



Independent Pricing and Regulatory Tribunal

# **Assessment of Flow Systems Operations Pty Ltd's network operator's licence application**

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

**Water — Report to the Minister**  
April 2016





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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 16\_037, see **Appendix A**) and name Flow Systems Pty Ltd (Flow Systems) as an authorised third party on the licence. The licence will authorise Flow Systems Operations to construct, operate and maintain non-potable<sup>1</sup> water and sewerage infrastructure for the Box Hill North development. The development is located in north-western Sydney in The Hills Shire Council Local Government Area.

The Box Hill North development will comprise approximately 4,100 new dwellings, a town centre, active and passive open space, a primary school and a multi-purpose community centre. The development is proposed to be developed in seven stages. The first stage of development will service 300 lots initially.

In assessing Flow Systems Operation's 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> We engaged an expert consultant to undertake a review of two environmental assessment reports and accompanying specialist studies regarding the proposed construction, operation and maintenance of water industry infrastructure for the whole development. The consultant's assessment report concluded that the environmental assessment reports adequately identified the potential risks and mitigation measures associated with the proposed activities. The proposed works do not present a significant risk of harm to the environment if mitigation measures are implemented appropriately.

In assessing Flow Systems Operations' capacity to carry out the proposed activities in a manner that does not present a significant risk of harm to the environment, we identified that the requirement of an environment protection licence, under the *Protection of the Environment Operations Act 1997* (POEO Act), has not been resolved between Flow Systems Operations and the Environmental Protection Agency (EPA). Notwithstanding this, we have assessed the environmental impacts with respect to the proposed activities and we recommend that a network operators' licence to be granted by the Minister.

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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. Flow Systems Operations seeks this licence to supply recycled 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).

In addition to assessing the application against the licensing criteria and principles of the WIC Act, we also considered whether Flow Systems Operations should be considered a monopoly supplier and subject to price regulation. We consider that the recycled water and sewerage services at the Box Hill North development are not a monopoly service. We recommend that Flow Systems Operations not be declared a monopoly supplier in relation to these services at this time.

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>3</sup>

## **2 Background**

### **2.1 The applicant and its parent organisation**

On 22 May 2015 we received an application from Flow Systems Operations for a network operator's licence for the Box Hill North development. The application is for the construction, operation and maintenance of non-potable water and sewerage infrastructure in the Box Hill North development in north-western Sydney.

Flow Systems Operations is a wholly owned subsidiary of Flow Systems, and was established specifically for the Box Hill North scheme. It has no employees and relies on the full support of Flow Systems to provide technical, financial and organisational capacity. Flow Systems is a privately owned company, held in majority ownership by Brookfield Infrastructure Partners. Flow Systems is named on the network operator's licence as an Authorised Person.

Flow Systems currently holds seven network operator's licences through its subsidiary companies. It is licensed to construct, operate, and maintain water industry infrastructure under network operator's licences granted under the WIC Act. The subsidiaries are outlined in Table 2.1 below. In addition, Flow Systems holds a retail supplier's licence (licence number 13\_001R).

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<sup>3</sup> WIC Act, section 10(2).



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

<b>Subsidiary</b>	<b>Scheme</b>	<b>Network operator's licence</b>	<b>Licensed for</b>
Pitt Town Water Pty Ltd	Pitt Town development, Pitt Town, Sydney	10_014	Non-potable water, sewage treatment
Central Park Water Pty Ltd	Central Park development, Chippendale, Sydney	12_022	Drinking water, non-potable water, sewage treatment
Discovery Point Water Pty Ltd	Discovery Point development, Wollli Creek, Sydney	13_025	Drinking water, non-potable water, sewage treatment
Wye Water Pty Ltd	Wye residential development, Wye, Lake Macquarie	14_026	Drinking water, non-potable water, sewage treatment
Huntlee Water Pty Ltd	Huntlee residential development, North Rothbury, Hunter Valley	15_030	Drinking water, non-potable water, sewage treatment
Green Square Water Pty Ltd	Green Square Town Centre, Sydney	15_031	Non-potable water
Cooranbong Water Pty Ltd	Cooranbong residential development, Cooranbong, Lake Macquarie	15_033	Drinking water, non-potable water, sewage treatment

## 2.2 The scheme

Flow Systems Operations and its parent Flow Systems has been engaged by Celestino Property Developments Pty Ltd (Celestino), the developer, to establish a local water utility for the Box Hill North development in north-western Sydney in The Hills Shire Council local government area.

Flow Systems Operations' application is for the construction, operation and maintenance of non-potable water and sewerage infrastructure that will serve a new residential development at Box Hill North. The development is to be developed in seven stages and will comprise approximately 4,100 dwellings, a town centre, active and passive open space, a primary school and a multi-purpose community centre.

In parallel, Flow Systems has submitted a retail supplier's licence variation application to service the Box Hill North development. Our assessment for the retail supplier's licence variation application is presented in a separate report.

The scheme infrastructure will be constructed in two phases:

- ▼ Phase 1 will service an initial 300 lots in an interim scheme servicing period, during which sewage discharged to Flow Systems Operations' pressure sewerage system will be collected and disposed of off-site at the Pitt Town sewage treatment plant (operated by Flow Systems' subsidiary Pitt Town Water Factory Pty Ltd<sup>4</sup>). Non-potable water reticulation will be constructed and connected to new dwellings in this phase, but will only be serviced by drinking water during this interim period. It is expected that the Phase 1 sewerage and non-potable water infrastructure will commence operation in late-2016.
- ▼ Phase 2 will involve the construction of the first stage of a Local Water Centre, to treat sewage and supply non-potable water to dwellings through the non-potable water reticulation. It is expected that the Phase 2 infrastructure will commence operation in 2018.

The Local Water Centre and sewerage and non-potable water reticulation will be augmented in later stages of development, and is dependent on lot sales.

The proposed end uses of non-potable water include toilet flushing, clothes washing, water features, irrigation and dust suppression.

Flow Systems Operations will be responsible for the construction and operation and maintenance of the Local Water Centre. The recycled water and sewerage reticulation networks will be constructed by the developer, with Flow Systems Operations assuming responsibility for their operation and maintenance when the construction of the networks reaches the practical completion stage.

Drinking water for the development will be supplied by Sydney Water. Non-potable water is proposed to be available in 2018, depending on the rate of lot sales.

Flow Systems will provide retail services at the Box Hill North for non-potable water supply and sewerage services. Customers will be both residential and commercial, with the majority being small retail customers.

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<sup>4</sup> WIC Act network operator's licence no. 10\_014.

### 3 Consultation and submissions

On 23 September 2015, 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>5</sup>

At the same time, we also provided a copy of the licence application to you as the Minister administering the WIC Act.<sup>6</sup>

We invited Sydney Water Corporation (Sydney Water) to make a submission<sup>7</sup> on the licence application.

We invited The Hills Shire Council to make a submission<sup>8</sup> as we understand that The Hills Shire Council is the Consent Authority under the EP&A Act for the development. Further, we understand that if the licence is granted, The Hills Shire Council would be the Appropriate Regulatory Authority under the POEO Act, because Flow Systems Operations has indicated that the proposed activities do not require an environment protection licence under the POEO Act.

We also called for submissions on the application from the public.<sup>9</sup> We advertised in the Sydney Morning Herald and The Daily Telegraph on 23 September 2015 for public submissions. The closing date for submissions was 21 October 2015.

We received five submissions in total, including submissions from:

- ▼ the Minister for Lands and Water<sup>10</sup> (addressed in section 4.5)
- ▼ NSW Health<sup>11</sup> (addressed in sections 4.3 and 4.6.1)
- ▼ NSW Environmental Protection Authority<sup>12</sup> (addressed in section 4.5 and 4.6.2)

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<sup>5</sup> WIC Act, section 9(1)(b) and *Water Industry Competition (General) Regulation 2008*, clause 17(1).

<sup>6</sup> WIC Act, section 9(1)(a).

<sup>7</sup> Letter to Sydney Water, IPART, 23 September 2015.

<sup>8</sup> Letter/Email to The Hills Shire Council, IPART, 23 September 2015.

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

<sup>10</sup> Letter from the Minister for Lands and Water, 19 October 2015.

<sup>11</sup> Letter from NSW Health, 3 November 2015.

<sup>12</sup> Letter from NSW Environment Protection Authority, 12 October 2015.

- ▼ Sydney Water<sup>13</sup> (addressed in section 2.2, 4.2.1, 4.2.2, 4.3, 4.5, 4.6.2 and 4.8.1), and
- ▼ The Hills Shire Council<sup>14</sup> (addressed in section 4.2.1 and 4.6.2).

These submissions are available on our website. A summary of the submissions is provided in **Appendix B**.

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

- ▼ O'Connor Marsden to inform our financial assessment (see section 4.2.2)
- ▼ NSW Insurance & Care, trading as icare self insurance (previously NSW Self Insurance Corporation), to inform our assessment of appropriate insurance arrangements (see section 4.4), and
- ▼ NSW Public Works to inform our environmental assessment (see section 4.5).

## 4 Assessment of application

This section of the report contains our assessment of Flow Systems Operations' licence application and our recommendations. Our assessment considers each of the following requirements of the WIC Act:

- ▼ A licence must not be granted to:
  - a) a disqualified corporation, or
  - b) a corporation that is a related entity of a relevant<sup>15</sup> disqualified corporation.
- ▼ A licence may not be granted unless the Minister is satisfied as to each of the following:
  - that the applicant has, and will continue to have, the capacity (including technical, financial and organisational capacity) to carry out the activities that the licence (if granted) would authorise
  - that the applicant has the capacity to carry out those activities in a manner that does not present a risk to public health
  - that the applicant has made, and will continue to maintain, appropriate arrangements with respect to insurance
  - in the case of an application for a licence to supply water, that, if such a licence is granted, sufficient quantities of the water supplied by the licensee will have been obtained otherwise than from a public water utility

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<sup>13</sup> Letter from Sydney Water Corporation, 21 October 2015.

<sup>14</sup> Letter from The Hills Shire Council, 28 October 2015.

<sup>15</sup> Where the disqualified corporation would have a direct or indirect interest in, or influence on, the carrying out of the activities that the licence would authorise if granted. WIC Act, section 10(3)(b).

- that the applicant has the capacity to carry out the activities that the licence (if granted) would authorise in a manner that does not present a significant risk of harm to the environment, and
  - such other matters as the Minister considers relevant, having regard to the public interest.<sup>16</sup>
- ▼ In considering whether or not a licence is to be granted, and what conditions are to be imposed on such a licence, regard is to be had to the following principles:
- the protection of public health, the environment, public safety and consumers generally
  - the encouragement of competition in the supply of water and the provision of sewerage services
  - the ensuring of sustainability of water resources
  - the promotion of production and use of recycled water
  - the promotion of policies set out in any prescribed water policy document
  - the potential for adverse financial implications for small retail customers generally arising from the activities proposed to be covered by the licence, and
  - the promotion of the equitable sharing among participants in the drinking water market of the costs of water industry infrastructure that significantly contributes to water security.<sup>17</sup>

#### 4.1 Disqualified corporation and related entity checks

**We consider that Flow Systems Operations is neither a disqualified corporation nor a corporation that is a related entity of a relevant<sup>18</sup> disqualified corporation.**

In making this recommendation, we have considered the following information:

- ▼ A statutory declaration signed by Flow Systems Operations' Managing Director and a Director stating that:
- neither Flow Systems Operations, nor any director or person concerned in the management of Flow Systems Operations is, or would be, a disqualified corporation or a disqualified individual within the meaning of the WIC Act, 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 would authorise if granted.

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<sup>16</sup> WIC Act, sections 10(3) and (4), and WIC Regulation, [clause 7 (for NOL)/clause 11 (for RSL)].

<sup>17</sup> WIC Act, section 7.

<sup>18</sup> A related entity that would have a direct or indirect interest in, or influence on, the carrying out of the activities that the licence authorises. WIC Act, section 10(3)(b).

- ▼ 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>19</sup> and
  - names of the Chief Financial Officer and Managing Director/Chief Executive Officer for Flow Systems Operations and each of Flow Systems Operations' relevant related entities.
- ▼ Results of ASIC and Dun & Bradstreet reports that we have obtained for Flow Systems Operations, and for the 11 relevant related entities, confirmed that these companies are not disqualified nor are their directors or persons concerned in the management disqualified individuals.<sup>20</sup>
- ▼ Results of our search of the WIC Act licence database,<sup>21</sup> confirming in part the above.

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

Flow Systems Operations has applied for a network operator's licence to authorise the construction, operation and maintenance of water industry infrastructure at the Box Hill North development. The proposed works include the construction, operation and maintenance of a recycled water treatment plant, and reticulation networks for non-potable water and sewerage services for 4,100 lots within the scheme's boundaries. An interim sewage pump out scheme is also included as part of the proposal.

We assessed Flow Systems Operations' 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.

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<sup>19</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.

<sup>20</sup> The relevant searches were completed on 15 March 2016.

<sup>21</sup> There are currently no disqualified corporations or individuals on the register pursuant to the WIC Act, sections 16(e) and 16(f).

#### 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 water industry infrastructure in the Box Hill North development.**

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 dated 23 March 2015 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>22</sup> prepared for similar projects (ie, Pitt Town, Discovery Point, Central Park, Huntlee and Cooranbong). These documents demonstrated its technical understanding of design, operation and maintenance of non-potable water and sewerage reticulation and treatment infrastructure.
- ▼ The audit reports for the licence plan audits carried out for Pitt Town, Discovery Point, Central Park, and the Pitt Town operational audit report. The audit reports do not identify any significant non-compliances, which demonstrates Flow Systems' capacity to safely and reliably design, construct, operate and maintain water industry infrastructure.
- ▼ Process flow diagrams for 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 required treatment system appropriately for each proposed scheme stage and identify key input and output streams and storages (eg, source materials and waste streams). The diagrams also indicate preliminary critical control points for recycled water quality and expected removal efficiency for each stage of the treatment for key water quality parameters (ie, virus, protozoa and bacteria for recycled water treatment) in accordance with the proposed recycled water end-uses.
- ▼ Flow Systems Operations' preliminary risk assessment for the non-potable water and sewerage services. This demonstrates Flow Systems Operations' technical capacity to identify hazards and risks related to the scheme's non-potable water and sewerage infrastructure and Flow Systems Operations' business systems, and to develop control measures to manage these risks. The residual risks are considered acceptable, and we consider the control measures identified are appropriate. Further, the preliminary risk assessment provided demonstrates technical capacity to understand and implement the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks 2006* (*Australian Guidelines for Water Recycling 2006*).

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<sup>22</sup> Flow Systems will be undertaking these activities on behalf of Flow Systems Operations.

- ▼ Proposed 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 Water Balance Report which demonstrates Flow Systems Operations' technical capacity, as supported by Flow Systems, to forecast non-potable water requirements, production and storage necessary (eg, top-up and non-potable water demand volumes) in the scheme, and key information such as future sewage production, top-up and non-potable water demands, weather conditions and system losses. The land capability assessment report recommends a rate for irrigation of excess non-potable water. The Water Balance Report includes projected volumes of excess recycled water produced and areas of land required for irrigation in future stages of the Box Hill North development.
- ▼ Flow Systems' previous technical experience (within Australia), which we assessed by reviewing schemes which are currently being operated by Flow Systems' subsidiaries, including the Pitt Town, Discovery Point and Central Park schemes. We consider Flow Systems' previous technical experience is appropriate to provide sufficient technical capacity to Flow Systems Operations.
- ▼ 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.

We received a submission from Sydney Water regarding Flow Systems Operations' technical capacity. Sydney Water considers the estimated amount of sewage generated per person is conservative and the recycled water demand figure to be ambitious and reinforced the need for the water and sewerage infrastructure be designed and constructed to Water Services Association of Australia (WSAA) standards and codes, in the event that an Operator of Last Resort situation is invoked. Flow Systems Operations have demonstrated that all water and sewerage infrastructure in the Box Hill North scheme will be designed and constructed in accordance with WSAA (Sydney Water) codes.

