

PM No. 1 Pty Ltd

Kings Hill Water and Wastewater Infrastructure

Environmental Impact Statement



PM NO. 1 PTY LTD KINGS HILL WATER AND WASTEWATER INFRASTRUCTURE

Environmental Impact Statement

Designated Development

		A. R. Peny.
Author	Francisco Medina, Rachel Perry, Danielle Haynes	DaltAy
Checker	Westley Owers	Aner.
Approver	Westley Owers	mine.
Date	17/02/2020	
Revision Text	Final Report	

This report has been prepared for PM No. 1 Pty Ltd in accordance with the terms and conditions of appointment for Kings Hill EIS dated 10 May 2019. Arcadis Australia Pacific Pty Limited (ABN 76 104 485 289) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

REVISIONS

Revision	Date	Description	Prepared by	Approved by
Draft	19/07/2019	Draft Report	FM, RP, DH	WO
Final	30/10/2019	Final Report	FM	WO

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STATEMENT OF VALIDITY

Submission of Environmental Impact Statement

Prepared under Part 4, Division 4.12(8) of the *Environmental Planning and Assessment Act 1979*, and Schedule 2, Part 3, Clause 7(1)(e) of the *Environmental Planning and Assessment Regulation 2000*

Environmental Assessment prepared by

Name:	Westley Owers
Qualifications:	BTP (Hons 1) MProDev
Address:	Level 16, 580 George Street Sydney NSW 2000
In respect of:	PM No. 1 Pty Ltd
Applicant Name:	PM No. 1 Pty Ltd
Applicant Address:	PO Box H-257 Australia Square NSW 1215
	The Proposal involves water and wastewater infrastructure to service the first stage of development of the Kings Hill Urban Release Area.
	Key components of the Proposal include:
Proposed	 A water pipeline approximately 6.7 kilometres in length that would connect to existing Hunter Water Corporation infrastructure at Raymond Terrace in the south and Kings Hill Urban Release Area in the north
development:	• A wastewater pipeline approximately 4.2 kilometres in length that would connect to existing Hunter Water Corporation infrastructure in the south and the wastewater pumping station to be constructed within Kings Hill Urban Release Area in the north
	 A wastewater pumping station within Kings Hill Urban Release Area, including a hardstand area for vehicular access during operation
	• Temporary compound areas to be utilised during construction.
	A summary of the legal description (i.e. Lot and Deposited Plan (DP) references) of the Proposal site includes:
	• Lot 1, DP1085482
	• Lot 1, DP1226115
	• Lot 35, DP259487
Land to be	• Lot 36, DP259487
developed.	• Lot 38, DP259487
	• Lot 175, DP251129
	• Lot 291, DP262169
	• Lot 292, DP262169
	• Lot 4, DP241685

Submission of Environmental Impact Statement		
Prepared under Part 4, Division 4.12(8) of the <i>Environmental Planning and</i> <i>Assessment Act 1</i> 979, and Schedule 2, Part 3, Clause 7(1)(e) of the <i>Environmental</i> <i>Planning and Assessment Regulation 2000</i>		
	• Lot 13, DP882528	
	• Lot 1, DP1130764	
	• Lot 113, DP733181	
	• Lot 41, DP103741.	
Environmental Impact Statement:	An Environmental Impact Statement (EIS) is attached which addresses all matters in accordance with Part 4, Division 4.12(8) of the <i>Environmental Planning and Assessment Act 1979</i> , and Schedule 2, Part 3, Clause 7(1)(e) of the <i>Environmental Planning and Assessment Regulation 2000</i> . I certify that I have prepared the contents of this EIS in accordance with the Secretary's Environmental Assessment Requirements (SEARs) (No. 1291) dated 19 February 2019, and that to the best of my knowledge, the information contained within this EIS is not false or misleading.	
Signature:	price.	
Name:	Westley Owers	
Date:	30 October 2019	

GLOSSARY

Term	Description	
ABCS	Australian Bushfire Consulting Services	
ABS	Australian Bureau of Statistics	
ACHAR	Aboriginal Cultural Heritage Assessment Report	
AEP	Annual Exceedance Probability	
AHD	Australian Height Datum	
AHIMS	Aboriginal Heritage Information Management System	
AHIP	Aboriginal Heritage Impact Permit	
The Applicant	The entity seeking approval, namely PM No. 1 Pty Ltd	
APZ	Asset Protection Zone	
ARD	Archaeological Research Design	
ASSMP	Acid Sulfate Soil Management Plan	
AQA	Air Quality Assessment	
AQMS	Air Quality Monitoring Station	
ASD	Approach sight distance	
AWS	Automatic Weather Station	
BAM	Biodiversity Assessment Method	
BAMC	BAM Calculator	
BAL	Basic left turn	
BAR	Basic right turn	
BC Act	Biodiversity Conservation Act 2016	
BDAR	Biodiversity Development Assessment Report	
ВоМ	Bureau of Meteorology	
BOS	Biodiversity Offsets Scheme	
BVM	Biodiversity Values Map	
The camp	Grey-headed Flying-fox camp	
CEMP	Construction Environmental Management Plan	
СКРоМ	Comprehensive Koala Plan of Management	
CLM Act	Contaminated Land Management Act 1997	
CNVMP	Construction Noise and Vibration Management Plan	
Coastal Management SEPP	State Environmental Planning Policy (Coastal Management) 2018	
CoPC	Contaminants of potential concern	
Council	Port Stephens Council	
СТМР	Construction Traffic Management Plan	
DA	Development Application	
dB	Decibel—a unit of measurement used to express sound level	
Designated Development	Development that is declared to be designated development by an environmental planning instrument or the regulations	
DICL	Ductile iron with concrete lining	

