

Appendix D: Infrastructure and Services

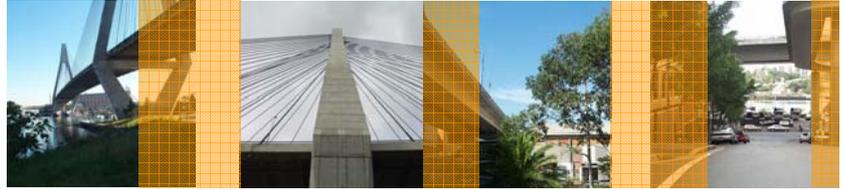
1.0 Background

This appendix aims to identify the location and size of existing stormwater, sewer reticulation, water reticulation, electricity, telecommunication and gas services on or adjacent to the site.

Assumptions and Input Information

This report was prepared based on the following:

- Information provided by the Sydney Fish Market and Sydney Harbour Foreshore Authority, *Sydney Fish Market Master Plan – Final Report on Infrastructure Services Review* prepared by GHD, December 2001;
- Existing services information gathered from a services search for the site (undertaken through Dial Before You Dig); and
- The completion of a site walkover.



2.0 Existing Services

General

The existing services are generally located within the road reserve in Bank Street with the exception of a number of stormwater drainage pipes. The identified location and extent of these services are shown in **Figure 2.1**.

Sewerage

A sewer main carrier runs along Bank Street from its corner with Bowman Street, continues along Jones Street gravitating to Sewer Pump Station (SPS) No.2 located on the southwest corner of the intersection of Pymont Bridge Road and Wattle Street. Along Bank Street, the main drains sewerage from properties fronting Bank Street and is commonly referred to as the “Bank Street carrier”.

Water Supply

The main water reticulation system is located on both sides of Bank Street. Existing buildings within the study area directly connect to the 180mm diameter supply line in Bank Street and it is assumed that they have their own separate metering systems.

Stormwater

There are four stormwater drains that traverse through the study area and discharge to Blackwattle Bay. The location of these pipes is described below:

- Council drain located on Bank Street about 120m northwest of the corner with Quarry Master Drive which drains the northern end of Bank Street;
- Council drain, of unknown size located at the northern end of property No. 21-29 (Poulos) which drains a partial section of Bank Street;
- RTA drain, of unknown size located at the south-eastern corner of property No.37-39 (Hymix) servicing the overhead Anzac Bridge approach; and
- Council and SWC drains, of unknown size located beneath the main entrance road to the SFM.

Electricity

The *Final Report on Infrastructure Services Review* (GHD, December 2001) report identified three substations, all of which are located on Bank Street. Two substations (No. 1/S2700 and No. 2/S6838) are located near the corner of Bank and Miller Streets and currently service the concrete batching plant, the commercial/storage facilities north of the SFM site and the Anzac Bridge overpass. The third substation (No. 5916) is located opposite Quarry Master Drive and services the street network and the areas north of the study area including Bowman Street.

Telecommunications

An existing telecommunications network exists in Bank Street and although primarily owned by Telstra, it also houses infrastructure owned by other authorities as described below.

Optus telecommunication infrastructure is located on the east side of Bank Street and Miller Street. AAPT also has infrastructure on the west side of Bank Street between Miller Street and Quarry Master Drive.

Gas

An existing 32mm, 210kPa pipe is located on the west side of Bank Street, extending from Bowman Street to the northeast corner of the SFM site. A larger 50mm pipe (210kPa) is located on the east side of Bank Street and extends between Quarry Master Drive and Miller Street.

2.1 Issues

Sewer

The Bank Street carrier may be augmented as part of the redevelopment of the Pymont Point peninsula to cater for the proposed densities for its proposed catchment¹, which includes the subject study area. The proposed augmentation was to include the construction of a new sewer pipe parallel to the existing one. At the time of the GHD report, the planned augmentation of a duplicate sewer carrier along Bank Street north of Miller Street had not commenced.

The report also identified that the existing Bank Street carrier in its current condition has capacity to accommodate flows from partial redevelopment of the sites within the Bank Street study area, though this will be subject to the timing of the redevelopment. The carrier will have adequate capacity once the augmentation is completed to cater for the entire redevelopment during detailed design.

Sewer infrastructure is likely to exist within the properties located on the western side of Bank Street and possibly connect to the Bank Street carrier by gravity or pump station. The capacity and condition of this infrastructure is unknown at this stage, though it is anticipated that an assessment would be undertaken to determine the suitability of using this infrastructure.