Sydney Water advised that it cannot provide Flow Systems Operations with a potable water connection as Flow Systems Operations does not own any property within the development at this stage. Celestino Developments Pty Ltd (Celestino) the owner of the development site, will apply to Sydney Water for a potable water connection to the Local Water Centre site and provide this supply to Flow Systems Operations in accordance with the Project Delivery Agreement between Celestino and Flow Systems Operations. Celestino, as the landowner, will be a customer of Sydney Water and Flow Systems Operations will pay the water bills as a lessee.



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

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

B1.1 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 immediately in accordance with the Network Operator's Reporting Manual.

Further, we recommend that Flow Systems Operations should be subject to the following special condition, in relation to technical capacity. If a licence is granted, this condition requires Flow Systems Operations to provide prior notification to IPART when the licensee proposes to modify any agreement in connection with the licence application, including the Deed of Guarantee and Indemnity and Corporate Services Agreement:

A1 If a party to an Agreement proposes to:

- a) terminate the Agreement;
- b) novate the Agreement;
- c) assign or transfer any of its rights or obligations under such an Agreement to any other person; or
- d) alter the Agreement in any way that materially reduces the Licensee's technical, financial or organisational capacity to carry out the activities authorised by this Licence,

the Licensee must provide IPART with written notice as soon as practicable, but no later than 3 months, before the time when the proposed action is to occur. The written notice must include details of how the service provided under the Agreement will be provided subsequent to the proposed termination, novation, assignment, transfer or alteration.

#### **4.2.2 Financial capacity**

**We are satisfied that Flow Systems Operations has the financial capacity to construct, operate and maintain water industry infrastructure in the Box Hill North development.**

As mentioned previously, Flow Systems Operations relies on the full support of Flow Systems to provide financial capacity. In making our assessment of the applicant's financial capacity we have considered the following information:

- ▼ Flow Systems' summarised profit and loss statements.
- ▼ Flow Systems' summarised balance sheets.

- ▼ Flow Systems' summarised income tax returns.
- ▼ Flow Systems' key financial ratios.
- ▼ Deed of Guarantee and Indemnity (the Deed) and the Corporate Services Agreement between Flow Systems Operations and Flow Systems.

We engaged an independent financial consultant, O'Connor Marsden (OCM) to assess the financial capacity of Flow Systems Operations and the viability of the scheme. Since Flow Systems Operations is a newly formed subsidiary of Flow Systems, we asked OCM to review both companies.

The Deed provides a financial guarantee for the subsidiary company, whilst the Corporate Services Agreement provides the contractual arrangements between parent and subsidiary regarding the provision of services necessary to complete the works. The Deed has no cap on liability and no sunset date. Flow Systems will ensure that Flow Systems Operations will perform and observe the guaranteed obligations necessary to meet any claim during the term and, if required, Flow Systems will perform or observe any guaranteed obligation or otherwise procure its performance.

We reviewed the Deed and consider that it is adequate to provide a continuing guarantee and indemnity for all liabilities incurred by Flow Systems Operations in carrying out the obligations under the scheme contract.

OCM reported that Flow Systems has a medium risk rating.<sup>23</sup> OCM's assessment found that Flow Systems Group, including Flow Systems Operations, has the financial capacity to undertake the proposed project. OCM noted that the ongoing financial capacity will be monitored through self-assessment and reporting requirements under the licence.

Regarding the financial viability of the project, OCM considered the scheme to be financially viable and have a low risk rating.<sup>24</sup> OCM recommended that IPART review the scheme's rolling cash flow projects during the life of the project as part of standard good financial governance.

OCM considers that Flow Systems Operations does not require any special licence conditions relating to financial capacity. We support the assessment made by OCM.

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<sup>23</sup> O'Connor Marsden, *Forensic Accountant's Report in the matter of Water Industry Competition Act Financial Assessment, Flow Systems Operations Pty Ltd, Box Hill North Scheme*, 11 February 2016, p 1.

<sup>24</sup> O'Connor Marsden, *Forensic Accountant's Report in the matter of Water Industry Competition Act Financial Assessment, Flow Systems Operations Pty Ltd, Box Hill North Scheme*, 11 February 2016, p 1.

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

We received one submission from Sydney Water regarding the importance of Flow Systems Operations' ability to demonstrate financial capacity, in order to reduce the likelihood and impact of a potential Last Resort event and the appointment of an Operator of Last Resort. We are satisfied that Flow Systems Operations has demonstrated financial capacity.

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

B1.1 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 immediately in accordance with the Reporting Manual.

Further, we recommend that Flow Systems Operations should be subject to the following special condition, in relation to financial capacity, if a licence is granted, this condition requires Flow Systems Operations to provide prior notification to IPART when the licensee proposes to modify any agreement in connection with the licence application, including the Deed and Corporate Services Agreement:

- A1 If a party to an Agreement proposes to:
- a) terminate the Agreement;
  - b) novate the Agreement;
  - c) assign or transfer any of its rights or obligations under such an Agreement to any other person; or
  - d) alter the Agreement in any way that materially reduces the Licensee's technical, financial or organisational capacity to carry out the activities authorised by this Licence,

the Licensee must provide IPART with written notice as soon as practicable, but no later than 3 months, before the time when the proposed action is to occur. The written notice must include details of how the service provided under the Agreement will be provided subsequent to the proposed termination, novation, assignment, transfer or alteration.

### 4.2.3 Organisational capacity

**We are satisfied that Flow Systems Operations has the organisational capacity to construct, operate and maintain water industry infrastructure in the Box Hill North development.**

Our analysis showed that, through its relationship with Flow Systems, Flow Systems Operations demonstrated its organisational capacity to construct, maintain and operate water industry infrastructure at the Box Hill North development by:

- ▼ Providing evidence of its experience in providing similar services to other schemes, including Pitt Town, Central Park and Discovery Point.
- ▼ Having an appropriate organisational structure to manage its nominated third parties to deliver the proposed work based on their contractual arrangements and agreements.
- ▼ Outlining the experience of the personnel currently in the Managing Director, Chief Operating Officer, Executive Manager Project Delivery and Executive Manager Utility Operations roles, which matched that of the role descriptions.
- ▼ Having previous experience (within Australia) in the water industry and specific personnel nominated to the project, as shown by the CVs of its key personnel provided to us in its application form.
- ▼ Having demonstrated that business risks have been identified and will be managed, through the risk assessment provided to us in its application form.

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' organisational capacity.

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.

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

B1.1 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 immediately in accordance with the Network Operator's Reporting Manual.

Further, we recommend that Flow Systems Operations should be subject to the following special condition, in relation to organisational capacity, if a licence is granted. This condition requires Flow Systems Operations to provide prior notification to IPART when the licensee proposes to modify any agreement in connection with the licence application, including the Deed and Corporate Services Agreement:

- A1 If a party to an Agreement proposes to:
- a) terminate the Agreement;
  - b) novate the Agreement;
  - c) assign or transfer any of its rights or obligations under such an Agreement to any other person; or
  - d) alter the Agreement in any way that materially reduces the Licensee's technical, financial or organisational capacity to carry out the activities authorised by this Licence,

the Licensee must provide IPART with written notice as soon as practicable, but no later than 3 months, before the time when the proposed action is to occur. The written notice must include details of how the service provided under the Agreement will be provided subsequent to the proposed termination, novation, assignment, transfer or alteration.

#### **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 has the capacity to construct, operate and maintain water industry infrastructure, in a manner that does not present a risk to public health at the Box Hill North development.**

We assessed Flow Systems Operations' capacity to manage the following key risks to public health, posed by constructing, operating and maintaining water industry infrastructure in the Box Hill North development:

- ▼ **Source water quality:** Non-potable water will be produced from sewage sourced from the Box Hill North development. Top-up water is proposed to be sourced from Sydney Water's potable water supply system. If required in the future, stormwater from the detention ponds within the development may also be used as source water, however insufficient details have been provided with respect to stormwater infrastructure. If our licence condition recommendations are accepted, Flow Systems Operations would require a licence variation to use stormwater as a secondary source (see sections 4.5 and 4.6.2). We understand that management of non-potable water would be consistent with the Australian Guidelines for Water Recycling 2006. As the retail supplier for the Flow Systems Operations development, Flow Systems has a water quality and sewerage complaints procedure that includes a 24 hour emergency number for water quality (non-potable water) and

sewerage incidents and concerns. The procedure includes notification of Flow Systems Operations as the network operator.

- ▼ **Provide non-potable water quality fit for purpose:** Flow Systems Operations has demonstrated its capacity to treat and provide non-potable water to an appropriate quality level given proposed specific uses. Flow Systems Operations will source sewage collected within the Box Hill North development and propose to top-up the system with drinking water. There is insufficient information provided in the application to assess the suitability of the proposed stormwater top-up. If our licence condition recommendations are accepted, Flow Systems Operations would require a licence variation to use stormwater as a secondary source (see sections 4.5 and 4.6.2). We consider Flow Systems Operations' proposed sewage treatment and recycled water treatment systems to be robust and consistent with the requirements of the *Australian Guidelines for Recycling Water 2006*.
- ▼ **Potential for inappropriate water use:** Flow Systems Operations will supply non-potable water to Flow Systems, which will then retail to customers at the Box Hill North development. This could present a risk to public health if customers do not use non-potable water for the appropriate purposes. Flow Systems Operations has indicated that customers will be provided with guidance on appropriate use of non-potable water by Flow Systems. We consider this is the responsibility of the retailer, and have previously reviewed Flow Systems' applications for its Pitt Town retail supplier's licence and variations to the licence for its Central Park and Discovery Point schemes. 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.
- ▼ **Potential for cross connections:** Flow Systems Operations has indicated technical controls to ensure the risks of cross connections are minimised. Such controls include lower pressure in the recycled water network relative to the drinking water distribution network, network pressure monitoring, colour coded and labelled pipes and marker tape in the recycled water distribution network. Further, 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 case of possible cross connection incidents.
- ▼ **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, sewage would be removed by tankers for small scale interruptions. For larger interruptions, there will be storage available within the flow balance tank at the Local Water Centre, duty/standby on all treatment trains and critical control points, a tankering company on emergency callout contract and skilled operators to manage the situation. It will also investigate the feasibility of a mobile treatment facility

and designing the Local Water Centre to easily plumb to it in case of emergency.

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 recycled water and sewage components of the proposed scheme, to acceptable levels of risk, and will have in place reasonable control and mitigation measures.

We received the following submissions regarding Flow Systems Operations' capacity to protect public health:

NSW Health generally supported the application to grant Flow Systems Operations' licence but identified a number of concerns.<sup>25</sup> These are presented in **Appendix B** in detail and discussed below:

- ▼ Sewage influent to the recycled water treatment plant and stormwater extracted from detention ponds to be used to top-up the non-potable water supply have not been characterised. In response to this issue, Flow Systems Operations has advised that when sewage catchments and stormwater detention ponds are established, sampling of sewage influent and stormwater quality parameters will be undertaken at the Local Water Centre (treatment plant), with out-of-specification influent being rejected.
- ▼ The risk from consumption of recycled water due to a cross connection has been inconsistently addressed in the risk assessment. In response to this issue, Flow Systems Operations has updated its risk assessment accordingly. It presented satisfactory evidence to demonstrate that the risk of consumption of non-potable water due to a cross connection has been adequately addressed and assessed.
- ▼ The risks from flooding, including impacts on the pressurised sewage pumping system, and the risk of mosquito breeding and the potential for mosquito-borne disease due to stormwater management have not been assessed. In response to this issue, Flow Systems Operations advised that any flooding within the development will not impact on the pressurised sewage system as it is a sealed system that can continue to operate under minor flood conditions. It also advised that it is not contracted to and does not propose to design, construct or maintain the stormwater infrastructure within the development and therefore does not have carriage of the impact of flooding or any resulting impact from mosquitoes. This is the responsibility of the owner, the developer, to maintain the stormwater infrastructure within the development.

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<sup>25</sup> Letter from NSW Health, 3 November 2015.

NSW Health requested that it be consulted during the detailed recycled water risk assessment, technology assessment and the development of the recycled water management plan, 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 adapts its generic Incident Notification Protocol to include contact details of all stakeholders involved in this scheme.

Our current practices will ensure NSW Health is consulted at various stages throughout the development and auditing of the licence's management plans.

Sydney Water also queried Flow Systems Operations' use of stormwater as a non-potable water source given that the nature of stormwater is highly variable in both quality and availability. We have addressed this issue above.

We consider that the information submitted by Flow Systems Operations demonstrates that it has the capacity to construct, operate and maintain water industry 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 licence conditions (see draft licence in **Appendix A**), in relation to its capacity to protect public health, if a licence is granted:

- B4 The Licensee must carry out the activities authorised by this Licence in compliance with any requirements of NSW Health that:
- a) IPART has agreed to; and
  - b) are notified from time to time to the Licensee by IPART in writing.

#### **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 Box Hill North development.**

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

- ▼ Combined Business Liability Insurance, including Public Liability, 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 industrial special risks insurance and forefront portfolio insurance.



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

As part of the review, icare self insurance examined Flow Systems Operations' proposed scope of work, the risk assessment, insurance coverage in the areas of professional indemnity, public liability and product liability, as shown in the applicant's insurance certificates. icare self insurance also reviewed the product disclosure statements for each insurance certificate, and examined the financial rating of the various underwriters providing the insurance.

At icare self insurance's request Flow Systems Operations provided specific information on the activities proposed to be undertaken, such as the containment of potential sewage spillages from the sewage reticulation network, the continued renewal and maintenance of construction liability insurance throughout the seven stages of the scheme development, long term pollution control measures and methods and risk management.

As Flow Systems Operations is responsible for the design of the water industry infrastructure, we proposed an additional licence condition, similar to previous licence application assessments, that the licensee must maintain professional indemnity insurance during the Design Phase and for a minimum period of six years from the date of completion of the Design Phase. icare self insurance agreed with the inclusion of the Design Phase condition as a standard condition.

icare self insurance found the insurances held by Flow Systems Operations to be adequate for the purposes of its network operator's licence application.<sup>26</sup>

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

We consider that the information submitted by Flow Systems Operations demonstrates that it has made, and will continue to maintain, appropriate insurance arrangements.

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

## **B2 Obtaining appropriate insurance**

B2.1 Before commencing to commercially operate the Specified Water Industry Infrastructure under this Licence, the Licensee must:

- a) obtain insurance that is appropriate for the size and nature of the activities authorised under this Licence;

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<sup>26</sup> Email to IPART, Insurance and Reinsurance Strategy Manager, SICorp, 8 February 2016.

- b) provide a copy of each certificate of currency of the insurance obtained to IPART; and
- c) demonstrate that the insurance obtained is appropriate for the size and nature of the activities authorised under this Licence by providing a report to IPART from an Insurance Expert that:
  - i) certifies that in the Insurance Expert's opinion, the type and level of the insurance obtained by the Licensee is appropriate for the size and nature of the activities authorised under the Licence; and
  - ii) is in the form prescribed by the Reporting Manual.

### **B3 Maintaining appropriate insurance**

B3.1 The Licensee must maintain insurance that is appropriate for the size and nature of the activities authorised under this Licence.

B3.2 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.

B3.3 If there is, or is to be, a change in:

- a) the insurer or underwriting panel in respect of an insurance policy held by the Licensee; or
- b) the type, scope or limit on the amount of insurance held by the Licensee,

in relation to the activities authorised under this Licence, the Licensee must provide a report to IPART in accordance with the Reporting Manual.

B3.4 From time to time when requested in writing by IPART, the Licensee must provide a report to IPART, in the manner, form and time specified by IPART, from an Insurance Expert certifying that in the Insurance Expert's opinion the type, scope or limit on the amount of the insurance held by the Licensee is appropriate for the size and nature of the activities authorised under this Licence.

*[Note: The circumstances in which IPART may request a report under clause B3.4 include (but are not limited to) the following:*

- *where IPART has reason to believe 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 authorised under this Licence;*
- *where there is a change in the type or extent of activities authorised under this Licence; or*
- *where IPART or an approved auditor has reason to believe 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 authorised under this Licence.]*

B3.5 The Licensee must maintain professional indemnity insurance during the Design Phase and for a minimum period of 6 years from the date of the completion of the Design Phase.

