Brisbane City Plan 2014
Local Government Infrastructure Plan
Extrinsic Material

Stormwater network

December 2021

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Addendum

Council has undertaken to make an interim amendment to the Local Government Infrastructure Plan to ensure that it accurately reflects Council's trunk infrastructure priorities. As an interim amendment, the changes are limited in nature and only affect the infrastructure schedules and related costings.

Details on the interim amendment process can be found in the Interim Amendment Extrinsic Material document.

The Stormwater Extrinsic Material document was prepared in June 2018 and has been updated only to reflect the changes made as part of the interim amendment to the infrastructure schedules and costings. A complete review of the document may be undertaken as part of a future LGIP amendment as required.

1 Introduction

1.1. Background

Brisbane City Plan 2014 is Council's planning scheme prepared under the *Sustainable Planning Act [Qld] 2009* (SPA) and in accordance with the *Planning Act 2016*. The planning scheme sets a framework for managing development in Brisbane. In accordance with legislation Council is required to prepare a Local Government Infrastructure Plan (LGIP) to guide the planning of trunk infrastructure over a 10 year horizon. The LGIP forms part of the planning scheme in Part 4 and Schedule 3.

The following documents are extrinsic material and contain supporting material used to draft the LGIP:

(1) Public parks and land for community facilities network;
(2) Transport network;
(3) Stormwater network;
(4) Planning assumptions; and
(5) Schedule of works model.

This document (extrinsic material) provides supporting material for the stormwater network.

1.2. Purpose

The purpose of this report is to:

(1) define and identify trunk infrastructure for the stormwater network;
(2) explain the methodology used to plan trunk infrastructure for the stormwater network identified in the LGIP;
(3) summarise how the establishment cost for the stormwater network trunk infrastructure identified in the LGIP is calculated; and
(4) list relevant background studies and reports used in the preparation of the LGIP.

1.3. Definitions and abbreviations

In this extrinsic material report the following abbreviations are used:

ALS	Aerial Laser Survey
BCC	Brisbane City Council
BPD	Backflow Prevention Device
BUG Model	Brisbane Urban Growth Model
BSD	Brisbane Standard Drawing
DSS	Desired Standards of Service
DTMR	Department of Transport and Main Roads
EMP	Environmental Management Plan
f_i	Fraction impervious
GIS	Geographical Information Systems
GPT	Gross pollutant trap
GST	Goods and Services Tax
IDPSP	Infrastructure design planning scheme policy
LGIP	Local government infrastructure plan
LSMP	Local Stormwater Management Plan

LUAD	Land Use Activity Dataset
NP	Neighbourhood Plan
PFTI	Plans for trunk infrastructure
PIA	Priority infrastructure area
QUDM	Queensland Urban Drainage Manual
QPP	Queensland Planning Provision
SEQCoM	South East Queensland Council of Mayors
RCBC	Reinforced Concrete Box Culvert
RCP	Reinforce Concrete Pipe
SoW	Schedule of works
SMP	Stormwater Management Plan
SPA	*Sustainable Planning Act [Qld] 2009*
SQID	Stormwater Quality Improvement Device

In this extrinsic material report the following definitions apply:

Brisbane Urban Growth Model	means Council's urban supply model. The primary purpose of the model is to determine at site level, the type, location and timeframe of future potential residential dwelling supply.
Desired Standards of Service	see the *Minister's Guidelines and Rules* (Chapter 5, part 4, section 21.2).
Fraction Impervious	means the part of a catchment which is impervious and expressed as a decimal or percentage.
LGIP Statutory Guideline 03/14	means the *Statutory Guideline 03/14 Local government infrastructure plans* prepared by the Queensland government, Department of State Development, Infrastructure and Planning (June 2014).
Local Government Infrastructure Plan	see the *Planning Act 2016* (Schedule 2).
Pervious surface or pervious area	means a surface or area within a drainage catchment where some of the rainfall will infiltrate thus resulting in a reduced volume and rate of runoff (e.g. grassed playing fields, lawns etc.).
Plans for Trunk Infrastructure	means plans for trunk infrastructure identify the existing and planned trunk infrastructure networks intended to service urban development. Refer to Section 4.6 for further information.
Priority Infrastructure Area	see the *Planning Act 2016* (Schedule 2).
Runoff	means the fraction of rainfall that is not lost to infiltration, evaporation, transpiration or depression storage.

