

File Ref. No: FRN 18/95 TRIM Ref. No: D18/2347

Independent Pricing and Regulatory Tribunal Po Box K35 Haymarket Post Shop NSW 1240

22 January 2018

Dear Sir / Madam

## RE: Issues Paper - Review of Developer Charges and Backlog Sewerage Charges for Metropolitan Water Agencies

The Independent Pricing and Regulatory Tribunal (IPART) is currently conducting a review of developer charges and related charges levied by Sydney Water Corporation (Sydney Water), Hunter Water Corporation (Hunter Water), and the Central Coast Council (formerly Gosford City and Wyong Shire Councils). Each of the utilities have made submissions to IPART and provided responses to each of the questions asked by the IPART issues paper. The utilities' submission date was 11 December 2017.

The legislated responsibilities detailed in the *Fire Brigades Act* pertaining to the protection of life, property and the environment mean that Fire & Rescue NSW (FRNSW) has significant community safety obligations. In this regard, many of these obligations are dependent on the adequate provision of water from reticulated water networks and, as such, FRNSW is a key stakeholder of the metropolitan water agencies.

FRNSW has considered IPART's Issues Paper relating to the *Review of Developer Charges and Backlog Sewerage Charges for Metropolitan Water Agencies* and welcomes the opportunity to comment on the current requirements for water infrastructure funding. In formulating this response, the following documents have been considered:

- 'A plan for growing Sydney'. NSW Government Planning and Environment.
- Draft Greater Sydney Region Plan. Greater Sydney Commission
- Central Coast Council. Submission in response to IPART issues paper; 'Review of Developer Charges and Backlog Sewerage Charges'.
- Hunter Water. Submission to IPART 'Review of Developer Charges and Backlog Sewerage Charges.'
- Sydney Water. IPART 'Review of Developer Charges and Backlog Sewerage Charges for Metropolitan Water Agencies 2017
- Sydney Water. Growth Servicing Plan 2017 2022

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The NSW Government's Department of Planning and the Environment *Metropolitan Housing Monitor* has also been used to determine the type of dwellings completed in specific local government areas. In this regard, the relationship between the types of dwellings being constructed, the water infrastructure provided to these dwellings, the fire hydrant services provided to these dwellings and the cost to the community are discussed in this submission.

This submission has been structured to provide an overview of the key issues FRNSW believes need to be considered by IPART in making any determination regarding the funding of water infrastructure and, possibly, the allocation of funding. No specific comments on the questions asked in the IPART discussion paper or the specific funding formula for water infrastructure have been made in this submission. The submission concludes by making several recommendations for consideration by IPART.

## Development planning and the balancing of policy objectives

The submissions made to IPART highlight some of the many policy objectives that would need to be balanced in considering amendments to any funding model. These included:

- The Greater Sydney Commission, which is tasked with the strategic planning of Greater Sydney, indicates that one of its goals is to "take the pressure off housing affordability". The Greater Sydney Commission, through its draft Sydney Regional Plan also indicate that "planning for infrastructure needs to carefully balance requirements to fund infrastructure without burdening private development unreasonably, by better understanding the cumulative impacts of developer contributions in different markets across Greater Sydney".
- The Department of Planning and Environment's 'Plan for Growing Sydney' indicates that "as the population grows in existing suburbs, utilities such as water, sewerage, electricity and gas need to expand to meet growing demands"

A NSW State Government policy objective not stated within the correspondence, however, was that of the duty of the Commissioner of FRNSW. Section 6(1) of the *Fire Brigades Act* states —

It is the duty of the Commissioner to take all practicable measures for preventing and extinguishing fires and protecting and saving life and property in case of fire in any fire district.

As the operational effectiveness of FRNSW is directly related to the availability of water in and from reticulated water supplies, FRNSW is of the belief that any decisions made regarding the funding for water infrastructure should also be considerate of the duties of the Commissioner of FRNSW. These considerations should include the implications of water infrastructure funding for FRNSW and the community of NSW.

## A snapshot of development in Sydney

The Department of Planning and the Environment's *Metropolitan Housing Monitor* highlights the differing forms of dwellings currently being constructed within the greater Sydney region, these being multi-unit development and detached housing. The snapshots below highlight that multi-unit development is the dominate form of construction in the 'eastern city', the 'north district' and the 'south district' while detached housing is the dominate form in the 'western city'. Note: See Figure 1, Figure 2, Figure 3 and Figure 4 below.

These differing urban forms and the locations they are being developed in means that in most instances multi-unit developments are undertaken on brownfield sites that are serviced by existing water infrastructure, while detached dwelling developments are typically undertaken on greenfield sites serviced by new water infrastructure.



