

Independent Pricing and Regulatory Tribunal  
New South Wales

# Assessment of Flow Systems Operations network operator's licence application for Shepherds Bay

**Prepared under the  
*Water Industry Competition Act 2006 (NSW)***

Report to the Minister  
for Energy and Utilities

August 2017



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# 1 Summary

We recommend that the Minister grants Flow Systems Operations Pty Ltd (Flow Systems Operations) a network operator's licence (licence number 17\_042, see **Attachment A**) and name Flow Systems Pty Ltd (Flow Systems) as an authorised third party on the licence. The licence would authorise Flow Systems Operations to construct, operate and maintain drinking water, non-potable<sup>1</sup> water and sewerage infrastructure for the Shepherds Bay scheme.

The development is located at Meadowbank in the City of Ryde Council local government area. The Shepherds Bay development is a new large scale residential development, it will consist of approximately 1,700 new apartments and about 6,000 m<sup>2</sup> of retail floor area. The complete development comprises 10 stages. Flow Systems Operations intends to service eight of the ten stages namely stages two to nine

In assessing Flow Systems Operations licence application, we considered the licensing criteria set out in sections 10(3)-(4) of the *Water Industry Competition Act 2006* (NSW) (WIC Act), and had regard to the licensing principles in section 7(1) of the WIC Act.

In granting this WIC Act licence, the Minister is not a determining authority under Part 5 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). For this application, we have undertaken an environmental assessment having regard to the environmental considerations under the WIC Act<sup>2</sup> and the *Water Industry Competition Regulation 2008* (WIC Regulation).<sup>3</sup>

The Minister must consider, but is not bound to accept, any advice or recommendation in this report in determining the licence application. The Minister may, if circumstances so require, seek further advice from us in relation to the licence application.<sup>4</sup>

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<sup>1</sup> In the *Water Industry Competition Act 2006* (NSW), non-potable water means water that is not drinking water.

<sup>2</sup> WIC Act, s 7(1)(a), s 10(4)(e) and clause 7 of the *Water Industry Competition Regulation 2008* (WIC Regulation).

<sup>3</sup> WIC Regulation, clause 7.

<sup>4</sup> WIC Act, section 10(2).

## 2 Background

On 22 December 2015, we received an application from Flow Systems Operations for a network operator's licence for the Shepherds Bay scheme. In response to requests for information Flow Systems Operations provided on 2 September 2016, a revised application package. At the same time Flow Systems applied to vary its retail supplier's licence to allow the provision of retail services at the Shepherds Bay scheme. We recommend that the Minister grant a variation to Flow Systems retail supplier's licence (licence number 13\_001R) to include the Shepherds Bay scheme.

### 2.1 The applicant

Flow Systems Operations is a wholly owned subsidiary of Flow Systems. Flow System's ultimate holding company is Brookfield Asset Management Inc (incorporated in Bermuda). Flow Systems Operations has no employees and relies on the full support of Flow Systems to provide technical, financial and organisational capacity. Flow Systems is named on the proposed network operator's licence as an Authorised Person (see **Attachment A**).

Flow Systems' currently has eight network operator's licence schemes as shown in Table 2.1 below.

**Table 2.1 Flow Systems' licence schemes, under its subsidiaries**

Subsidiary	Scheme	Network operator's licence	Licensed for		
			DW <sup>a</sup>	NP <sup>b</sup>	S <sup>c</sup>
Pitt Town Water Pty Ltd	Pitt Town scheme, Pitt Town, Sydney	10_014		✓	✓
Central Park Water Factory Pty Ltd	Central Park development, Chippendale, Sydney	12_022	✓	✓	✓
Discovery Point Water Pty Ltd	Discovery Point development, Wolli Creek, Sydney	13_025	✓	✓	✓
Wyee Water Pty Ltd	Wyee residential scheme, Wyee, Lake Macquarie	14_026	✓	✓	✓
Huntlee Water Pty Ltd	Huntlee residential scheme, North Rothbury, Hunter Valley	15_030	✓	✓	✓
Green Square Water Pty Ltd	Green Square Town Centre, Sydney	15_031		✓	
Cooranbong Water Pty Ltd	Cooranbong residential development, Cooranbong, Lake Macquarie	15_033	✓	✓	✓
Flow Systems Operations Pty Ltd	Box Hill North residential development, Hills Shire Council	16_037		✓	✓

**a** Drinking water

**b** Non-potable water

**c** Sewage treatment

## 2.2 The scheme

The Shepherds Bay development comprises large scale residential apartment buildings; it covers approximately 35 hectares and is changing from an industrial area to a high density residential area.

The development will consist of approximately 1,700 new apartments and about 6,000 m<sup>2</sup> of retail floor area. The complete development comprises 10 stages. Flow Systems Operations intend to service eight stages. Stage one is completed and connected to the Sydney Water network and will not be serviced by Flow Systems Operations.

Shepherds Bay Infrastructure Management Pty Ltd (the developer) has engaged Flow Systems and its subsidiary Flow Systems Operations, to establish a local water utility for the Shepherds Bay development.

The scheme will be serviced in three phases, as summarised in Table 2.2.

**Table 2.2 Services provided in the proposed phases at Shepherds Bay development**

Phase	Estimated commencement	Drinking water	Non-potable water	Sewerage
1	October 2017			Stages 2-3 and 4-5 discharge to two local points in Sydney Water's sewerage system
2	Depending on the lot sales rate	Sydney Water will provide drinking water to Flow Systems Operations for its reticulation system and recycled water treatment plant top up	Reticulation network charged with drinking water	Construction of balance tanks and recycled water treatment plant. Discharge to Sydney Water's sewerage system
3	August 2018		Reticulation network charged with non-potable water	Operation of water recycling recycled water treatment plant

**Note:** The licence application refers to the recycled water treatment plant as a "Local Water Centre".

Flow Systems Operations proposes to construct the recycled water treatment plant in the basement of the buildings located at stage 2-3. The water recycling treatment train will consist of a membrane bioreactor, reverse osmosis and disinfection units. The estimated hydraulic capacity is up to 600 kL/day and will treat 449 kL/day on average at full development.

The proposed end uses of non-potable water include toilet flushing, clothes washing, cooling tower, car washing, water features and irrigation.

Flow Systems Operations will be responsible for the construction and operation of the recycled water treatment plant.<sup>5</sup> The Developer will construct and Flow Systems Operations will operate and maintain the drinking water, non-potable water and sewerage reticulation networks.

<sup>5</sup> Excluding construction of civil works, which are part of the basement of the buildings at stage 2-3, construction is to be undertaken by the developer.

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If the Minister grants a variation to the retail licence, then Flow Systems would also provide retail services at the Shepherds Bay development for drinking water, non-potable water supply and sewerage services. Customers will be both residential and commercial, with the majority being small retail customers.



### 3 Consultation and submissions

On 9 November 2016, we provided the licence application to, and invited submissions from, the following Ministers and their relevant departments:

- ▼ Minister administering the *Public Health Act 2010* (NSW) (Minister for Health)
- ▼ Minister administering Chapter 2 of the *Water Management Act 2000* (NSW) (Minister for Lands and Water)
- ▼ Minister administering the *Protection of the Environment Operations Act 1997* (NSW) (Minister for the Environment), and
- ▼ Minister administering the *Environmental Planning and Assessment Act 1979* (NSW) (Minister for Planning).<sup>6</sup>

At the same time, we also provided a copy of the licence application to the former Minister administering the WIC Act (The Hon. Niall Blair, MLC).<sup>7</sup> We also called for submissions on the applications from the public.<sup>8</sup> A summary of all the submissions we received is presented in **Attachment B**.

In addition to inviting submissions, we sought expert advice from:

- ▼ Aurecon to inform our environmental assessment (see section 4.6.2)
- ▼ Corporate Scorecard to inform our financial assessment (see section 4.2.2), and
- ▼ Insurance and Care NSW (icare) to inform our assessment of appropriate insurance arrangements (see section 4.4).

We notified Sydney Water of the licence application<sup>9</sup> because Flow Systems Operations is proposing to connect to, or use, Sydney Water's water industry infrastructure (as defined in the WIC Act) as part of activities in relation to which it seeks a licence.<sup>10</sup>

We invited the City of Ryde Council (Council) to make a submission.<sup>11</sup> The Council is the consent authority for the Shepherds Bay development under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).<sup>12</sup>

We also called for submissions on the application from the public. We advertised in the Sydney Morning Herald and the Daily Telegraph on 9 November 2016. The closing date for submissions was 9 December 2016.

<sup>6</sup> WIC Act, section 9(1)(b) and *Water Industry Competition (General) Regulation 2008*, clause 17(1).

<sup>7</sup> WIC Act, section 9(1)(a).

<sup>8</sup> WIC Act, section 9(1)(c).

<sup>9</sup> Letter to Sydney Water Corporation, IPART, 9 November 2016.

<sup>10</sup> WIC Act, section 9(1)(b)(iii) and WIC Regulation, clause 17(2).

<sup>11</sup> Letter to City of Ryde Council, IPART, 9 November 2016.

<sup>12</sup> Submission from the Executive Director Priority Projects Assessments, Department of Planning and Environment (on behalf of the Minister for Planning), 20 December 2016.

We received six submissions, including Council, NSW Health, Minister for the Environment, Sydney Water, Department of Planning and Environment, and Minister for Lands and Water. There were no public submissions.

Subsequent to the initial consultation period, NSW Health and Sydney Water provided further comments on changes to the ownership, operation and maintenance of the water industry infrastructure for which Flow Systems Operations seeks a licence.<sup>13</sup>

These submissions are available on our website and are discussed below.

**NSW Health**<sup>14</sup> supported Flow Systems Operations licence application as long as a number of matters were addressed. NSW Health requested that it be consulted, by IPART, during the detailed risk assessments for drinking water and non-potable water, the technology assessment and the development of management plans for non-potable water and drinking water. NSW Health requested that it also be consulted, by IPART, following the final compliance audit and before retail supply commences to ensure all relevant public health matters have been considered. Further, NSW Health requested that Flow Systems Operations adapt its Incident Notification Protocol for incidences including, but not limited to, water quality issues, treatment plant critical control points limit exceedances, algae, non-potable water issues, cross connections, and contact details of all stakeholders involved in this scheme. NSW Health's requests are related to Flow Systems Operations' capacity to carry out activities in a manner that does not present a risk to public health and this is discussed further in section 4.3.

**Sydney Water**<sup>15</sup> raised a number of issues relevant to our assessment. These included, uncertainty around the need for a network operator's licence for drinking water, lack of clarity around responsibility for infrastructure, servicing strategy, drinking water top-up availability and capacity required in Sydney Water assets. We consider these matters in section 4.2.1. Further, Sydney Water's view is that IPART should recommend to the Minister that Flow Systems Operations should be declared a monopoly for the Shepherds Bay scheme. We consider this in section 4.6.4. Sydney Water also raised concerns regarding competition and the potential for adverse financial implications for customers. We consider these matters in sections 4.6.4, 4.6.5 and 4.6.9.

The submission from the **Council**<sup>16</sup> referred to the existing consents, land use zoning, environmental risks and recommended licence conditions. We consider these in section 4.5.2.

The submission from the **Minister for the Environment**<sup>17</sup> referred to environmental risks and recommended licence conditions for the protection of the environment. We consider these in section 4.5.

The submission from the **Department of Planning and Environment**<sup>18</sup> confirmed that the Council is the consent authority for each subsequent stage of the Shepherds Bay development under Part 4 of the EP&A Act.

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<sup>13</sup> Submission from NSW Health, 30 June 2017 and Submission from Sydney Water Corporation, 3 July 2017.

<sup>14</sup> Submission from NSW Health, 9 December 2016.

<sup>15</sup> Sydney Water Corporation submission to IPART, 16 December 2016.

<sup>16</sup> Submission from City of Ryde Council, 30 November 2016.

<sup>17</sup> Submission from the Minister for the Environment, 16 December 2016.



Finally, the **Minister for Lands and Water**<sup>19</sup> advised us in relation to water extractions under the *Water Management Act 2000* (NSW) and the need for approval for controlled activities. In section 4.6.2 we explain the Minister for Lands and Water's response in further detail.

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<sup>18</sup> Submission from the Executive Director Priority Projects Assessments, Department of Planning and Environment (on behalf of the Minister for Planning), 20 December 2016.

<sup>19</sup> See submission from the Minister for Lands and Water, 6 January 2017.

