casey, the region and the state.

The current landfill is expected to reach capacity by 2032 and has a permit which allows landfilling until 2040. As the Hallam Road landfill closes, the facilities will transition away from waste disposal activities and focus on waste transfer activities and the resource recovery of inert materials.

The overall vision of the Hampton Park Hill Development Plan is to ensure that there is access to sustainable waste and resource recovery facilities at Local, regional and State level by providing integrated land uses that enhance the amenity and safety of the community. In the longer term, the landfill site is envisaged to be repurposed as public open space.

The Development plan sub-precincts map below shows the preferred location of future land uses and infrastructure within the precinct.

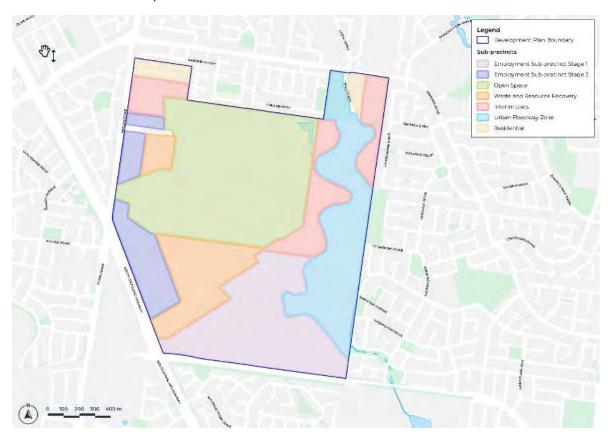


Figure 3 - Sub-Precinct Map (Draft Hampton Park Hill Employment Dev Plan - July 2022)



The land use budget as summarized in Table 1.

Table 1 – Summary Land Use Budget

DESCRIPTION	HECTARES			
Waste and Resource Recovery	28.03			
Employment				
- Existing Employment	4.15			
- Future light industrial/ commercial Stage 1	45.82			
- Future light industrial/ commercial Stage 2	12.67			
Residential (Existing)	6.32			
Public Open Space				
- Active open scape (subject to land swap agreement)	21.98			
- Passive open space	62.55			
- Employment land local park	1.58			
Interim Land Uses				
- Temporary employment (long-term residential)	6.49			
- Low impact agriculture	61.29			
Transport and Movement				
- Internal road network and reserve (estimated)	0.72			
- Shared paths (estimated)	1.61			
Integrated Water Management				
- Urban Floodway zone for stormwater management on Eastern boundary	44.17			



4.0 DRAINAGE & UTILITY SERVICES INFRASTRUCTURE

The following sections describe the existing significant drainage and utility services infrastructure in the vicinity of the precinct and its capacity to cater for development of the precinct based on authority advice at this time.

Plans showing existing services infrastructure in the vicinity of the site sourced from Dial Before You Dig (DBYD) are contained in Appendix A.

4.1 DRAINAGE

The site is located within three Melbourne Water Drainage Schemes as follows:

Eastern catchment - Hampton Park East Extension DS

North Western catchment: Lyndhurst North DS

South Western catchment - Lyndhurst South DS

The locality plan below shows the delineation of each scheme area, the general fall of the land and the extents of existing flooding within the Eastern catchment.

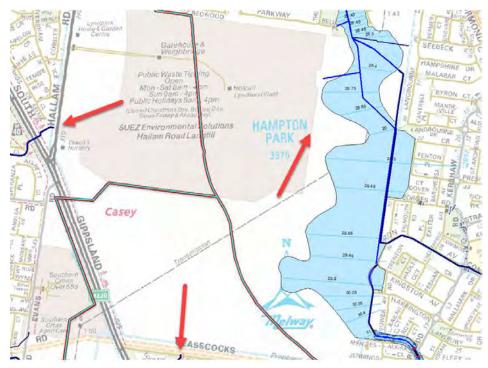


Figure 4 - Drainage Scheme Map (Melbourne Water DSS)



The River Gum Creek flows from South to North along the Eastern boundary of the precinct.