Term	Description	
Dol CL	Department of Industry – Crown Lands	
Dol Water	Department of Industry – Water	
DoTEE	Department of the Environment and Energy	
DPIE	Department of Planning, Industry and Environment (from 1 July 2019)	
DP&E	(Former) Department of Planning and Environment	
DSI	Detailed Site Investigation	
EIS	Environmental Impact Statement	
EP&A Act	Environmental Planning and Assessment Act 1979	
EP&A Regs	Environmental Planning and Assessment Regulation 2000	
EPA	Environment Protection Authority	
EPI	Environmental planning instrument	
EPL	Environmental Protection Licence	
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999	
ERA	Environmental Risk Analysis	
ERS	Emergency Relief Structure	
ESCP	Erosion and Sediment Control Plan	
ESD	Ecologically Sustainable Development	
FM Act	Fisheries Management Act	
GDEs	Groundwater dependent ecosystems	
The Guideline	Assessing Vibration: A Technical Guideline	
HCIS	Hazardous Chemical Information System	
Heritage Act	Heritage Act 1977	
HRVs	Heavy Rigid Vehicles	
HWC	Hunter Water Corporation	
IBRA	Interim Biogeographic Regionalisation of Australia	
ICNG	Interim Construction Noise Guidelines	
IMAP	Inventory Multi-tiered Assessment and Prioritisation	
Infrastructure SEPP	State Environmental Planning Policy (Infrastructure) 2007	
JRPP	Joint Regional Planning Panel	
KHD	Kings Hill Developments Pty Ltd	
Kings Hill URA	Kings Hill Urban Release Area	
KRAs	Key result areas	
LGA	Local Government Area	
LOS	Level of service	
MNES	Matters of National Significance	
NCA	Noise Catchment Area	
NICNAS	National Industrial Chemicals Notification and Assessment Scheme	
NMLs	Noise Management Levels	

Term	Description	
Northrop	Northrop Consulting Engineers	
Northstar	Northstar Air Quality Pty Ltd	
NPI	NSW Industrial Noise Policy for Industry	
NP&W Act	National Parks and Wildlife Act 1974	
NSW	New South Wales	
NSW 2021	NSW 2021: A plan to make NSW number one	
NVA	Noise and Vibration Assessment	
OCPs	Organochlorine pesticides	
OEH	Office of Environment and Heritage	
OOHW	Out of hours works	
OPPs	Organophosphate pesticides	
OU	Odour units	
PAD	Potential Archaeological Deposit	
PASS	Potential Acid Sulphate Soils	
PBP	Planning for Bush Fire Protection 2006	
PCBs	Polychlorinated biphenyls	
PCTs	Plant community types	
PE	Polyethylene	
PEA	Preliminary Environmental Assessment	
The Plan	Hunter Regional Plan 2036	
Phytophthora	Phytophthora cinnamomi	
PMF	Probable maximum flood	
POEO Act	Protection of the Environment Operations Act 1997	
Port Stephens DCP	Port Stephens Development Control Plan 2014	
Port Stephens LEP	Port Stephens Local Environmental Plan 2013	
The Proposal	Water and waste water supply pipeline and a waste water pumping station	
PSI	Preliminary Site Investigation	
PVC	Polyvinylchloride	
RAPs	Registered Aboriginal Parties	
RDA	Riding for the Disabled Australia	
REF	Review of Environmental Factors	
Resonate	Resonate Consultants Pty Ltd	
RFS	Rural Fire Services	
Roads Act	Roads Act 1993	
Roads and Maritime	Roads and Maritime Services	
SEARs	Secretary's Environmental Assessment Requirements	
SEPP 33	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development	

Term	Description	
SEPP 44	State Environmental Planning Policy No. 44 – Koala Habitat Protection	
SEPP 55	State Environmental Planning Policy No. 55 – Remediation of Land	
SEPPs	State Environmental Planning Policies	
SIA	Stormwater Impact Assessment	
SISD	Safe Intersection Sight Distance	
SHR	State Heritage Register	
SoHI	Statement of Heritage Impact	
SSD	State Significant Development	
State and Regional SEPP	State Environmental Planning Policy (State and Regional Development) 2011	
The Strategy	Port Stephens Planning Strategy 2011-2036	
SWL	Standing Water Level	
SWMP	Soil and Water Management Plan	
TECs	Threatened Ecological Communities	
The Proposal site	The Proposal stretches about 7.8 kilometres between Raymond Terrace in the south and Kings Hill Urban Release Area in the north	
TIA	Transport Impact Assessment	
TOBAN	Total Fire Ban	
TSC Act	Threatened Species Conservation Act 1999	
VDV	Vibration Dose Value	
VPA	Voluntary Planning Agreement	
WARR Strategy	Waste Avoidance and Resource Recovery Strategy 2014-2021	
WARR Report	Waste Avoidance and Resource Recovery Report 2017-2018	
WHS	Work Health and Safety	
Williamtown AWS	Williamtown RAAF Automatic Weather Station	
WM Act	Water Management Act 2000	
WSAA	Water Services Association of Australia	
WWPS	Waste water pumping station	
WWTW	Waste Water Treatment Works	

EXECUTIVE SUMMARY

PM No. 1 Pty Ltd is seeking approval for the development of a water and wastewater supply pipeline and a wastewater pumping station (WWPS) (the Proposal) to support the development of the Kings Hill Urban Release Area (URA), north of Raymond Terrace, New South Wales (NSW). PM No. 1 Pty Ltd (the Applicant) is seeking approval for the Proposal under Part 4 (Designated Development) of the *Environmental Planning and Assessment 1979* (EP&A Act).

The Proposal is approximately 6.7 kilometres in length and is located between Raymond Terrace in the south, and Kings Hill URA in the north, within the Port Stephens Local Government Area. The Proposal site includes the footprints of the WWPS, water pipeline and wastewater pipeline, in addition to buffer areas and temporary construction compounds.

This Environmental Impact Statement (EIS) has been prepared by Arcadis Australia Pacific Pty Limited (Arcadis) on behalf of the Applicant, PM No. 1 Pty Ltd to support an application for the approval of the Proposal. It has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs No. 1291) provided for the Proposal in accordance with Section 4.12(8) of the EP&A Act and Schedule 3 the Environmental Planning and Assessment Regulation 2000 (EP&A Regs).