## 4 Assessment of application

We considered the relevant licensing criteria set out in sections 10(3)-(4) of the WIC Act and had regard to the licensing principles in section 7(1) of the WIC Act in assessing Flow Systems Operations' application for a network operator's licence at Shepherds Bay.

This section of the report contains our assessment of Flow Systems Operations' licence application and our recommendations.

### 4.1 Disqualified corporation and related entity checks

**We consider that Flow Systems Operations is not a disqualified corporation or a corporation that is a related entity of a disqualified corporation that would have a direct or indirect interest in, or influence on, the carrying out of the activities that the licence variation, if granted, would authorise.**

In making this recommendation, we have considered the following:

- ▼ A statutory declaration signed by Flow Systems Operations' Chief Executive Officer and Director stating that:
  - Flow Systems Operations is not a disqualified corporation, and
  - Flow Systems Operations is not a related entity of a disqualified corporation that would have a direct or indirect interest in, or influence on, the carrying out of activities that the licence, if granted, would authorise.
- ▼ Information provided by Flow Systems Operations regarding details of the:
  - trustees (past and current) of any trusts in relation to which Flow Systems Operations is a beneficiary
  - current beneficiaries of any trusts in relation to which Flow Systems Operations is a trustee
  - relevant related entities,<sup>20</sup> and
  - names of the Chief Executive Officer, Deputy Managing Director and Chief Operations Officer for Flow Systems Operations and each of Flow Systems Operations' relevant related entities (subsidiary companies and holding companies within Australia).

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<sup>20</sup> Flow Systems Operations identified the following relevant related entities: BPIH Pty Limited (ACN 100364234), Enwave Australia Pty Limited (ACN 133427022), Brookfield Water Holdings Pty Limited (ACN 162523533), Flow Systems Pty Limited (ACN 136272298), Huntlee Water Pty Limited (ACN 167418608), Central Park Water Pty Limited (ACN 151072838), Discovery Point Water Pty Limited (ACN 142392541), Green Square Water Pty Limited (ACN 163432906), Pitt Town Water Pty Limited (ACN 141705660), Wyee Water Pty Limited (ACN 160953775) and Cooranbong Water Pty Limited (ACN 169450453).

- ▼ Results of ASIC and Dun & Bradstreet reports for Flow Systems Operations, and for the 11 relevant related entities, confirm that these companies are not disqualified corporations nor are their directors or persons concerned in the management disqualified individuals for the purpose of the WIC Act.<sup>21</sup>
- ▼ Results of our search of the WIC Act licence database,<sup>22</sup> confirm in part the above.

We consider that Flow Systems should not be subject to any licence conditions in relation to the disqualified corporation checks if a licence is granted.

## 4.2 Capacity (including technical, financial and organisational capacity) to carry out the activities

Flow Systems has applied for a network operator's licence to authorise the construction, operation and maintenance of drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme.

Flow Systems Operations is already providing similar services to the Box Hill North scheme and Flow Systems is providing similar services through its subsidiaries under other network operator's licences.<sup>23</sup>

We assessed Flow Systems Operations' technical, financial and organisational capacity to carry out activities to be licensed. Our assessment was based on Flow Systems Operations' capacity at the time of making the application.

### 4.2.1 Technical capacity

**We are satisfied that Flow Systems Operations, supported by Flow Systems, has the technical capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme.**

Flow Systems Operations relies on the full support of Flow Systems to provide technical capacity. Our analysis included a review of:

- ▼ **The corporate services agreement**<sup>24</sup> between Flow Systems Operations and Flow Systems. The agreement is a binding agreement for the provision of services by Flow Systems to Flow Systems Operations.
- ▼ **Reports, plans and procedures** that Flow Systems<sup>25</sup> prepared for similar projects (eg, Pitt Town, Discovery Point, Central Park, Huntlee and Cooranbong). These documents demonstrated that Flow Systems has a technical understanding of design, operation and maintenance of drinking water, non-potable water and sewage reticulation and treatment infrastructure.

<sup>21</sup> The relevant searches were completed on 18 July 2017.

<sup>22</sup> There are currently no disqualified corporations or individuals on the register pursuant to the WIC Act, sections 16(e) and 16(f).

<sup>23</sup> Central Park, Discovery Point, Wyee, Cooranbong and Huntlee (drinking water and non-potable water supply, and sewerage services). Pitt Town and Box Hill North (non-potable water supply and sewerage services). Green Square (non-potable water supply service). See Table 2.1 in section 2.

<sup>24</sup> 17 June 2016.

<sup>25</sup> Flow Systems will be undertaking these activities on behalf of Flow Systems Operations.

- ▼ The **audit reports** for the licence plan audits carried out for Pitt Town, Discovery Point, Central Park, Cooranbong, Central Park, Huntlee and Box Hill schemes. Further we have considered, the operational audit reports for Pitt Town, Cooranbong, Central Park and Huntlee projects. The audit reports did not identify any significant non-compliances. This demonstrates Flow Systems' capacity to safely and reliably design, construct, operate and maintain water industry infrastructure.
- ▼ **Process flow diagrams** for drinking water, non-potable water and sewerage (including staged, interim and permanent facility development). This is evidence of Flow Systems Operations' capacity, supported by Flow Systems; to design the treatment system necessary for each proposed scheme stage and identify key input and output streams and storages. The diagrams identify the preliminary critical control points for each treatment stage and expected removal efficiencies for key water quality parameters (ie, virus, protozoa and bacteria for non-potable water treatment).
- ▼ **Preliminary risk assessment** for the drinking water, non-potable water and sewerage infrastructure. This demonstrates Flow Systems Operations' technical capacity to identify hazards and risks related to the scheme's drinking water, non-potable water and sewerage infrastructure and business systems and develop control measures to manage these risks. Further, the preliminary risk assessment demonstrates Flow Systems Operations technical capacity to understand and implement the *Australian Drinking Water Guidelines (2011)* (ADWG) and the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (2006)* (AGWR).
- ▼ Proposed drinking water, non-potable water and pressure sewer **reticulation masterplans**. These demonstrate Flow Systems Operations' technical capacity, as supported by Flow Systems, to design staged reticulation networks in accordance with the future project demands and stage requirements.
- ▼ A **servicing strategy**<sup>26</sup> that includes staged forecasts for drinking water and non-potable water demands and wastewater production at each stage of the development, including requirements to upgrade existing infrastructure. The servicing strategy includes a **water balance report**<sup>27</sup> which demonstrates Flow Systems Operations' technical capacity (supported by Flow Systems), to forecast parameters (eg, non-potable water demand, irrigation and top-up volumes), and considers key information such as weather conditions and system losses.
- ▼ Flow Systems' **previous technical experience** (within Australia), which we assessed by reviewing the schemes currently operated by Flow Systems' subsidiaries (refer to Table 2.1). We consider Flow Systems' previous technical experience is appropriate to provide sufficient technical capacity to Flow Systems Operations in relation to Shepherds Bay scheme.
- ▼ Flow Systems' **human resources capability**, which we assessed from the position descriptions and professional experience of specific personnel nominated to the project in the application. We consider the personnel and positions nominated by Flow Systems are appropriate to provide technical capacity to Flow Systems Operations.
- ▼ Flow Systems' **drinking water quality plan**<sup>28</sup> which describes how the operation and maintenance of infrastructure will be consistent with the ADWG.

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<sup>26</sup> Version 7, July 2016.

<sup>27</sup> Prepared by Kinesis for Flow Systems, 6 July 2015.

<sup>28</sup> Revision 3, February 2015.

- ▼ Flow Systems’ **infrastructure operating plan**<sup>29</sup> which outlines the asset lifecycle planning, system redundancy and condition monitoring for water industry infrastructure, amongst other infrastructure management considerations.
- ▼ Flow Systems’ **sewage management plan**<sup>30</sup> which outlines relevant practices and commitment to responsible management of sewage; including elements such as incident notifications, monitoring and waste disposal.
- ▼ Flow Systems’ **scheme management plan**<sup>31</sup> which provides a plan framework and scheme-specific details from relevant Flow System’s plans above for the proposed infrastructure. It also integrates elements from asset management plan, incident management plan and operations environmental management plan.

We received a submission from Sydney Water which related to Flow Systems Operations’ technical capacity. Sydney Water noted inconsistencies in the licence application and questioned the need for Flow Systems Operations to hold a network operator’s licence for drinking water. In response Flow Systems Operations provided additional information, in the form of an amended licence application indicating that Flow Systems Operations would be responsible for the maintenance and operation of drinking water industry infrastructure. The additional information also detailed where the connection points would be for the sewerage and non-potable infrastructure. The amendments to its licence application are available in our website.

In its submission, Sydney Water also commented on the commercial agreements between Flow Systems Operations and Sydney Water, in relation to issues such as connections, metering, prices and waste streams. Sydney Water and Flow Systems Operations have subsequently had further conversations and are negotiating a utility services agreement. Flow Systems Operations have informed us that the proposed utility services agreement will include provisions for the disposal of waste streams and trade waste discharges into Sydney Water’s sewerage network.<sup>32</sup> Sydney Water has confirmed that it is negotiating with Flow Systems Operations on these matters.<sup>33</sup>

Sydney Water noted that the proposed air-gap used to top-up a non-potable water supply tank must be registered and metered. The licence applicant has acknowledged Sydney Water’s observations.<sup>34</sup> Further, this is a requirement of the Plumbing Code of Australia.<sup>35</sup>

In relation to the capacity required in Sydney Water assets, Sydney Water indicated that it appears that Flow Systems Operations expects to fully rely on Sydney Water to provide water and wastewater backup for the entire scheme<sup>36</sup> and noted no agreement has been made in relation to the proposed sewage bypass. Sydney Water considers its infrastructure must be sized to service the entire development, which means there is no ability to reduce, delay or downsize infrastructure required to service the development. This is why Sydney Water considers a non-residential price is not appropriate for the wholesale wastewater service provided at this site.

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<sup>29</sup> Revision 6, May 2016.

<sup>30</sup> Revision 3, February 2016.

<sup>31</sup> Revision 3, July 2016.

<sup>32</sup> Email to IPART, Flow Systems, Darren Wharton, 26 June 2017.

<sup>33</sup> Email to IPART, Sydney Water - Customer, Strategy and Regulation, 8 May 2017.

<sup>34</sup> Letter to IPART, Flow Systems Operations, 25 January 2017.

<sup>35</sup> National Construction Code Volume 3 Plumbing Code of Australia, 2016.

<sup>36</sup> Submission, Sydney Water, 3 July 2017.

IPART has released the wholesale pricing determination report which addresses these matters.<sup>37</sup> Under the framework established in the report both parties are able to negotiate a price or could apply to IPART for a price to be set via a scheme specific review.

Sydney Water outlined some issues related to the complexity of developing a utility services agreement with Flow Systems Operations. These were due to the proposed drinking water infrastructure operation and maintenance arrangements and interconnections. As mentioned previously, Flow Systems Operations informed IPART that it is currently negotiating a utility services agreement with Sydney Water. Further, Flow Systems Operations has amended the licence application to clarify its responsibilities in relation to the drinking water infrastructure for which it seeks a licence.

As a potential operator of last resort, Sydney Water recommended that the minimum requirement for all infrastructure, including the water recycling plant, should be based on WSAA<sup>38</sup> standards and codes to minimise potential future last resort risks and costs. Flow Systems Operations has informed us that all water and sewerage infrastructure in the Shepherds Bay scheme will be designed and constructed in accordance with WSAA (Sydney Water) codes. Further, if a network operator's licence is granted, it is a requirement of the WIC Regulation that the licensee must ensure that the design, construction and operation of water industry infrastructure will have regard to any publicly available standards or codes.<sup>39</sup>

All the comments raised by Sydney Water in its submission are presented in **Attachment B**.

After consultation, Flow Systems Operations provided documents which outlined the Developers and Flow Systems roles for the proposed construction, operation and maintenance of the water industry infrastructure for which it seeks a licence.<sup>40</sup> The amendments clarified that Flow Systems Operations would be responsible for the maintenance and operation of the water industry infrastructure for which it seeks a licence and where the connection points would be for the sewerage and non-potable infrastructure. The amendments to its licence application are available in our website.