Water Supply

The GHD report ascertained that the system has adequate capacity to service the redevelopment needs of the study area.

Stormwater

The existing capacity of the stormwater infrastructure is unknown. The GHD report has suggested that the older Council and SWC drains are likely to have been designed to at least the 1 in 5 year ARI storm event and the capacities of newer pipe systems such as those servicing the Anzac Bridge approaches and associated road works in Bank Street, would have been designed to the current 1 in 20 year ARI storm event.

The grade of Miller Street is very steep leading up to the intersection with Bank Street. There should be provision for overland flows in this area for the subject site. Similarly, an assessment should be undertaken for the intersection between Quarry Master Drive and Bank Street and possible provision for overland flows through the site.

¹ *Final Report on Infrastructure Services Review*, GHD (December 2001)

The existing stormwater pits at the time of the site walkover appeared to vary in condition from well maintained in the recently upgraded areas to completely clogged with stagnant water in the northern end of Bank Street. Some parts of the drainage system appear to be tidal influenced.

Within the existing properties, roof water and surface discharge is collected and discharged directly into Blackwattle Bay via several stormwater outlets. This current format is generally considered unacceptable and it is anticipated that the number of outlets will be reduced to the minimum possible to service the site. This will ensure that stormwater flows are readily diverted to a gross pollutant trap (GPT) or other water quality improvement device prior to discharge into Blackwattle Bay.

In addition, there has been no evidence to suggest that gross pollutant traps have been provided on the outlets discharging to Blackwattle Bay. It would be anticipated that gross pollutant traps will be provided to service the entire redevelopment site, the number and type required will be confirmed at the concept design stage or the development of a stormwater management plan for the site. A GPT will be required at every outlet to prevent stormwater pollution such as sediments, gross pollutants, debris, oil and grease from being discharged into Blackwattle Bay.

Electricity

The full regulations for customer connection requirements can be found on the Energy Australia website: <http://www.energy.com.au/ea/earetail.nsf/Content/ElectricityStandards>.

Due to the overall size of the development, the developer will be classified as a large load customer (connection of loads in excess of 200A) in accordance with Document ES 8. This means that the customer (in this case the developer) will in general not be required to fund external network augmentation unless there is a risk of an inadequate return through network use of system tariffs.

In urban networks EnergyAustralia will fund the material cost only of standard substation assets that can be efficiently recovered and reused. EnergyAustralia will normally supply the material, which it funds. The costs do not include the building or enclosure costs for the substation other than for kiosk or padmount substation enclosures. In general terms this means that the transformer, the high voltage and low voltage switchgear and the padmount substation will be supplied by EnergyAustralia at their cost and will be suitable for the advised load.

The developer is responsible for all trenching, provision of easements, construction of foundations (including piling if necessary) and earthing requirements, low voltage reticulation, supply of low voltage cables and conduits.

For each re-development within the study area, the total predicted load and the quantity of customers and usage will need to be determined. A request for the connection of load (available on the EnergyAustralia website) will need to be completed and EnergyAustralia will determine the electrical infrastructure required.

It is likely that each new large commercial development such as an office block will require a new substation. The size of the substation is dependent on the load (in some cases more than one substation may be required). The type of substations will be determined by EnergyAustralia and will most likely kiosk or padmounts but could be chamber (located inside building). These substations can then be used to supply smaller users (such as recreational and community facilities). Details are given in EnergyAustralia's network standards available at www.energy.com.au/ea/earetail.nsf/Content/NetworkStandards_OurNetwork.

For the Hymix site it is likely that existing substations would be sufficient for the small amount of greater loads.

General reticulation will be underground, and for this area a pit and conduit system may be used. For new infrastructure, trenches can be shared with gas and telecommunications. It is important that installation be coordinated so that the services can use a common trench, as this can represent significant cost savings.

Key considerations:

- Determination of loads for each building/facility to determine the final power requirements;
- Supply of Substation equipment is borne by EnergyAustralia;
- Proponent to provide housing for substations;
- Ample time must be allowed (3-4months) to complete the reticulation design prior to installation;
- An additional 3 months should be allowed for electrical cabling and equipping; and
- Trenching should if possible be suitable for shared arrangements for gas and telecommunications.

Telecommunications

The GHD report indicated that there should be no servicing constraints on any proposed redevelopment of the study area. It is anticipated that the level of service required by the proposed development will be sought from the individual telecommunications carrier(s) once the level is identified.