Planning approval pathway and statutory context

The Proposal triggers the requirements for Designated Development under Part 4 of the EP&A Act, as the Proposal would involve development within a mapped Coastal Wetland listed under *State Environmental Planning Policy – Coastal Management 2018* (Coastal Management SEPP). While the majority of the Proposal is located outside of a mapped wetland, for simplicity, the Applicant is seeking approval for the entire Proposal as Designated Development.

The Proposal is consistent with the relevant local planning instruments, the *Port Stephens Local Environmental Plan 2013* and the *Port Stephens Development Control Plan 2014*.

Need for the Proposal

Strategic Need

Kings Hill URA has been identified by the *Hunter Regional Plan 2036* (the Plan) as one of three future housing opportunities for the Port Stephens Local Government Area (LGA). The land at Kings Hill comprises 'greenfield' land therefore there is currently no water and wastewater infrastructure with the capacity to service the Kings Hill URA. To support this development of residential dwellings, as well as a town centre (including a school, commercial and mixed-use development) within the Kings Hill URA, the provision of water and wastewater infrastructure is required, specifically:

- Pipes and pumping station(s) to convey wastewater from Kings Hill URA to a wastewater treatment works, where wastewater is treated before being discharged to waterways or reused
- Pipes to convey drinking water from an existing water main trunk to Kings Hill URA.

Therefore, the Proposal is considered necessary to support the additional housing goals for NSW strategic planning.

Proposal alternatives

A number of alternative scenarios to achieve the Proposal objectives were considered, and included:

- The 'Do Nothing' scenario: This option was rejected as given that there is currently
 no water and wastewater infrastructure present with the capacity to service Kings
 Hill URA, the provision of water and wastewater infrastructure is required to facilitate
 the development of the Kings Hill URA. Without adequate water and wastewater
 infrastructure, the development of the Kings Hill URA could not feasibly occur
- Construction of Wastewater Option SE2 and Water Option 3: The Wastewater Option SE2 was rejected as the alternate option minimises impact to land mapped as a Coastal Wetland under the Coastal Management SEPP, which is also land that HWC proposes to establish as biodiversity stewardship site under the *Biodiversity Conservation Act 2016*. Water Option 3 was determined as the preferred option
- Water Option 3, being the most suitable option, forms the basis for the Proposal.

Proposal Description

The objective of the Proposal is to provide water and wastewater infrastructure that enables the connection of residential, commercial and mixed-use development within Kings Hill URA to Hunter Water Corporation's (HWC) existing water and wastewater network.

Key components of the Proposal include:

- A water pipeline approximately 6.7 kilometres in length that would connect to existing HWC infrastructure in the south and Kings Hill URA in the north
- A wastewater pipeline approximately 4.2 kilometres in length that would connect to existing HWC infrastructure in the south and the WWPS to be constructed within Kings Hill URA in the north
- A WWPS within Kings Hill URA, including a hardstand area for vehicular access during operation
- Temporary compound areas to be utilised during construction.

The Proposal is shown in Figure 0-1.



LEGEND

- Compound Kings Hill URA Proposed water infrastructure alignment Proposed wastewater infrastructure
- alignment

Figure 0-1 The Proposal overview

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Coordinate System: GDA 1994 MGA Zone 56 Date issued: October 22, 2019 Aerial imagery supplied by NSW LPI 1:25,000 at A4

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Consultation

Ongoing consultation by the Applicant has been undertaken throughout the preparation of this EIS with government agencies, service and infrastructure providers the community, public interest groups, Aboriginal groups and nearby landowners. The consultation undertaken included that recommended by the SEARs as well as additional consultation with community members and other relevant parties and agencies.

Government agency consultation

A number of government agencies were consulted with during the preparation of the EIS for the Proposal, including:

- Department of Planning, Environment & Industry (DPIE)
- Hunter Water Corporation (HWC)
- Environmental Protection Authority (EPA)
- Office of Environment and Heritage (OEH)
- Department of Industry Water (Dol Water)
- Roads and Maritime Services (Roads and Maritime)
- Rural Fire Service (RFS)
- Port Stephens Council (Council).

The abovementioned government agencies were consulted with in the form of meetings, telephone conversations, email and/or letter correspondence. Key issues raised included:

- Water and hydrology, including water quality, flooding, stormwater runoff, sedimentation, wastewater system overflows and scouring
- · Biodiversity, including threatened species
- Air quality, including impacts of odour on surrounding receivers
- Compliance of the proposal with relevant Environmental Planning Instruments
- Heritage, including Aboriginal and non-Aboriginal
- · Bushfire, including ignition risks and strategies to minimise risks
- · Contamination, including acid sulfate soils
- Noise, including construction noise impacts on receivers
- Traffic and transport, including construction impact on the existing road network.

These key issues have been addressed throughout this EIS.

Community consultation

Community consultation was undertaken during the development of the EIS to facilitate engagement between the project team and key community stakeholders. This engagement served a dual purpose:

- To identify key community issues for consideration in the EIS and associated technical studies
- To create broad awareness of the Proposal so as to remove uncertainty around the proposed activities.

Community consultation was undertaken from 29 July 2019 to 25 September 2019 and included:

- A dedicated webpage that offers general information about the Proposal, together with a timeline, factsheet and opportunity to lodge submissions on-line
- A mobile contact number and project email address, and postal address were used to provide a central point of contact for community enquiries.
- A total of 420 letters were mailed out to landowners and the community seeking feedback on the Proposal. The letters contained the background of the Proposal and its key components, the key environmental impacts and assessment proposed, a project timeline, as well as methods for submitting enquiries
- Community consultation responses received have been considered as part of the preparation of this EIS.

Other consultation

Other consultation for the Proposal included:

- Aboriginal consultation: Fourteen Registered Aboriginal Parties (RAPs) were consulted in accordance with Aboriginal cultural heritage consultation requirements for proponents (OEH, 2010c). This consultation included letters advertisements, participation of relevant representatives in field surveys, and provision of the methodology and draft copy of the Aboriginal Cultural Heritage Assessment Report (ACHAR). Three (3) responses were received for the draft report and have been documented in the final ACHAR (Appendix F)
- WaterNSW: WaterNSW confirmed that the Proposal site is not located near any WaterNSW land, assets or infrastructure
- Service and utility providers: Discussions with Ausgrid and Telstra determined the location of utilities and that further consultation would be necessary as part of detailed design.