We received comments from NSW Health and Sydney Water about the licence application amendments. Sydney Water noted that a number of issues raised in their previous response have been addressed, and highlighted some remaining issues.<sup>41</sup> NSW Health supported the updated application, provided certain matters were addressed.<sup>42</sup>

We consider that the comments from Sydney Water on the proposed amendments of the licence application in relation to: description of infrastructure configuration, commercial agreement, drinking water top-up, capacity required in Sydney Water assets, waste streams generated, connections and metering; will be addressed in the utility services agreement that Flow Systems Operations is negotiating with Sydney Water.<sup>43</sup> We consider the remaining comments from Sydney Water (description of infrastructure configuration, monopoly

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<sup>37</sup> IPART, *Prices for wholesale water and sewerage services. Sydney Water Corporation and Hunter Water Corporation - Final Report*, June 2017.

<sup>38</sup> Water Services Association of Australia.

<sup>39</sup> WIC Regulation, Schedule 1, section 3(c).

<sup>40</sup> Email to IPART, Flow Systems, Darren Wharton, 25 May 2017.

<sup>41</sup> Letter from Sydney Water to IPART, 3 July 2017.

<sup>42</sup> Letter from NSW Health to IPART, 30 June 2017.

<sup>43</sup> Email to IPART, Sydney Water - Customer, Strategy and Regulation, 8 May 2017.



provider and operator of last resort); do not impact Flow Systems Operations’ technical capacity to undertake the activities that a licence would authorise, if granted.

NSW Health recommended the proposed amendments on the ownership and management responsibilities of the water industry infrastructure should include a consistent approach to servicing and use approved contractors. The responsibilities need to be clearly documented and communicated to all parties to avoid misunderstandings about which party is accountable for monitoring, maintenance and repair works within the scheme. NSW Health notes that it is the proponent’s responsibility as the water supplier to ensure that all potential public health risks are adequately managed. Flow Systems Operations provided an amended project delivery agreement to ensure that the allocated responsibilities are consistent with the ownership and maintenance of water industry infrastructure.<sup>44</sup>

We consider that Flow Systems’ expertise is critical to Flow Systems Operations’ technical capacity. We recommend that Flow Systems should be named as an authorised person for the construction, operation and maintenance of infrastructure on the licence, if granted.

We consider that the information submitted by Flow Systems Operations demonstrates that it has the technical capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at Shepherds Bay subject to Flow Systems being named as an authorised person.

We recommend that Flow Systems Operations should be subject to the following special and standard licence conditions (see draft licence in Attachment **Error! Reference source not found.**), in relation to technical capacity, if a licence is granted:

**Table 4.1 Recommended licence conditions for technical capacity**

Licence condition	Condition details
Schedule A 1.1	If an Authorised Person ceases, proposes to cease, or receives notification to cease providing any of the services relating to the activities authorised by this Licence, the Licensee must provide IPART with written notice as soon as practicable but no later than 28 days before the date of cessation of the services, or a later date approved by IPART in writing. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.
Schedule B 1.1	The Licensee must have the technical, financial and organisational capacity to carry out the activities authorised by this Licence. If the Licensee ceases to have this capacity, it must report this to IPART in accordance with the Reporting Manual.

#### 4.2.2 Financial capacity

**On balance, we are satisfied that Flow Systems Operations, supported by its parent companies, has the financial capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay development.**

We engaged an independent financial consultant, Corporate Scorecard, to assess Flow Systems Operations’ financial capacity and the viability of the scheme. At the same time, Corporate Scorecard assessed the financial capacity of Flow Systems in relation to its application for a variation of its retail supplier’s licence to include Shepherds Bay scheme.

<sup>44</sup> Email to IPART, Flow Systems Operations, Darren Wharton, 1 June 2017.

Corporate Scorecard concluded that, to have the requisite financial capacity, Flow Systems Operations would need a cross-company guarantee from its ultimate parent company, Brookfield Asset Management. However, we recommend against requiring a cross-company guarantee for the licence applicant as:

- ▼ Flow Systems Operations is part of a larger and financially capable group that holds WICA licences for other schemes and that has a history of successful scheme management,
- ▼ Flow Systems Operations requires financial support from a parent company mainly because of a period of rapid expansion and infrastructure investment rather than because of ongoing structural financial capacity issues,
- ▼ Flow Systems Operations' scheme generates positive cash flows and is financially viable in the medium and long term, resulting in a low risk to continuity of service,
- ▼ Brookfield has incentives to continue financial support arising from having a majority interest in Flow Systems Operations' immediate parent company and a need to protect its reputation and brand in the essential services sectors, and
- ▼ we have a letter of comfort from Enwave Australia Pty Ltd which contributes to our comfort level regarding the intention of the parent/subsidiary corporate relationship.<sup>45</sup>

In making our assessment of Flow Systems Operations' financial capacity we considered the following information:

- ▼ reports from our independent financial consultant, Corporate Scorecard
- ▼ historic financial performance including profit and loss statements and balance sheets
- ▼ key financial ratios
- ▼ audited financial statements
- ▼ projected cash flow forecasts related to the schemes
- ▼ income tax returns, and
- ▼ a letter of comfort from the Brookfield Group.

We emphasise that our financial assessment represents Flow Systems Operations' financial capacity at a point in time. Our recommendation to grant Flow Systems Operations a network operator's licence should not be viewed as an endorsement of the future ongoing viability of the corporation. Our assessment is based on a combination of information sources, none of which is individually determinative. This assessment is done for our own purposes and for the Minister's purposes in assessing the licence application. The conclusion is not to be relied upon for any other purpose by any other person.

We received one submission regarding Flow Systems Operations' financial capacity in response to its application for a network operator's licence.<sup>46</sup> Sydney Water mentioned that it would be prudent for operators to demonstrate a suitable level of financial security before scheme approval in order to reduce the likelihood and impact of a last resort event.

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<sup>45</sup> Enwave Australia Pty Ltd is a part of the Brookfield Group, letter to IPART, 15 August 2017.

<sup>46</sup> Sydney Water Corporation submission to IPART, 16 December 2016.

On balance, we consider that the information submitted by Flow Systems Operations and Corporate Scorecard demonstrates that Flow Systems Operations has the financial capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme.

We recommend that Flow Systems Operations should be subject to the following standard licence condition (see draft licence in Attachment A), in relation to financial capacity, if a licence is granted:

**Table 4.2 Recommended licence condition for financial capacity**

Licence condition	Condition details
Schedule B 1.1	The Licensee must have the technical, financial and organisational capacity to carry out the activities authorised by this Licence. If the Licensee ceases to have this capacity, it must report this to IPART in accordance with the Reporting Manual.

### 4.2.3 Organisational capacity

**We are satisfied that Flow Systems Operations, supported by Flow Systems, has the organisational capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme.**

In making our assessment of Flow Systems Operations’ organisational capacity we have considered following information:

- ▼ **Organisational structure**<sup>47</sup> that includes Flow Systems management of third parties to deliver the proposed works based on contractual arrangements and agreements.
- ▼ **Organisational chart**<sup>48</sup> that includes key personnel for areas such as business development, project delivery, operations, retail, finance, technology, legal, risk and compliance.
- ▼ The **organisational diagrams** demonstrate that Flow Systems Operations has an appropriate structure to manage its nominated third parties to deliver the proposed works at the Shepherds Bay scheme.
- ▼ Outline of the **experience of the personnel**<sup>49</sup> currently in the Managing Director, Chief Executive Officer, Deputy Managing Director, Chief Operating Officer, Executive Manager Project Delivery and Executive Manager Utility Operations, which matched the role descriptions.
- ▼ Curricula vitae of its key personnel provided to us in its licence application form which outlines previous experience (within Australia) in the water industry and the specific personnel nominated to the Shepherds Bay project.
- ▼ The risk assessment provided to us in its licence application which demonstrated that business risks have been identified and will be managed.

<sup>47</sup> Flow Systems Operations Network Operator and Retail Suppliers Licence application - Appendix 6.1.1(a) Flow Systems Operational Ownership Structure.

<sup>48</sup> Flow Systems Operations Network Operator and Retail Suppliers Licence application - Appendix 6.1.1(d) Flow Systems Organisation Chart.

<sup>49</sup> Flow Systems Operations Network Operator and Retail Suppliers Licence application Appendix 6.1.3.(a) Position Descriptions (Key personnel).

- ▼ Evidence of Flow Systems experience providing similar services to other schemes, including Pitt Town, Central Park, Discovery Point, Huntlee and Cooranbong.
- ▼ Evidence of Flow Systems Operations experience providing similar services to Box Hill scheme.

As a subsidiary of Flow Systems, Flow Systems Operations relies on Flow Systems for business support. The Corporate Services Agreement and the Deed demonstrated continued organisational support from Flow Systems.

We received no submissions regarding Flow Systems Operations’ organisational capacity in response to its application for a network operator’s licence.

We consider that the information submitted by Flow Systems Operations demonstrates that it has the organisational capacity to construct, operate and maintain water industry infrastructure at the Shepherds Bay scheme.

We consider that Flow Systems’ expertise is critical to Flow Systems Operations ongoing organisational capacity. We recommend that Flow Systems should be named as an authorised person for the construction, operation and maintenance of infrastructure on the licence, if granted.

We recommend that Flow Systems Operations should be subject to the following special and standard licence condition (see draft licence in Attachment A), in relation to organisational capacity, if a licence is granted.

**Table 4.3 Recommended licence conditions for organisational capacity**

Licence condition	Condition details
Schedule A 1.1	If an Authorised Person ceases, proposes to cease, or receives notification to cease providing any of the services relating to the activities authorised by this Licence, the Licensee must provide IPART with written notice as soon as practicable but no later than 28 days before the date of cessation of the services, or a later date approved by IPART in writing. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.
Schedule B 1.1	The Licensee must have the technical, financial and organisational capacity to carry out the activities authorised by this Licence. If the Licensee ceases to have this capacity, it must report this to IPART in accordance with the Reporting Manual.

### **4.3 Capacity to carry out those activities in a manner that does not present a risk to public health**

**We are satisfied that Flow Systems Operations, supported by Flow Systems, has the capacity to supply drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme, in a manner that does not present a risk to public health.**

We assessed Flow Systems Operations’ capacity to manage the following key risks to public health, posed by the construction, operation and maintenance of drinking water, non-potable water and sewerage infrastructure at the Shepherd Bay scheme. In making our assessment we considered the following information:

- ▼ **Source water quality:** Non-potable water will be produced from sewage sourced from the Shepherds Bay scheme. Flow Systems Operations propose a trade waste agreement to control quality of commercial waste discharged into its sewerage network. Top-up water is proposed to be sourced from Sydney Water's drinking water supply system. We understand that management of non-potable water will be consistent with the AGWR. As the retail supplier for the Shepherds Bay scheme, Flow Systems has a pollution incident notification protocol that includes notification to the proposed network operator (Flow Systems Operations). Drinking water will be sourced from Sydney Water for each stage of the development.
- ▼ **Non-potable water quality will be fit for purpose:** Flow Systems Operations has demonstrated its capacity to treat sewage and provide non-potable water to an appropriate quality level for the proposed uses. Flow Systems Operations will collect sewage from within the Shepherds Bay scheme and will top-up the system with drinking water, if required. We consider Flow Systems Operations' proposed sewage treatment and non-potable water treatment systems to be robust and consistent with the requirements of the AGWR, this demonstrates Flow Systems Operations capacity to provide non-potable water quality fit for purpose.
- ▼ **Potential for cross connections:** Flow Systems Operations has outlined the following controls to ensure the risks of cross connections are minimised: lower pressure in the non-potable water network relative to the drinking water network, network pressure monitoring, colour coded and labelled pipes and marker tape in the non-potable water distribution network. In addition, Flow Systems Operations proposes to conduct quality assurance inspections of non-potable water connections prior to commercial operation and will follow a specific notification protocol in the case of possible cross connection incidents. Flow Systems Operations indicated that the dual pipe reticulation systems will be designed and constructed in accordance to WSAA Codes.
- ▼ **Water supply interruption:** interruption to the provision of water could pose a risk to public health. In situations of customer non-payment of debt, we understand that Flow Systems Operations, would continue to provide water at a reasonable flow for basic health and hygiene purposes. Flow Systems would give reasonable notice to its customers if it intends to restrict supply. Further, we understand that the utility services agreement between Flow Systems Operations and Sydney Water would include provisions to mitigate risks of water supply interruption.
- ▼ **Sewerage service interruption:** Flow Systems Operations has demonstrated its capacity to mitigate this risk through its risk management assessment and sewerage plans. Flow Systems Operations has indicated that should an interruption to sewerage services occur, it would remove the sewage by tankers for small scale interruptions. For larger interruptions, storage will be available within the flow balance tanks, duty/standby on treatment trains and critical control points, a tankering company on emergency callout contract and skilled operators to manage the situation. We also understand that Flow Systems Operations intends to discharge into Sydney Water's sewerage network the sewage that it does not require to meet non-potable water demand.
- ▼ **Risk assessment:** we reviewed Flow Systems Operations' preliminary risk assessment and we consider that Flow Systems Operations has demonstrated its capacity to identify and manage hazards and risks of the drinking water, non-potable water and sewerage components of the proposed scheme, to acceptable levels of risk, and will have in place reasonable control and mitigation measures.