2 Legislative requirements

Under the *Planning Act 2016*, a local government that wishes to levy infrastructure charges or impose conditions about trunk infrastructure is required to prepare a local government infrastructure plan (LGIP).

The LGIP was prepared in accordance with *Statutory guideline 03/14 Local government infrastructure plans* dated 12 June 2014. The guideline sets out the minimum requirements that must be followed by a local government for preparing or amending an LGIP, in accordance with section 117 of the SPA.

The guideline states an LGIP must comprise the following sections:

(6) assumptions about growth, type, scale, location and timing of development;
(7) priority infrastructure area (PIA);
(8) desired standards of service (DSS);
(9) plans for trunk infrastructure (PFTI) supported by schedule of works (SoW); and
(10) extrinsic material.

Section 724 of the SPA stipulates that a local government must keep available for inspection and purchase, all supporting material used to draft the LGIP. This supporting material forms part of the extrinsic material within the LGIP.

3 Stormwater network overview

The stormwater network consists of natural and constructed assets that convey runoff to receiving waterbodies. Common natural assets that Brisbane City Council maintains are waterways, wetlands and flood storage areas. Constructed assets such as pipes and culverts are designed to supplement the existing natural assets and reduce runoff from interfering with everyday activities. Pollution from urban activities impacts the health of our environment, which are mitigated through infrastructure such as Stormwater Quality Improvement Devices (SQID's). The integration of these assets into the landscape is an art and science called Water Sensitive Urban Design.

The LGIP focuses on 'trunk infrastructure', which aims to service multiple landowners, distinct from private connections. Further to this, Council has identified that pipes of 1050mm diameter (or greater) typically service broader stormwater catchments and multiple landowners. This has informed the trunk infrastructure criteria below.

Trunk infrastructure for the stormwater network comprises development infrastructure, land or works or both land and works having met the following criteria:

(11) the infrastructure is for drainage, conveyance, water quality or stormwater detention purposes which:
  (a) includes the following:
    (i) water quantity infrastructure being:
      (A) closed conduits (pipes and RCBCs) and culverts (pipes and RCBCs) that have a hydraulic capacity equal to or greater than the hydraulic capacity of a 1050 mm diameter pipe. This may include multiple conduits that together provide this hydraulic capacity;
      (B) backflow prevention devices; and
      (C) concrete lined channels and constructed natural channels.
    (ii) water quality infrastructure being waterway rehabilitation and SQIDs (bioretention devices, constructed wetlands, gross pollutant traps, sedimentation traps and basins, trash racks, floating litter traps or booms);
  (b) excludes the following:
    (i) drainage infrastructure associated with upgrading the road works required to service the development of premises;
    (ii) infrastructure replacing, altering or relocating existing underground drainage, an existing waterway, an existing overland flow path or open channel, existing sheet flow or existing flood storage;
    (iii) combinations of culverts, pipes or RCBCs with a hydraulic capacity less than the hydraulic capacity of a 1050 mm diameter pipe; and
    (iv) land and works not for water quantity infrastructure or water quality infrastructure.

(12) the purpose of the infrastructure is to accommodate the existing demand for existing urban development and projected demand for assumed future urban development for each service catchment of the stormwater network stated in the planning assumptions; and

(13) the function of the infrastructure is to deliver the standard of performance for the stormwater network stated in the desired standards of service.

4 Network planning

4.1. Preliminary

The methodology for preparing the LGIP for the stormwater network involved the following steps:

(14) define planning assumptions in terms of:
  (a) prediction of growth and demand;
  (b) PIA;
  (c) demand generation; and
  (d) DSS;
(15) infrastructure planning including:
  (a) quantifying infrastructure needed to manage stormwater in order to meet the DSS; and
  (b) understanding the magnitude of the works required within the planning timeframes;
(16) determining the cost of existing and future trunk infrastructure:
  (a) infrastructure valuations and unit rates.