Key environmental issues

A summary of the key environmental issues, as identified within the SEARs (No. 1291), is provided within Table 0-1 below.

Key Environmental issue	Potential construction impacts	Potential operation impacts
Soils and contamination	 Class 3 category of acid sulfate soils have been identified at the northern portion of the Proposal site. There is potential for acid sulfate soils to be encountered, disturbed, exposed and/or drained during excavation works Other potential onsite sources of contamination identified include unknown fill materials and the presence of herbicides and pesticides 	 A chlorine injection point is required during operations for the water pipeline. Chlorine is classified as hazardous by SafeWork Australia A Human Health risk was conducted and concluded that existing regulatory controls are considered sufficient and the use of chlorine is not anticipated to have adverse impacts on the environment The chlorine injection point will be designed and managed in

Table 0-1 Key environmental issues and potential impacts

Key Environmental issue	Potential construction impacts	Potential operation impacts
	 Receptors may be exposed to contamination on and off-site through direct contact with contaminated soil/groundwater, ingestion of soil/abstracted groundwater, inhalation of dust, vertical migration of spills/leaks to groundwater Through the implementation of mitigation measures, the risk of contamination has been deemed low. 	accordance with <i>HWC</i> Standard Technical Specification – Chemical Storage and Delivery Systems (STS 670) and the relevant Australian Standards and legislative requirements.
Water and hydrology	 The majority of the Proposal site would be located outside of the flood prone land. The northern and southern extents of the Proposal site are within the low hazard flood fringe and flood planning area It is anticipated that the construction footprint of the WWPS would be located both above the 100-year flood level and outside of the riparian corridors of the ephemeral watercourses in accordance with HWC requirements. The exact location of the WWPS would be determined at detailed design Potential impacts to sensitive receiving waterways (e.g. Grahamstown Dam, Irrawang Swamp and the Kings Hill URA watercourse) would involve downstream sedimentation and water quality impacts associated with earthworks and other construction activities Groundwater may be intercepted during construction of the Proposal. The nature and duration of impacts would be mitigated through the implementation of appropriate measures prior to any 	 The commissioning of the pipelines, ongoing inspection of the pipelines and management of the WWPS overflow relief would be in accordance with HWC standards Whilst unlikely, during the operational period there is the risk of the pipelines leaking or spillage during maintenance activities which could potentially impact the downstream water quality of nearby waterways. The extent of water quality impacts would depend on the volume of leakage/spill and spread Stormwater runoff volumes and pollutant loads could increase during the operational period at the proposed WWPS. Water quality and flow of nearby receiving waterways could be impacted, though impacts are likely to be minor Regular monitoring would be undertaken for the Proposal site rehabilitation, pipeline performance, watercourses and downstream water quality. Any scour, vegetation or water quality issues that arise would be investigated and rectified.
	construction works.	
Biodiversity	 The Proposal would traverse a mapped Coastal Wetland (ID 36586) under the Coastal Management SEPP The Proposal would result in the removal of about 5.22 	 There is potential for edge effects during maintenance activities during operation Trampling of adjacent native vegetation, rubbish dumping, soil disturbance and weed
	the removal of about 5.22 hectares of native vegetation	soll disturbance and weed spread could occur. However,

Key Environmental issue	Potential construction impacts	Potential operation impacts
	 from within the Proposal site. However, none of the vegetation in the Proposal site is equivalent to any Threatened Ecological Community (TEC) listed under the Environment Protection and Biodiversity Conservation Act 1999 and/or Biodiversity Conservation Act 2016 The clearing of vegetation would result in the loss of fauna habitat, fauna injury and mortality, and some indirect impacts such as odds offsets 	 this is likely to be minor and localised Whilst unlikely, groundwater may be contaminated from wastewater leakage along the pipeline during operation. The nature and duration of impacts is unknown and potential groundwater dependent ecosystems (GDEs) near the Proposal site may be impacted.
	 and weeds There would be minimal removal of aquatic habitat in the Kings Hill URA watercourse during construction. However, no impacts to threatened fish are anticipated Construction activities would generate short-term impacts (e.g. noise, vibration, dust, light spill) which could affect 	
	 adjacent native vegetation and native fauna, such as the Raymond Terrace Flying-fox Camp (Camp ID 265) All relevant mitigation measures would be implemented in order to minimise potential impacts from construction activities. 	
Aboriginal heritage	 Two newly recorded Aboriginal sites were located during the survey for the Proposal and have been registered with the Aboriginal Heritage Information Management System (AHIMS): AHIMS ID 38-4-2023 - KHW01 Artefact Scatter and Potential Archaeological Deposit (PAD) and AHIMS ID 38-4-2025 - KHW02 PAD There is potential that both AHIMS ID 38-4-2023 - KHW01 and AHIMS AHIMS AHIMS AHIMS AHIMS AHIMS AHIMS AHIMS A	 Operation of the Proposal (i.e. the routine delivery of water, routine pumping of wastewater and inspection and maintenance of infrastructure) would not impact Aboriginal heritage Should sub-surface maintenance or repairs of infrastructure be required, potential environmental impacts would be considered as relevant.
	 and AHIMS ID 38-4-2025 - KHW02 would be impacted by earthworks and pipe installation however this would be determined at detailed design The remainder of the Proposal site was not considered to be of Aboriginal significance. 	