We received one submission from NSW Health regarding Flow Systems Operations' capacity to protect public health. NSW Health supported the licence application but identified a number of concerns.<sup>50</sup> These are presented in **Attachment B** and discussed below:

- ▼ Inconsistent description of drinking water system. The proposed drinking water infrastructure in the licence application does not include treatment; however the risk assessment refers to hazards, risks and controls due to storage, chlorine dosing and contamination from treatment chemicals. In response to this issue, Flow Systems Operations has amended its preliminary risk assessment to remove references to drinking water treatment and has clarified that it does not propose to treat drinking water within the scheme area.
- ▼ The risk assessment does not adequately address the proposed sources of water in the non-potable water scheme. For instance, the licence application states that groundwater and rainwater may be used to supplement supply; however the risk assessment does not adequately identify, characterise and manage the resulting hazards and risks. It recommended the risk assessment should be updated to reflect adequate information on the source water, and further characterisation of the source water quality, is undertaken as recommended by the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks* (2006) and *Australian Guidelines for Water Recycling: Stormwater Harvesting and Reuse* (2009). In response, Flow Systems Operations has confirmed that the sources for non-potable water will be sewage and drinking top-up only (and do not include stormwater). Flow Systems Operations amended its licence application accordingly.
- ▼ The application does not clearly indicate how non-potable water will be managed during periods of wet weather or before the retail supply commences. Flow Systems Operations provided an amended licence application, it has indicated that stormwater will not be used to produce non-potable water; therefore wet weather is not expected to affect non-potable water management. Further, Flow Systems Operations has indicated that it will produce non-potable water required to meet demand and bypass any sewage that it does not need (it will not use stormwater to produce non-potable water). We note that in its licence application, Flow Systems Operations propose to construct balance tanks to manage non-potable water. We understand that Flow Systems Operations is negotiating an agreement with Sydney Water that will include discharge of sewage into Sydney Water's sewerage network.<sup>51</sup>
- ▼ The risk from consumption of non-potable water due to unauthorised uses has been inconsistently addressed and there is confusion as the application refers to both Hunter Water and Sydney Water. Flow Systems Operations amended its licence application to remove references to Hunter Water. As we noted in section 4.3, we consider that ensuring that non-potable water is used for the appropriate purposes is the responsibility of the retailer (Flow Systems). We determined that Flow Systems had demonstrated its capacity to mitigate the risk of inappropriate end use through its guidance to customers on its existing non-potable water schemes.

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<sup>50</sup> Submission from NSW Health, 9 December 2016.

<sup>51</sup> Email to IPART, Flow Systems, Darren Wharton, 26 June 2017.

- ▼ The application states that the non-potable water will also be used in cooling towers. Treatment and monitoring is required to ensure the water quality is suitable for use in cooling towers. If the licence is granted, we will audit the adequacy of the proposed controls (including treatment and monitoring), as captured in the licence plans prior to commencing commercial operation.
- ▼ NSW Health recommends that verification monitoring of both the drinking water and non-potable water systems be required at the frequency recommended by the *Australian Drinking Water Guidelines* (2011) and the *Australian Guidelines for Water Recycling* (2006). The Public Health Unit and Flow Systems should be notified immediately of any verification results that are outside of Australian Drinking Water Guidelines or the Australian Guidelines for Water Recycling values and in accordance with NSW Health protocols.
- ▼ Our current practices, as agreed in writing between NSW Health and IPART,<sup>52</sup> ensure that NSW Health is consulted at various stages throughout the development and auditing of the licensee’s management plans. Further, licence holders are required to notify incidents in accordance with the WIC Act, including incidents that threatens or could threaten water quality, public health or safety.
- ▼ NSW Health requested it be consulted, by IPART, following the final compliance audit and before retail supply commences to ensure that all relevant public health matters have been considered. It also requested that Flow Systems Operations develop an Incident Notification Protocol for incidents. Our current practices will ensure that NSW Health is consulted, by IPART and Flow Systems Operations at various stages throughout the development and auditing of the licence’s management plans.

We consider that the information submitted by Flow Systems Operations demonstrates that it has the capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure in a manner that does not present a risk to public health.

We recommend that Flow Systems Operations should be subject to the following standard licence conditions (see draft licence in Attachment A) in relation to its capacity to protect public health, if a licence is granted:

**Table 4.4 Recommended licence conditions for the protection of public health**

Licence condition	Condition details
Schedule B 3.1	The Licensee must carry out the activities authorised by this Licence in compliance with any requirements of NSW Health that: <ul style="list-style-type: none"> <li>a) IPART has agreed to; and</li> <li>b) are notified from time to time to the Licensee by IPART in writing.</li> </ul>
Schedule B 7.1	The Licensee must undertake any monitoring that is required for the purposes of this Licence, any Plan, the Act or the Regulation in accordance with this clause 7.

<sup>52</sup> IPART *Audit Guidelines for Greenfield scheme*, July 2013 and IPART *Audit Guidelines for Brownfield Schemes*, July 2013.

Licence condition	Condition details
Schedule B 7.2	The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan: <ul style="list-style-type: none"> <li>a) the date on which the sample was taken;</li> <li>b) the time at which the sample was collected;</li> <li>c) the point or location at which the sample was taken; and</li> <li>d) the chain of custody of the sample (if applicable).</li> </ul>
Schedule B 7.3	The Licensee must ensure that analyses of all samples taken for the purposes of Verification Monitoring are carried out by a laboratory accredited for the specified tests by an independent body that is acceptable to NSW Health, such as the National Association of Testing Authorities or an equivalent body.
Schedule B 9.1	If the Licensee proposes to operate the Specified Water Industry Infrastructure to supply non-potable water for an end-use which is not set out in the most recent Water Quality Plan provided to IPART, the Licensee must notify IPART in writing at least 3 months before commencing such operation.
Schedule B 11.1	If the Licensee becomes aware that a customer's Plumbing is not Code Compliant, the Licensee must, within 10 days, notify the customer and the Plumbing Regulator, in writing, of that fact.

#### 4.4 Appropriate arrangements with respect to insurance

**We are satisfied that Flow Systems Operations has made, and will continue to maintain, appropriate insurance arrangements for the Shepherds Bay scheme.**

In making our assessment of Flow Systems Operations' insurance arrangements, we have considered Flow Systems':

- ▼ Combined Business Liability Insurance, including public and products liability and professional indemnity (financial loss arising from a wrongful act) insurance policy.
- ▼ Workers compensation insurance policy.
- ▼ Risk management assessment and control plan.

We note that Flow Systems also holds other insurances including construction insurance, industrial special risks insurance and forefront portfolio insurance.

We received no submissions regarding Flow Systems Operations' insurance arrangements.

We requested advice from Insurance & Care NSW (icare) on the appropriateness of Flow Systems and Flow Systems Operations' insurance arrangements, with respect to the activities to be licensed.

As part of its review, icare examined Flow Systems Operations' scope of work, the risk assessment, insurance coverage in the areas of professional indemnity, public liability and product liability in the insurance certificates of currency that both Flow Systems and Flow Systems Operations hold. In addition, icare also reviewed the product disclosure statements for each insurance certificate, and examined the financial rating of the various underwriters providing the insurance.

Further, icare considered the limit of indemnity for public and products liability, and the limit of indemnity for professional liability (financial loss arising from a wrongful act) for both construction and operation phases as appropriate for the Shepherds Bay scheme. As a



result of its review, icare considered Flow Systems and Flow Systems Operations insurance arrangements as appropriate for the network operator’s licence application.<sup>53</sup>

We consider that Flow Systems Operations has demonstrated that it has made, and will continue to maintain, appropriate insurance arrangements.

We recommend that Flow Systems Operations should be subject to the following standard licence conditions (see draft licence in Attachment A), in relation to its insurance arrangements, if a licence is granted:

**Table 4.5 Recommended licence conditions for insurances**

Licence condition	Condition details
Schedule B 2.1	The Licensee must hold insurance that is appropriate for the size and nature of the activities that the Licensee is carrying out under this Licence.
Schedule B 2.2	The Licensee must provide a copy of each certificate of currency of the insurance maintained by the Licensee to IPART in accordance with the Reporting Manual.
Schedule B 2.3	Before commencing to commercially operate the Specified Water Industry Infrastructure under this Licence, the Licensee must demonstrate that the insurance held is appropriate for the size and nature of those commercial operation activities, by providing a report to IPART from an Insurance Expert that: <ul style="list-style-type: none"> <li>a) certifies that in the Insurance Expert’s opinion, the type, scope and limit of the insurance held by the Licensee is appropriate for the size and nature of those commercial operation activities; and</li> <li>b) is in the form prescribed by the Reporting Manual.</li> </ul>
Schedule B 2.5	If, in relation to the activities authorised by this Licence, there is, or is to be, a change in either of the following, the Licensee must provide a report to IPART in accordance with the Reporting Manual: <ul style="list-style-type: none"> <li>a) the insurer or underwriting panel in respect of an insurance policy held by the Licensee; or</li> <li>b) the type, scope or limit on the amount of insurance held by the Licensee.</li> </ul>
Schedule B 2.6	From time to time when requested in writing by IPART, the Licensee must provide a report to IPART, in the manner and form and within the timeframes specified by IPART, from an Insurance Expert certifying that in the Insurance Expert’s opinion the type, scope and limit on the amount of insurance held by the Licensee is appropriate for the size and nature of the activities that the Licensee is carrying out under this Licence. <p><i>[Note: The circumstances in which IPART may request a report under clause 2.6 include (but are not limited to) the following:</i></p> <p><i>where IPART considers that there may be a change in the type, scope or limit on the amount of insurance held by the Licensee in relation to activities that the Licensee is carrying out under this Licence;</i></p> <p><i>where there is a change in the type or extent of activities authorised by this Licence;</i></p> <p><i>or</i></p> <p><i>where IPART or an approved auditor considers that the type, scope or limit on the amount of insurance held by the Licensee may not be appropriate for the size and nature of the activities that the Licensee is carrying out under this Licence.]</i></p>

<sup>53</sup> Email to IPART, icare Insurance and Reinsurance Strategy Manager, 21 March 2017.

## 4.5 Capacity to carry out activities in a manner that does not present a significant risk of harm to the environment

We are satisfied that Flow Systems Operations, supported by Flow Systems, has the capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme, in a manner that does not present a significant risk of harm to the environment.

In making our assessment of Flow Systems Operations' capacity to manage key risks to the environment posed by the construction, operation and maintenance of drinking water, non-potable water and sewerage infrastructure, we have considered Flow Systems Operations':

- ▼ **Understanding of environmental regulations in NSW:**
  - Flow Systems Operations demonstrated its understanding of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP), through its liaison with the Council, to identify infrastructure that is permitted with and or without consent, considering the land zoning. See section 4.6.2 for our assessment on the protection of the environment.
  - Flow Systems Operations demonstrated its ability to interpret and support its position on scheduled activities<sup>54</sup> under the *Protection of the Environment Operations Act 1997* (POEO Act). It interpreted that an environmental protection licence is not required for the recycled water treatment plant. The Environmental Protection Authority advised that no approvals are required under the POEO Act.<sup>55</sup>
  - The developer was been granted concept approval under Part 3A of the EP&A Act for the Shepherds Bay development.<sup>56</sup>
  - The Sydney East Joint Regional Planning Panel has granted four development approvals for the Shepherds Bay redevelopment.<sup>57</sup>
- ▼ **Capacity to comply with environmental regulations:** We understand that Flow Systems Operations and Shepherds Bay Infrastructure Management Pty Ltd have not been subject to enforcement actions under the EP&A Act.<sup>58</sup>
- ▼ **Capacity to implement environmental management processes in relation to the activities to be licensed:** Flow Systems Operations has demonstrated its capacity to implement environmental management processes, through its risk assessments for drinking water, non-potable water and sewerage activities and Flow Systems' ISO 14001 certification (Environmental Management Systems). Further, Flow Systems Operations engaged a consultant to prepare a Review of Environmental Factors (REF) for the proposed reticulation non-potable water system and for the pressure sewerage reticulation system between stages (see our assessment of the protection of the environment in section 4.6.2). Flow Systems has previous experience in preparing environmental assessment and mitigation measures in recent network operator's licence applications including Huntlee, Green Square and Box Hill North schemes.