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

**Notwithstanding the absence of EPL for the proposed activities, we are satisfied that Flow Systems Operations has the capacity to construct, operate and maintain water industry infrastructure to service the Box Hill North development, 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 water industry infrastructure, we have considered Flow Systems Operations':

- ▼ **Capacity to comply with environmental regulations on existing schemes:** The EPA, in its submission, confirmed that Flow Systems Operations did not hold an Environmental Protection Licence. It has no record that Flow Systems Operations, Flow Systems and Celestino (formerly EJC) have breached the POEO Act.<sup>27</sup>
- ▼ **Understanding of environmental regulations in NSW:** Flow Systems Operations has demonstrated understanding of regulatory approval requirements, as confirmed by our own assessment.
  - It has a commercial agreement with the developer which identified the roles and responsibilities of obtaining relevant approvals, including environmental approvals and the preparation of environmental assessment reports.
  - The developer obtained consent<sup>28</sup> for the Masterplan Box Hill North from the Joint Regional Planning Panel (Sydney West Region) under Part 4 of the EP&A Act. The Masterplan included specific strategies for the precinct including flooding, ecology, contamination, Aboriginal heritage, landscaping and open space. The conditions of consent required the developer to carry out the development in accordance with the approved plans and design guidelines. The consent conditions also include compliance with the requirements of the NSW Office of Environment and Heritage under the *Threatened Species Conservation Act 1995*. The Masterplan consent does not include construction of the proposed works. Construction works will be subject to further development applications where appropriate.

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<sup>27</sup> Letter from the Environment Protection Authority, 14 October 2015.

<sup>28</sup> Letter to the developer, Mr M Scard, The Hills Shire Council, Reference no. 1397/2015/JP, 11 February 2016.

- The developer has submitted development applications<sup>29</sup> for bulk earthworks in the early stages of the Box Hill North development area. These development applications are the first steps to allow any construction in the area, including water industry infrastructure. These development applications are at various stages of approval by the local council.
- Flow Systems Operations demonstrated understanding of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP). It has submitted a planning proposal to rezone<sup>30</sup> the land for the treatment plant site on Red Gables Road from R3 Medium Density Residential to SP2 Infrastructure.. When approved, the development of a water recycling facility will be permitted without consent by any person licensed under the WIC Act, on land in a prescribed zone<sup>31</sup>. Flow Systems Operations anticipates that the subdivision registration will occur in March 2017.
- Flow Systems Operations demonstrated ability to interpret and support its position on scheduled activities<sup>32</sup> under the *Protection of the Environment* POEO Act. It has interpreted that an environmental protection licence is not required because the recycled water treatment plant will not produce a waste or by-product that will be applied to land or water. It considered recycled water as a marketable product used for beneficial reuse, not a waste. However, during stakeholder consultation, the EPA noted that:

... the reticulation and treatment of sewage has the potential to impact on the environment; untreated discharge from both the reticulation system and the sewage treatment plant – and the associated nutrients and pollutants being released overland and into waterways – may result in environmental harm. In recognition of the potential risk associated with larger sewage reticulation systems and treatment plants, larger scale sewage treatment plants require an environment protection licence under the POEO Act.<sup>33</sup>

We consider the requirement of an environment protection licence a matter to be addressed by Flow Systems Operations and the EPA. Notwithstanding that the requirement for an environment protection licence is yet to be resolved, we have assessed the environmental impacts with respect to the proposed construction, operation and maintenance of the water industry infrastructure, and considered that the activities will not cause significant risk of harm to the environment with appropriate implementation of mitigation measures. We therefore recommend that a network operator’s licence to be granted to Flow Systems Operations by the Minister. See section 4.6.2 for our assessment on the protection of the environment.

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<sup>29</sup> DA 1633/2015/ZB for Bulk Earthworks and creek rehabilitation (Precinct A); DA 297/2016/ZB for Bulk Earthworks and creek rehabilitation (Precinct H).

<sup>30</sup> Application Number 3/2016/PLP.

<sup>31</sup> *State Environmental Planning Policy (Infrastructure) 2007*, Division 18.

<sup>32</sup> *Protection of the Environment Operations Act 1997*, schedule 1 clause 36.

<sup>33</sup> Letter from the Environmental Protection Authority, 14 October 2015.

- Flow Systems Operations also demonstrated understanding of the requirement to obtain a water access licence and/or a water supply works approval under *Water Management Act 2000* (NSW). In its application, the regulatory approval requirement described is consistent with Department of Primary Industries – Water’s response<sup>34</sup> submitted during stakeholder consultation. It is possible to capture up to 10% of runoff from a property without the need for a water access licence or approval. Stormwater has been identified as a potential secondary source for water recycling in the licence application. Insufficient details have been provided with respect to stormwater infrastructure. If our licence condition recommendations are accepted, Flow Systems Operations would require a licence variation to use stormwater as a secondary source (see section 4.6.2 for our assessment on the protection of the environment).
- ▼ **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 site-specific environmental risk and impact assessments. It engaged a consultant to prepare Review of Environmental Factors (REFs) for the proposed recycled water treatment plant and the proposed reticulation systems for both sewage and recycled water. The REFs were supported by specialist studies to determine the environmental impacts and mitigation measures. Flow Systems has previous experience in preparing environmental assessment and mitigation measures in recent network operator’s licence applications including Huntlee, North Cooranbong and Green Square.

We have also assessed the following reports submitted by Flow Systems Operations:

- ▼ Review of Environmental Factors for the construction, operation and maintenance of the proposed local water centre and the sewage and recycled water reticulation systems at the Box Hill North development. These reports were supported by specialist studies in areas such as noise, odour, Aboriginal heritage, salinity, flora & fauna, and contamination.
- ▼ Land Capability Assessment for the recycled water management scheme at Box Hill North. This report considered the site and soil characteristics to assess the suitability of surface irrigation throughout the site.
- ▼ Staging Assessment for Recycled Water Management Scheme prepared for the Box Hill North development to assess the site’s capacity to sustainably accommodate recycled water that is not reused by residential developments once the proposed recycled water treatment plant is commissioned and operational.

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<sup>34</sup> Letter from the Minister for Lands and Water, 19 October 2015.

- ▼ Water Balance Report analysed water demands (drinking and non-potable), water production (recycled water is sourced from treated sewage in this case), monthly variation of recycled water system performance, necessary storage and management of excess recycled water.

We present our assessment of the above reports in Section 4.6.2 of this report.

We consider that the information submitted by Flow Systems Operations demonstrates that it has the capacity to carry out construction, operation and maintenance of water industry infrastructure, in a manner that does not present a significant risk of harm to the environment.

We consider that Flow Systems Operations should not be subject to any licence conditions in relation to its capacity to not present a significant risk of harm to the environment, if a licence is granted.

## **4.6 Licensing principles**

We have had regard to each of following licensing principles in making a recommendation 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 water industry infrastructure in a manner that does not present a risk to public health. As outlined in section 4.3 of this report, 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/required under the EP&A Act for the construction, operation and maintenance of water industry infrastructure to service the Box Hill North development. The EP&A Act is the central legislation that controls planning and development in NSW.

We understand that only some of the activities to be licensed have obtained, and some activities will require approval under the EP&A Act:

- ▼ Consent was granted for the overall Masterplan for the Box Hill North development area by the Joint Regional Planning Panel (Sydney West Region) under Part 4 of the EP&A Act.<sup>35</sup> The consent included specific strategies for the precinct, but not the actual construction of the proposed water industry infrastructure works. Construction works will be subject to further development applications where appropriate.
- ▼ Consent was granted for the subdivision of the existing lot (Lot 10 DP 593517) to create two residual lots by The Hills Shire Council under Part 4 of the EP&A Act.<sup>36</sup> This property is where the Local Water Centre (the recycled water treatment plant) is proposed on Red Gables Road. The subdivision was supported by a Statement of Environmental Effects, which provided an assessment of the subdivision, earthworks and dam relocation at the property, to allow for future development of a Local Water Centre. The consent covered conditions that would be relevant to the construction of water industry infrastructure, such as potential land contamination, dam dewatering, retention of trees, sediment and erosion control plan and dust control.
- ▼ Consents are yet to be granted for bulk earthwork development applications by The Hills Shire Council under Part 4 of the EP&A Act, for the early stages of the Box Hill North development.<sup>37</sup> The early stages of development are on the southern side of Box Hill North, close to Old Pitt Town Road. Further development applications for subdivision of existing lots in these early stages were progressively submitted to the Council for assessment.
- ▼ Consent would not be required for the development of sewage and recycled water reticulation systems in Box Hill North once Flow Systems Operations obtained a network operator's licence, if approved by the Minister.<sup>38</sup> This would include the interim sewage collection and tankering arrangement.
- ▼ Consent would not be required for the development of the Local Water Centre, a water recycling facility, once Flow Systems Operations obtained approval from the Department of Planning and Environment to rezone<sup>39</sup> the site to SP2 Infrastructure (a prescribed zone), and once Flow Systems Operations obtained a network operator's licence, if approved by the Minister.<sup>40</sup>

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<sup>35</sup> Letter to the developer, Mr M Scard, The Hills Shire Council, Reference no. 1397/2015/JP, 11 February 2016.

<sup>36</sup> The Hills Shire Council, Notice of Determination, DA 1634/2015/ZB, 18 November 2015.

<sup>37</sup> Application Number 1633/2015/ZB for Precinct A Bulk Earthworks, 297/2016/ZB for Precinct H Bulk Earthworks. Progress checked on 14 March 2016.

<sup>38</sup> *State Environmental Planning Policy (Infrastructure) 2007*, Division 18.

<sup>39</sup> Application Number 3/2016/PLP.

<sup>40</sup> *State Environmental Planning Policy (Infrastructure) 2007*, Division 18.

The Hills Shire Council maintains an online enquiry system for its applications. The status of these applications is displayed online with supporting information available for viewing.<sup>41</sup>

In having regard to protection of the environment, we also considered the following information:

- ▼ **Flow Systems Operations' Review of Environmental Factors (REF) for the Proposed Local Water Centre at Box Hill North Precinct<sup>42</sup>:** This report assessed the environmental impacts of the construction, operation and maintenance of the proposed recycled water treatment plant on Red Gables Road. The REF concluded that the proposal, with mitigation measures, is unlikely to cause significant harm to the environment.
- ▼ **Flow Systems Operations' REF for the Proposed Sewage and Recycled Water Reticulation Systems at Box Hill North Precinct<sup>43</sup>:** This report assessed the environmental impacts of the construction, operation and maintenance of the proposed sewage and recycled water reticulation networks, including the use of recycled water for irrigation, throughout the Box Hill North development area. The REF concluded that the proposal, with mitigation measures, is unlikely to cause significant harm to the environment.
- ▼ **Consultant's review of the Box Hill REFs<sup>44</sup>:** We engaged a consultant to review the two REFs provided by Flow Systems Operations. We required a thorough environmental assessment to be undertaken because some of the proposed activities could be carried out without consent under ISEPP, once Flow Systems Operations obtained a WIC Act licence, if approved by the Minister. The REFs have been amended following comments from the consultant during the review and resubmitted for assessment. The consultant's report on the amended REFs is provided in **Attachment C**. The report concluded that:
  - The REFs have examined and taken into account to the fullest extent possible all matters likely to affect the environment by reason of the activity and established that the activity is not likely to significantly affect the environment.
  - The assessments considered the potential impacts of the activity on those factors listed under section 111(2), (3) and (4) of the EP&A Act including impacts to critical habitat conservation agreements and plans of management under the *National Parks and Wildlife Act 1974* (NPW Act), joint management agreements and biobanking agreements under the *Threatened*

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<sup>41</sup> <https://epathway.thehills.nsw.gov.au/ePathway/Production/Web/default.aspx>

<sup>42</sup> RPS, *REF for Proposed Local Water Centre Box Hill North Precinct, New South Wales, Version 4*, March 2016.

<sup>43</sup> RPS, *REF for Proposed Sewage and Recycled Water Reticulation Systems, Box Hill North Precinct, New South Wales, Version 7*, March 2016.

<sup>44</sup> NSW Public Works, *Box Hill North Local Water Centre, Sewage and Recycled Water Reticulation System, REF reviews, Final Report* (No. DC 16036), April 2016.



*Species Conservation Act 1995 (TSC Act) and wilderness areas under the Wilderness Act 1987.*

- The proposal described in the REFs will not affect declared critical habitat. The activity described in the REFs will not significantly affect threatened species, populations or ecological communities or their habitats as defined by the TSC Act pursuant to section 5A of the EP&A Act.
  - The assessments have also addressed the potential impacts on the activity on matters of national environmental significance and any impacts on Commonwealth land and concluded that there will be no significant impacts.
  - The REFs are considered to be of adequate quality and meet all relevant legislative and technical assessment requirements.
- ▼ **Flow Systems Operations' risks register:** As part of the risk assessment, it identified environmental related risks and specific control and mitigation measures for the construction, operation and maintenance of the water industry infrastructure required to service the development from catchment to customers. In particular, breakage or blockage of sewage collection system and recycled water mains were identified to cause potential contamination to the local environment and downstream water. Proposed controls included pressure monitoring of the network for early alert of leaks, engaging a pre-qualified licensed contractor responsible for maintenance, incident response plan, customer updates via SMS and up to date registration of drawings on Dial Before You Dig database. Flow Systems Operations considered the residual risks acceptable for the proposed scheme. We will audit the adequacy of these controls as captured in the licence plans prior to Flow Systems Operations commencing commercial operation of the scheme.
- ▼ **Land Capability Assessment:** The report considered the site and soil characteristics to assess the suitability of surface irrigation throughout the site. Flow Systems Operations proposes to use the excess recycled water to irrigate the undeveloped land associated with later development stages, in recycled water irrigation zones. The report recommended a design irrigation rate of 2mm/day for all recycled water irrigation zones. The report concluded that surface irrigation is generally appropriate on identified land throughout the Box Hill North development site, provided all identified control measures are implemented prior to the commencement of operation of the irrigation scheme.

- ▼ **Staging Assessment for recycled water management scheme:** This report assessed the Box Hill North development site's capacity to use excess recycled water in a sustainable manner once the proposed recycled water treatment is commissioned and operational. Any excess water is proposed to be irrigated on managed pasture in the land set aside for the subsequent development stages of the subdivision. The Land Capability Assessment was an input to this study. The assessment demonstrated that hydraulic load is the limiting factor across the site. The Box Hill development is proposed to be developed in seven stages. The modelling results predicted that excess recycled water could be used for irrigation up to, and including, the completion of Stage 5. A plan to identify reuse options of the excess recycled water will be required prior to the commencement of Stage 6. This is considered a conservative estimate. With soil moisture monitoring to control irrigation and monitoring of actual recycled water usage and production, a plan to identify reuse options of the excess recycled water may be delayed to the commencement of Stage 7. The plan may include acquiring additional area for irrigation and off-site customers to use up the excess recycled water, which could be assessed in future licence variations. An Environment Protection Licence to allow discharge to local waterways could also be an alternative.
- ▼ **Water balance report:** This report analysed the water demands (drinking and non-potable), water production (from sewage), monthly variation of recycled water system performance and storage necessary (eg, top-up and non-potable water demand volumes). It included projected volumes of excess recycled water produced and areas of land required for irrigation in each stage of the Box Hill North development. It identified that at the full build out of the development, approximately 700 kL/day (in winter) of recycled water will be in excess of that which could be used for irrigation. The report suggested that approximately 56 ha of additional land will be required to fully utilise the excess recycled water at the completion of the development in 2032. By 2029, the development area would run out of new lot area for irrigation of excess recycled water. Approximately 3,500 dwellings would have been developed, with 600 more dwellings to be constructed at Box Hill North. Off-site reuse options would be required to use up the excess recycled water. The report did not provide a clear conclusion for the sensitivity analysis undertaken for wet years versus dry years, and for different water efficiency settings of water fixtures and appliances. The plan may include acquiring additional area for irrigation and off-site customers to use up the excess recycled water, which could be assessed in future licence variations. An Environment Protection Licence to allow discharge to local waterways could also be an alternative.