Melbourne Water has advised that no changes to the flood plain storage is to occur, as well as no increase in inundation levels due to change in floodplain. Therefore, any development in this catchment may require the construction of new retarding basins upstream of connection to the creek. Water quality treatment of stormwater from development may also be required before discharge.

The following extracts from drainage scheme plans show the existing (dark blue) and proposed (red pipes) drainage infrastructure under the schemes for the Lynbrook and Hampton Park catchments:

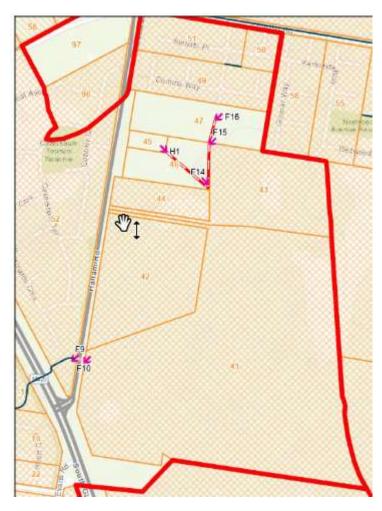


Figure 5 - Lynbrook North DS extract (https://www.melbournewater.com.au/building-and-works/developer-guides-and-resources/drainage-schemes-and-contribution-rates/download)





Figure 6 - Lynbrook South DS extract https://www.melbournewater.com.au/building-and-works/developer-guides-and-resources/drainage-schemes-and-contribution-rates/downloadsn)

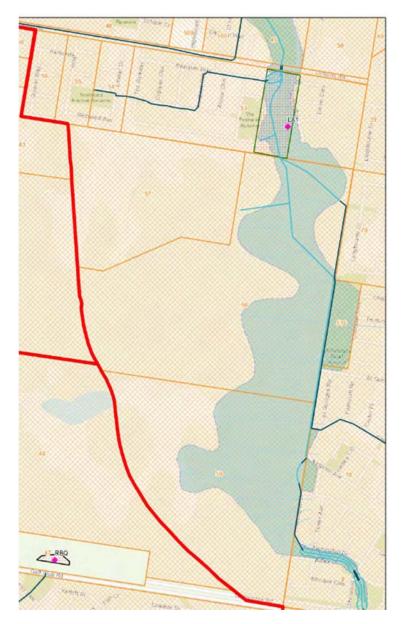


Figure 7 – Hampton Park East extension DS (Melbourne Water DS)

Melbourne Water has provided the following table commenting on the indicative capacity of their existing drainage infrastructure in the vicinity of the site and noting potential infrastructure requirements to cater for development in these catchments of the precinct:



Table 2 - Proposed Drainage Infrastructure

Node	Size	Indicative Capacity	Comments
F9- F10	Proposed 2X 1350 culverts	Q100 tbc	Capacity to be verified. Retarding basin upstream may be required.
K1-K2	Proposed 600dia crossing under Gippsland Hwy	Approx 0.6m3/s	Capacity to be verified. Retarding basin upstream may be required
RBQ	Proposed retarding basin		Asset not as part of DSS reimbursement. Intent is to alleviate deep flooding occurring downstream. Sizing will need to be part of stormwater strategy for the precinct to ensure no downstream impacts to land use changes.
F16- F15- F14	Proposed 850dia	To convey Q5 of local catchment, ie property No 47	As these are only minor infrastructure, these can be removed, and overall strategy of new planning scheme can replace these pipes with more appropriate assets.
H1- F14	Proposed 300dia	To convey Q5 of local catchment, property 45	Similar to above.

As per Melbourne Water's advice, flood modelling and further investigation will be required in order to provide advice on any potential upgrades and new infrastructure required in order to cater for the additional stormwater overland flow caused by the proposed development.