Key Environmental issue	Potential construction impacts	Potential operation impacts
Non-Aboriginal heritage	• There are three non-Aboriginal heritage items that overlap with the construction footprint: two of which are listed on the Hunter Water Section 170 Register (Irrawang Pottery Site and Grahamstown Dam) and one listed on both the Port Stephens LEP as well as the Hunter Water Section 170 Register (curtilage of the Irrawang Pottery Site)	• Non-Aboriginal heritage would not be impacted during operation of the Proposal, as the pipeline would be underground, and areas reinstated where practicable.
	 Key activities of the Proposal have potential to impact the aforementioned heritage items including trenching, underboring, backfilling and restoration works, as well as vegetation clearance 	
	• Earthworks in the vicinity of the mature trees in Boomerang Park along the Irrawang Street boundary that are within approximately 12 metres of the proposed works, may impact on their root zones. Impact to tree root zones would be avoided where practicable	
	 Heritage items adjacent to the Proposal would experience temporary visual impacts during construction 	
	• Further investigations will be conducted and the final pipeline alignment may be refined during detailed design to avoid, where possible, impact to significant archaeological remains.	
Waste management	• The Proposal would result in waste generation primarily during construction as a result of civil works and vegetation clearing. The waste streams generated would include spoil and excavation waste, green waste and other general construction and demolition waste	• The major sources of waste during operation would be limited to maintenance works. Where feasible and reasonable, waste would be managed, reused and recycled in accordance with the Waste Avoidance and Resource Recovery Strategy.
	 The volume of waste would be determined during detailed design and managed appropriately to ensure waste generation is minimised. 	

Key Environmental	Potential construction impacts	Potential operation impacts
issue		
Air quality and odour	 Sensitive receptor areas surrounding the Proposal site comprise residential, commercial and recreational areas Construction particular matter is generally typified by heavier size fractions which would primarily result in amenity impacts rather than health- related impacts Construction activities would generate short-term emissions of particulates, that may affect sensitive receivers in close proximity however given the extent of the Proposal site, the distance to sensitive receptors and of the construction activities, the risk of health- related impacts associated with smaller particles would be negligible. 	 Air emissions from the operation of the Proposal would be negligible Maintenance activities at valve, hydrant and scour locations may generate odour emissions, which would be short term in nature The WWPS would generate odour emissions from the pump well, valve pit and any educt ventilation stacks installed within the WWPS location Through good practice and adherence to POEO principles and HWC standards, it is anticipated odour emissions would remain below the odour criterion for urban areas.
Noise and vibration	 Four noise catchment areas have been determined within the vicinity of the Proposal site and include: commercial, educational and recreational receiver types Construction activities are expected to exceed the relevant noise criteria at sensitive receivers located in close proximity to the Proposal site Those located directly adjacent to the compound areas are likely to be in highly noise affected category when work is occurring at their location. Construction works would move progressively along the alignment and therefore maximum noise impacts would generally be temporary Predicted maximum noise levels within the compound areas were to operate outside of standard construction hours Most construction works will be completed within standard hours in accordance with <i>NSW</i> 	Operational activities associated with the Proposal are anticipated to comply with the established noise criteria through the implementation of the relevant acoustic control measures within HWC guidelines.

Key Environmental issue	Potential construction impacts	Potential operation impacts
	Industrial Noise Policy for Industry however if out of hour works are deemed necessary (e.g. for worker safety or impact on traffic), they would be undertaken in accordance with HWC requirements • All relevant mitigation measures would be	
	implemented in order to minimise the potential noise and impacts from construction activities	
	• Generally, the separation distance from the nearest receivers is sufficient to mitigate the potential vibration impacts.	
Traffic and transport	• During a worst-case scenario, the construction phase intersection impact found Pacific Highway/Laydown Access Road would experience an average additional delay of up to 2.4 seconds in the PM peak with construction traffic	• Operational generated traffic would be negligible from a traffic engineering or transport planning perspective and further analysis of the operational stage would not be required.
	 All other assessed intersections would experience no loss of service during construction 	
	• The traffic impact assessment also included a turns warrants assessment, absorption capacity assessment, safe intersection sight distance, approach sight distance, and parking provision. All other assessments were determined as having no or negligible impact from construction traffic	
	• Overall, the proposed construction generated traffic would have a minimal impact on the existing surrounding road network.	
Bushfire	 The northern part of the Proposal site is within an area mapped as a buffer zone from Bushfire Vegetation Category 1 (high hazard). Additionally, the Proposal site traverses Vegetation Category 2 (low hazard) at the north (Kings Hill URA) and south (Raymond Terrace) Potential ignition risks from 	 As during construction, the above ground components of the Proposal are exposed to bushfire risk. The interim APZs established during construction will be maintained until the Kings Hill URA is fully developed and bushfire prone vegetation surrounding the WWPS at the north of Proposal site removed. Thus, the risk of material ignition

Key Environmental issue	Potential construction impacts	Potential operation impacts
	human activity, vandalism, sparks from plant machinery operations and Hot Work operation would be minimised through the implementation of safe works procedures	during operation would be reduced.
	 The majority of the Proposal includes infrastructure located underground that would not be exposed or pose a bushfire risk 	
	• The above ground components included in the Proposal that may be exposed to bushfire risk include above ground components of the WWPS and the educt vent shaft pipes	
	• Given the robust nature of the galvanised steel pipes, the need for greater defendable space around the educt vents is unnecessary	
	• To ensure adequate defendable space for the Proposal, interim Asset Protection Zones (APZ) of 12 metres to the north, west and south, and 29 metres to the east of the WWPS footprint would be maintained during the construction stage until the Kings Hill URA is fully developed and bushfire prone vegetation surrounding the WWPS at the north of Proposal site removed. These interim APZs would be located within R2 zoned land and outside any environmental conservation zones.	

Other issues

Other environmental issues that were not raised in the SEARs have been assessed and include hazard and risk, landscape and visual amenity, socio-economic, and landuse and property. Impacts associated with these issues have been determined as temporary and short-term in nature (e.g. access disruptions).

From a socio-economic perspective, the Proposal would have a positive outcome as it would provide water and wastewater services to the Kings Hill URA. Further operational benefits include employment generation for the ongoing maintenance of the Proposal.