- ▼ **Notice of determinations:** Consent was granted, with conditions, to the developer for the overall Masterplan for Box Hill North and for the subdivision and earthwork at the Local Water Centre under Part 4 of the EP&A Act. Since the Box Hill North development would have potential to impact on threatened species without mitigation, Office of Environment and Heritage was consulted and provided requirements as part of the notice of determination under the *Threatened Species Conservation Act 1995*. A biodiversity offset strategy is required to balance the removal of vegetation and conservation outcome.
- ▼ **Submission made by the EPA in relation to the protection of the environment:** The EPA has advised that if the treated effluent from the recycled water treatment plant is being discharged to land or waters, and EPL from the EPA would be required under the POEO Act. Flow Systems Operations in its licence application stated that it intended to use all of the recycled water produced. The plan may include acquiring additional area for irrigation and off-site customers to use up the excess recycled water, which could be assessed in future licence variations. An Environment Protection Licence to allow discharge to local waterways could also be an alternative. It does not anticipate that it will need to discharge any recycled water (ie, treated effluent) to land or waters. However, if all the proposed long term options for use of recycled water are exhausted and there still remains excess recycled water, an environment protection licence will be sought.
- ▼ **Submission made by The Hills Shire Council in relation to the protection of the environment:** The council advised that the proposed recycled water treatment plant and network would need an EPL from the EPA. Therefore, the council would not be the appropriate regulatory authority. We consider the requirement of an environment protection licence an important matter to be addressed by Flow Systems Operations and the EPA. The council also raised concerns regarding potential noise and odour from the operation of a treatment facility located close to residential areas. These issues were sufficiently addressed in the REF for the Proposed Local Water Centre at Box Hill North Precinct. Mitigations such as lining of walls of buildings that house the plant and equipment with glass wool insulation or polyester or air gap are proposed. The odour assessment, based on measurements from the Pitt Town recycled water treatment plant where applicable, and local conditions, indicated that the odour concentration at sensitive receivers outside the plant boundary should be within the NSW EPA odour assessment criterion.

In having regard to protection of the environment, we recommend that the following activities authorised by the licence (if granted) should be described in a specific manner in the licence scope (see draft licence in **Appendix A**), that is held to the submitted REFs:

- ▼ S1 Activities authorised – non-potable water.
- ▼ S3 Activities authorised – sewerage services.

The REFs did not consider stormwater as a secondary source in the assessment of environmental impact. As the proposed conditions in the network operator's licence require that Flow Systems Operations carry out activities substantially consistent with the water industry infrastructure described in the REFs, a licence variation is required if stormwater is to be used as a secondary source in the future.

We also recommend that Flow Systems Operations should be subject to the following licence conditions (see draft licence in Attachment A), in relation to protection of the environment, if a licence is granted:

A2 The Licensee is to implement environmental mitigation measures substantially consistent with the environmental risk mitigation measures identified in the Water Centre REF and the Systems REF in carrying out any activities authorised under:

- a) clause A1 of this Licence; and
- b) clause A3 of this Licence.

A3 The Licensee must not commence, or authorise the commencement of, construction of any water industry infrastructure which is:

- a) described in Clause A1.1 and Table 1.2(1); and
- b) located in the area specified in Table 1.4(1),

(Relevant Recycling Infrastructure),

until after the Licensee has provided a Construction Environmental Management Plan (CEMP), and IPART has provided written approval of the CEMP to the Licensee.

A4 In addition to any requirements imposed by or under the Act or the Regulation, the Licensee must not commence commercial operation of, or authorise commercial operation of, the Relevant Recycling Infrastructure until the Licensee has provided:

- a) a report addressing how the environmental mitigation measures identified in the CEMP have been implemented during the design and construction of the Relevant Recycling Infrastructure (Report); and
- b) an Operational Environmental Management Plan (OEMP),

to IPART, and IPART has provided written approval of the Report and the OEMP to the Licensee.

A5 The Licensee must operate and maintain the Relevant Recycling Infrastructure consistently with the OEMP.

A6 If the Licensee proposes to vary its environmental mitigation measures referred to in clause A2, it must first notify IPART in accordance with the Reporting Manual. The Licensee must not vary its environmental mitigation measures without the prior written approval of IPART.

#### **4.6.3 Protection of public safety**

We have had regard to the protection of public safety through our assessment of Flow Systems Operations' technical capacity to construct, operate and maintain water industry infrastructure. As outlined in section 4.2.1 of this report, we assessed Flow Systems Operations' capacity to manage key risks to public safety by the activities to be licensed.

As part of our assessment (outlined in section 4.6.2), we considered environmental assessment reports provided by Flow Systems Operations, which included specific control and mitigation measures to protect the public safety during different stages of the proposed scheme. Further, we considered Flow Systems Operations' risk assessment and proposed control and mitigation measures for the non-potable water and sewage services proposed. We will audit the adequacy of these controls prior to Flow Systems Operations commencing commercial operation of the scheme.

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 the assessment of Flow Systems Operations' technical capacity to construct water industry infrastructure as described in this report. As outlined in section 4.2.1 of this report, we assessed Flow Systems Operations' capacity to protect consumers through the expertise supplied by Flow Systems, the parent company of Flow Systems Operations, who have the technical experience constructing, operating and maintaining similar schemes.

We consider that Flow Systems Operations has the technical, financial and organisational capacity and relevant specific experience to undertake the activities to be licensed in a way that will satisfactorily manage risks and afford protection to consumers. While there are no Operator of Last Resort provisions in place, and no requirement to have them, all scheme infrastructure will be substantially based on and be consistent with design standards adopted by Sydney Water. Additionally, drinking water will be used as non-potable water top-up if required.

If the Minister approves this licence variation, we consider that consumers generally will continue to be protected in relation to the activities licensed.

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

Historically, Sydney Water has provided monopoly sewerage services in the Sydney region. Sydney Water also supplies non-potable water to residents of the north-western region of Sydney in Rouse Hill, near the Box Hill North development. This licence would enable a new entity to supply recycled water and provide sewerage services to the Box Hill North development, thus encouraging competition in the provision of these services. Ensuring sustainability of water resources

Flow Systems Operations will supply non-potable water to Flow Systems who in turn will supply customers at the Box Hill North Development. 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, cold water clothes washing, irrigation, water features and dust suppression, contributing to the sustainability of water resources from where the drinking water is sourced.

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

Flow Systems Operations will provide non-potable water, including recycled water, to Flow Systems who will supply customers at the Box Hill North development. Through its website and other marketing material, Flow Systems Operations has also committed to promoting the use of non-potable water in the community.

#### **4.6.7 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 *Water Industry Competition (General) Regulation 2008*. The MWP outlines strategies to secure greater Sydney's water supply now and in the future.

The increased water recycling is consistent with the key initiatives of the MWP, including in relation to water recycling, water efficiency and innovation.<sup>45</sup>

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<sup>45</sup> NSW Office of Water, *2010 Metropolitan Water Plan*, August 2010, p 27.

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

This principle applies to retail supplier's licence applications. It has been considered in our assessment of Flow Systems' application to vary its retail supplier's licence to include the Box Hill North development.

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

Flow Systems Operations, through the developer, will purchase drinking water from Sydney Water at the regulated price. This price takes into account the cost of infrastructure that significantly contributes to water security.

#### **4.7 Public interest considerations**

We did not identify any additional matters with regard to the public interest in relation to Flow Systems Operations' capacity to construct, operate and maintain water industry infrastructure to service the Box Hill North development.

We consider that Flow Systems Operations should not be subject to any licence conditions in relation to public interest, if a licence is granted.

#### **4.8 Additional matters considered**

In addition to assessing the application against the licensing criteria and principles of the WIC Act, we also considered whether the applicant's services should be subject to price regulation, at this time.

##### **4.8.1 Monopoly supply and price regulation**

**We recommend that the Minister does not declare Flow Systems Operations to be a monopoly supplier in relation to the construction, operation and maintenance of water industry infrastructure at the Box Hill North development.**

**Should the Minister declare any monopoly services at Box Hill North, we recommend that the Minister does not refer these services to IPART for a determination of pricing or a periodic review of pricing policies at this time.**

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 to a specified class of customers.<sup>46</sup>

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<sup>46</sup> WIC Act, section 51.

The Minister can declare a monopoly supplier at any time. This declaration does not have to link to the grant or variation of a licence or a change in licence conditions. If the Minister declares a monopoly supplier, the Minister may then refer the monopoly services to IPART for price regulation.<sup>47</sup>

A monopoly declaration may only be made in relation to a service, if the Minister is satisfied that it is a service:

- ▼ for which there are no other suppliers to provide competition in the part of the market concerned
- ▼ for which there is no contestable market by potential suppliers in the short term in that part of the market, and
- ▼ in the case of a water supply service for recycled water, that connection of land to that service is required by or under some other Act.<sup>48</sup>

We have considered the market for each of the services within the Box Hill North development (the specified area) for all classes of customer. We have also considered Sydney Water's submission, where it considered Flow Systems Operations to be a monopoly supplier of services as the individual customers will not be able to choose to receive sewerage or recycled water services from Sydney Water because the developer has already chosen the service provider. Flow Systems Operations will construct, operate and maintain water industry infrastructure to supply non-potable water and sewerage services.

The development is fully enveloped by the Sydney Water area of operations and there are two Sydney Water's sewage treatment plants within a 5km radius of the Box Hill North development area. We note that the Box Hill North development is located outside of the wastewater catchment areas of those two existing treatment plants. The nearest Sydney Water sewer main will be over 1km away from the nearest property as noted in Sydney Water's submission. We judge that the development area is contestable, and therefore not a monopoly. In the event of persistent pricing above the competitive price, we judge that Sydney Water would be able to win substantial market share with relatively small capital outlay to connect to its sewer main. The commercial attractiveness of this entry proposition would be enhanced by the following facts. The North West Growth Centre is located on the southern side of the Box Hill North development, on the other side of the Old Pitt Town Road. The Growth Centre will add around 62,000 dwellings in the area in the next 25 to 30 years.<sup>49</sup>

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<sup>47</sup> Determination of the pricing and/or periodic review of the pricing policies. WIC Act, section 52(1).

<sup>48</sup> WIC Act, section 51(2).

<sup>49</sup> North West Growth Centre Structure Plan – Explanatory Notes, at [http://growthcentres.planning.nsw.gov.au/Portals/0/docs/Growth%20Centres%20maps/NW\\_Structure\\_Plan\\_Explanatory\\_Notes.pdf](http://growthcentres.planning.nsw.gov.au/Portals/0/docs/Growth%20Centres%20maps/NW_Structure_Plan_Explanatory_Notes.pdf), accessed on 23 March 2016.



For the supply of non-potable water, the connection of land to that service was the choice of the developer, and is not required by or under some other Act. We consider that the growth in this area is significant enough that the threat of entry by Sydney Water is real. This implies that contestability continues to apply and therefore these are not monopoly services.

We note that, in its application, Flow Systems Operations has indicated that it has a price parity policy with the local incumbent water authority. Non-potable water and sewerage charges (by Flow Systems) are in line with the local water authority, which is Sydney Water in this area. Flow Systems Operations also indicated that the non-potable water price will be less than the incumbent's drinking water price. We also consider the pricing of services at the Box Hill North development in our assessment of the Flow Systems' application to vary its retail supplier's licence to include the Box Hill North development.

Should the Minister declare any monopoly services, we recommend that the Minister does not refer these monopoly services to IPART for price regulation, at this time.

## 5 Recommendations

**We recommend that the Minister:**

- ▼ **grants a network operator's licence to Flow Systems Operations, subject to the conditions as set out in the attached draft licence (licence number 16\_037, and**
- ▼ **does not declare Flow Systems Operations to be a monopoly supplier in relation to the supply of non-potable water and sewerage services to the Box Hill North development.**

**Should the Minister declare any monopoly services at the Box Hill North development, we recommend that the Minister does not refer these services to IPART for a determination of pricing or a periodic review of pricing policies, at this time.**

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>50</sup>

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<sup>50</sup> WIC Act, section 10(2).

The Minister is required to provide us with a notice of the decision and the reasons for the decision on whether or not to grant the licence<sup>51</sup>. We will then make the information in the notice available to the public on our website, in accordance with the requirements of the WIC Act.<sup>52</sup>

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<sup>51</sup> WIC Act, section 10(5).

<sup>52</sup> WIC Act, section 10(6).



## **Appendices**



## **A Draft licence**





**NEW SOUTH WALES  
GOVERNMENT**

*WATER INDUSTRY COMPETITION ACT 2006  
(NSW)*

**NETWORK OPERATOR'S LICENCE**  
**Licence no. 16\_037**

**Flow Systems Operations Pty Ltd**

**(ACN 603 106 305)**

## LICENCE SCOPE

### ACTIVITIES AUTHORISED UNDER THE LICENCE AND AREA OF OPERATIONS

#### S1 Activities authorised - non-potable water

S1.1 This Licence authorises the Licensee and any authorised persons specified in Table 1.1 to construct, maintain and operate the water industry infrastructure which is specified in Table 1.2, and is substantially consistent with water industry infrastructure described in the Water Centre REF or the Systems REF, as applicable:

- a) for one or more of the authorised purposes specified in Table 1.3; and
- b) within the area of operations specified in Table 1.4, subject to the conditions imposed by or under the Act, the Regulation and Schedules A and B of this Licence.

#### **Table 1.1 Authorised persons**

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Flow Systems Pty Ltd (ACN 136 272 298)

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#### **Table 1.2 Water industry infrastructure**

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- 1) A treatment plant for non-potable water and other water infrastructure used, or to be used, in connection with the treatment plant, where components of the treatment plant or other water infrastructure may also be used for one or more of the following:
  - a) production of non-potable water;
  - b) treatment of non-potable water;
  - c) filtration of non-potable water;
  - d) storage of non-potable water; and
  - e) conveyance of non-potable water.
- 2) A reticulation network for non-potable water and other water infrastructure used, or to be used, in connection with the reticulation network, where components of the reticulation network or other water infrastructure may also be used for one or more of the following:
  - a) storage of non-potable water;
  - b) conveyance of non-potable water; and
  - c) treatment of non-potable water.

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#### **Table 1.3 Authorised purposes**

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Toilet flushing, clothes washing, water features, irrigation and dust suppression.

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**Table 1.4 Area of operations**

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- 1) South-eastern corner of Lot 10 of DP 593517 on Red Gables Road, Box Hill North, identified as proposed Lot 1 on the map at Attachment A to this Licence.
- 2) Land situated under the following folio identifiers:

<b>Lot</b>	<b>DP</b>
1	253552
2	253552
3	253552
4	253552
15	255616
16	255616
17	255616
18	255616
21	255616
22	255616
23	255616
24	255616
25	255616
26	255616
27	255616
28	255616
29	255616
30	255616
31	255616
40	255616
41	255616
43	255616
44	255616
45	255616
46	255616
47	255616
10	593517
9	593517
1	207750
1	11126
2	11126
3	11126
4A & 4B	135304
5	658286
1	564211
1	567785
1	782360
Part 1 of 1	329953
7	39157

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## **S2 Activities authorised – drinking water**

*[Not applicable]*

### **Table 2.1 Authorised persons**

*[Not applicable]*

### **Table 2.2 Water industry infrastructure**

*[Not applicable]*

### **Table 2.3 Authorised purposes**

*[Not applicable]*

### **Table 2.4 Area of operations**

*[Not applicable]*

## **S3 Activities authorised – sewerage services**

S3.1 This Licence authorises the Licensee and any authorised persons specified in Table 3.1 to construct, maintain and operate the water industry infrastructure which is specified in Table 3.2, and is substantially consistent with water industry infrastructure described in the Water Centre REF or the Systems REF, as applicable:

- a) for one or more of the authorised purposes specified in Table 3.3; and
- b) within the area of operations specified in Table 3.4, subject to the conditions imposed by or under the Act, the Regulation and Schedules A and B of this Licence.

### **Table 3.1 Authorised persons**

Flow Systems Pty Ltd (ACN 136 272 298)

### **Table 3.2 Water industry infrastructure**

- 1) A treatment plant for sewage and other sewerage infrastructure used, or to be used, in connection with the treatment plant, where components of the treatment plant or other sewerage infrastructure may also be used for one or more of the following:
  - a) production of treated non-potable water from sewage;
  - b) treatment of sewage;
  - c) filtration of sewage;
  - d) storage of sewage; and
  - e) conveyance of sewage.
- 2) A reticulation network for sewage and other sewerage infrastructure used, or to be used, in connection with the reticulation network, where components of the reticulation network or other water infrastructure may also be used for one or more of the following:
  - a) storage of sewage; and
  - b) conveyance of sewage.