<sup>54</sup> POEO Act, Division 18.

<sup>55</sup> See submission from the Minister for the Environment, 13 December 2016.

<sup>56</sup> Approval number MP09\_0216 granted on 6 March 2013, amended on 16 October 2014.

<sup>57</sup> Approvals number: LDA2015/0018, LDA2015/0019, LDA2015/0032 and LDA2015/0031 for stages 2 to 9.

<sup>58</sup> Submission from the Executive Director Priority Projects Assessments, Department of Planning and Environment (on behalf of the Minister for Planning), 20 December 2016.

We received submissions from Council and from the Minister for the Environment about recommended licence conditions in relation to protection of the environment.

We consider that some of the licence conditions recommended by Council are captured in our proposed network operator's licence conditions including those contained in the WIC Act and WIC Regulation licence conditions. The remaining should be addressed through the development consent process (under the EP&A Act). We note that Flow Systems Operations compliance with these licence conditions will be audited.

**Table 4.6 Licence conditions recommended by Council**

Recommended licence conditions	Comments
1. Construction hours. All construction hours to be carried out within defined times.	We consider this is within the scope of the overall development consents and the REF. Condition 2.1 in Schedule A of the licence holds them to the REF.
2. Plumbing and drainage work. All plumbing and drainage work must be carried out in accordance with the requirements of NSW Fair Trading.	The WIC Act contains provisions in relation to observance of the <i>Plumbing and Drainage Act 2011</i> .
3. Trade wastewater from retail and commercial premises. All trade wastewater from the retail and commercial premises must be discharged to Sydney Water's sewerage system.	We consider this matter is to be addressed by the agreement between Flow Systems Operations and Sydney Water, as the draft agreement provided by Flow Systems Operations refers to discharge to Sydney Water's sewerage network.
4. Quality of non-potable water. All non-potable water supplied to customers must be suitable for its intended use.	Our proposed varied retail supplier's licence (Flow Systems' licence) outlines the authorised purposes for non-potable water, which are determined in accordance with the Australian Guidelines for Water Recycling.
5. Labelling of non-potable water infrastructure. All non-potable water storage tanks and supply outlets must be appropriately labelled to prevent accidental misuse.	Flow Systems Operations have informed that all water and sewerage infrastructure in the Shepherds Bay scheme will be designed and constructed in accordance with WSAA (Sydney Water) codes. If a network operator's licence is granted, it is a requirement of the WIC Regulation that the licensee must ensure that the design, construction and operation of water industry infrastructure will have regard to any publicly available standards or codes.
6. Air pollution. The operation of the system must not result in the emissions of odours or other air impurities that are a nuisance or danger to health.	6, 7 and 8. Section 4.3 (Capacity to carry out those activities in a manner that does not present a risk to public health) and Section 4.6.2 (Protection of the Environment). These matters are addressed by the REF for the relevant sewerage and non-potable water reticulation infrastructure. Condition 2.1 in Schedule A of the licence holds them to the REF.
7. Offensive noise. The operation of the system must not result in the emission of 'offensive noise' as defined in the POEO Act.	

Recommended licence conditions	Comments
<p>8. Noise and vibration from plant or equipment. The operation of any plant or equipment installed on the premises must not cause:</p> <p>a) The emission of noise that exceeds the background noise level by more than 5dB when measured at, or computed for, the most affected point, on or within the boundary of the most affected receiver. Modifying factor corrections must be applied for tonal, impulsive, low frequency or intermittent noise in accordance with the <i>New South Wales Industrial Noise Policy</i> (EPA, 2000).</p> <p>b) An internal noise level in any adjoining occupancy that exceeds the recommended design sound levels specified in Australian/New Zealand Standards AS/NZS 2107:2000 <i>Acoustics – Recommended design sound levels and reverberation times for building interiors</i>.</p> <p>c) The transmission of vibration to any place of different occupancy.</p>	<p>The non-potable water treatment plant, which does not fall into the regulatory gap, will require development consent from Council.</p>
<p>9. Storage of hazardous substances. The storage of hazardous substances must comply with the requirements of the <i>Work Health and Safety Act 2011</i> and <i>Work Health and Safety Regulation 2011</i>.</p>	<p>Noted, this requirement is appropriately regulated under the named Acts. It is a condition of a network operator's licence that the infrastructure must be constructed, operated and maintained in accordance with any publicly available standard.</p>
<p>10. Bunding of above ground storage tanks. All above ground liquid storage tanks must be bunded to prevent the escape of spills or leaks.</p>	<p>10, 11, 12, 13, 14, 16 and 17. It is a condition of a network operator's licence that the infrastructure must be constructed, operated and maintained in accordance with any publicly available standards. These standards will address the requirements outlined and we will audit them.</p>
<p>11. Construction of tanks bunds. All tank bunds must be designed and constructed in accordance with the following requirements:</p> <p>a) The bund must have capacity of at least 110% of the largest tank plus the volume displaced by any additional tanks within the bunded area.</p> <p>b) The walls and floor of the bund must be constructed of materials impervious to the contents of any container within the bund and be structurally adequate to contain any liquid spilled within the bund.</p> <p>c) A collection sump must be provided in the floors of the bund to facilitate the removal of liquids and the floor of the bund graded to the sump.</p> <p>d) Drain valves must not be provided in the bund.</p> <p>e) Pipe-work from the enclosed tanks and any associated pumps must pass over the bund walls.</p> <p>f) Hose couplings for tanks enclosed within the bund must be located so that leaks or spills are contained within the bund.</p> <p>g) The bund must be covered to prevent the entry of rainwater.</p>	
<p>12. Storage and disposal wastes. All wastes generated on the premises must be stored and disposed of in an environmentally acceptable manner.</p>	

Recommended licence conditions	Comments
13. Disposal of liquid wastes. All liquid wastes generated in the premises must be treated and discharged to the sewerage system in accordance with the requirements of Sydney Water or be transported to a liquid waste facility for recycling or disposal.	
14. Disposal of excess sewage or non-potable water. All excess sewage or non-potable water must be discharge to Sydney Water's sewerage system by gravity flow.	
15. Clean water only to stormwater system. Only clean unpolluted water is permitted to enter Council's stormwater drainage system.	We consider stormwater management falls within the scope of the overall approvals of the Shepherds Bay development. Further, the licence applicant has indicated that stormwater will not be harvested to produce non-potable water.
16. Clean-up materials to be kept in premises. An adequate supply of suitable clean up materials must be kept on the premises for cleaning up accidental spills.	See 10 above.
17. Cleaning wastes and spills. All cleaning wastes and spills must be collected and disposed of in an environmentally acceptable manner.	
18. Duty to notify pollution incidents. Pollution incidents causing or threatening harm to the environment must be reported immediately to all relevant authorities in accordance with Section 148 of the POEO Act.	Noted the POEO Act notification requirements. Licence holders are required to notify incidents in accordance with the WIC Act, including incidents that threatens or could threaten water quality, public health or safety.

**Source:** See submission from City of Ryde Council, 30 November 2016.

The submission from Council also recommended that any licence granted should ensure that the requirements for the management of private recycled water schemes as set out in the *Interim NSW Guidelines for Management of Private Recycled Water Schemes* (2008) are complied with.

The WIC Regulation contains provisions in relation to the AGWR, on which the *Interim NSW Guidelines for Management of Private Recycled Water Schemes* (2008) are based.

Further, we undertake compliance activities prior to commercial operation to ensure the non-potable water infrastructure is capable of operating safely and in accordance with its plan and licence conditions.

We outline the licence conditions recommended by Council and the Minister for the Environment in **Attachment B**.

We consider that the information submitted by Flow Systems Operations and our own analysis demonstrated that it has the capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure in a manner that does not present a significant risk of harm to the environment.

We consider that Flow Systems should not be subject to any additional licence conditions in relation to its capacity to carry out activities in a manner that does not present a significant risk of harm to the environment.

## 4.6 Public interest considerations

We had regard to each of the licensing principles related to the public interest. Our recommendation in relation to this criterion includes our consideration as to whether or not the network operator's licence should be granted, and if so, what conditions to impose.

### 4.6.1 Protection of public health

We have had regard to protection of public health through our assessment of Flow Systems Operations' capacity to construct, maintain and operate drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme in a manner that does not present a risk to public health. As outlined in section 4.3, we assessed Flow Systems Operations' capacity to manage the key risks posed to public health by the activities to be licensed.

If the Minister grants a network operator's licence to Flow Systems Operations, we consider that public health will be protected in relation to the activities licensed.

### 4.6.2 Protection of the environment

In having regard to protection of the environment, we considered the approvals obtained or required under the EP&A Act for construction, operation and maintenance of water industry infrastructure to service the Shepherds Bay scheme. The EP&A Act is the central legislation that controls planning and development in NSW.

We understand that some of the water industry infrastructure that comprises the licence application has obtained approval, some infrastructure will require approval, and some infrastructure would not require approval under the EP&A Act in the event that the licence is granted,<sup>59</sup> as outlined below. This was confirmed by Council after it provided its submission.<sup>60</sup> We understand that the following approvals have been granted for the Shepherds Bay scheme:

- ▼ The Minister for Planning and Infrastructure approved the concept plan for the Shepherds Bay development under Part 3A of the EP&A Act on 6 March 2013.<sup>61</sup> The concept plan contains provisions for the construction of the residential, retail and commercial development and some infrastructure works to support the development.<sup>62</sup>
- ▼ The Joint Regional Planning Panel (Sydney East Region) granted consent for Shepherds Bay stages two to nine under Part 4 of the EP&A Act.<sup>63</sup>

Considering the approvals outlined above and our own analysis, our understanding of the approvals required for the infrastructure, **if a licence is granted**, is outlined below:

<sup>59</sup> Due to the interactions between the EP&A Act and *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP).

<sup>60</sup> Email to IPART, Manager Assessment (Acting) City of Ryde Council, 2 May 2017.

<sup>61</sup> The approval has been modified subsequently.

<sup>62</sup> Approval MP09\_0216 Schedule 2, A1.

<sup>63</sup> Approvals number: LDA2015/0018, LDA2015/0019, LDA2015/0032 and LDA2015/0031 for stages 2 to 9.

- ▼ **Drinking water reticulation:** Consent has been granted for the drinking water reticulation system. In addition, any development for the purpose of drinking water reticulation that does not have consent will require consent under Part 4 of the EP&A Act if carried out by or on behalf of Flow Systems Operations (if Flow Systems Operations is granted a network operator's licence under the WIC Act).
- ▼ **Recycled water treatment plant:** This infrastructure will require consent. The Council's view is that the facility is ancillary to the Part 3A concept approval and as such it is permissible with consent. This will require the lodgement and approval of a development application.<sup>64</sup>
- ▼ **Sewage reticulation *within*<sup>65</sup> stages:** Based on consultation with Council, we understand that gravity sewage reticulation within stages is covered by existing development consents.<sup>66</sup> These consents may need to be modified to allow pressure sewage reticulation within the stages of the Shepherds Bay development.
- ▼ **Non-potable water<sup>67</sup> reticulation and pressure sewage reticulation *between*<sup>68</sup> stages:** Flow Systems Operation would be allowed to construct, maintain and operate this infrastructure without consent.<sup>69</sup> This infrastructure therefore falls under a 'regulatory gap'<sup>70</sup> where no approval under the EP&A Act is required. We carried out a thorough environmental assessment of this infrastructure, as outlined in Box 4.1.

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<sup>64</sup> Email from Manager Assessment (Acting) City of Ryde Council to EnviroPlan (Consultant engaged by Flow Systems), 12 April 2017.

<sup>65</sup> Flow Systems Operations intends to service eight stages in the development. Each stage comprises a group of buildings. Reticulation *within* stages refers to the proposed networks to transport sewage not beyond the group of buildings in each stage.

<sup>66</sup> Email to IPART, Manager Assessment (Acting) City of Ryde Council, 2 May 2017.

<sup>67</sup> The REF refers to *recycled water*, which is equivalent to *non-potable* water in this report.

<sup>68</sup> Reticulation *between* stages refers to the proposed networks to transport recycled water and/or sewage from a group of buildings (ie, stage) to another stage in the development.

<sup>69</sup> *State Environmental Planning Policy (Infrastructure) 2007*, Division 18.