Gas

Agility will need to be consulted to determine servicing requirements for the proposed redevelopment once known, should gas be required.

2.2 Constraints

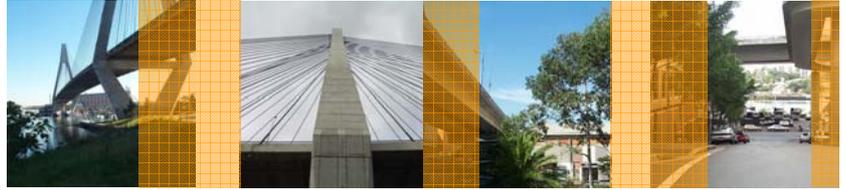
The location of services such as sewer and stormwater will be dependent on site grading, and discharge and connection points. The alignment of all other services should be contained in existing common services trenches or corridors where possible for ease of construction and future maintenance requirements.

It is a general requirement that only one connection to each service per development site be undertaken unless some form of subdivision or strata title exists. The determination on the location and number of connection points will depend on the proposed master plan layout and development strategy.

The stormwater drainage system should be designed for the following:

- Stormwater piped systems be designed to accommodate the 1 in 20 year ARI storm event;
- 1 in 100 year ARI storm event be used for the sizing of all roof water runoff, gutters and down pipes;
- Gross pollutant traps should be sized to treat the 1 in 1 year ARI 'first flush';
- Site grading and layout to provide suitable overland flow paths for flows greater than the 1 in 20 year storm event flows; and
- The number of stormwater discharge points should be limited to one per property.

In terms of current sewer constraints, it is recommended that SWC be consulted to determine the amount of capacity available and the extent of partial development allowable should the Bank Street carrier not have been augmented.



3.0 Stormwater, Sewer and Water

NSW Maritime Minor

As there is no development at the minor NSW Maritime site, there will be no change to sewer, water and stormwater infrastructure.

No. 1 Bank Street

The existing land use features a residential property, which includes a building fronting Bank Street. In the long-term, both the Preferred and Alternative master plans involve eventual redevelopment of the existing land into recreation/community facilities.

For any redevelopment of the site the internal sewer, water and stormwater infrastructure would need to be upgraded to meet the requirements of the recreation / community facilities. It is assumed the existing property is currently sewered and has a potable water connection.

It is not anticipated that a change in land use would result in a significant increase in sewer and water demand and sewage discharge. Should there be a need to provide a new sewer and water connection, a sewer carrier main and water supply main are located within the roadway in Bank Street.

With respect to stormwater, it is expected that an internal drainage system will be provided, should one not already exist. The surface and roof drainage should be designed to City of Sydney Council standards and connections made where required.

NSW Maritime Site

The NSW Maritime site is currently vacant and contains some stockpiles within the site. The site surface is predominantly grassed with little to no hardstand area and appears to drain freely towards Blackwattle Bay. In its current state, the site could be contributing to litter collection and sediment build-up, consequently resulting in polluted runoff. Services information does not indicate that the site is serviced in terms of sewer, water and stormwater.

The proposed development is likely to increase public traffic and require new amenities such as toilets, wash down and car parking.

The proposed development will require sewer and water connections for which there are reticulation mains available in Bank Street. Additional demands will result from the new amenities, however, these are not likely have a significant impact on the water and sewerage systems.

New stormwater drainage would be required internally to drain areas such as the car park and hardstand areas. Collected runoff should be designed such that stormwater runoff is discharged to a first flush pit or gross pollutant trap with provision for spill retention and/or treatment prior to release to the receiving waters. A trade waste license may be required and should be investigated at the concept design stage.

An assessment may be required to determine whether the area to the southeast of this site needs to allow for overland flows through the site from Quarry Master Drive.

Poulos

The Poulos site currently operate a fish processing facility that collects generated waste and water from the site on a daily basis. It is assumed that the site has sewer and water connections, and it is understood that the stormwater drainage discharges directly to the receiving waters via several pipe outlets.

Bidvest

Stephensons Pty Ltd currently operates a food processing facility on the Bidvest site. It is expected that the site under existing conditions would have internal sewer and water connections, and stormwater infrastructure.

Poulos and Bidvest Redevelopment

It would be expected that the sewer and water demands would decrease as the current operations appear to have activities that would pertain to higher use of water and production of sewerage.