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**Table 3.3 Authorised purposes**

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Sewage collection, sewage transport, sewage treatment, sludge/waste disposal to off-site sewage treatment plant.

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**Table 3.4 Area of operations**

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- 1) South-eastern corner of Lot 10 of DP 593517 on Red Gables Road, Box Hill North, identified as proposed Lot 1 on the map at Attachment A to this Licence.
- 2) Land situated under the following folio identifiers:

<b>Lot</b>	<b>DP</b>
1	253552
2	253552
3	253552
4	253552
15	255616
16	255616
17	255616
18	255616
21	255616
22	255616
23	255616
24	255616
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30	255616
31	255616
40	255616
41	255616
43	255616
44	255616
45	255616
46	255616
47	255616
10	593517
9	593517
1	207750
1	11126
2	11126
3	11126
4A & 4B	135304
5	658286
1	564211
1	567785
1	782360
Part 1 of 1	329953
7	39157

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## SCHEDULE A – SPECIAL MINISTERIALLY-IMPOSED LICENCE CONDITIONS FOR FLOW SYSTEMS OPERATIONS PTY LTD'S NETWORK OPERATOR'S LICENCE

This schedule sets out the conditions which the Minister imposes pursuant to section 13(1)(b) of the Act. In addition to these special Ministerially-imposed conditions, the Licensee is subject to obligations imposed by the Act, the Regulation and the standard Ministerially-imposed licence conditions set out in Schedule B. The Minister may vary the conditions in this schedule or impose new conditions, provided there is no inconsistency with the conditions imposed by the Act or the Regulation.

- A1 If a party to an Agreement proposes to:
- a) terminate the Agreement;
  - b) novate the Agreement;
  - c) assign or transfer any of its rights or obligations under such an Agreement to any other person; or
  - d) alter the Agreement in any way that materially reduces the Licensee's technical, financial or organisational capacity to carry out the activities authorised by this Licence,
- the Licensee must provide IPART with written notice as soon as practicable, but no later than 3 months, before the time when the proposed action is to occur. The written notice must include details of how the service provided under the Agreement will be provided subsequent to the proposed termination, novation, assignment, transfer or alteration.
- A2 Where the Licensee carries out any activities under clause S1 or clause S3, the Licensee must implement environmental mitigation measures substantially consistent with the environmental risk mitigation measures identified in the Water Centre REF and the Systems REF.
- A3 The Licensee must not commence, or authorise the commencement of, construction of any water industry infrastructure which is described in:
- a) clause S1 and Table 1.2(1); or
  - b) clause S3 and Table 3.2(1)
- (Relevant Recycling Infrastructure),**
- until after the Licensee has provided a Construction Environmental Management Plan (**CEMP**), and IPART has provided written approval of the CEMP to the Licensee.
- A4 In addition to any requirements imposed by or under the Act or the Regulation, the Licensee must not commence commercial operation of, or authorise commercial operation of, the Relevant Recycling Infrastructure until the Licensee has provided:
- a) a report addressing how the environmental mitigation measures identified in the CEMP have been implemented during the design and construction of the Relevant Recycling Infrastructure (**Report**); and
  - b) an Operational Environmental Management Plan (**OEMP**),
- to IPART, and IPART has provided written approval of the Report and the OEMP to the Licensee.
- A5 The Licensee must operate and maintain the Relevant Recycling Infrastructure consistently with the OEMP.

- A6 If the Licensee proposes to vary its environmental mitigation measures referred to in clause A2, it must first notify IPART in accordance with the Reporting Manual. The Licensee must not vary its environmental mitigation measures without the prior written approval of IPART.

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## **SCHEDULE B - STANDARD MINISTERIALLY-IMPOSED LICENCE CONDITIONS FOR ALL LICENSED NETWORK OPERATORS UNDER THE ACT**

This schedule sets out the standard conditions which the Minister imposes on the Licensee and all other licensed network operators pursuant to section 13(1)(b) of the Act. In addition to these standard Ministerially-imposed conditions, the Licensee is subject to obligations imposed by the Act, the Regulation and the special Ministerially-imposed licence conditions set out in Schedule A. The Minister may vary the conditions in this schedule or impose new conditions, provided there is no inconsistency with the conditions imposed on the Licensee by the Act or the Regulation.

### **B1 Ongoing capacity to operate**

B1.1 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 immediately in accordance with the Reporting Manual.

### **B2 Obtaining appropriate insurance**

B2.1 Before commencing to commercially operate the Specified Water Industry Infrastructure under this Licence, the Licensee must:

- a) obtain insurance that is appropriate for the size and nature of the activities authorised under this Licence;
- b) provide a copy of each certificate of currency of the insurance obtained to IPART; and
- c) demonstrate that the insurance obtained is appropriate for the size and nature of the activities authorised under this Licence by providing a report to IPART from an Insurance Expert that:
  - i) certifies that in the Insurance Expert's opinion, the type and level of the insurance obtained by the Licensee is appropriate for the size and nature of the activities authorised under the Licence; and
  - ii) is in the form prescribed by the Reporting Manual.

B2.2 *[Not applicable]*

### **B3 Maintaining appropriate insurance**

B3.1 The Licensee must maintain insurance that is appropriate for the size and nature of the activities authorised under this Licence.

B3.2 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.

B3.3 If there is, or is to be, a change in:

- a) the insurer or underwriting panel in respect of an insurance policy held by the Licensee; or
  - b) the type, scope or limit on the amount of insurance held by the Licensee,
- in relation to the activities authorised under this Licence, the Licensee must provide a report to IPART in accordance with the Reporting Manual.

B3.4 From time to time when requested in writing by IPART, the Licensee must provide a report to IPART, in the manner, form and time specified by IPART, from an Insurance

Expert certifying that in the Insurance Expert's opinion the type, scope or limit on the amount of the insurance held by the Licensee is appropriate for the size and nature of the activities authorised under this Licence.

*[Note: The circumstances in which IPART may request a report under clause B3.4 include (but are not limited to) the following:*

- *where IPART has reason to believe 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 authorised under this Licence;*
- *where there is a change in the type or extent of activities authorised under this Licence; or*
- *where IPART or an approved auditor has reason to believe 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 authorised under this Licence.]*

B3.5 The Licensee must maintain professional indemnity insurance during the Design Phase and for a minimum period of 6 years from the date of the completion of the Design Phase.

#### **B4 Complying with NSW Health requirements**

B4.1 The Licensee must carry out the activities authorised by this Licence in compliance with any requirements of NSW Health that:

- a) IPART has agreed to; and
- b) are notified from time to time to the Licensee by IPART in writing.

#### **B5 Complying with Audit Guidelines from IPART**

B5.1 The Licensee must comply with any Audit Guidelines issued by IPART.

#### **B6 Reporting in accordance with the Reporting Manual**

B6.1 The Licensee must prepare and submit reports in accordance with the Reporting Manual.

#### **B7 Reporting information in relation to the Register of Licences**

B7.1 Within 14 days of any change in relation to the following, the Licensee must notify IPART, and provide IPART with details, of the change in accordance with the Reporting Manual:

- a) any source from which the water handled by the Specified Water Industry Infrastructure is derived;
- b) the Authorised Purposes of the water handled by the Specified Water Industry Infrastructure;
- c) the identity of each licensed retail supplier or public water utility that has access to the infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of supplying water to its customers;
- d) any other water infrastructure to which the Specified Water Industry Infrastructure is connected;

- e) the identity of each licensed retail supplier or public water utility that has access to infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of providing sewerage services to its customers;
- f) any other sewerage infrastructure to which the Specified Water Industry Infrastructure is connected;
- g) the arrangements for the disposal of waste from the Specified Water Industry Infrastructure.

## **B8 Monitoring**

- B8.1 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 B8.
- B8.2 The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan:
- a) the date on which the sample was taken;
  - b) the time at which the sample was collected;
  - c) the point or location at which the sample was taken; and
  - d) the chain of custody of the sample (if applicable).
- B8.3 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.

## **B9 Provision of copy of Plan**

- B9.1 Whenever the Licensee makes a significant amendment to a Plan, the Licensee must provide a copy of the amended Plan to IPART at the same time that it provides a copy to the approved auditor engaged to prepare a report as to the adequacy of the amended Plan, as required under the Regulation.

## **B10 Delineating responsibilities – interconnections**

- B10.1 If a code of conduct has not been established under clause 25 of the Regulation, the Licensee must (by a date specified by IPART) establish a code of conduct (**Licensee's Code of Conduct**) in accordance with this clause B10.
- B10.2 The Licensee's Code of Conduct must set out the respective responsibilities of:
- a) the Licensee; and
  - b) each licensed network operator, licensed retail supplier and/or public water utility that:
    - (i) supplies water or provides sewerage services by means of; or
    - (ii) constructs, maintains or operates,  
any water industry infrastructure that is connected to the Specified Water Industry Infrastructure,
- by, at a minimum, providing for:
- A. who is responsible for repairing, replacing or maintaining any pipes, pumps, valves, storages or other infrastructure connecting the Specified Water Industry Infrastructure to the other water industry infrastructure;
  - B. who is responsible for water quality;



- C. who is liable in the event of the unavailability of water;
- D. who is liable in the event of failure of the Specified Water Industry Infrastructure;
- E. the fees and charges payable in respect of the use of the Specified Water Industry Infrastructure; and
- F. who is responsible for handling customer complaints.

B10.3 Before the Licensee brings the Specified Water Industry Infrastructure into commercial operation or by a later date specified by IPART (if any), the Licensee's Code of Conduct must be agreed in writing between the Licensee and the other licensed network operators, licensed retail suppliers and/or public water utilities referred to in clause B10.2.

B10.4 *[Not applicable]*

B10.5 The Licensee must not contravene the Licensee's Code of Conduct to the extent that it makes the Licensee responsible or liable for the matters set out in it.

**B11 Notification of changes to end-use**

B11.1 If the Licensee proposes to operate the Specified Water Industry Infrastructure to supply 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.

**B12 Notification of changes to Authorised Person**

B12.1 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. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.

**B13 Notification of commercial operation**

B13.1 This clause B13 applies each time the Licensee has brought any of the Specified Water Industry Infrastructure into commercial operation.

B13.2 The Licensee must:

- a) notify IPART in accordance with the Reporting Manual that it has brought the relevant Specified Water Industry Infrastructure into commercial operation; and
- b) provide such notification within 10 days after it has brought the relevant Specified Water Industry Infrastructure into commercial operation.

## INTERPRETATION AND DEFINITIONS

### 1. Interpretation

- 1.1 In this Licence, unless the context requires otherwise:
- a) the singular includes the plural and vice versa;
  - b) headings are used for convenience only and do not affect the interpretation of this Licence;
  - c) a reference to a document includes the document as modified from time to time and any document replacing it;
  - d) a reference to a person includes a natural person and any body or entity whether incorporated or not;
  - e) a reference to a clause is to a clause in this Licence;
  - f) a reference to a schedule is to a schedule to this Licence;
  - g) a reference to a law or statute includes regulations, rules, codes and other instruments under it, and consolidations, amendments, re-enactments or replacements of them; and
  - h) explanatory notes do not form part of this Licence, but in the case of uncertainty may be relied on for interpretation purposes.

### 2. Definitions

- 2.1 Expressions used in this Licence that are defined in the Act or the Regulation have the meanings set out in the Act or the Regulation.

- 2.2 In this Licence:

Act	means the <i>Water Industry Competition Act 2006</i> (NSW).
Agreement	means any agreement or deed provided to IPART in connection with the Licensee's application for this Licence.
Audit Guidelines	means the document entitled "Audit Guideline – Water Industry Competition Act 2006" which is prepared by IPART and is available on IPART's website at <a href="http://www.ipart.nsw.gov.au">www.ipart.nsw.gov.au</a> , and any other guidelines issued by IPART in relation to audits under the Act.
Authorised Person	means the authorised persons specified in, as applicable: <ol style="list-style-type: none"><li>a) clause S1, Table 1.1;</li><li>b) clause S2, Table 2.1; and</li><li>c) clause S3, Table 3.1.</li></ol>
Authorised Purposes	means the authorised purposes specified in, as applicable: <ol style="list-style-type: none"><li>a) clause S1, Table 1.3;</li><li>b) clause S2, Table 2.3; and</li><li>c) clause S3, Table 3.3.</li></ol>

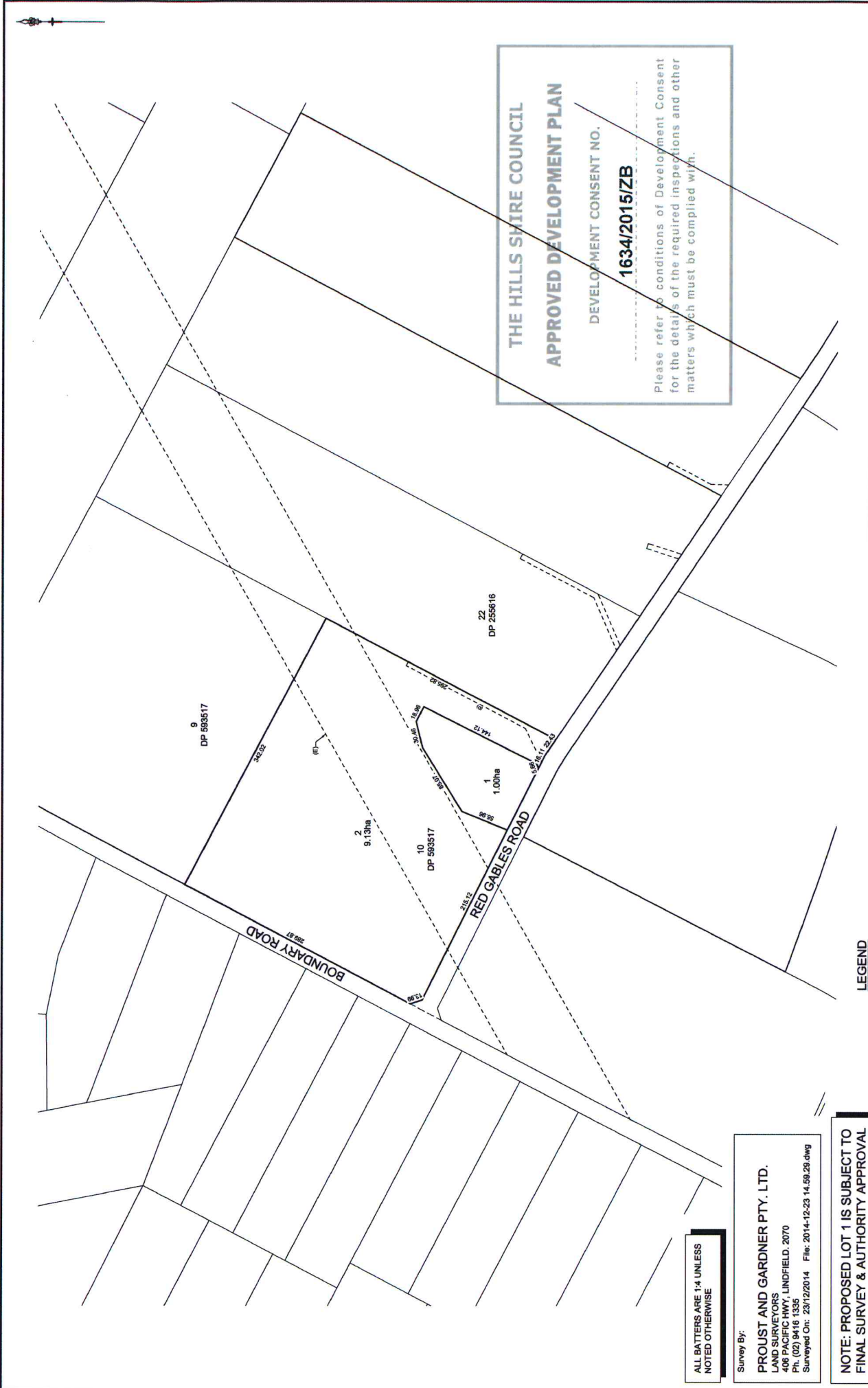
Construction Environmental Management Plan (CEMP)	means a site or project specific plan which, in relation to construction works: <ul style="list-style-type: none"> <li>a) complies with the basic structure detailed in the "Guideline for the Preparation of Environmental Management Plans", Department of Infrastructure, Planning and Natural Resources (2004); and</li> <li>b) identifies the environmental risks associated with the licensed activities and the mitigation measures to be implemented.</li> </ul>
Design Phase	means the period during which any design works are carried out in relation to the water industry infrastructure that the Licensee is authorised to construct, maintain and operate under this Licence.
Insurance Expert	means an insurance broker which holds an Australian financial services licence under Part 7.6 of the <i>Corporations Act 2001</i> (Cth) that authorises the broker to provide financial product advice for, and deal in, contracts of insurance within the meaning of Chapter 7 of that Act.
IPART	means the Independent Pricing and Regulatory Tribunal of New South Wales established under the <i>Independent Pricing and Regulatory Tribunal Act 1992</i> (NSW).
Licence	means this network operator's licence granted under section 10 of the Act.
Licensee	means Flow Systems Operations Pty Ltd (ACN 603 106 305).
Licensee's Code of Conduct	has the meaning given in Schedule B, clause B10.1.
Minister	means the Minister responsible for Part 2 of the Act.
NSW Health	means the Water Unit of NSW Ministry of Health and any of the local health districts as defined by the NSW Ministry of Health.
Operational Environmental Management Plan (OEMP)	means a site or project specific plan which, in relation to the operational phase: <ul style="list-style-type: none"> <li>a) complies with the basic structure detailed in the "Guideline for the Preparation of Environmental Management Plans", Department of Infrastructure, Planning and Natural Resources (2004); and</li> <li>b) identifies the environmental risks associated with the licensed activities and the mitigation measures to be implemented.</li> </ul>
Plan	means any infrastructure operating plan, water quality plan or sewage management plan that the Licensee is required to prepare under the Regulation.
Regulation	means the <i>Water Industry Competition (General) Regulation 2008</i> (NSW).