These steps are described in more detail in the following sections.

4.2. Planning assumptions – methodology

4.2.1. Existing and projected residential and non-residential growth

The planning assumptions estimate the existing and projected residential and non-residential growth for the Brisbane City Council (BCC) area. This information estimates where and when development will occur and to what scale. This information is provided to infrastructure network partners to aid them with their network planning by estimating demand generated on the network from existing and future growth.

The LGIP Extrinsic Material for the Planning Assumptions contains the full methodology and the assumptions used to derive the existing and projected residential and non-residential growth.

4.3. Planning assumptions – Demand

4.3.1. Calculating demand for sizing of infrastructure

Demand in the waterways network has been calculated using hydrologic methods which are appropriate to the type of catchment in accordance with the Queensland Urban Drainage Manual (QUDM) (refer to section 4.0 in the 2013 provisional edition). Where appropriate, the rational method as outlined in QUDM (refer to section 4.03 in the 2013 provisional edition) has been used as a simple means for assessing the peak discharge rate for design storm events. The calculation of the demand for infrastructure is based on the available information at the time of the study. This includes the City's land use zoning, which affects the impervious areas. Detailed design of the infrastructure proposed in the LGIP is required, and is required to use the current information for the ultimate demand.

4.3.2. Calculating demand for reporting on infrastructure demand

For the stormwater network, future and ultimate demand was based on the land use provisions and an assumed fraction of impervious area for that land use. The planning scheme defines the land use for each parcel in Brisbane City Council. Future stormwater network demand calculation are impervious area (hectares) which is correlated to current zoning information and fraction impervious (f_i) based on values in the QUDM.

The existing demand for stormwater infrastructure is determined using impervious imagery, assumptions about growth in demand at the planning horizon and assumptions about ultimate demand.

The existing stormwater demand and ultimate level of demand are fixed based on actual values and maximum site demand respectively. The intermediate timeframes use growth forecasting, vacant/developable land and jobs growth to predict the impact on f_i area for both residential and non-residential zoned land.

For the purpose of reporting on infrastructure demand, demand has been expressed in "impervious hectares" as reported in the LGIP, Table SC3.1.6 Existing and projected demand for the stormwater network. This was achieved by:

(1) For existing demand at 2016, existing impervious area was processed using the Land Use Activity Dataset (LUAD) Site Base June 2014 version 4, Neighbourhood Plans (NPs) adopted as at 2015 (27 October 2015) Queensland Planning Provision (QPP) Zoning, Stormwater Service Catchment Boundaries feature classes and the 2014 impervious imagery.

(2) Ultimate Demand used (Page 4-10 of the QUDM) as the basis for the ultimate f_i with three amendments:
   (a) where base, occupied or vacant f_i exceeded ultimate f_i, that f_i was used as ultimate;
   (b) Emerging community was defined separately; and
   (c) Future industry.

(3) The intermediate future demand (2021-2036) uses growth forecasting, vacant/developable land and jobs growth to predict the impact on f_i area. Due to the differences in residential and non-residential forecasting methods, residential and non-residential areas are processed separately along with environmental and roads categories. For sites not flagged as vacant/developable a small uplift, as calculated from an analysis of 2005 and 2014 impervious imagery, was used.

The existing and projected cumulative demand for the stormwater network by catchment area between 2016 and ultimate is stated in the LGIP, Table SC3.1.6 Existing and projected demand for the stormwater network.

Aspects of this method are described in more detail below.

4.3.3. Determining the fraction impervious for each lot within its planning scheme designation at ultimate development

To determine the fraction impervious for each lot at ultimate development, an analysis was undertaken of the existing fraction impervious versus the assumed fraction impervious for each planning scheme designation using the QUDM. The fraction impervious provided by QUDM was used except where:

(4) base, occupied or vacant f_i exceeded ultimate f_i, that f_i was used as ultimate;
(5) Emerging community was defined separately; and
(6) Future Industry.