The proposed development may require internal sewer and water reticulation upgrades to suit the new site layout. Existing connections can be retained where appropriate to minimise construction impact and costs associated with new connections to mains in Bank Street.

Stormwater runoff would mainly be limited to roof runoff and hardstand areas such as car parks, which would either drain to Bank Street or discharge directly to the bay. The commercial/office space land use would generally not be considered a high pollution generator provided good waste management practices are implemented. However, this should be confirmed with the Department of Environment and Conservation (DEC formerly EPA) at the concept design stage.

Hymix and Miller Street Lot

These areas can be referred to as Hymix North, the Miller Street Lot (owned by NSW Maritime) and Hymix South. The current land use of Hymix North is access to a wharf which is currently being used for charter boats (but may eventually be used by Hymix to bring in aggregate) and the Miller Street Lot that is used for the parking of vehicles by Hymix. The Hymix southern area is currently being used as a concrete batching plant and office.

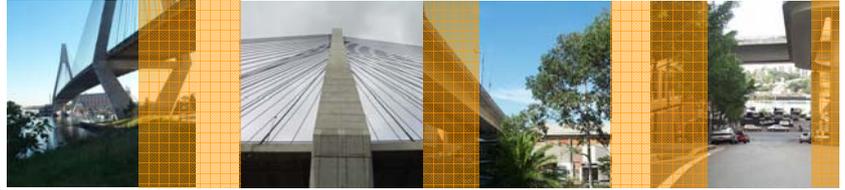
The intensified usage of the Hymix North and South areas could include aggregate coming by water rather than road. The Miller Street Lot area will be redeveloped with the aim of increasing public space and would be retained as a view corridor.

Upgrades for the internal sewer and water may be required for the proposed development to meet increased demands. With regards to stormwater, they will need to include provision for stormwater runoff treatment via a first flush pit or gross pollutant trap, should there not be currently any measures in place that meet DEC (EPA) requirements. An assessment is required to determine whether the NSW Maritime area redevelopment is required to allow for overland flows through the site from Miller Street.

The proposed development may require internal sewer and water reticulation upgrades to suit the new site layout. Existing connections can be retained where appropriate to minimise construction impact and costs associated with new connections to mains in Bank Street.

Stormwater runoff would mainly be limited to roof runoff and hardstand areas such as car park areas, which would either drain to Bank Street or discharge directly to the bay. The commercial/office space land use would generally not be considered a high pollution generator provided good waste management practices are implemented. However, this should be confirmed with the DEC (formerly

EPA) at the concept design stage. An overland flow path should be provided in the enhanced reduced view corridor for overland flows from Miller Street.



4.0 Waste Management

No. 1 Bank Street

The proposed eventual development as recreational/community facilities would be likely to use the same waste storage and collection process. However with such facilities, more of an emphasis can be placed on recycling, such that additional bins and collections for recyclables may be implemented.

NSW Maritime Site

The proposed development will increase public access to the area, and would require the installation of some form of waste receptacles such as Mobile Garbage Bins (MGB) or fixed bins. These would be collected via Council during either the local residential Rear End Lift (REL) waste pickup or via their public area cleaning runs.

The frequency of bin emptying required and the number of bins would need to be determined on a trial basis, based on the patronage and on a seasonal basis. It is envisaged that due to odour and vermin risk, these bins would be emptied and taken to landfill on at least a daily basis during the warmer spring/summer months and during seasons when the waste volume generated is high.

Poulos and Bidvest Sites

Should the sites be redeveloped as commercial/office space, this would change waste management practices to those typical of commercial/office operations. These practices usually consist of internal storage of small amounts in bins at many locations within the building(s). These small bins are usually emptied on a regular basis into larger Front End Lift (FEL) or REL bins stored in the building basement or dock, which are emptied by commercial contractor compactor trucks on a regular basis. The frequency of bin emptying is determined by the amount of waste generated.

Many commercial/office developments also use a waste paper recycling service, whereby MGBs are stored within the buildings and collected by a commercial contractor on a regular basis. Sometimes these bins are emptied into a larger dedicated FEL or REL paper recycling bin stored in the building basement or dock and then returned to their location. The most common practice for large office buildings is to have the contractors generally remove the paper recycling MGB and replace it with an empty one. The method of collection generally depends on whether the recycling service is organised by individual tenants of the building, or by the building manager.

Hymix

The intensification of use would increase internal activities occurring within the concrete batching plant and have the effect of slightly increasing the volume of washout material requiring removal from site, however, storage and removal practices would remain the same.