Figure 1 - Dwelling Completions: Eastern City





Figure 3 - Dwelling Completions - South District

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The implications of aged water infrastructure serving multi-unit developments will be explored in the following sections.

## **The National Construction Code**

The Deemed-to-Satisfy provisions of the National Construction Code (NCC) detail a prescriptive set of requirements for all building types, with each of these building types being provided with a classification (Class 1 to Class 10) by the NCC. The differing levels of fire protection detailed in the NCC can be attributed to the differing level of life safety risk associated with each building type. To highlight this variation, the fire hydrant system requirements for a detached dwelling (Class 1a) and a multi-unit development (Class 2) will be discussed. Note that the Buildings Classifications of the NCC are detailed in Appendix 1.

Under the provisions of Volume 2 of the NCC, which deals with Class 1a and Class 10 buildings, no fire hydrant systems provisions are detailed. As such, the detached housing currently being constructed throughout the areas serviced by Central Coast Council, Hunter Water and Sydney Water would not be required to have a fire hydrant system. Notwithstanding this comment, protection from fire for these dwellings is provided by the street hydrants installed on reticulated water networks.

Under the provisions Clause E1.3 of Volume 1 of the NCC, a Class 2 to 9 building that has a floor area greater than 500 m<sup>2</sup> and where a fire brigade is available to attend is required to be provided with a fire hydrant system complying with the requirements of Australian Standard AS 2419.1. As such, all multi-unit development complexes currently being constructed in areas served by Sydney Water, Central Coast Council

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and Hunter Water would be required to be provided with a fire hydrant system complying with AS 2419.1.

Because of the differing fire hydrant provisions detailed in the NCC, almost all multiunit developments will need to incorporate the cost of a fire hydrant system into their overall development costs. On the other hand, all detached housing developments will not. In relation to the total cost of the fire hydrant system borne by a multi-unit development and the subsequent cost attributed to each unit, two factors will determine this cost: the size of the development; and the pressure and flow characteristics of the nearest available town main.

Where the pressure and flow characteristics of an existing town main are identified as not being able to provide the required pressure, the required flow, or both, to a fire hydrant system, the cost to install a fire hydrant system can increase significantly through the requirement to provide on-site pumps or on-site tanks and pumps. Instances where the nearest available town main has been unable to provide the required pressure or flow are now being seen with increasing regularity by FRNSW. The 'Eastern City' and 'North District' of Sydney are particular areas of concern. Statements of available pressure and flow from these areas have been included with this submission. For each of the statements provided, if the information detailed was used to design an on-site fire hydrant system, an on-site tank and pump would be required in each instance.

#### Australian Standard AS 2419.1 – Fire Hydrant Installations

Under the provisions of AS 2419.1, fire hydrant coverage to a building may be provided from the available street fire hydrants and, if this is not possible, through the provision of an on-site fire hydrant system.

For low rise multi-unit developments, the desired fire hydrant solution is to provide fire hydrant coverage from the available street fire hydrants. Where this is not possible, an on-site solution is required. For mid- and high-rise multi-unit developments, an on-site fire hydrant system is always required.

Where an on-site fire hydrant system is required, in all instances the cost of this system and therefore the cost of this aspect of development can be directly related to the characteristics of the nearest available town main. This is best understood by having a basic understanding of some of the underlying design principles in AS 2419.1. While the principles detailed in AS 2419.1 are a little bit more complex than what is stated, they may be summarised as follows:

- where pressure is an issue, an on-site pump is required to be installed
- where flow is an issue, an on-site tank and pumps is required to be installed
- where on-site pumps or on-site tanks and pumps are required to be provided, the cost of installing a fire hydrant system increases significantly. In this regard, apart from the cost of having to install these items (significant in themselves), space within the development (net lettable area) must be allocated to an on-site tank and pumproom.

In Sydney, as a consequence of multi-unit development primarily being undertaken in areas served by existing water infrastructure, FRNSW has for many years seen an

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increase in the need for low rise multi-unit developments to install on-site fire hydrant systems and for low-, mid- and high-rise multi-unit developments to install on-site tanks and pumps. In relation to these items, FRNSW considers these to be 'silent costs' not currently considered in the funding of water infrastructure.