<sup>70</sup> The regulatory gap is described in an IPART submission to DP&E, available on our website: <https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-working-papers-water-wica-licensing-sepp-infrastructure-2007/submission-ipart-response-to-the-state-environmental-planning-policy-infrastructure-amendment-review-2016-28-march-2017.pdf>

#### Box 4.1 Thorough environmental assessment – Review of Environmental Factors

Our environmental assessment considered the following:

- ▼ **Flow Systems Operations' Review of Environmental Factors (REF) for the proposed sewage and non-potable water reticulation systems:**<sup>71</sup> This report outlines Flow Systems Operations' assessment of the environmental impacts of the construction, operation and maintenance of the proposed sewage and non-potable water reticulation networks throughout the Shepherds Bay development area (stages two to nine). The REF concluded that the proposed activities, with proposed mitigation measures, are not likely to significantly affect the environment.
- ▼ **Consultant's review of the Shepherds Bay REF:**<sup>72</sup> We engaged a consultant to review the REF provided by Flow Systems Operations. Following comments from the consultant, Flow Systems Operations amended the REF and resubmitted it to us. The consultant reviewed the updated REF and concluded the following:
  - The proposed activities are not likely to significantly affect the environment or any protected biodiversity.
  - The REF provides a range of mitigation measures to be implemented during construction that would adequately mitigate any environmental risks.
  - Appropriately qualified and experienced personnel prepared and approved the REF.
  - With regard to protection of the environment, the consultant is satisfied that the proposed activities can be carried out with acceptable risks to the environment, provided the issues raised in submissions are appropriately addressed and the protection and mitigation measures specified in the REF are implemented.

We consider the issues raised in submissions have been appropriately addressed. Our analysis of issues raised in submissions is summarised in **Attachment B**.

#### ▼ Submissions made in relation to the protection of the environment:

- **Minister for the Environment:** The Minister recommended that environmental guidelines<sup>73</sup> should be followed, particularly for the proposed irrigation of effluent and its potential impacts in soils and that the operator will ensure ongoing monitoring of treated water. Flow Systems Operations in its licence application stated that non-potable water will be produced to meet its demand. All excess sewage will be discharged into the Sydney Water's sewer. Further, the use of non-potable water for irrigation in the Shepherds Bay scheme is not a primary component of non-potable water demand. The submission also mentioned that odour emissions can be problematic unless appropriate odour controls are designed, installed and operated. The submission suggested following environmental guidelines<sup>74</sup> to mitigate odour impacts. As noted above, Council will assess an application for development consent for the water recycling facility under Part 4 of the EP&A Act. Further, the REF considered air quality and odour impacts of the proposed reticulation networks. Therefore, we consider odour impacts will be addressed and mitigated in the scheme.

<sup>71</sup> RPS, *REF for proposed sewage and recycled water reticulation systems, Shepherds Bay, New South Wales, Version 3*, 2 June 2017.

<sup>72</sup> Aurecon, *Final (detailed) review of Review of Environmental Factors for Proposed Sewage and Recycled Water Reticulation Systems Shepherds Bay*, 16 June 2017.

<sup>73</sup> *Environmental Guidelines: Use of Effluent by Irrigation*, available at: [www.epa.nsw.gov.au/resources/epa/effguide.pdf](http://www.epa.nsw.gov.au/resources/epa/effguide.pdf)

<sup>74</sup> *Technical Framework – Assessment and Management of Odour from Stationary Sources in NSW*, available at: [www.epa.nsw.gov.au/resources/air/20060440framework.pdf](http://www.epa.nsw.gov.au/resources/air/20060440framework.pdf)



- We will audit the adequacy of the proposed controls (including treatment and monitoring), as captured in the licence plans prior to Flow Systems Operations commencing commercial operation. In addition, proposed irrigation in this scheme (high rise buildings) is not a significant component, as opposed of greenfield schemes.
- Lastly, the submission recommended nine licence conditions in relation to protection of the environment. We do not consider those conditions are required at this stage, as outlined in Table 4.7.

**Table 4.7 Licence conditions recommended by the Minister for the Environment**

Recommended licence conditions	Comments
<p>If the WICA licence is granted, the EPA recommends that the licence include:</p> <ol style="list-style-type: none"> <li>1. monitoring and reporting conditions in relation to appropriate soil moisture testing</li> <li>2. appropriate rainfall triggers to prevent irrigation during high rainfall periods</li> <li>3. annual soil monitoring reports to ensure the sustainability of the irrigation application area</li> <li>4. monitoring of volume and quality at the discharge point to the irrigation area and establishment of water quality and volumetric limits</li> <li>5. water quality monitoring of any nearby waterways considered at high risk to impacts from the irrigation application area to ensure that impacts are not occurring</li> <li>6. a definition of the extent and size of the appropriate irrigation application area</li> <li>7. surface and groundwater quality monitoring up gradient and down gradient from the irrigation application area to monitor status of surface and groundwater to ensure that irrigation of wastewater is not polluting waters</li> <li>8. conditions to ensure that runoff to waters does not occur from the irrigation areas such as limitations on ponding to prevent any offsite mitigation waste waters, and</li> </ol> <p>conditions requiring no offensive odour from the premises.</p>	<p>These comments relate to the recycled water plant and we consider that they should be addressed through the development consent process (under the EP&amp;A Act).</p> <p>About irrigation, we note:</p> <ul style="list-style-type: none"> <li>▼ the scheme propose to bypass sewage (to Sydney Water's sewerage system) that it is not required to meet non-potable water demand (it includes irrigation)</li> <li>▼ use of non-potable water for irrigation is not a significant component in the proposed scheme, and,</li> </ul> <p>we consider the proposed irrigation rate to be within adequate parameters.</p>

**Source:** Letter from the Department of Planning and Environment, 20 December 2016

- **NSW Health:** There is potential for residential areas adjacent to the development site to be adversely impacted by noise. Flow Systems Operations should engage a suitably qualified acoustic consultant to prepare a report demonstrating that the operation of all plant and equipment associated with the recycled water facility complies with the POEO Act and NSW Industrial Noise Policy. As noted above, we understand that the Council will assess an application for development consent for the recycled water treatment plant under Part 4 of the EP&A Act, which should address environmental impacts, such as noise. The REF includes noise mitigation in relation to the relevant reticulation.
- **City of Ryde Council:** The Council described its position in relation to its understanding of the existing consents. The Council also indicated that no planning proposal has been submitted to amend the B4 Mixed Use zoning at this stage.

Council subsequently advised IPART<sup>75</sup> that amendment of the B4 Mixed Use zoning is not required as development of the recycled water facility is consistent with the Part 3A concept approval for the site. Clause 106 of *State Environmental Planning Policy (Infrastructure) 2007* does not apply in this instance (as B4 is not a prescribed zone). We have summarised our understanding above. The Council does not believe that the proposed activities will pose an unacceptable risk to the environment if the system is appropriately designed, constructed, operated and maintained. It identifies certain risks that would need to be appropriately managed, such as power failure, cross-connections, accidental leaks, etc. The preliminary risk assessment provided by Flow Systems Operations addresses key risk to the environment, as the risks suggested by the Council. The Council suggests that all trade wastewater should bypass the water recycling treatment plant and be discharged directly to Sydney Water's sewerage system. We consider this matter is to be addressed by the agreement between Flow Systems Operations and Sydney Water, as the draft agreement provided by Flow Systems Operations refers to discharge to Sydney Water's sewerage network.<sup>76</sup> The submission also recommended 18 licence conditions. We do not consider those conditions are required, as outlined in section 4.5.

- **Minister for Lands and Water:** The Minister stated that under the *Water Management Act 2000* (WMA), water extractions from a water source must be covered by an appropriate water access licence and approval, a basic landholder right, or a relevant exemption. Considering the information provided by Flow Systems Operations, we understand that this requirement does not apply for this scheme, as the water is proposed to be sourced from Sydney Water (drinking water) and from treated sewage produced at Shepherds Bay scheme (non-potable water). The submission also mentions provisions for controlled activity approval requirements. We consider this falls within the overall development approvals granted for Shepherds Bay.<sup>77</sup> Specifically the approval granted by the Sydney East Joint Regional Planning Panel includes the WMA in the *relevant mandatory considerations* section.

We recommend that Flow System Operations should be subject to licence conditions in Schedule A (see draft licence in **Attachment A**), in relation to protection of the environment, if a licence is granted (see Table 4.8).

We consider these conditions are necessary to ensure that Flow Systems Operations may only construct, maintain and operate sewerage and non-potable water reticulation infrastructure:

- ▼ for which a thorough environmental assessment has been carried out (eg, has consent or is the subject of an REF approved by the Minister), or
- ▼ is of minimal environmental impact.<sup>78</sup>

<sup>75</sup> Email to IPART, Manager Assessment (Acting) City of Ryde Council, 2 May 2017.

<sup>76</sup> Email to IPART, Flow Systems Operations, 26 June 2017

<sup>77</sup> The approval number LDA2015/0018 granted by the Sydney East Joint Regional Planning Panel includes the *Water Management Act 2000* in the *Relevant mandatory considerations* section.

<sup>78</sup> Section 76(2) of the EP&A Act provides that exempt development must be of minimal environmental impact.

**Table 4.8 Recommended licence conditions for protection of the environment**

Licence condition	Condition details
Schedule A 2.1	<p>The Licensee must only construct, maintain and operate, and must ensure that any Authorised Person only constructs, maintains and operates, the water industry infrastructure specified in paragraph 2) of Table 1.2 or paragraph 2) of Table 3.2 to the extent that such construction, maintenance or operation:</p> <ul style="list-style-type: none"><li>a) has been granted development consent under the EP&amp;A Act as at the date this Licence is granted;</li><li>b) is exempt development under the EP&amp;A Act and may be carried out without development consent under section 76(3)(a) of the EP&amp;A Act;</li><li>c) is the subject of the REF; or</li><li>d) involves the construction, maintenance or operation of infrastructure that is substantially equivalent in function and scale to infrastructure:<ul style="list-style-type: none"><li>i) that is the subject of the REF; or</li><li>ii) the development of which has been granted development consent under the EP&amp;A Act as at the date this Licence is granted, provided that such construction, maintenance or operation is the subject of a subsequent REF approved by the Minister, or the Minister has, by notice in writing, indicated that no subsequent REF is required.</li></ul></li></ul>
Schedule A 2.2	<p>The Licensee must undertake, and must ensure that any Authorised Person undertakes, the activities set out in the REF or in any subsequent REF that is approved by the Minister, that are authorised by the Licence, in a manner that is substantially consistent with the REF, or the subsequent REF, if applicable. Those activities include, but are not limited to, the environmental mitigation measures set out in the REF or the subsequent REF.</p>

#### 4.6.3 Protection of public safety

We had regard to the protection of public safety through our assessment of Flow Systems Operations' technical capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme.

We consider that the risks assessments (outlined in section 4.2) undertaken by Flow Systems Operations for drinking water, non-potable water and sewerage demonstrate that Flow Systems Operations will implement public safety protections prior to undertaking activities for which it seeks a licence. We will audit the adequacy of proposed controls and mitigation measures in relation to public safety protection prior to Flow Systems Operations commencing commercial operation of the scheme.

We did not receive any submissions regarding protection of public safety.

If the Minister grants a network operator's licence to Flow Systems Operations, we consider that public safety will be protected in relation to the activities licensed.

#### 4.6.4 Protection of consumers generally

We have had regard to the protection of consumers through our assessment of Flow Systems Operations' technical capacity to construct, operate and maintain drinking water, non-potable water and sewerage infrastructure at the Shepherds Bay scheme. As outlined in section 4.2, we assessed Flow Systems Operations' technical expertise in constructing,

operating and maintaining water infrastructure with the support of Flow Systems. We consider Flow Systems Operations will develop appropriate operating processes and procedures that will be subject to an IPART audit, should the Minister grant it a network operator's licence.

We received two submissions from Sydney Water regarding monopoly. Both submissions state that:

...it is unlikely that customers within the Shepherd's Bay precinct will, in practical terms, be able to choose their service provider for water or wastewater services.