Justification

The Proposal is considered necessary to support the Kings Hill URA, including development of residential dwellings, as well as a town centre through the provision of water and wastewater infrastructure, specifically:

- Pipes and pumping station(s) to convey wastewater from Kings Hill URA to a wastewater treatment works, where wastewater is treated before being discharged to waterways or reused
- Pipes to convey drinking water from an existing water main trunk to Kings Hill URA.

PM No. 1 Pty Ltd is seeking approval for the development of a water and wastewater supply pipeline and a WWPS to support the development of the Kings Hill URA, which has been identified as a future housing opportunity by the Plan. This development has a forecasted population of 11,000 and would greatly contribute to economic growth and jobs in the LGA. The provision of secure potable water would not only improve people's lives, local environments, and strengthen the community but it would ultimately stimulate the state and regional economy. Further, the Proposal represents investment in regional infrastructure that would secure potable water supplies to the growing community at Kings Hill URA.

The Proposal has been proven to be consistent with the relevant local and state government planning instruments. No significant environmental impacts have been identified during the preparation of the EIS. The environmental impacts identified are considered to be able to be mitigated through the implementation of the identified mitigation measures for construction and operation of the Proposal.

Construction of the Proposal would result in relatively minor short-term impacts to the local environment. These temporary impacts would be generally confined to the Proposal site and immediate surrounds.

A range of measures are proposed to mitigate these potential environmental impacts. A CEMP including the mitigation measures proposed in this EIS would be prepared prior to commencement of construction of the Proposal. Assuming the CEMP is successfully implemented, no significant environmental impacts during the construction phase are predicted.

Operation of the Proposal would result in relatively minor impacts to the local environment. The operation of the Proposal would be in accordance with HWC's procedures, as well as other relevant guidelines, as mentioned throughout the EIS.

The development of the Proposal is therefore required and, as a result of mitigating potential environmental impacts, would not significantly impact on the surrounding environment or community.

Conclusion

The Proposal, which is classified as Designated Development under Part 4 of the EP&A Act, has been subject to an EIS in accordance with the the EP&A Act, EP&A Regs and the SEARs.

The potential environmental, social and economic impacts, both direct and cumulative, have been identified and thoroughly assessed as part of this EIS. The assessment concluded that no significant environmental impacts have been identified as a result of the Proposal. It is considered that any potential impacts can be satisfactorily mitigated through a range of measures that have been identified within the EIS. In addition, the Proposal has been assessed against – and has been found to be consistent with – the priorities and targets adopted in relevant and draft State plans as well as Government policies and strategies.

The Proposal would provide significant benefit in terms of providing water and wastewater infrastructure for Kings Hill URA, a development which is expected to yield in excess of 3,500 residential dwellings over a twenty-five-year period. This Proposal accompanies concurrent applications for the proposed stormwater channel and interchange at Kings Hill, which would also support the Kings Hill URA. The proposed development is in the public interest and its approval is recommended.

Next steps

The EIS would be placed on public display for 28 days in accordance with Schedule 1, Division 2 (Part 8, Designated Development Applications) of the EP&A Act. This public display period would provide an opportunity for all stakeholders to comment on the Proposal. On completion of the public display period, all submissions received would be considered in a response to Council.

Opportunities would be provided for the community to provide feedback as well as for the dissemination of up-to-date information on the Proposal via an email feedback system with RPS Group (kingshill@rpsgroup.com.au) and the maintenance of a free-call information line (1800 887 598).

In addition, the Project website (https://kingshill.engagementhub.com.au/) would be regularly updated throughout construction of the Proposal, to provide accessible, up-to-date information regarding the Proposal.

1 INTRODUCTION

1.1 Overview

PM No. 1 Pty Ltd is seeking approval for the development of a water and wastewater supply pipeline and a Wastewater Pumping Station (the Proposal) to support the development of the Kings Hill Urban Release Area (URA), north of Raymond Terrace, NSW. The Proposal is located between Raymond Terrace in the south, and Kings Hill URA in the north.

Approval for the Proposal is sought as Designated Development under Part 4 of the *Environmental Planning and Assessment 1979* (EP&A Act). This planning approval pathway is triggered as a result of the Proposal (in part) traversing a mapped Coastal Wetland (ID 36586) under the *State Environmental Planning Policy (Coast Management) 2018* (Coastal Management SEPP).

The Proposal includes water and wastewater pipelines of about 6.7 kilometres and 4.2 kilometres in length, respectively, and an associated Wastewater Pumping Station (WWPS) within Kings Hill URA. The water pipeline would connect to existing Hunter Water infrastructure in the south and the Kings Hill URA in the north, while the wastewater pipeline would connect to the proposed WWPS in Kings Hill URA and existing Hunter Water infrastructure in the south.

This EIS has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) (No. 1291) provided for the Proposal in accordance with Section 4.12(8) of the EP&A Act and Schedule 3 the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

1.2 Background to the Proposal

In 2010, the New South Wales Government rezoned land at Kings Hill, located north of Raymond Terrace within the Port Stephens Local Government Area (LGA). Previously rural zoned land, the land would support a mix of general residential, mixed use and local centre land and is expected to comprise in excess of 3,500 residential dwellings developed over a twenty-five-year period.

Kings Hill Developments (KHD) is the majority landowner of this rezoned land known as the Kings Hill Urban Release Area (Kings Hill URA). Key development features of Kings Hill URA will also include the provision of utilities and supporting infrastructure, including a Pacific Highway grade separated interchange, stormwater channel and water and wastewater infrastructure. There is currently no water and wastewater infrastructure present with the capacity to service Kings Hill URA.

To address Hunter Water Corporation's (HWC) strategic planning requirements and determine infrastructure requirements to connect Kings Hill URA to the water and wastewater network, *Kings Hill Development Wastewater Servicing Strategy* (SMEC 2014) was prepared. This strategy was approved by HWC in 2014.

Following extensive consultation with HWC, consideration of environmental and technical constraints, and review of location and capacity of existing HWC assets, two updated servicing strategies have been prepared:

- *Kings Hill Development Wastewater Servicing Strategy* (SMEC 2017, Revision G), which identifies the preferred option for wastewater infrastructure to be developed
- *Kings Hill Development Water Servicing Strategy* (SMEC 2017, Revision H), which identifies the preferred option for water infrastructure to be developed.