#### Existing infrastructure and cement lined in situ water mains

To understand the issues associated with the use of existing water infrastructure, there is a need to understand cement-lined *in situ* water mains. Across broad areas of the Sydney water network (and possibly within areas of Central Coast Council and Hunter Water), previously laid cast iron water mains, some of which were laid nearly a century ago, have been cement lined. In this regard, FRNSW understands that the application of this cement lining was undertaken to ensure that these cast iron mains would continue to be suitable for use with potable water and to extend the life of these mains. While both are considered positive community benefits, the problem of this approach has been that the internal diameter of these mains was significantly decreased and the 'roughness' of the internal lining of the pipe was significantly increased. When taken together, these factors contribute to a decrease in flow and an increase in pressure loss across the existing water network.

As the cost of a fire hydrant system can be directly related to the pressure and flow available in the nearest available town main, FRNSW is of the opinion that the real cost to the community of maintaining and relying on water mains that have been cement lined in situ can only be understood if the additional costs ('the silent costs') discussed above associated with the installation of an on-site fire hydrant pump and or fire hydrant tank and pumps are considered in any funding model.

## Council Fire Orders and the upgrading of existing buildings

A truth that applies to all things, including buildings, is that something that is new will eventually be old. To extend the life of an older building, this will generally mean the building has to go through one or more building upgrades.

Under the provisions of the *Environmental Planning and Assessment Act*, Councils are granted a broad range of powers relating to the approval of development and the issuing of fire orders. For the owners of older buildings, particularly Class 2 buildings, the issuing of a fire safety order is typically prompted by concerns about the level of fire safety within the building. As such, a common condition detailed in all fire orders is for the building to be provided with a fire hydrant system complying with the requirements of AS 2419.1.

Almost all older multi-unit development complexes, particularly in Sydney, are serviced by existing water infrastructure. In many instances, particularly in areas where cement lined *in situ* pipe is installed, compliance with the requirements of AS 2419.1 will require the installation of an on-site pump or an on-site tank and pump. Where either of these items are required, minimum costs typically extend into the many tens of thousands of dollars. Apart from the cost of installation, in older buildings the other difficulty that arises is finding space for these items so that they do not impact adversely on the building and its use.

Further to the above, in many instances, when FRNSW has been approached to provide an exemption from the provisions of AS 2419.1, FRNSW has not been able to approve such exemptions due to low pressure or limited flow available in some areas of Sydney.

As a consequence of the issues discussed above, FRNSW is now observing a burgeoning problem in that Council fire orders are unable to be finalised, or if finalised, it is at great financial cost to the community.

NOTE: The issue of Council fire orders was raised in an earlier submission to IPART through the reference to the property 40 The Crescent Dee Why. In this example, initial investigations indicated that the most appropriate and cost-effective solution may be through the upgrading of the existing town main.

#### FRNSW Operational Effectiveness

As the property and life losses experienced by the community from fire can be related to the time taken for FRNSW to intervene, the importance of installing the most appropriate fire hydrant system, and therefore minimising fire brigade intervention time, cannot be understated.

Under the provisions of AS 2419.1, two different forms of fire hydrant booster assembly are provided: one that enables the attending fire brigade to access the primary water supply through the use of lay-flat 'soft' canvas hose; and one that requires the use of 'semi-rigid' large bore hose (see Figure 5 and Figure 6 below). Booster assemblies that allow for the use of 'soft' lay-flat canvas hose are preferred as they enable rapid connection to the booster assembly and minimise fire brigade intervention time.





In-line Booster Assembly



'H' Pattern Booster Assembly

Figure 6 – Tank suction booster assembly provides for the use of semi-rigid large bore hose



FRNSW is now seeing a trend of tank suction booster assemblies having to be installed in multi-unit residential complexes due to the limited flow available in the nearest town main (see Figure 7). FRNSW believes that funding and planning decisions should be made to minimise the installation of these systems, as they significantly increase the cost of a fire hydrant system, and therefore the cost of apartments, and can delay fire brigade intervention time.





## The general public's opinion

Over the last decade, FRNSW has collaborated with a number of Councils in an endeavour to find a resolution to their outstanding fire orders. In almost all instances, the community has expressed the consistent view that they should not have to the bear the cost of what they perceive is a water infrastructure-related issue.

## Sydney Water infrastructure spending

The Sydney Water 'Growth Servicing Plan' indicates that "Servicing greenfield areas accounts for over 80% of our growth investment, while providing only 15% of current dwelling completions." Extrapolating, this would suggest that not more than 20% of Sydney Water's growth investment is made in brownfield or infill areas that support 85% of current dwelling completions.

In view of costs associated with the installation of on-site pumps and tanks, FRNSW believes that funding for water infrastructure should enable water authorities to make a greater spending commitment to the upgrading of existing infrastructure.