Relevant Recycling Infrastructure	has the meaning given in Schedule A, clause A3.
Report	has the meaning given in Schedule A, clause A4(a).
Reporting Manual	means the document entitled "Network Operator's Reporting Manual" which is prepared by IPART and is available on IPART's website at <a href="http://www.ipart.nsw.gov.au">www.ipart.nsw.gov.au</a> .
Specified Water Industry Infrastructure	means the water industry infrastructure specified in, as applicable: <ul style="list-style-type: none"> <li>a) clause S1, Table 1.2;</li> <li>b) clause S2, Table 2.2; and</li> <li>c) clause S3, Table 3.2.</li> </ul>
Systems REF	means the "Review of Environmental Factors for the Proposed Sewage, Recycled Water Reticulation Systems, Box Hill North Precinct New South Wales" (RPS Australia East Pty Ltd, Version 7, March 2016).
Verification Monitoring	means verification monitoring as described in the document entitled "Australian Drinking Water Guidelines" or the document entitled "Australian Guidelines for Water Recycling", as the case may be.
Water Centre REF	means the "Review of Environmental Factors for the Proposed Local Water Centre, Box Hill North Precinct New South Wales" (RPS Australia East Pty Ltd, Version 4, March 2016).
Water Quality Plan	means the water quality plan that the Licensee is required to prepare under the Regulation.

## Attachment A

Drawing No	Revision	Date
997603/DA71	E	28 October 2015

DRAFT



THE HILLS SHIRE COUNCIL  
**APPROVED DEVELOPMENT PLAN**  
 DEVELOPMENT CONSENT NO.  
**1634/2015/ZB**

Please refer to conditions of Development Consent for the details of the required inspections and other matters which must be complied with.

ALL BATTERS ARE 1:4 UNLESS NOTED OTHERWISE

Survey By:  
**PROUST AND GARDNER PTY. LTD.**  
 LAND SURVEYORS  
 406 PACIFIC HWY, LINDFIELD, 2070  
 Ph. (02) 9416 1335  
 Surveyed On: 23/12/2014 File: 2014-12-23 14.59.29.dwg

**NOTE: PROPOSED LOT 1 IS SUBJECT TO FINAL SURVEY & AUTHORITY APPROVAL FOR LOCATION**

**LEGEND**  
 (E) POWERLINE EASEMENT  
 (D) DRAINAGE EASEMENT



AMENDMENT	DES	DRN	COO	APR	DATE
E	DH	NW	AM	RS	28/07/15
C	AC	NW	AM	MS	04/08/15
O	DH	NW	AM	MS	24/08/15
A	DH	NW	AM	MS	24/08/15
	DH	NW	AM	MS	27/05/15

**J. WYNNDHAM PRINCE**  
 CONSULTING CIVIL INFRASTRUCTURE ENGINEERS  
 & PROJECT MANAGERS  
 170 New Ash Green Way, Westboro NSW 2760  
 P: 02 4720 3300 F: 02 4720 3370 W: www.jwprince.com.au E: jw@jwprince.com.au

CLIENT:  
**THE GABLES OF HILL CELESTINO**  
170 New Ash Green Way, Westboro NSW 2760  
 CONSTRUCTION NUMBER AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR DA APPROVAL  
 NOT FOR CONSTRUCTION

PLAN No:  
**997603/DA71 E**  
 FILE No: 997603/DA71  
 SHEET SIZE: A1 ORIGINAL

**BOX HILL NORTH**  
**FLOW SYSTEMS**  
 SUBDIVISION PLAN

## **B Summary of submissions**

Table B.1 Summary of submissions by government agencies and utilities

ID	IPART Reference	Agency	Supports application?	Issues	Report section reference/our response
1	W15/5019	Minister for Primary Industries Minister for Lands and Water	Neutral	Advised that as potable water for Box Hill North will be sourced from Sydney Water's bulk water supply under a Utility Service Agreement, this falls outside the definition of the State's water rights and therefore does not require a water access licence (WAL) and/or a water supply works approval under the <i>Water Management Act 2000</i> (WMA).	4.5 Environmental capacity
				Advised that for stormwater used to augment recycled water used within the development, under harvestable rights provisions of the WMA it is possible to capture up to 10% of runoff from a property without the need for a WAL or water supply works.	4.3 Health capacity; 4.5 Environmental capacity
2	W15/5065	NSW Health	Yes, with clarifications provided from Flow Systems Operations	NSW Health requests that it be consulted: <ul style="list-style-type: none"> <li>▼ during the detailed recycled water risk assessment, technology assessment and the development of the recycled water management plan;</li> <li>▼ following the final compliance audit, and</li> <li>▼ before retail supply commences</li> </ul> to ensure that all relevant public health matters have been considered.	4.3 Health capacity
				NSW Health also requests that that Flow Systems Operations adapts its generic Incident Notification Protocol to include contact details of all stakeholders involved in this scheme.	4.3 Health capacity
				Sewage and stormwater to be used as potential sources for the water recycling scheme has not been adequately characterised and the resulting risks are not adequately identified or addressed in the risk assessment. NSW Health recommends further characterisation of the source water quality is undertaken as recommended by the <i>Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (2006)</i> and <i>Australian Guidelines for Water Recycling: Stormwater Harvesting and Reuse (2006)</i> . The risk assessment should be updated to reflect any additional information on the source water.	4.3 Health capacity; 4.5 Environmental capacity
				Flow Systems Operations should implement effective controls to protect against cross-connection as the risk from consumption of recycled water due to a cross-connection has been inconsistently addressed in the risk assessment.	4.3 Health capacity



ID	IPART Reference	Agency	Supports application?	Issues	Report section reference/ our response
				The risks from flooding, including impacts on the pressurised sewage pumping system, and the risk of mosquito breeding and the potential for mosquito borne disease due to stormwater management have not been assessed.	4.3 Health capacity
				The term 'refined water' used in the application should be replaced with 'recycled water'.	Noted
3	W15/5002	EPA NSW	Neutral, will require further discussion on EPL requirement	EPA is not aware of any breaches of the <i>Protection of the Environment Operations Act 1997</i> (POEO Act) by Flow Systems Operations, Flow Systems Pty Ltd (Flow Systems) and Celestino Development Pty Ltd (the developer).	4.5 Environmental capacity
				EPA advised that Flow Systems Operations will require an Environmental Protection Licence (EPL) for the sewage treatment system under <i>Protection of the Environment Operations Act 1997</i> (POEO Act) if treated effluent is discharged to land and possibly waters. However, Flow Systems Operations has advised that an EPL will not be required since its water recycling plant will not be discharging or likely discharge of wastes or by-products to land or waters.	4.6.2 Protection of environment
4	W15/5014	Sydney Water	Unstated	Noted that the developer was progressing with detailed planning of water and sewerage infrastructure with Sydney Water while Flow Systems Operations' licence application was being assessed by IPART.	Noted
				Is of the view that the sewerage and recycled water services provided to customers within the development will be monopoly services and that in the absence of price regulation there would be the ability for Flow Systems Operations to exercise market power.	4.8.1 Monopoly supply & price regulation
				Disputed Flow Systems Operations' claim on its website that it is more efficient than Sydney Water and can provide services for less.	Noted
				Considered that there would be potential for adverse financial implications despite Flow Systems and Flow Systems Operations suggesting that there would be no potential for adverse financial implications for customers due to their "price parity" policy. Sydney Water considered that customer receiving services from Flow Systems Operations would pay slightly more than if they received services from Sydney Water.	4.8.1 Monopoly supply & price regulation
				Advised that it could not provide Flow Systems Operations with a potable water connection as Flow Systems Operations did not own any property within the	4.2.1 Technical capacity

ID	IPART Reference	Agency	Supports application?	Issues	Report section reference/ our response
				development.	
				Stated that it would not enter into a commercial agreement with Flow Systems Operations as there was no interconnecting infrastructure, and it was yet to be approached by the applicant regarding this development.	Noted
				Queried Flow Systems Operations' use of stormwater as a recycled water source given that the nature of stormwater could be highly variable in both quality and availability.	4.3 Health capacity; 4.5 Environmental capacity
				Questioned Flow Systems Operations' proposed method and location of waste stream disposal, and highlighted the need of an Environment Protection Licence.	2.2 The scheme; 4.6.2 Protection of environment
				Is of the view that the estimated amount of sewage generated per person was conservative and the recycled water demand figure to be ambitious.	Flow Systems Operations noted that its design assumptions are derived from actual data. Flow Systems Operations expressed commitment to monitor and calibrate its water balance model. 4.2.1 Technical capacity
				Reinforced the need the water and sewerage infrastructure be designed and constructed to Water Services Association of Australia (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 all 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
5	W15/5047	The Hills Shire Council	Unstated	The Hills Shire Council (THSC) preferred a conventional sewerage system with disposal at a licensed sewage treatment plant.	Noted
				THSC is concerned that it may become the Appropriate Regulatory Authority under the POEO Act if Flow Systems Operations do not obtain an EPL.	4.6.2 Protection of environment

ID	IPART Reference	Agency	Supports application?	Issues	Report section reference/ our response
				The additional infrastructure required for the system and the supply of grey water to each property will take up additional areas in the front or rear of properties and the public roadways.	Noted. We consider the additional infrastructure (recycled water pipelines and sewage pods) can be accommodated within the properties and roadways.
				Additional infrastructure associated with the system may necessitate the widening of public roads to accommodate additional service.	We consider the additional service (recycled water pipelines with maximum size of 300mm) can be accommodated at different depths within the width allocated.
				Concern that rainwater tanks will not be installed as per the original precinct-wide stormwater strategy.	Flow Systems Operations advised that a revised stormwater assessment has been submitted to the council in September 2015.
				Flow Systems Operations' scheme does not make allowance for the future connection of properties in the Box hill North area currently outside Flow Systems Operations' control, which may lead to unnecessary duplication of sewerage infrastructure to accommodate future connection of these sites.	Flow Systems Operations' proposed area of operation is for Box Hill North only. Infrastructure is funded by the landowners in the development. Future connections outside the development area are subject to commercial discussions with infrastructure owner.
				<p>THSC also raised the following concerns regarding potential unacceptable environmental risks:</p> <ul style="list-style-type: none"> <li>▼ The proposal is considered to be an unacceptable risk when compared to a conventional sewerage system.</li> <li>▼ As the treatment facility is proposed to be constructed on land immediately</li> </ul>	<p>4.6.2 Protection of environment; 4.2.1 Technical capacity</p> <p>Before commercial operation</p>

ID	IPART Reference	Agency	Supports application?	Issues	Report section reference/ our response
				<p>adjacent to Medium Density Residential zoned land, there is a significant potential for the proposal to impact upon residents in terms of noise and odour.</p> <ul style="list-style-type: none"> <li>▼ The proposed system includes a number of inherent risks that are not found in a conventional gravity sewerage system, as listed below: <ul style="list-style-type: none"> <li>– The system includes thousands of small pumps with small diameter pipe work. The likelihood and frequency of failures of these elements is therefore increased.</li> <li>– There is potential for odour in residential properties due to detention within the property, failure of the treatment plant or failure of the filtration of the vent pipes.</li> <li>– Small pumps are more prone to blockages and premature wear and require the residents to actively manage the system.</li> <li>– The applicant claims the pots will hold 48 hours of storage of wastewater in the event of a failure. The capacity of proposed holding tanks is inconsistent with two days storage when compared to the design requirements for on-site sewage management solutions and are deemed to be significantly undersized.</li> <li>– The system will have excessive energy requirements due to the number of pumps and equipment proposed and is therefore not consistent with the principles of Ecologically Sustainable Development.</li> </ul> </li> <li>▼ An acoustic report has been presented in the planning proposal that identified that the noise from the treatment plant is likely to exceed acceptable criteria at night.</li> <li>▼ Additional environmental protection conditions relating to potential impacts on noise, water, odour, chemical storage, system maintenance, contingencies in the event of power failure or the like may be required.</li> </ul>	<p>of the proposed scheme at Box Hill North, if a licence is approved, Flow Systems Operations is required to prepare a Sewage Management Plan, Recycled Water Management Plan and Infrastructure Operating Plan. These plans are required to be independently audited to assess their adequacy. Some of Council's concerns would be addressed at a later stage.</p>

## **C Review of environmental assessments**





# BOX HILL NORTH LOCAL WATER CENTRE, SEWAGE AND RECYCLED WATER RETICULATION SYSTEM FINAL REVIEW REPORT (TASK 4B)

Report Number: DC16036

April 2016

**Prepared for**

IPART



# BOX HILL NORTH LOCAL WATER CENTRE, SEWAGE AND RECYCLED WATER RETICULATION SYSTEM FINAL REVIEW REPORT (TASK 4B)

Report Number: DC16036

April 2016

## Document Control

Version	Author	Reviewer	Approved for Issue	
			Name	Date
Draft	Lara Hess	Penny Goldin	Penny Goldin	06/04/2016
Final	Lara Hess	Penny Goldin	Penny Goldin	07/04/2016

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## Foreword

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This review report has been prepared by NSW Public Works for the Independent Pricing and Regulatory Tribunal (IPART) and presents the review of the final environmental assessment reports prepared by RPS Australian East Pty Ltd on behalf of Flow Systems Operations Pty Ltd in response to Task 4b of the project brief.

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## List of Abbreviations

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<b>CEMP</b>	Construction Environmental Management Plan
<b>EEC</b>	Endangered ecological community
<b>EIS Guideline</b>	Is an EIS Required? Department of Planning 1995
<b>EP&amp;A Act</b>	<i>Environmental Planning and Assessment Act 1979</i>
<b>EPA</b>	Environment Protection Authority, now part of OEH
<b>EPBC Act</b>	<i>Environment Protection And Biodiversity Conservation Act 1999</i>
<b>IPART</b>	Independent Pricing and Regulatory Tribunal
<b>ISEPP</b>	<i>State Environmental Planning Policy (Infrastructure) 2007</i>
<b>Licence Plans</b>	Includes Infrastructure Operating Plan, Water Quality Plan and Sewage Management Plan as specified under the <i>Water Industry Competition (General) Regulation 2008</i>
<b>LEP</b>	Local Environmental Plan
<b>LWC</b>	Local Water Centre
<b>NES</b>	Matters of National Environmental Significance under the EPBC Act
<b>NPW Act</b>	<i>National Parks and Wildlife Act 1974</i>
<b>OEH</b>	Office Of Environment and Heritage
<b>OEMP</b>	Operational Environmental Management Plan
<b>OH&amp;S</b>	Occupational Health and Safety
<b>POEO Act</b>	<i>Protection of The Environment Operations Act 1997</i>
<b>REF</b>	Review of Environmental Factors
<b>SEPP</b>	State Environmental Planning Policy
<b>TSC Act</b>	<i>Threatened Species Conservation Act 1995</i>

# 1 Introduction

---

## 1.1 Background

NSW Public Works have been engaged by IPART to provide environmental assessment advice to assist IPART in making a recommendation to the Minister on whether or not a network operator's licence should be granted.