4.2 WATER SUPPLY

South East Water (SEW) is the Authority responsible for the provision of water reticulation services in the area. From the DBYD information and SEW GIS asset services map, the only existing potable water connection to the precinct is to the existing Nursery in South-West section of the precinct.

SEW has advised that in order to provide drinking water facilities to the development, it will be necessary to construct the four new 300mm diameter reticulated drinking water mains, A and C at Ormond Road, B at Hallam Road and D at Sherwood Road/ Strathaird, as shown in Figure 8.





Figure 8 - South East Water proposed indicative alignment plan (SEW advise letter – Appendix C)



Figure 9 – BYDA SEW Water Main Map extract (South West)

The 300mm dia main shown in *Figure 9* is located West of the precinct and runs adjacent to Hallam Road up to Ormond Road and the heads East along Ormond Road as shown in *Figure 9*.



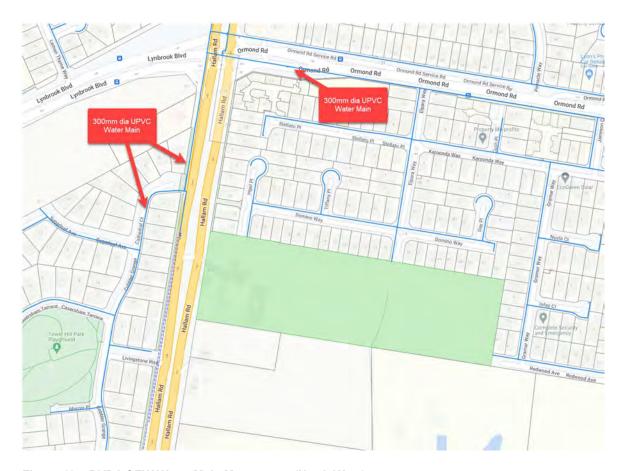


Figure 10 – BYDA SEW Water Main Map extract (North West)

Recycled water is not currently available to the precinct and the surrounding area. SEW's advice as to whether recycled water would be mandated for the area is pending.



4.3 SEWER RETICULATION

South East Water (SEW) is the Authority responsible for the provision of sewer reticulation services in the area. From the information gathered from DBYD and SEW GIS asset services map, there is no existing sewer infrastructure servicing the precinct.

There are, however, several larger sewer reticulation lines located adjacent to the precinct that may be capable of servicing development as follows:



Figure 11 – BYDA SEW Sewer Main Map Extract (North East)

Figure 11 shows an existing 525mm dia. sewer main located North East of the site and runs North adjacent to the site boundary towards Ormond Road.





Figure 12 – BYDA Trunk Sewer Main (North East)

Figure 12 shows an existing 600mm dia. sewer main located along the Northern boundary of the site.



Figure 13 – BYDA SWW Sewer Main Map extract (South)

Figure 13 shows an existing 300mm dia. Sewer main to the South of Glasscocks Road. The main runs South West towards South Gippsland Hwy.





Figure 14 - BYDA SWW Sewer Main Map extract (South West)

Figure 14 shows an existing 225mm dia. sewer main. The main runs North West adjacent to South Gippsland Hwy.

SEW has advised that the existing 525mm dia reticulated sewer main to the North East has some capacity to cater for the proposed development. However, SEW has cited uncertainty of the future topography of the site once the landfill is no longer operational. As a result, at this stage SEW is unable to confirm if the existing infrastructure has sufficient capacity/ grade in this main to service the entire development or whether multiple discharges are required including to the neighbouring Cranbourne catchment to the west.

Our high-level review of the existing topography suggests that post landfill operation there will remain a North South ridge through the site dividing it into East and West catchments.

As a result, it appears unlikely that the West catchment can be sewered by gravity to the 525 dia sewer at the North Eastern edge of the precinct. Alternative solutions maybe required. SEW's advice as to whether there is capacity in the existing sewers to the west of the precinct to cater for development of the site has been sought.



4.4 ELECTRICITY SUPPLY

AusNet is the Authority responsible for the provision of electrical supply to the precinct.