As such it is our firm view that IPART should recommend to the Minister that FSO and FS should be declared as monopoly suppliers for the Shepherds Bay development in accordance with section 51 of the WIC Act.<sup>79</sup>

We understand Sydney Water's concerns and note that the Minister *may* declare a licensed retail supplier or licensed network operator to be a monopoly supplier in relation to a specified water supply or sewerage service in a specified area or to a specified class of customers.<sup>80</sup>

The Minister can declare a monopoly supplier at any time. This declaration does not have to be made at the time a licence is granted or varied. If the Minister declares a monopoly supplier, the Minister may then refer the monopoly services to us for price regulation.<sup>81</sup>

In its application, Flow Systems Operations states that it has a price parity policy with the local incumbent water authority. It also indicates that water and wastewater fees and charges are reviewed annually and matched to the incumbent. Should the Minister declare any monopoly services at the Shepherds Bay scheme, we are of the view that in the current circumstances, there would be no need to refer these monopoly services to IPART for price regulation.

If the Minister grants a network operator's licence to Flow Systems Operations, we consider that consumers generally will be protected in relation to the activities licensed.

#### **4.6.5 Encouragement of competition**

Historically, Sydney Water has provided monopoly water supply and sewerage services in the Sydney region. This licence would enable a new entity to supply water and sewerage services to the Shepherds Bay scheme, thus encouraging competition in the provision of these services.

#### **4.6.6 Ensuring sustainability of water resources**

Flow Systems Operations will supply non-potable water to Flow Systems who in turn will supply customers at the Shepherds Bay scheme. This water will be sourced from sewage which would have otherwise been treated and discharged into the environment. The supply of non-potable water also replaces the use of drinking water for toilet flushing, clothes

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<sup>79</sup> Sydney Water Corporation submission to IPART, 13 December 2016, p 3 and 3 July 2017, p 2.

<sup>80</sup> WIC Act, section 51.

<sup>81</sup> Determination of the pricing and/or periodic review of the pricing policies. WIC Act, section 52(1)

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washing, cooling tower top up, car washing, water features and irrigation, contributing to the sustainability of water resources from where the drinking water is sourced.

#### **4.6.7 Promotion of production and use of recycled water**

The promotion and production of non-potable water is a key component of the proposed scheme. If granted a licence, Flow Systems Operations will supply non-potable water (ie, recycled water) to Flow Systems who will supply customers at the Shepherds Bay scheme. Through its website and other marketing material, Flow Systems is also committed to promoting the use of non-potable water in the community. This licence will enable increased production and uses of non-potable water.

#### **4.6.8 Promotion of policies set out in any prescribed water policy document**

The Metropolitan Water Plan (MWP) is the only prescribed water policy document in the WIC Regulation. The MWP outlines strategies to secure greater Sydney's water supply now and in the future.

Water conservation is a strategy identified to achieve outcomes stated in the MWP, and the increase of water recycling is a key component in relation to water conservation, liveability and resilience of water resources.<sup>82</sup>

#### **4.6.9 Potential for adverse financial implications for small retail customers**

We have had regard to the potential for adverse financial implications for small retail customers through our assessment of Flow Systems Operations' technical and financial capacity to construct, operate and maintain drinking water, non-potable water and sewerage services for the ultimate scheme.

We have assessed this principle in detail in our assessment of Flow Systems' application to vary its retail supplier's licence to include the Shepherds Bay scheme.<sup>83</sup>

In its submission, Sydney Water noted that there are some small price differences between Flow Systems and Sydney Water prices, such as ancillary charges (based on hourly rates) and different non-potable water charges (service charge). We consider that the differences in prices referred by Sydney Water do not constitute a material risk for potential adverse financial implications for small retail customers. We have assessed this in detail in our assessment of Flow Systems' application to vary its retail supplier's licence to include the Shepherds Bay scheme.<sup>84</sup>

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<sup>82</sup> NSW Metropolitan Water Directorate, *2017 Metropolitan Water Plan, Water for a Liveable, Growing and Resilient Greater Sydney*, March 2017, p 7-8.

<sup>83</sup> IPART, Report to the Minister – *Assessment of Flow Systems Pty Ltd's application to vary its retail supplier's licence no. 13\_001R*, July 2017.

<sup>84</sup> Ibid.

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#### **4.6.10 Promotion of equitable sharing of the costs of water industry infrastructure that significantly contributes to water security.**

Flow Systems Operations intends to source drinking water from Sydney Water for the Shepherds Bay scheme. We understand the price that Flow Systems Operations will pay Sydney Water is likely to incorporate a share of the cost of any infrastructure that significantly contributes to water security in the Sydney water market.

Flow Systems Operations proposed construction and operation of water industry infrastructure for the production and supply of non-potable water at the Shepherds Bay scheme would contribute to the costs of water security by providing an alternative water source for some uses.

#### **4.6.11 Other matters in the public interest**

We did not identify any additional matters with regard to the public interest in relation to Flow Systems Operations constructing, operating and maintaining water industry infrastructure at the Shepherds Bay scheme.

We consider that Flow Systems Operations should not be subject to any other licence conditions in relation to public interest, if the network operator's licence is granted.

## 5 Recommendations

We recommend that the Minister for Energy and Utilities:

grants a network operator's licence (licence number 17\_042) to Flow Systems Operations, for the Shepherds Bay scheme subject to the conditions as set out in the attached draft licence.

The Minister must consider, but is not bound to accept, any advice or recommendation in this report in determining the licence application. The Minister may, if circumstances so require, seek further advice from us in relation to the licence application.<sup>85</sup>

The Minister is required to provide us with a notice of the decision and the reasons for the decision on making a decision whether or not to grant the licence<sup>86</sup>. We will make the information in the notice available to the public on our website, in accordance with the requirements of the WIC Act.<sup>87</sup>

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<sup>85</sup> WIC Act, section 10(2).

<sup>86</sup> WIC Act, section 10(5).

<sup>87</sup> WIC Act, section 10(6).







## Appendices



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## A Draft network operator's licence



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## B Summary of submissions



**Table B.1 Summary of stakeholder submissions**

ID	Agency	Issues	Report section reference/ our response
1	NSW Health	<p>NSW Health supports the application and requests that it be consulted:</p> <ul style="list-style-type: none"> <li>▼ during the detailed risk assessment, technology assessment and the development of management plans for drinking water and recycled water,</li> <li>▼ following the final compliance audit, and</li> <li>▼ before retail supply commences</li> </ul> <p>to ensure that all relevant public health matters have been considered.</p>	<p>4.2.1 Technical capacity, and 4.3 Capacity to carry out activities in a manner that does not present a risk to public health.</p>
		<p>NSW Health also requests that Flow Systems Operations develop an Incident Notification Protocol to include matters such as water quality issues, treatment plant critical control point limit exceedances, algae, recycled water issues, cross connections, and contact details of all stakeholders involved in this scheme.</p>	<p>4.3 Capacity to carry out activities in a manner that does not present a risk to public health, and 4.6.2 Protection of the environment.</p>
		<p>NSW Health noted following inconsistencies in some of the licence application documents:</p> <ul style="list-style-type: none"> <li>▼ description of the drinking water system, particularly in relation to the preliminary risk assessment,</li> <li>▼ sources of water to produce recycled water,</li> <li>▼ risk of consumption of recycled water due to unauthorised uses, and</li> <li>▼ utility supplying drinking water (Hunter Water and Sydney Water).</li> </ul>	<p>4.3 Capacity to carry out activities in a manner that does not present a risk to public health.</p>
		<p>It recommended the risk assessment should be updated to reflect adequate information on the source water, and further characterisation of the source water quality, as recommended by the <i>Australian Guidelines for Water Recycling: Managing Health and Environmental Risks</i> (2006) and <i>Australian Guidelines for Water Recycling: Stormwater Harvesting and Reuse</i> (2009).</p>	
		<p>The applicant claims that the scheme will achieve 100% effluent disposal through reuse or losses and that no environmental discharge is required. It is unclear how recycled water will be managed during periods of wet weather or before the retail supply commences.</p>	<p>4.3 Capacity to carry out activities in a manner that does not present a risk to public health.</p>
		<p>The application states the recycled water will also be used in cooling towers. Treatment and monitoring is required to ensure the water is suitable for use in cooling towers.</p>	<p>4.3 Capacity to carry out activities in a manner that does not present a risk to public health.</p>
		<p>There is potential for residential areas adjacent to the development site to be adversely impacted by noise. The applicant should engage a suitable qualified acoustic consultant to prepare a report demonstrating that the operation of all plant</p>	<p>4.6.2 Protection of the environment.</p>

ID	Agency	Issues	Report section reference/ our response
		and equipment associated with the recycled water facility complies with the <i>Protection of the Environment Operations Act 1997</i> and NSW Industrial Noise Policy.	
		NSW Health recommends that verification monitoring of both the drinking water and recycled water systems be required at the frequency recommended by the <i>Australian Drinking Water Guidelines 2011</i> and the <i>Australian Guidelines for Water Recycling: Managing Health and Environmental Risks 2006</i> . The Public Health Unit and Flow Systems should be notified immediately of any verification results that are outside of <i>Australian Drinking Water Guidelines</i> or <i>Australian Guidelines for Water Recycling</i> values and in accordance with NSW Health protocols.	4.3. Capacity to carry out activities in a manner that does not present a risk to public health.
		Uncertainty around need for network operator licence for drinking water. Sydney Water recommended consider whether Flow Systems Operations would require a network operator's licence under the WIC Act for drinking water, as it appears it would apply only to water meters.	4.2.1 Technical capacity
		Lack of clarity around responsibility for infrastructure. Sydney Water indicated that the application does not contain a clear description of which parties will be responsible for the ongoing operation and maintenance of infrastructure.	4.2.1 Technical capacity
		Servicing strategy. Sydney Water's understanding was that the developer was yet to make a decision regarding the service provider for drinking water in the Shepherds Bay precinct. Such understanding does not appear to align with the application for a Network Operator's licence.	4.2.1 Technical capacity
2	Sydney Water	Monopoly provider. Sydney Water's view is that IPART should recommend to the Minister that Flow Systems Operations and Flow Systems should be declared monopoly suppliers for the Shepherds Bay developments in accordance with section 51 of the WIC Act.	4.6.4 Protection of consumers generally
		Commercial agreement. Noted discussions in relation to a utility services agreement and a trade waste agreement have not commenced. Negotiations for any potential utility services agreement may consider additional metering or other measures to allow calculation of IPART's determined wholesale prices.	4.2.1 Technical capacity
		Potential for adverse financial implications for customers. Noted that there are some small price differences between Flow Systems and Sydney Water prices, such as ancillary charges (based on hourly rates) and different	4.6.9 Potential for adverse financial implications for small retail customers.



ID	Agency	Issues	Report section reference/ our response
		recycled water charges (service charge).	
		Potable water top-up availability. Noted that the proposed air-gap used to top-up a recycled water supply tank must be registered and metered.	4.2.1 Technical capacity
		Capacity required in Sydney Water assets. Indicated that it appears that Flow Systems Operations expects to fully rely on Sydney Water to provide water and wastewater backup for the entire development and noted no agreement have been made in relation to the proposed sewage bypass. Sydney Water considers its infrastructure must be seized to service the entire development, which means no ability to reduce, delay or downsize infrastructure required to service the development.	4.2.1 Technical capacity
		Waste streams generated. Flow Systems Operations and Sydney Water have not commenced discussions to establish a trade waste agreement for the acceptance of wastewater treatment sub products into Sydney Water wastewater network. Any discharge must meet Sydney Water's acceptance standards.	4.2.1 Technical capacity
		Connections and metering. Outlined some issues related to the complexity to develop a utility services agreement with Flow Systems Operations, due to the proposed drinking water infrastructure operation and maintenance arrangements and its interconnections.	4.2.1 Technical capacity
		Operator of Last Resort. Reinforced the need for the water and sewerage infrastructure be designed and constructed to WSAA standards and codes, in the event that an Operator of Last Resort situation is invoked.	4.2.1 Technical capacity
		Reinforced the need for scheme operators to demonstrate a suitable level of financial security before scheme approval to reduce likelihood and impact of a Last Resort event.	4.2.2 Financial capacity
3	City of Ryde Council	Stated its understanding of the existing consents relevant for the Shepherds Bay development.	4.5 Capacity to carry out those activities in a manner that does not present a significant of harm to the environment. 4.6.2 Protection of the environment.
		No planning proposal has been submitted to amend the B4 Mixed Use zoning at this stage. Clause 106 of <i>State Environmental Planning Policy (Infrastructure) 2007</i>	4.6.2 Protection of the environment.