## Developer charges

In IPART's issues paper, developer charges are defined as "upfront charges water utilities levy on developers to recover the costs of providing water, wastewater and/or stormwater infrastructure to new developments. They can ensure existing customers do not face higher costs as a result of new development". The issues paper also indicates that the "NSW Government set Sydney Water's and Hunter Water's developer charges for water, wastewater and sewerage to zero in 2008".

In relation to developer charges, Sydney Water's submission indicates that "A funding framework that includes developer charges can also promote a fairer outcome for the community, as the main beneficiaries of new infrastructure are obligated to bear some (or all) of the cost and risk of development decisions". The submission also states: "One of the challenges for IPART's review is that the NSW Government set Sydney Water's and Hunter Water's developer charges for water, wastewater and stormwater to zero in 2008".

While FRNSW strongly supports a fair and equitable funding methodology to cover the infrastructure costs associated with new developments, it also believes that a fair and equitable funding methodology should be developed to facilitate the upgrading of existing water infrastructure. The adoption of such a funding methodology will ensure the cost burden being placed on development and existing home owners in areas serviced by existing water infrastructure will be given due consideration when determinations are made on infrastructure funding.

#### FRNSW Comment and Recommendations

Multi-unit development is likely to be the dominant form of new residential construction in the greater Sydney area for the foreseeable future. At the same time, Council fire

safety orders have become the preferred mechanism to upgrade existing buildings. Unless a commitment and an appropriate funding model is developed to provide for the upgrading of existing water infrastructure, existing infrastructure will be placed under increasing stress. Consequently, the 'silent' costs to the community will continue to increase and delays in FRNSW's intervention will occur through an increased need to use semi-rigid large bore hose. As such, FRNSW respectfully requests that IPART consider the following recommendations when developing any future funding model:

- 1. That all of the issues raised above be considered when reviewing the current funding model for water infrastructure., and
- 2. That consideration be given to developing a funding model that provides for the upgrading of existing water infrastructure.

Should you require clarification or any further information, please contact me on 9742 7156 or at e-mail Mark.Whybro@fire.nsw.gov.au.

Yours sincerely



Mark Whybro Assistant Commissioner Community Safety



# Appendix 1 – NCC Building Classifications

Under the provisions of Clause A3.2 *Classifications* of the NCC, buildings are classified as follows:

**Class 1:** one or more buildings which in association constitute—

- (a) Class 1a a single dwelling being-
  - (i) a detached house; or
  - (ii) one of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit; or
- (b) Class 1b ---
  - (i) a boarding house, guest house, hostel or the like-
    - (A) with a total area of all floors not exceeding 300 m2 measured over the enclosing walls of the Class 1b; and
    - (B) in which not more than 12 persons would ordinarily be resident; or
  - (ii) 4 or more single dwellings located on one allotment and used for shortterm holiday accommodation,

which are not located above or below another dwelling or another Class of building other than a private garage.

**Class 2:** a building containing 2 or more sole-occupancy units each being a separate dwelling.

**Class 3:** a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including—

- (a) a boarding house, guest house, hostel, lodging house or backpackers accommodation; or
- (b) a residential part of a hotel or motel; or
- (c) a residential part of a school; or
- (d) accommodation for the aged, children or people with disabilities; or
- (e) a residential part of a health-care building which accommodates members of staff; or
- (f) a residential part of a detention centre.

**Class 4:** a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

**Class 5:** an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.

**Class 6:** a shop or other building for the sale of goods by retail or the supply of services direct to the public, including—

- (a) an eating room, café, restaurant, milk or soft-drink bar; or
- (b) a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or

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- (c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- (d) market or sale room, showroom, or service station.

Class 7: a building which is-

- (a) Class 7a —a carpark; or
- (b) Class 7b for storage, or display of goods or produce for sale by wholesale.

**Class 8:** a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

Class 9: a building of a public nature-

- (a) **Class 9a** —a health-care building, including those parts of the building set aside as a laboratory; or
- (b) **Class 9b** an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class; or
- (c) Class 9c an aged care building.

Class 10: a non-habitable building or structure

- (a) **Class 10a** a non-habitable building being a private garage, carport, shed, or the like; or
- (b) **Class 10b** a structure being a fence, mast, antenna, retaining or freestanding wall, swimming pool, or the like; or
- (c) Class 10c —a private bushfire shelter.



## Appendix 2 – Sydney Water Statements of Available Pressure and Flow

Sydney Water Statements of Available Pressure and Flow for the following addresses are have been included.



In relation to the design of a fire hydrant system the value detailed in each of the statements that would be used, is that titled 'Fire Hydrant / Fire Sprinkler Installations (Pressure expected to be maintained for 95% of the time).

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