Existing overhead electricity transmission lines traverse the precinct as shown in blue and yellow on the electrical asset map below. The transmission lines are contained in an approximate 155m wide easement which restricts land uses as per the AusNet "A guide to living with transmission line easements", some of the restrictions include:

- Houses, other buildings and structures, including eaves, awnings, canopies, shelters, water tanks, boreholes and windmills.
- Scaffolding
- Swimming pools, both above and below the ground, including filtration equipment.
- Storage of materials in industrial type waste bins and skips.
- Stockpiling of excavated materials.
- Parking of large trucks and caravans (traversing or crossing easements is permitted).
- Storage or handling of flammable liquids or gases. For 500 kV easements only, the storage or handling of such liquids or gases from bulk delivery vehicles is not permitted within 60 metres of the centreline of the transmission line.
- Fuelling of and repairs to vehicles, plant and equipment.
- Use of vehicles and equipment exceeding 3 metres in operating height. A higher operating height limit is subject to sufficient clearances to the conductors. Possible additional restrictions apply to items of plant defined as a Crane by the Occupational Health and Safety (Plant) Regulations 1995.
- Loading, unloading and load adjustment of large trucks.
- Operation of large water spray irrigators of the gun type
- Metal pipes (including reinforced concrete), power cables and other electrically conductive materials within 30 metres of any tower steelwork.
- Electrical detonation or storage of explosives including fireworks.

AusNet has advised that their existing electricity supply feeders in the vicinity of the site are as follows:

- HPK21 feeder underground and overhead high voltage cables located along the West boundary of the precinct and.
- HPK11 underground cables located to the North-East of the precinct.



AusNet has also advised that the current feeders don't have much capacity available to cater for the proposed development of the precinct. However, the capacity of HPK21 will be increased once a proposed 3rd transformer is installed.

Depending on the amount of load being added due to the development, AusNet has advised that additional new electricity supply infrastructure may be required including the installation of another supply feeder to the area.

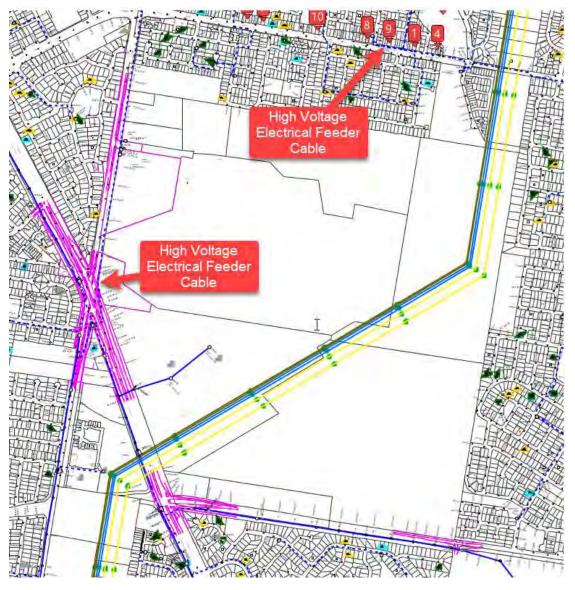


Figure 15 - Electrical Asset Map (AusNet authority asset map)



4.5 TELECOMMUNICATIONS

National Broadband Network (NBN) is the default provider of telecommunications facilities to new developments.

There are a number of telecommunication assets adjacent to site and currently there are connections to the existing infrastructure on the West side of the site as shown below.

NBN is yet to advise if there is sufficient capacity in its network to service future development in the precinct.



Figure 16 - Telecommunication Existing Service Location (Existing Services Plan – Appendix A)



4.6 GAS SUPPLY

APA Networks is the Authority responsible for the provision of gas supply for the area. A high-pressure transmission pipeline runs through the South West section of the precinct. The transmission pipeline will need to be retained and protected.