This report has been prepared in response to **Task 4b: Prepare a report on the findings of the environmental assessment** of the project brief issued by IPART. It presents the review of the final REFs prepared on behalf of Flow Systems Operations, these being;

- *REF for Proposed Local Water Centre, Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 4, March 2016), (referred to as the Local Water Centre REF) and
- *REF for the Proposed Sewage, Recycled Water Reticulation Systems Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 7, March 2015) (referred to as the Reticulation REF)

Specifically this report has been prepared to address the following questions as per the client project brief;

- How has the applicant addressed each of the factors identified in Task 2?
- Are the proposed activities likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats? What is the reason for your answer?
- What are the key environmental risks posed by the activities and how will these be mitigated?
- How has each of the issues raised in the submissions been addressed ?
- Having regard to protection of the environment, should the Minister grant or refuse to grant a network operator's licence to the applicant? What is the reason for your answer?
- If you recommend that the Minister should grant a network operator's licence to the applicant, should the licence include any specific conditions to protect the environment? If so, what should these conditions be and why?

## 2 Addressing factors identified in Task 2

---

### 2.1 Requirement:

*How has the applicant addressed each of the factors identified in Task 2?*

#### 2.1.1 Task 2 Factors

Task 2 of the Project Brief required a review of the two REFs and supporting investigations to identify whether they provided enough information and were of an appropriate quality to address the following criteria;

- the likely impact of the activity on the environment including by reference to factors referred to in “Is an EIS Required?” (the EIS Guidelines)
- examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity
- consider the effect of an activity on the following:
  - any conservation agreement entered into under the *National Parks and Wildlife Act 1974* and applying to the whole or part of the land to which the activity relates, and
  - any plan of management adopted under that Act for the conservation area to which the agreement relates, and
  - any joint management agreement entered into under the *Threatened Species Conservation Act 1995*, and
  - any biobanking agreement entered into under Part 7A of the *Threatened Species Conservation Act 1995* that applies to the whole or part of the land to which the activity relates, and
  - any wilderness area (within the meaning of the *Wilderness Act 1987*) in the locality in which the activity is intended to be carried on, and
  - critical habitat, and
  - in the case of threatened species, populations and ecological communities, and their habitats, whether there is likely to be a significant effect on those species, populations or ecological communities, or those habitats, and
  - any other protected fauna or protected native plants within the meaning of the *National Parks and Wildlife Act 1974*.

A review of the two REFs against the criteria set out above was detailed in Tables 2-1 and 3-1 of the *Box Hill North Local Water Centre, Sewage and Recycled Water Reticulation System REF Review Report* (NSW Public Works, 2015) referred to henceforth as the REF Review Report).

Whilst the report determined that most of the criteria specified in Task 2 were addressed, a number of deficiencies and / or gaps were identified and documented in Tables 2-2 and 3-2 of the REF Review Report. The two REFs were updated and subsequently resubmitted.

### 2.2 Response

A description of how the applicant has addressed each of the factors listed in Task 2 is addressed below.

#### 2.2.1 The likely impact of the activity on the environment

This task required a review of the REFs provided by the licence applicant to be undertaken in order to *identify whether the assessment provides enough information and is of an*

*appropriate quality to consider the likely impact of the activity on the environment, including by reference to factors referred to in “Is an EIS Required?” (the EIS Guideline).*

### **Methodology for assessing compliance with this task**

*Is an EIS Required – Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979* (Department of Urban Affairs and Planning, 1995) (the EIS Guideline) was developed to assist a proponent to determine the impacts of activity on the environment and whether an EIS is likely to be required. However the guideline is outdated (being over 20 years old) and no longer considered to be industry best practice. It is noted however that no further guidelines on assessing the impacts and significance of an activity under Part 5 of the EP&A Act have been published by the Department of Planning and Environment (DP&E). A number of drafts and working drafts have been issued, however they are not considered to be government policy.

Given that there is no current guideline provided by the DP&E, many organisations have developed their own guidelines on assessing the likely impacts of an activity on the environment, which draws on the process developed in the EIS Guideline but is more targeted towards a particular type of activity or industry.

*EIA Guidelines Environmental assessment procedure Project review of environmental factors -roads EIA-P05-2* (Roads and Maritime Services, 2014) (referred to henceforth as the RMS Guideline) is considered a more up to date guide for undertaking assessments under Part 5 of the EP&A Act and draws upon the process and procedures developed in the EIS Guideline. Therefore both the RMS and EIS Guideline have been used as reference during the review of the REFs to determine whether they provide sufficient information and are of an appropriate quality to assess the likely impact of the activity on the environment. Specifically, the following procedure / criteria has been adopted based on the aforementioned guidelines;

#### **STEP 1 – Describe the Proposed Activity**

1. Describe the proposal including all ancillary activities.
2. Detail the construction methodology and timeframe
3. Detail the operation of the proposed activity

#### **STEP 2 - Characterise the area of impact**

4. Describe the existing environment as it relates to the various impacts of the proposal in sufficient detail to provide the background to any potential impacts and/or risks.
5. Include the results of database searches.
6. Define the area of the investigation covered in the environmental assessment.

#### **STEP 3 - Analyse the extent Impacts (including in environmental sensitive areas**

1. Determine the type of impact
2. Determine the size of the impacts (considering amount, quantity, volume, mass other relevant measure)
3. Determine the scope (both direct and indirect) of impacts – considering area, number, range or limits or other relevant measure.
4. Determine the intensity of the impacts
5. Determine the duration of the impacts

#### **STEP 4- Analyse the nature of the Impacts**

1. The level of confidence in their prediction.
2. The resilience of the environment to cope with the impacts.

3. The permanency of the impacts or how reversible the impacts are considered to be.
4. How adequately the impacts can be mitigated or managed.
5. Compliance with performance criteria, standards, plans or policies.
6. The anticipated extent of public interest in the impacts.
7. Whether additional studies are needed to adequately assess impacts or to develop management measures.

### **Conclusion**

It has been determined that both REFs have provided enough information and are of an appropriate quality to assess the likely impact of the activity on the environment. Specialist investigations have been undertaken to support the REFs and assist in assessing the impacts for the following aspects;

- Ecology
- Indigenous and non-indigenous heritage
- Stormwater and flood management (construction and operation)
- Noise
- Odour
- Geotechnical and salinity
- Site contamination and remedial works
- Land capability / suitability

Details of how the applicant has addressed the likely impact of the proposal on the environment, by reference to the criteria detailed above (as relevant to the proposed works) is presented in Table 2-1 and Table 2-2 below.

### ***Clause 228 of the Environmental Planning and Assessment Regulation 2000***

Clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) lists those factors which for the purposes of Part 5 of the EP&A Act, need to be taken into account when consideration is being given to the likely impact of an activity on the environment.

Appendix 1 of each of the REFs has provided an assessment of the proposed works against the factors listed under clause 228 of the EP&A Regulation. This has been undertaken by way of a table which describes each factor as it relates to the proposed works and a statement / comment as to the overall impact (such as positive, negative, neutral, minor etc).



**Table 2-1 Demonstration of how the applicant has addressed the likely impact of the proposal on the environment – Local Water Centre REF**

Potential Impact (during construction and operation)	How addressed in REFs (reference to REF report section)			
	Characterise the area of impact	Analyse the nature to the potential impacts	Analyse the Extent of impacts	Rank the impact (ie low medium or high)
<b>Physical or pollution impacts</b>				
(a) Air impacts	Section 6.7.1	Section 6.7.2	Section 6.7.2	Low
(b) Water impacts	Section 6.5.1	Section 6.5.2	Section 6.5.2	Low
(c) Soil and stability impacts	Sections 6.1.1	Section 6.1.2	Section 6.1.2	Low
(d) Noise and vibration impacts	Section 6.6.1	Section 6.2.2	Section 6.2.2	Low
(e) land capability	Section 6.1.1	Section 6.1.2	Section 6.1.2	Low to medium
<b>Biological impacts</b>				
(a) Fauna impacts	Section 6.2.1	Section 6.2.2	Section 6.2.2	Low
(b) Flora impacts	Section 6.2.1	Section 6.2.2	Section 6.2.2	Low
(c) Ecological impacts	Section 6.2.1	Section 6.2.2	Section 6.2.2	Low

Potential Impact (during construction and operation)	How addressed in REFs (reference to REF report section)			
	Characterise the area of impact	Analyse the nature to the potential impacts	Analyse the Extent of impacts	Rank the impact (ie low medium or high)
<b>Resource use impacts</b>				
(a) Waste management	-	Section 6.12.1	Section 6.12.1	Low
<b>Community impacts</b>				
(a) Social factors	Section 6.11.1	Section 6.11.2	Section 6.11.2	Low
(b) Economic factors	Section 6.11.1	Section 6.11.2	Section 6.11.2	Low
(c) Heritage, aesthetic, cultural impacts	Section 6.3.1, 6.4.1 and 6.10.1	Section 6.3.2, 6.4.2 and 6.10.2	Section 6.3.2, 6.4.2 and 6.10.2	Low No cultural heritage objects or places identified
(d) Traffic and access impacts	Section 6.9.1	Section 6.9.2	Section 6.9.2	Low
(e) Health and hazards	-	Section 6.13.1	Section 6.13.1	Low The site will be remediated prior to construction of the LWC.

**Table 2-2 Demonstration of how the applicant has addressed the likely impact of the proposal on the environment – Reticulation REF**

Potential Impact (during construction and operation)	How addressed in REFs (reference to REF report section)			
	Characterise the area of impact	Analyse the nature to the potential impacts	Analyse the Extent of impacts	Rank the impact (ie low medium or high)
<b>Physical or pollution impacts</b>				
(a) Air impacts	Section 6.7.1	Section 6.7.2	Section 6.7.2	Low
(b) Water impacts	Section 6.5.1	Section 6.5.2	Section 6.5.2	Low
(c) Soil and stability impacts	Section 6.1.1	Section 6.1.2	Section 6.1.2	Low to medium Due to saline soils
(d) Noise and vibration impacts	Section 6.6.1	Section 6.6.2	Section 6.6.2	Low
(e) land capability	n/a	n/a	n/a	
<b>Biological impacts</b>				
(a) Fauna impacts	Section 6.2.1	Section 6.2.2	Section 6.2.2	Low
(b) Flora impacts	Section 6.2.1	Section 6.2.2	Section 6.2.2	Low
(c) Ecological impacts	Sections 6.2.1	Sections 6.2.2	Sections 6.2.2	Low

Potential Impact (during construction and operation)	How addressed in REFs (reference to REF report section)			
	Characterise the area of impact	Analyse the nature to the potential impacts	Analyse the Extent of impacts	Rank the impact (ie low medium or high)
<b>Resource use impacts</b>				
(a) Waste management	-	Section 6.10.1	Section 6.10.1	Low
<b>Community impacts</b>				
(a) Social factors	Section 6.9.1	Section 6.9.2	Section 6.9.2	Low
(b) Economic factors	Section 6.9.1	Section 6.9.2	Section 6.9.2	Low
(c) Heritage, aesthetic, cultural impacts	Sections 6.3.1 and 6.4.1	Sections 6.3.2 and 6.4.1	Sections 6.3.2 and 6.4.2	Low
(d) Traffic and access impacts	Section 6.8.1	Sections 6.8.2	Section 6.8.2	Low
(e) Health and hazards	-	Section 6.1.1	Section 6.1.2	Low to medium The site will be remediated prior to construction works however subsurface contamination may be present.

**2.2.2 Examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity.**

The REFs have examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment as demonstrated in Table 2-1 and Table 2-2 above and through the consideration of factors listed under clause 228 of the EP&A Regulation (Appendix 1 of each REF). The majority of identified environmental impacts associated with the works have been classified as low or as low to medium.

**2.2.3 Consider the effect of an activity on the following specific matters as per section 111(2) (3) and (4) of the EP&A Act**

The REFs provided by the applicant have provided enough information and are of an appropriate quality to address the requirements under section 111(2) (3) and (4) of the EP&A Act as demonstrated in the below.

**Table 2-3 Demonstration of how the applicant has addressed s111(2) (3) and (4) of the EP&A Act**

Criteria	How addressed in REFs
Any conservation agreement entered into under the <i>National Parks and Wildlife Act 1974</i> and applying to the whole or part of the land to which the activity relates, and	N/a No conservation agreement applies to the land for the proposed works. Areas of land have been set aside for conservation purposes as part of the overall Box Hill North development. These areas would not be impacted by the proposal.
Any plan of management adopted under that Act for the conservation area to which the agreement relates, and	N/a No plan of management relates to the site.
Any joint management agreement entered into under the <i>Threatened Species Conservation Act 1995</i> , and	N/a No joint management agreement applies to the site.
Any biobanking agreement entered into under Part 7A of the <i>Threatened Species Conservation Act 1995</i> that applies to the whole or part of the land to which the activity relates, and	The Box Hill North site is subject to a biobanking agreement. The developer of the entire Box Hill North site has purchased 210 CPW (HN528) and 40 SSTF (HN556) BioBanking credits, which are in process of being formally "retired" to allow for permanent off-site conservation management. The works would not impact upon the biobanking agreement and would not impact upon endangered ecological communities (EEC) to be retained on the site.
Any wilderness area (within the meaning of the <i>Wilderness Act 1987</i> ) in the locality in which the activity is intended to be carried on, and	N/a No wilderness area has been identified in the vicinity of the works.
Critical habitat, and	N/a No critical habitat will be impacted.
In the case of threatened species, populations and ecological communities, and their habitats, whether there is likely to be a significant effect on those species, populations or ecological communities, or those habitats, and	A species impact statement (SIS) for the overall Box Hill North site development has been prepared due to the impact of the development to identified EECs. The works associated with the LWC and reticulation network would not result in a

Criteria	How addressed in REFs
	significant impact to threatened species, populations and ecological communities, and their habitats as listed under the TSC Act.  The works would be consistent with the mitigation measures identified in the SIS and site vegetation management plan.
any other protected fauna or protected native plants within the meaning of the <i>National Parks and Wildlife Act 1974</i> .	The proposal would not impact on the habitat of protected fauna (within the meaning of the NPWS Act).

## 3 Are the proposed activities likely to significantly affect the environment?

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### 3.1 Requirement

*Are the proposed activities likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats? What is the reason for your answer?*

### 3.2 Response

The EP&A Act or Regulation does not define “likely to significantly affect the environment” and the decision is an objective one. The determination of whether an activity assessed under Part 5 of the EP&A Act is likely to significantly affect the environment is undertaken by way of a REF. The two REFs prepared by Flow Systems Operations have both concluded that the proposed works will not result in a significant impact on the environment.

As discussed in Section 2.0 of this report, it has been determined that the two REFs have examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity pursuant to section 111(1) of the EP&A Act. This has been undertaken through the characterisation of the environment to be impacted and through an analysis of the nature and extent of potential impacts based on the scale of the activity proposed. Specialist investigations (including geotechnical, contamination, noise, odour, heritage and flora and fauna) have been undertaken to assist in assessing the potential environmental impacts of the proposal and in reaching the conclusion that the proposed activities would not result in a significant impact.

RMS Guideline provides assistance in determining whether environmental impacts are likely to be significant. Potentially significant impacts are identified as impacts:

- which are extensive relative to the receiving environment,
- are in an area where the environment has low resilience, such as environmentally sensitive areas,
- which are inconsistent with community values or that have a low level of acceptability,
- which cannot be predicted with any confidence,
- which are not consistent with government policy or for which there are no other adequate government controls,
- with irreversible health or safety implications.

None of the impacts identified in the REFs are considered to be potentially significant based on the above listed criteria. All environmental impacts identified can be readily avoided or reduced through the implementation of mitigation measures as detailed in the REFs (and summarised in Section 7.0 of each report).