Most recently, an addendum to the *Kings Hill Development Wastewater Servicing Strategy* (SMEC 2017, Revision G) was prepared by Northrop. This addendum to the strategy compared the preferred wastewater infrastructure option with an alternate option that further avoided environmental constraints (refer to Section 3.3 for further

detail). The alternate option was approved in principle by HWC during a meeting held on 15 November 2017, and the addendum to the strategy was prepared on 12 December 2017.

A number of applications are currently in preparation to support the development of the Kings Hill URA. A description of the current applications is provided within Table 1-1.

Table 1-1 Kings Hill URA current applications

Development	Description	Status
KHD Concept Application	A Development Application has been lodged with Council for the KHD Concept Masterplan and Stage 1 enabling works. The proposed development would support a mix of general residential, mixed use and local centre land. This proposal is expected to comprise a total of 1,900 residential lots. Note: The entire rezoned land at Kings Hill URA is expected to comprise in excess of 3,500 residential dwellings developed over a twenty-five-year period.	DA-2018/772.1 currently under assessment with Council
Interchange	A Review of Environmental Factors (REF) is being prepared by KHD, on behalf of Roads and Maritime, for a proposed grade separated interchange over the Pacific Highway at Kings Hill that would enable safe and efficient access and egress from the proposed Kings Hill URA. This interchange would satisfy the requirements of Clause 6.5 of the Port Stephens LEP that requires arrangements to be made for the provision of vehicular access providing for the long-term traffic capacity needs of the URA.	Currently under assessment with Roads and Maritime
Stormwater channel	A REF is being prepared by KHD, on behalf of Roads and Maritime, for a proposed stormwater channel that would convey post-development flows, treated at the source within the URA on the west of the Pacific Highway, and prevent stormwater entering into the Grahamstown Dam for any rainfall event up to the 0.2% Annual Exceedance Probability (AEP).	Currently under assessment with Council
Interchange/stormwater channel	State Voluntary Planning Agreement (VPA) between KHD, DPIE and Roads and Maritime Services provides best endeavours for state government to fund and deliver the interchange, stormwater channel and land for a school, with recovery of funds from developers (contributions) within the URA on a proportionate basis.	Draft VPA 2014/9939 was exhibited April / May 2019 and is currently being considered for execution by DPIE and Roads and Maritime
Wastewater and water pipeline (the Proposal)	Refer to Section 4 of this EIS.	The subject of this EIS

The above applications are outlined in Figure 1-1.



Proposed water infrastructure alignment Proposed stormwater channel - Proposed interchange

Coordinate System: GDA 1994 MGA Zone 56 Date issued: October 21, 2019 Aerial imagery supplied by NSW LPI

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Figure 1-1 Kings Hill URA and associated infrastructure

1.2.1 Proposal components and key terms

The key terms are outlined in Table 1-2.

Table 1-2 Terminology

Term	Definition	
Kings Hill URA	Kings Hill Urban Release Area	
Proposal	Water and wastewater supply pipeline and a wastewater pumping station to support the Kings Hill URA	
Proposal site	The Proposal stretches about 6.7 kilometres between Raymond Terrace in the south and Kings Hill Urban Release Area in the north	

1.3 Proposal objective

The objective of the Proposal is to provide water and wastewater infrastructure that enables the connection of residential, commercial and mixed-use development within Kings Hill URA to HWC's existing water and wastewater network.

By facilitating the development of Kings Hill URA, the Proposal is consistent with the overarching land use strategy outlined in *Port Stephens Planning Strategy 2011-2036* (Port Stephens Council, 2011). This strategy identifies the development of the town centre at Kings Hill, located within the Primary Growth Corridor of the LGA, as a proposal that has the potential to greatly impact on economic growth and jobs in the LGA. The strategy also forecasts that Kings Hill will support a population of up to 11,000 people. The town centre and residential properties will all require connection to water and wastewater infrastructure.

1.4 Structure of this EIS

The structure of this EIS is as follows:

- **EIS Summary**: Provides a brief overview of the Proposal, key environmental assessment results and an outline of the proposed environmental and social mitigation measures
- Section 1 Introduction: Provides an introduction to the Proposal and the EIS, including project objectives, site history, and previous approvals
- Section 2 Site description: Provides a summary of the existing Proposal site, its location in a regional and local context and existing operations of the Proposal site
- Section 3 Proposal justification, need and alternatives: Provides a discussion on the need for the Proposal having regard to strategic justification, relevant legislation, plans and policy and also provides alternatives to the design and location of the Proposal
- Section 4 Proposal description: Includes a description of the Proposal including built form, construction methodology and operational procedures
- Section 5 Statutory planning and approvals: Provides a summary and assessment of the Proposal having regard to relevant statutory legislation and plans at a Commonwealth, State and Local Government level
- Section 6 Consultation: Provides a summary of the consultation (public, stakeholder and government agencies) which has been undertaken to date for the Proposal

- Section 7 Key environmental issues: Provides a discussion on the existing environment conditions and an assessment of the key environmental issues for the Proposal as identified in the SEARS (No. 1291), namely: soils and contamination, water and hydrology, biodiversity, Aboriginal heritage, Non-Aboriginal heritage, waste management, air quality and odour, noise and vibration, traffic and transport, and bushfire
- Section 8 Other environmental issues: Provides a discussion on the on the existing environment conditions and an assessment of the other environmental issues (not listed in the SEARs) for the Proposal, namely: hazard and risk, landscape and visual amenity, socio-economic, property and land use and ecologically sustainable development
- Section 9 Cumulative impacts: Provides an analysis of the likely cumulative impacts resulting from the interaction of the Proposal with other developments within the region
- Section 10 Environmental risk assessment: Provides an analysis of the likely environmental risks and assigns a rating before and after the implementation of mitigation measures
- Section 11 Compilation of mitigation measures: Includes a summary of the mitigation measures identified in Sections 7 to 8 to minimise any adverse impact of the Proposal on the surrounding environment
- Section 12 Justification and conclusion: Provides a justification and conclusion of the Proposal.