APA has provided advice in response to the draft development plan that is contained in Appendix B. In summary, the gas transmission pipeline has a buffer zone of 240 m either side of the pipeline within which APA seeks to discourage sensitive uses as listed in their letter. Proposed sensitive uses within this zone would be assessed by a Safety Management Study that would determine the risk of the use and whether this is acceptable or not to APA.

APA's preference is that the easement containing the transmission pipeline be located within linear open space and is maintained free of inappropriate vegetation and structures. They may consider locating the easement within the front setbacks of commercial / industrial lots that are used for car parking or landscaping. Roads within the easement are to be avoided wherever possible. Periodic road and services crossings of the easement will be allowed in accordance with the conditions of the letter.

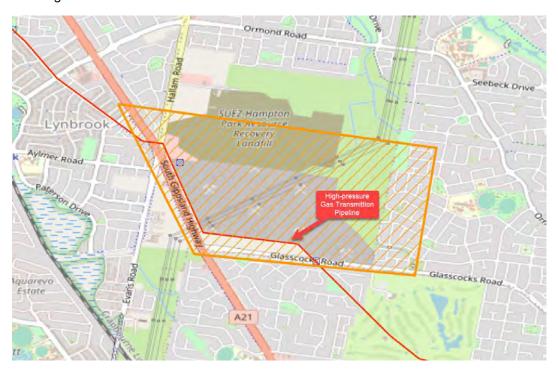


Figure 17 - BYDA High-Pressure Gas Transmission Pipeline Map

There are existing high-pressure gas mains adjacent to the site boundary on the South West and North sides of the precinct. A 125mm dia. pipe is located on the on the corner of Evans Road and Aylmer Road running West along Aylmer Road (*Figure 17*) and a 100mm dia. steel pipe running along Ormond Road North of the site.



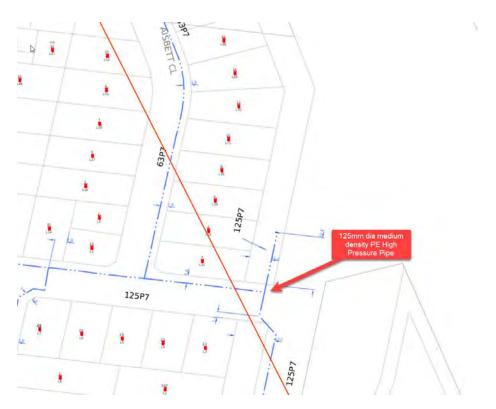


Figure 18 - High Pressure Gas Map extract (South West)



Figure 19 – BYDA High Pressure Gas Pipe Map Extract (North)

Typically, gas supply is not required for industrial and commercial development, there may be minimal demands for gas in the precinct.



Appendix A

Existing Services Plans

LEGEND	
>	EXISTING CHANNEL CENTRELINE
	GAS EASEMENT LINE
EX W	EXISTING WATER
—— EX G——	EXISTING GAS
———EX E———	EXISTING ELECTRICITY (HV)
———EX T	EXISTING TELECOMMUNICATION

EXISTING DRAIN

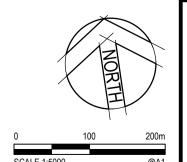
EXISTING ELECTRICAL OVERHEAD

WARNING
HIGH PRESSURE GAS MAINS IN CLOSE PROXIMITY

WARNING

BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE
APPROXIMATE ONLY AND THEIR EXACT POSITION
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

CONTRACTOR TO VERIFY EXISTING SERVICES
CONNECTION LEVELS PRIOR TO CONSTRUCTION.
ANY DISCREPANCIES MUST BE IMMEDIATELY
IDENTIFIED AND THE SUPERINTENDENT NOTIFIED
PRIOR TO CONSTRUCTION COMMENCING.