Whilst the overall development of the Box Hill North site has been identified as having a significant impact to EECs listed under the TSC Act and EPBC Act, the works associated with the LWC and reticulation network would not impact upon threatened species, populations and ecological communities, and their habitats.

The ecological value of the LWC site is considered low given that no existing remnant vegetation persists on site, habitat features are highly restricted and no threatened flora and/or fauna and no EECs were detected. On this basis it is considered unlikely that a significant impact will arise from the development of the Box Hill LWC.

The installation of the reticulation pipeline would have a generally limited footprint and would avoid known EECs identified at the site. Clearing and bulk earthworks (site levelling and remediation) would be undertaken prior to the installation of the reticulation pipelines.

Whilst it is proposed that the vegetation clearing and land remediation works would be undertaken prior to the construction of the LWC and installation of the reticulation works, the REFs have been drafted in a way to ensure that if required, the construction contractor can implement vegetation clearing or earthworks in a manner which minimises potential environmental impacts and is consistent with all specialist investigations.

### **Conclusion**

NSW Public Works have reviewed the following REFs prepared on behalf of Flow Systems Operations;

- *REF for Proposed Local Water Centre, Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 4, March 2016), and
- *REF for the Proposed Sewage, Recycled Water Reticulation Systems Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 7, March 2015)

Based on the information and assessment provided in the REFs including supporting specialist studies, it is concluded that subject to the implementation of all safeguards identified in the REFs, the proposed activities are unlikely to significantly affect the environment.



## 4 Identification of key environmental risks

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### 4.1 Requirement

*What are the key environmental risks posed by the activities and how will these be mitigated?*

### 4.2 Response

A number of potential environmental risks were identified in the two REFs. The key risks and how they will be mitigated are detailed as follows;

#### 4.2.1 Key Construction Risks

##### **Water quality impacts**

- Sediment and erosion associated with construction related ground disturbance impacting on local drainage lines / waterways.

##### **Mitigation Measures**

- Implementation and maintenance of site specific and effective sediment and erosion controls consistent with all site investigations.

##### **Soils and Land Capability**

- Saline soils and the highly dispersive soils have been identified at the Box Hill North site and therefore potential impacts may occur due to the installation of the proposed sewage collection tanks. Sewage household collection tanks will be installed to a depth approaching 2 metres below surface level, are 950mm in diameter and made of high density polyethylene. Having regard for their relatively small size, the impact of installation and use of the tanks is considered to be relatively low.

##### **Mitigation Measures**

- Earthworks for the installation of the tanks are to be carried out in accordance with a saline soil management plan, contained in the contractors CEMP, which would outline a range of control measures to eliminate, limit or mitigate impacts from the installation of the tanks.

##### **Contamination**

- Known contamination has been identified throughout the Box Hill North site and would be remediated in accordance with a site specific remediation plan prior to the construction of the LWC and reticulation pipework. There is however the risk that previously unidentified sub-surface contamination may be encountered during the construction works.

##### **Mitigation Measures**

- No excavation or ground disturbance works are to commence unless site remediation of the site has been undertaken in accordance with the Remediation Action Plan (JBS&G, April 2015) and an appropriate validation report of the remediation works has been prepared.
- Should any potential hazards be identified (or any other unexpected potentially hazardous substance), the unexpected finds protocol summarised in Flowchart 9.1 of the Remediation Action Plan (JBS&G, April 2015) is to be followed.

### **Flora and Fauna**

- Two endangered ecological communities have been identified at the Box Hill North site and may be impacted during construction of the reticulation pipelines.

### **Mitigation Measures**

- Vegetation clearing for the proposed activity will be undertaken in accordance with the Vegetation Management Plans prepared for each development precinct

### **Aboriginal Cultural Heritage**

- Areas with of high Aboriginal heritage sensitivity have been identified at the site and there is the potential for the works to impact Aboriginal heritage.

### **Mitigation Measures**

- Further due diligence assessments to be undertaken prior to construction. The due diligence assessments will include mitigation measures for the management of identified sites within the precinct area as highlighted within the Aboriginal Archaeological Assessment Test Excavation Report (Kelleher Nightingale Consulting Pty Ltd (2014).
- The proponent will undertake all construction consistent with Aboriginal Heritage Impact Permit (AHIP) C0001213.

## **4.2.2 Key Operational Risks**

### **Water quality impacts**

- Nutrient loads, pathogens and sodium associated with irrigation using recycled water impacting on surface and groundwaters.
- System overflows.

### **Mitigation Measures**

- Preparation and implementation of a Recycled Water Irrigation Management Plan in accordance with the AGWR to detail appropriate irrigation scheduling and buffer zones.
- Maintenance of the LWC in accordance with the plant operations and maintenance (O&M) manual.

### **Soils and Land Capability**

- Limited hydraulic load across the site. Daily modelling indicates that irrigation of recycled water can be sustainably managed on site for the first five stages of the development.
- Nutrient loads, pathogens and sodium associated with irrigation using recycled water impacting on soils and future land use.

### **Mitigation Measures**

- Implementation of soil improvement methods or other recommendations as per the Land Capability Assessment.
- Groundwater and surface waters would be protected through appropriate scheduling/application of irrigation in accordance with a Recycled Water Irrigation Plan that will be prepared in accordance the AGWR.

### **Noise**

- Operational noise exceeding predicted emissions and impacting on neighbouring residents.

#### ***Mitigation Measures***

- Implementation of recommended design criteria to the LWC, including the lining of internal walls of the pumphouse and plant room.
- Preparation and implementation of a Noise and Vibration Management Plan as per the noise assessment report.
- Regular ongoing maintenance of the LWC in accordance with the O&M manual.
- Establish a good community policy and consultation with neighbouring landowners.
- Promptly respond and investigate any noise complaint.

### **Odour**

- Operational odour exceeding predicted emissions and impacting on neighbouring residents.

#### ***Mitigation Measures***

- Regular ongoing maintenance of the LWC in accordance with the O&M manual.
- Establish a good community policy and consultation with neighbouring landowners.
- Promptly respond and investigate any odour complaint.

### **Public health**

- Public exposure to recycled water and associated potential health impacts.

#### ***Mitigation Measures***

- End use controls and onsite constraints to minimise both human exposure to hazards; such as signage, use of buffer zones, and control of plumbing and distribution systems
- Ongoing public education as to the appropriate uses and handling of recycled water.

## 5 Addressing Agency Submissions

### 5.1 Requirement

*How has each of the issues raised in the submissions been addressed ?*

### 5.2 Response

Submissions in relation to the network operator's licence application were received from the following stakeholders;

- Sydney Water
- The Hills Shire Council
- NSW Environment Protection Authority (EPA)

A review of the submissions with regards to protection of the environment was undertaken to identify whether the issues raised were appropriately addressed in each of the REFs and was presented in Table 4-1 of *Box Hill North Local Water Centre, Sewage and Recycled Water Reticulation System REF Review Report (Task 4a)* Report Number: DC15241 (NSW Public Works, January 2016).

A summary of how each of the issues raised in the submissions is provided in Table 5-1 below.

**Table 5-1 Review of stakeholder submissions relating to the protection of the environment**

Issue	How the issue has been addressed (refer to REF report sections)
<b>NSW EPA</b>	
An Environment Protection Licence (EPL) for the proposed Box Hill North development will be required.	Section 4.6. Flow Systems Operations will liaise with the EPA to come to an agreed position prior to the water recycling facility needing to be fitted out to a stage where it will exceed the POEO Act threshold processing capacities.
The reticulation and treatment of sewage has the potential to impact on the environment; untreated discharge from both the reticulation system and sewage treatment plant - and the associated nutrients and pollutants being released overland and into waterways - may result in environmental harm.  In recognition of the potential risk associated with larger sewage reticulation systems and treatment plants, larger scale sewage treatment plants require an EPL under the POEO Act.	Section 4.6. Flow Systems Operations will liaise with the EPA to come to an agreed position prior to the water recycling facility needing to be fitted out to a stage where it will exceed the POEO Act threshold processing capacities.
In determining whether to issue an EPL, the EPA must consider a range of matters including practical measures that could be taken to prevent, control, abate or mitigate the pollution. This may include	Section 6.0. It is considered that the environmental assessment of impacts presented in Section 6.0 of both REFs addresses the measures to prevent, control, abate or

Issue	How the issue has been addressed (refer to REF report sections)
<p>consideration of minimising stormwater ingress into the sewage infrastructure and maximising reuse of effluent.</p> <p>Consideration of these matters by the operator during planning of the sewage infrastructure has the potential to result in improved environmental outcomes. It may be appropriate to include conditions relevant to these matters in the network operator's licence.</p>	<p>mitigate pollution from the proposed scheme.</p>
<p><b>Sydney Water</b></p>	
<p>Flow Systems have suggested that in the event they exhaust all other options and require another disposal method they will seek connection to Sydney Water infrastructure or obtain an EPL to discharge.</p>	<p>Section 3.9</p> <p>Tankering of recycled water to an end use remote from the development may need to be considered if uses cannot be identified nearby. Any use of the recycled water outside of the Box Hill North Precinct will not be required for some 10-15 years (after Stage 8 of 12 of the development) and so specific customers cannot be identified. Uses outside of the development, including discharge to waterways would be subject to further environmental assessment and approval by the NSW Environment Protection Authority (EPA).</p>
<p><b>The Hills Shire Council</b></p>	
<p>The proposal is considered to be an unacceptable risk when compared to a conventional sewerage system.</p>	<p>Section 2.3 and 2.4 of the LWC REF.</p> <p>The REF has addressed the benefits of the proposed pressurised sewage system compared to a traditional gravity system. The REF notes that <i>the pressure sewage reticulation system proposed is closed in so far as rainwater, groundwater and stormwater cannot flow into the system and there are no wet weather overflow events discharging into the environment. Significantly, this minimisation and predictability of flow allows for technically advanced treatment technology (membrane bioreactor) to be utilised.</i></p>
<p>There is a significant potential for the proposal to impact upon the residents in terms of noise and odour.</p>	<p>Sections 6.6 and 6.7</p> <p>The noise and odour assessments undertaken as part of the REF have assessed the potential impacts in accordance with current best practice guidelines and have determined that provided the recommended mitigation measures are implemented that no adverse impacts to nearby residents are likely.</p>
<p>The proposed system includes a number of inherent risks that are not found in a conventional gravity sewerage system, as listed below;</p> <ul style="list-style-type: none"> <li>• The system includes thousands of small pumps with small diameter pipe work. The likelihood and</li> </ul>	<p>Sections 2.3 and Section 6.5.2 of the Reticulation REF.</p> <p>Potential for failure and mitigation measures are</p>

Issue	How the issue has been addressed (refer to REF report sections)
frequency of failures of these elements is therefore increased	addressed.
<ul style="list-style-type: none"> <li>There is potential for odour in residential properties due to detention within the property, failure of the treatment plant or failure of the filtration of the vent pipes.</li> </ul>	Section 6.7.2 of the Reticulation REF
<ul style="list-style-type: none"> <li>Small pumps are more prone to blockages and premature wear and require the residents to actively manage the system</li> </ul>	Section 6.9.2 of the Reticulation REF
<ul style="list-style-type: none"> <li>The applicant claims the pots will hold 48 hours of storage of wastewater in the event of a failure. The capacity of proposed holding tanks is inconsistent with two days storage when compared to the design requirements for on-site sewage management solutions and are deemed to be significantly undersized</li> </ul>	Section 6.9.2 Should an issue arise with the on-property equipment, an alarm (audible red light) located on the control panel would be activated to alert the resident that there is a problem with the pump or collection tank. The resident would then contact Flow Systems Operations or the relevant contact as required to arrange for the unit to be serviced or repaired.
<ul style="list-style-type: none"> <li>The system will have excessive energy requirements due to the number of pumps and equipment proposed and is therefore not consistent with the principles of Ecologically Sustainable Development;</li> </ul>	Section 2.3
An acoustic report has been presented in the planning proposal. The report has identified that the noise from the treatment plant is likely to exceed acceptable criteria at night.	Section 6.6 Mitigation measures have been included in the design to address night time operation. The LWC will meet the night time operational noise criteria.
Additional environmental protection conditions relating to potential impacts on; noise, water, odour, chemical storage, system maintenance, contingencies in the event of power failure or the like would also be required.	Section 6.

## Conclusion

The REFs have adequately addressed the issues raised in the stakeholder submissions.

## 6 Recommendation to grant or refuse the network operator's licence

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### 6.1 Requirement

*Having regard to protection of the environment, should the Minister grant or refuse to grant a network operator's licence to the applicant? What is the reason for your answer?*

### 6.2 Response

#### Recommendation

It is recommended that the Minister grant a network operator's licence to Flow Systems Operations for the construction and operation of the Box Hill North LWC, interim sewage storage tanks and sewage and recycled water reticulation systems at Box Hill North subject to the implementation of all safeguards identified in the REFs and compliance with all other relevant statutory approvals, licences, permits and authorisations (listed in Section 4.7 of the REFs).

#### Reason for Recommendation

The following REFs have been reviewed and considered against the requirements of sections 111 and 112 of the EP&A Act and the specific requirements of the project brief;

- *REF for Proposed Local Water Centre, Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 4, March 2016), and
- *REF for the Proposed Sewage, Recycled Water Reticulation Systems Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 7, March 2015)

In considering the potential environmental impacts of the proposed works, the REFs have examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as demonstrated in Section 2.0 of this report. The REFs have considered the factors under clause 228 of the EP&A Regulation as demonstrated in Appendix 1 of each of the REFs.

The proposal described in the REFs will have some environmental impacts which can be ameliorated satisfactorily (as demonstrated in Section 4.0 of this report). Having regard to the safeguards and management measures proposed, both REFs have demonstrated that these impacts are unlikely to be significant and therefore an environmental impact statement does not need to be prepared.

The assessments have considered the potential impacts of the activity on those factors listed under section 111(2), (3) and (4) of the EP&A Act including impacts to critical habitat conservation agreements and plans of management under the NPW Act, joint management agreements and biobanking agreements under the TSC Act and wilderness areas under the *Wilderness Act 1987*.

The proposal described in the REFs will not affect declared critical habitat or significantly affect threatened species, populations or ecological communities or their habitats as defined by the TSC Act pursuant to section 5A of the EP&A Act. Therefore the concurrence of the Secretary of the Office of Environment and Heritage and a species impact statement is not required. The works would be consistent with the biobanking agreement in place for the Box Hill North site.

The assessments have also considered the potential impacts of the activity on matters of national environmental significance and any impacts on Commonwealth land and concluded that the proposal would not impact on either of these issues. Therefore, there is no

requirement for a referral to be made to the Commonwealth Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999*.

Vegetation clearing and land remediation works would be undertaken prior to the construction of the LWC and sewage and recycled water reticulation works at the Box Hill North site. However the REFs have been drafted in a way to safeguard against potential environmental issues should these works not be undertaken. This will ensure that if required, the construction contractor can implement vegetation clearing or earthworks in a manner which minimises potential environmental impacts and is consistent with all specialist investigations.

The REFs are considered to be of adequate quality and meet all relevant requirements as detailed in Sections 2.0, 3.0 and 4.0 of this report.

The *REF for Proposed Local Water Centre, Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 4, March 2016), and *REF for the Proposed Sewage, Recycled Water Reticulation Systems Box Hill North Precinct New South Wales* (RPS Australia East Pty Ltd, Version 7, March 2015) have examined and taken into account to the fullest extent possible all matters likely to affect the environment by reason of the activity and established that the activity is not likely to significantly affect the environment. The REFs have concluded that there will be no significant impacts on matters of national environmental significance or any impacts on Commonwealth land.



## 7 Network Operator's Licence Conditions

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### 7.1 Requirement:

*If you recommend that the Minister should grant a network operator's licence to the applicant, should the licence include any specific conditions to protect the environment? If so, what should these conditions be and why?*

### 7.2 Response

The REFs have assessed all potential impacts associated with the construction and operation of the proposed LWC, interim sewage storage tanks and reticulation network. Mitigation measures have been developed to reduce or ameliorate potential environmental impacts and are summarised in Section 7.0 of each of the REFs. These mitigation measures have been based on a number of specialist investigations undertaken at the Box Hill North site. It is recommended that conditions requiring the implementation of environmental mitigation measures identified in both REFs be included in the network operator's licence.