Design plans and other supporting documentation for the Proposal are appended to this EIS and include:

- A summary of the Secretary's Environmental Assessment Requirements (SEARs) (No. 1291) provided for the Proposal (Appendix A)
- Preliminary Engineering Design Plans prepared by Northrop (Appendix B)
- Construction Footprint Overview prepared by Arcadis (Appendix C)

Technical specialists' reports for the Proposal are appended to this EIS. These reports provide further detail regarding the key environmental issues addressed in this EIS. The plans and technical reports for the Proposal include:

- Biodiversity Development Assessment Report prepared by Arcadis (Appendix D)
- Transport Impact Assessment prepared by Arcadis (Appendix E)
- Aboriginal Cultural Heritage Assessment Report prepared by Artefact (Appendix F)
- Statement of Heritage Impact prepared by Artefact (Appendix G)
- Preliminary Site Investigation prepared by Arcadis (Appendix H)
- Bushfire Assessment Report by Australian Bushfire Consulting Services (Appendix I)
- Preliminary Geotechnical Assessment prepared by Douglas Partners (Appendix J)
- Cut and Fill Plan prepared by Northrop (Appendix K)
- Stormwater Impact Assessment prepared by Arcadis (Appendix L)
- Air Quality Assessment prepared by North Star (Appendix M)
- Noise and Vibration Impact Assessment prepared by Resonate (Appendix N).

2 PROPOSAL SITE DESCRIPTION

2.1 Site location and local context

The Proposal is located within Port Stephens LGA, approximately four kilometres north of Raymond Terrace, 25 kilometres north of Newcastle and 135 kilometres north of Sydney.

The Proposal stretches approximately 6.7 kilometres (the Proposal site) between Raymond Terrace in the south, and Kings Hill URA in the north (Figure 2-1). The Proposal site includes the footprints of the wastewater pumping station, water pipeline and wastewater pipeline, in addition to buffer areas and temporary construction compounds.

2.2 Surrounding land uses

The southern portion of the Proposal site is located within Raymond Terrace and traverses urban areas characterised by low density residential development. Existing residential receivers are located along Irrawang Street, Adelaide Street and Rees James Road, with the closest residential receiver located about 12 metres from the Proposal. Other sensitive receivers located in proximity to the Proposal in Raymond Terrace include:

- Raymond Terrace Out of School Hours Care, located in the Children's Services Building, Boomerang Park, corner of William and Irrawang Street (about 20 metres from the Proposal)
- St Brigid's Primary School, located at 52 Irrawang Street (about 40 metres from the Proposal)
- St Brigid's Catholic Church, located on the corner of Irrawang Street and William Street (about 40 metres from the Proposal)
- Saint Andrews Presbyterian Church, located at 64 Irrawang Street (about 80 metres from the Proposal)
- RDA Riding for the Disabled, located at 3219 Pacific Highway (the same access road that will be used for the northern-most section of the Proposal).

The northern portion of the Proposal site is located beneath an overhead electrical easement in otherwise undeveloped "greenfield" land, owned and managed by the HWC. This land also contains a Coastal Wetland (ID 36586) listed under Coastal Management SEPP. The northern-most extent of the Proposal site is located within the Kings Hill URA, which is currently undeveloped and supports cattle grazing.

Located to the east of the northern portion of the Proposal site is the Pacific Highway, and further east, Grahamstown Dam (approximately 300 metres at its closest point to the Proposal site). Grahamstown Dam covers 2,800 hectares and is the Hunter's largest drinking water supply dam. Grahamstown Spillway, constructed in 2005, allows for the safe discharge of flows from the dam towards the Coastal Wetland in the west. The smaller Irrawang Spillway (located north of Grahamstown Spillway) is no longer operational. The Proposal would traverse both spillways, on the western side of the Pacific Highway.



LEGEND

 Proposed water and wastewater infrastructure alignment
 Watercourse

ARCADIS AUSTRALIA PACIFIC PTY LTD ABN 76 104 485 289 Level 16, 580 George St | Sydney NSW 2000 P: +61 (0) 2 8907 9000 | F: +61 (0) 2 8907 9001

Coordinate System: GDA 1994 MGA Zone 56 Date issued: October 18, 2019 Aerial imagery supplied by NSW LPI 1:25,000 at A4

ARCADIS

SEAHAM

THE BRANCH CLARENCE TOWN

Figure 2-1 Location of the Proposal

2.3 Impacted Lots

It is not intended that subdivision would be sought as part of the Proposal. Rather, the infrastructure would be located within easements through existing lots owned by various landowners. Impacted lots are summarised in Table 2-1 and illustrated in the figures below.

Subdivision of land within the Kings Hill URA would be considered as part of a separate assessment and is not in scope for the Proposal.

Table 2-1 Lots impacted by infrastructure

Chainage	Lot Number	DP	Description	Owner
0	1	DP1085482	Water Pumping Station	HWC
0	1	DP1226115	Area adjacent to Water Pumping Station	Council
0-800	N/A	N/A	Road Reserve Irrawang Street Mount Hall Road	Council
800-1015	35	DP259487	Newbury Park	Council
800-1015	36	DP259487	Newbury Park	Council
800-1015	38	DP259487	Newbury Park	Council
1015-4800	N/A	N/A	Road Reserve Adelaide Street Rees James Road Pacific Highway	Council / Roads and Maritime
1900-2000	175	DP251129	Road Reserve Adelaide Street	Council
2000-2100	291	DP262169	Road Reserve Adelaide Street Rees James Road	Council
2150-2300	292	DP262169	Road Reserve Rees James Road	Council
2360-2675	4	DP241685	Parkland	HWC
3555-3930	13	DP882528	Parkland	HWC
3930-3970	1	DP1130764	Parkland	HWC
4800-5680	113	DP733181	Irrawang Swamp	HWC
6030-6635	41	DP1037411	Kings Hill URA	KHD



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