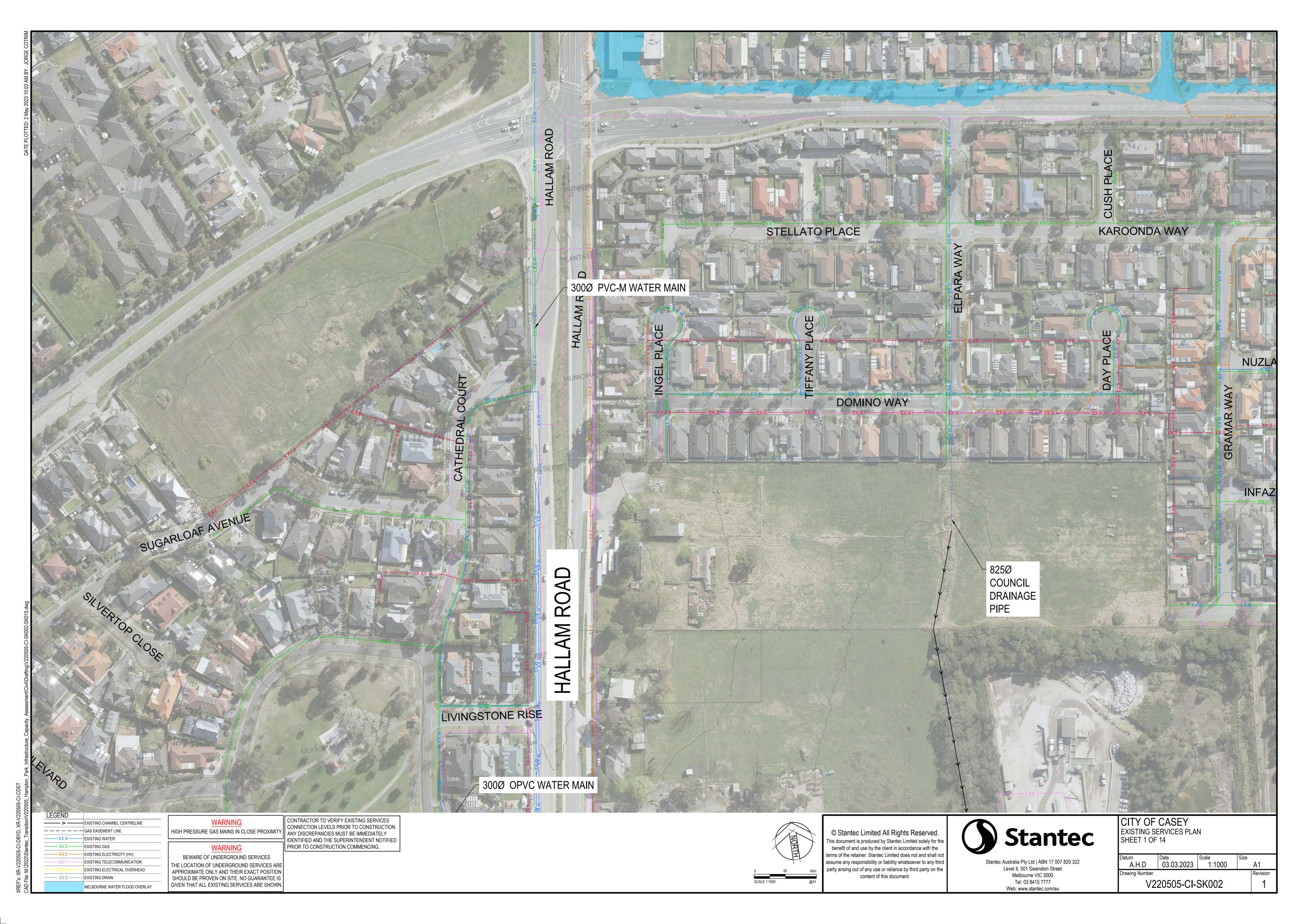
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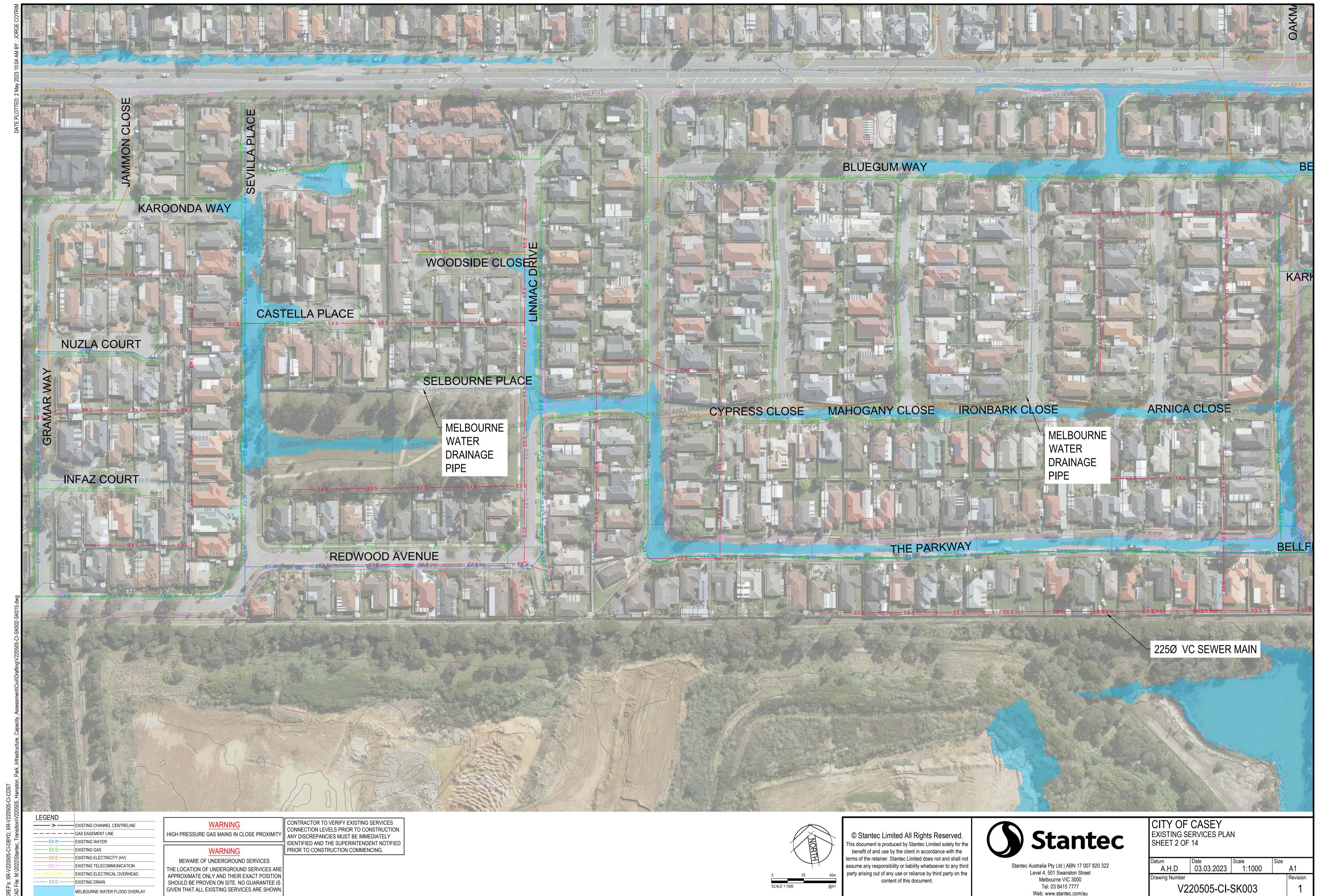