ID	Agency	Issues	Report section reference/ our response
		does not apply in this instance.	
		Outlines risks to the environment that would need to be appropriately managed in the proposed scheme: inadequate equipment or processes, power failure, equipment malfunctions, supply of inadequately treated water, misuse of recycled water, cross-connections to drinking water system, accidental leaks or spills, contamination with trade wastes, emission of odours, noise from plant and equipment.	4.6.2 Protection of the environment. In 4.6.2, we have considered risks to the environment in light of our understanding of the infrastructure that have obtained, will require and would not require approvals under the EP&A Act.
		Suggest all trade wastewater should by-pass the treatment plant (LWC) and be discharged directly to Sydney Water's sewerage system.	4.6.2 Protection of the environment.
		Any licence granted should ensure that the requirements for the management of private recycled water schemes as set out in the <i>Interim NSW Guidelines for Management of Private Recycled Water Schemes (2008)</i> are complied with.	4.5 Capacity to carry out those activities in a manner that does not present a significant of harm to the environment.
		<p>Any approval should include the following conditions:</p> <ol style="list-style-type: none"> <li>9. All construction hours to be carried out within defined times</li> <li>10. Plumbing and drainage work. All plumbing and drainage work must be carried out in accordance with the requirements of NSW Fair Trading.</li> <li>11. Trade wastewater from retail and commercial premises. All trade wastewater from the retail and commercial premises must be discharged to Sydney Water's sewerage system.</li> <li>12. Quality of recycled water. All recycled water supplied to customers must be suitable for its intended use.</li> <li>13. Labelling of recycled water infrastructure. All recycled water storage tanks and supply outlets must be appropriately labelled to prevent accidental misuse.</li> <li>14. Air pollution. The operation of the system must not result in the emissions of odours or other air impurities that are a nuisance or danger to health.</li> <li>15. Offensive noise. The operation of the system must not result in the emission of 'offensive noise' as defined in the POEO Act.</li> <li>16. Noise and vibration from plant or equipment. The operation of any plant or equipment installed on the premises must not cause: <ol style="list-style-type: none"> <li>e) The emission of noise that exceeds the background noise level by more than 5dB when measured at, or computed for, the most affected point, on or within the boundary of the most affected receiver. Modifying factor corrections must be applied for tonal, impulsive, low frequency or intermittent noise in accordance with the <i>New South Wales Industrial Noise Policy (EPA, 2000)</i>.</li> <li>f) An internal noise level in any adjoining occupancy that exceeds the</li> </ol> </li> </ol>	4.5 Capacity to carry out those activities in a manner that does not present a significant of harm to the environment.

ID	Agency	Issues	Report section reference/ our response
		<p>recommended design sound levels specified in Australian/New Zealand Standards AS/NZS 2107:2000 <i>Acoustics – Recommended design sound levels and reverberation times for building interiors</i>.</p>	
		<p>g) The transmission of vibration to any place of different occupancy.</p> <p>17. Storage of hazardous substances. The storage of hazardous substances must comply with the requirements of the <i>Work Health and Safety Act 2011</i> and <i>Work Health and Safety Regulation 2011</i>.</p> <p>18. Bunding of above ground storage tanks. All above ground liquid storage tanks must be bunded to prevent the escape of spills or leaks.</p> <p>19. Construction of tanks bunds. All tank bunds must be designed and constructed in accordance with the following requirements:</p> <p>h) The bund must have capacity of at least 110% of the largest tank plus the volume displaced by any additional tanks within the bunded area.</p> <p>i) The walls and floor of the bund must be constructed of materials impervious to the contents of any container within the bund and be structurally adequate to contain any liquid spilled within the bund.</p> <p>j) A collection sump must be provided in the floors of the bund to facilitate the removal of liquids and the floor of the bund graded to the sump.</p> <p>k) Drain valves must not be provided in the bund.</p> <p>l) Pipe-work from the enclosed tanks and any associated pumps must pass over the bund walls.</p> <p>m) Hose couplings for tanks enclosed within the bund must be located so that leaks or spills are contained within the bund.</p> <p>n) The bund must be covered to prevent the entry of rainwater.</p> <p>20. Storage and disposal wastes. All wastes generated on the premises must be stored and disposed of in an environmentally acceptable manner.</p> <p>21. Disposal of liquid wastes. All liquid wastes generated in the premises must be treated and discharged to the sewerage system in accordance with the requirements of Sydney Water or be transported to a liquid waste facility for recycling or disposal.</p> <p>22. Disposal of excess sewage or recycled water. All excess sewage or recycled water must be discharge to Sydney Water’s sewerage system by gravity flow.</p> <p>23. Clean water only to stormwater system. Only clean unpolluted water is permitted to enter Council’s stormwater drainage system.</p> <p>24. Clean-up materials to be kept in premises. An adequate supply of suitable clean up materials must be kept on the premises for cleaning up accidental spills.</p>	

ID	Agency	Issues	Report section reference/ our response
		<p>25. Cleaning wastes and spills. All cleaning wastes and spills must be collected and disposed of in an environmentally acceptable manner.</p> <p>26. Duty to notify pollution incidents. Pollution incidents causing or threatening harm to the environment must be reported immediately to all relevant authorities in accordance with Section 148 of the POEO Act 1997.</p>	
		The Environmental Protection Authority (EPA) is not aware of any breaches of the <i>Protection of the Environment Operations Act 1997</i> (POEO Act) by Flow Systems Operations or Flow Systems.	4.6.2 Protection of the environment
		EPA advises that no approvals are required under the POEO Act.	4.6.2 Protection of the environment
		EPA recommends discussing the assessment of risks and local planning requirements with the City of Ryde Council and that <i>the Environmental Guidelines: Use of Effluent by Irrigation</i> provides guidance.	See item 3 above.
		The operators will need to ensure by careful and ongoing monitoring of treated water that chemical impurities, for example salt and by-products of disinfection in the treated water do not over time exceed relevant recycled water guidelines or cause incremental accumulation of pollutants in soils.	4.6.2 Protection of the environment.
4	Minister for the Environment	The EPA's experience has shown that in similar water recycling facilities, hydrogen sulphide odour emissions can be problematic unless appropriate odour controls are designed, installed and operated. The <i>Technical Framework – Assessment and Management of Odour from Stationary Sources in NSW</i> provides appropriate guidance.	4.5 (Capacity to carry out those activities in a manner that does not present a significant risk of harm to the environment) and 4.6.2.
		<p>If the WICA licence is granted, the EPA recommends that the licence include:</p> <ul style="list-style-type: none"> <li>o) monitoring and reporting conditions in relation to appropriate soil moisture testing,</li> <li>p) appropriate rainfall triggers to prevent irrigation during high rainfall periods,</li> <li>q) annual soil monitoring reports to ensure the sustainability of the irrigation application area,</li> <li>r) monitoring of volume and quality at the discharge point to the irrigation area and establishment of water quality and volumetric limits,</li> <li>s) water quality monitoring of any nearby waterways considered at high risk to impacts from the irrigation application area to ensure that impacts are not occurring,</li> <li>t) a definition of the extent and size of the appropriate irrigation application area,</li> <li>u) surface and groundwater quality monitoring up gradient and down gradient</li> </ul>	4.6.2 Protection of the environment.

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		<p>from the irrigation application area to monitor status of surface and groundwater to ensure that irrigation of wastewater is not polluting waters,</p> <p>v) conditions to ensure that runoff to waters does not occur from the irrigation areas such as limitations on ponding to prevent any offsite mitigation waste waters, and</p> <p>w) conditions requiring no offensive odour from the premises.</p>	
5	Planning and Environment	The Department of Planning and Environment's Compliance Branch advised that Flow Systems Operations and Shepherds Bay Infrastructure Management Pty Ltd have not been subject to enforcement actions under the EP&A Act.	4.5 Capacity to carry out those activities in a manner that does not present a significant risk of harm to the environment.
		The Planning and Assessment Commission approved the Concept Plan for the Shepherds Bay development in March 2013. The City of Ryde Council (Council) is now the consent authority for each subsequent stage of the Shepherds Bay development under Part 4 of the EP&A Act. IPART may wish to confirm with Council whether the application for the construction, operation and maintenance of sewerage and recycled water infrastructure within the development area has been issued, and if so, whether the subsequent delivery of these services is compliant with the Council's consent.	3 (Consultation and submissions) and 4.6 (Public interest considerations). We have undertaken additional discussions with Ryde City Council.
		With regard to unacceptable risks and inclusion of licence conditions, no comment can be made as the Department has not been involved in the assessment or approval of the development and associated infrastructure.	Noted.
6	Minister for Lands and Water	Advised that under the <i>Water Management Act 2000</i> (WMA), water extractions from a water source must be covered by an appropriate water access licence and approval, a basic landholder right, or a relevant exemption. The taking of treated wastewater, potable water from another utility or harvesting rainwater from rooftops falls outside the definition of State's Water rights in the WMA.	4.6.2 Protection of the environment.
		Noted that a controlled activity approval may also be required if a specified controlled activity will be carried out in, on or under waterfront land. A controlled activity includes the erection of a building or carrying out of a work, the removal of material or vegetation from land, the deposition of material on land and carrying out any other activity that affects the quantity or flow of water in a water source. Waterfront land is defined as the bed of any river, lake or estuary and any land within 40 meters of the river bank, lake shore or estuary mean high water mark.	4.6.2 Protection of the environment.
7	NSW Health	NSW Health supports the updated application, provided all matters raised previously and below are addressed.	Noted. Matters raised previously, see item 1 above.

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		<p>The (licence application) amendments concern ownership and management responsibilities of the drinking water, recycled water and wastewater lines with the development site.</p> <ul style="list-style-type: none"> <li>▼ this would include a consistent approach to servicing and use of approved contractors,</li> <li>▼ these responsibilities need to be clearly documented and communicated to all parties to avoid misunderstanding about which party is accountable for monitoring, maintenance and repair works of particular sections of these lines within the development.</li> </ul> <p>NSW Health notes that it is the proponent's responsibility as the water supplier to ensure that all potential public health risks are adequately managed.</p>	<p>Flow Systems Operations has provided evidence of proposed operation and maintenance responsibilities within the development (including the developer, licence applicant and retailer) consistently with the amended application.<sup>88</sup></p>
		<p>Sydney Water noted a number of issues raised previously (item 2) have been addressed. Remaining issues are below.</p>	<p>Noted.</p>
8	Sydney Water	<p>The revised application contains some inconsistencies in the descriptions of infrastructure configuration. Sydney Water believes following statements are not correct.</p> <ul style="list-style-type: none"> <li>▼ Potable water infrastructure. 4.1.1 states that the drinking water will be sourced from Sydney Water at the boundary of the development.</li> <li>▼ Non-potable water infrastructure. 4.2.4 states there will be no permanent connections with any other infrastructure not part of the scheme, including interconnections with public utilities.</li> <li>▼ Sewerage infrastructure. Appendix 4.3.1 suggests that Flow Systems (not FSO) will be responsible for all wastewater infrastructure within the development. Sydney Water will be responsible for some wastewater mains within the development as well.</li> </ul>	<p>4.2.1. Technical capacity</p>
		<p>There is no reference to sewer mining in the main application, however appendix 4.2.1(a) refers to sewer mining arrangement. Sydney Water understands that sewer mining is something which may occur in the future.</p>	<p>4.2.1 Technical capacity</p>
		<p>Servicing strategy. Sydney Water provided an update on the water and wastewater servicing to stages 4 and 5 of the Shepherds Bay development.</p>	<p>Noted.</p>
		<p>Monopoly.</p>	<p>Addressed previously (item 2).</p>
		<p>Commercial agreement. Negotiations have now begun with FSO for a USA.</p>	<p>4.2.1 Technical capacity and 4.3 Capacity to carry out activities in a manner that does not</p>

<sup>88</sup> Email to IPART, Flow Systems Operations, 1 June 2017.

ID	Agency	Issues	Report section reference/ our response
			present a risk to public health.
		Potable water top-up.	Addressed previously (item 2).
		Capacity required in Sydney Water assets.	
		Waste streams generated.	
		Connections and metering.	
		Operator of last resort.	

**Source:**

Sydney Water Corporation, submission to IPART, 13 December 2016.

NSW Health, submission to IPART, 9 December 2016.

City of Ryde Council, submission to IPART, 30 November 2016.

Minister for the Environment, submission to IPART, 16 December 2016.

Minister for Lands and Water, submission to IPART, 6 January 2017.

Executive Director Priority Projects Assessments, Department of Planning and Environment (on behalf of the Minister for Planning), submission to IPART, 20 December 2016.

NSW Health, submission to IPART, 30 June 2017.

Sydney Water Corporation submission to IPART, 3 July 2017.