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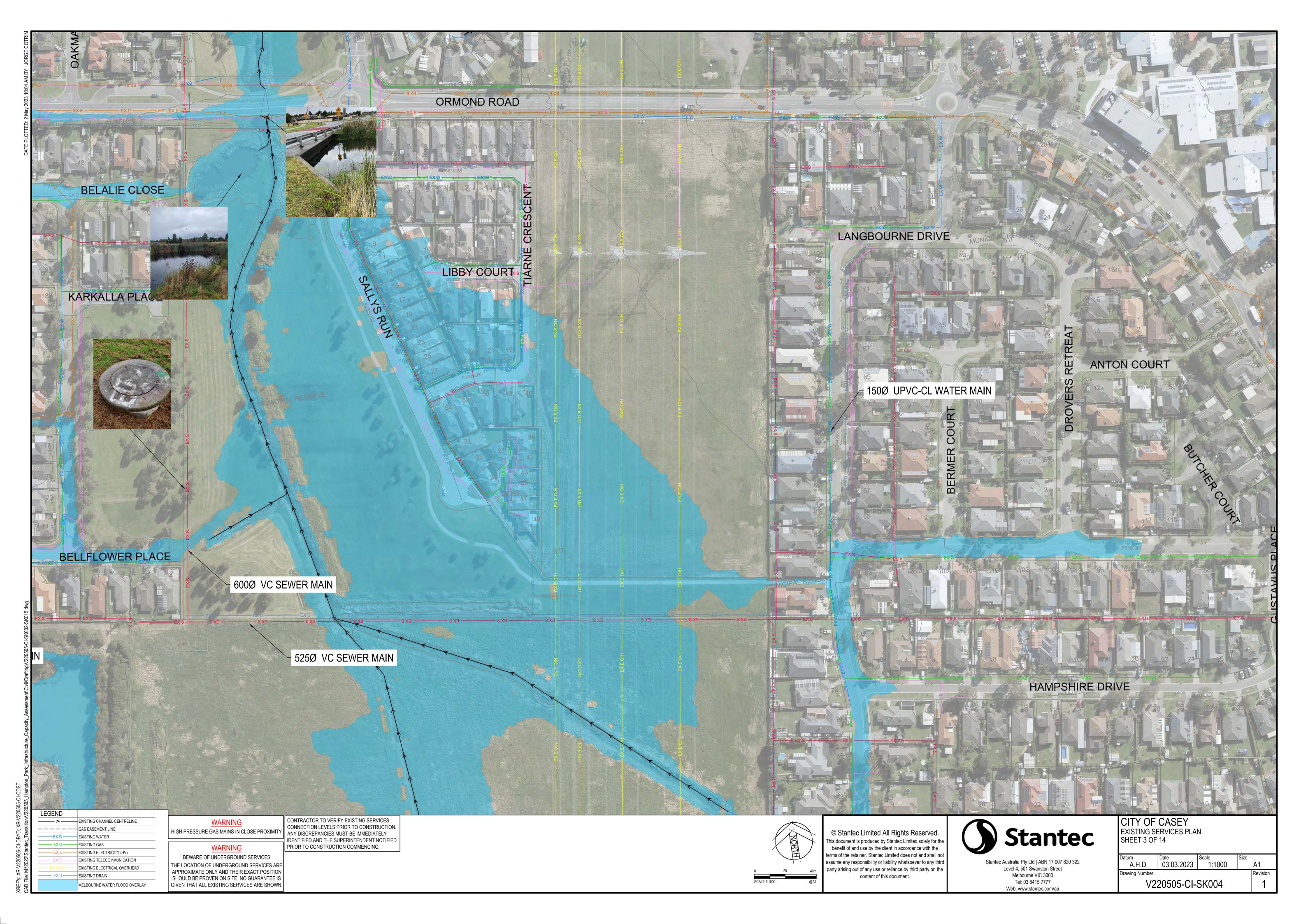


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EXISTING DRAIN

MELBOURNE WATER FLOOD OVERLAY

SHOULD BE PROVEN ON SITE. NO GUARANTEE IS

GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