For those unique planning scheme designations which involve a small amount of urban development over otherwise largely undeveloped lots, different fractions impervious were assigned to parts of the lot. The area assumed to be used for urban activities at ultimate was calculated and a fraction impervious assigned to this area, whilst the undeveloped balance was assigned fraction impervious reflective of its undeveloped nature. The assumed fractions impervious used for the LGIP are detailed in Table 4.3.3.1.

Table 4.3.3.1—City Plan area classification fraction impervious assumptions

Column 1 **City Plan 2014 zone/ zone precinct code**	**Column 2** **City Plan 2014 zone and precinct**	**Column 3** **LGIP recommended fraction impervious (f_i)**
CF1	Community facilities zone - Major health care zone precinct	0.70
CF2	Community facilities zone - Major sports venue zone precinct	0.70
CF3	Community facilities zone – Cemetery zone precinct	0.20
CF4	Community facilities zone – Community purposes zone precinct	0.90
CF5	Community facilities zone -Education purposes zone precinct	0.60
CF6	Community facilities zone - Emergency services zone precinct	0.70
CF7	Community facilities zone - Health care purposes zone precinct	0.60
CN CN1 CN2 CN3	Conservation zone Conservation zone - Local zone precinct Conservation zone - District zone precinct Conservation zone - Metropolitan zone precinct	0
CR1 CR2	Character residential - Character zone precinct Character residential - Infill housing zone precinct	0.60
DC1 DC2	District centre zone – District zone precinct District centre zone – Corridor zone precinct	0.90
EC	Emerging community zone	0.75
EI	Extractive industry zone	0.10
EM	Environmental management zone	0
GIB	Industry zone - General industry B zone precinct	0.90
GIC	Industry zone - General industry C zone precinct	0.90
HDR1 HDR2	High density residential zone - Up to 8 storeys zone precinct High density residential zone - Up to 15 storeys zone precinct	0.85
II	Industry investigation zone	Use f_i for existing site

Column 1 **City Plan 2014 zone/ zone precinct code**	**Column 2** **City Plan 2014 zone and precinct**	**Column 3** **LGIP recommended fraction impervious (f_i)**
LDR	Low density residential zone	0 to 299 m^2 lots – 0.85 300 to 450 m^2 lots – 0.75 451 to 600 m^2 lots – 0.65 601 to 750 m^2 lots – 0.60 751 to 1000 m^2 lots – 0.55 1001 to 4000 m^2 lots – 0.35 >4000 m^2 lots – refer to rural residential
LII GIA	Low impact industry Industry zone - General industry A zone precinct	0.90
LMR1 LMR2 LMR3	Low-medium density residential zone - 2 storey mix zone precinct Low-medium density residential zone - 2 to 3 storey mix zone precinct Low-medium density residential zone - Up to 3 storeys zone precinct	0.85
MC	Major centre zone	0.90
MDR	Medium density residential zone	0.85
MU1 MU2 MU3	Mixed use zone - Inner city zone precinct Mixed use zone - Centre frame zone precinct Mixed use zone - Corridor zone precinct	0.90
NC	Neighbourhood centre zone	0.90
OS OS1 OS2 OS3	Open space zone Open space zone - Local zone precinct Open space zone - District zone precinct Open space zone - Metropolitan zone precinct	0
PC1	Principal centre zone – City Centre zone precinct	0.90
PC2	Principal centre zone – Regional centre zone precinct	0.90
RR	Rural residential zone	1001 to 4000 m2 lots – 0.35 >4000 m2 lots – 0.20
RU	Rural zone	0.05
SC1	Specialised centre zone - Major educational and research facility zone precinct	Use f_i for existing site
SC2	Specialised centre zone - Entertainment and conference centre zone precinct	Use f_i for existing site
SC3	Specialised centre zone - Brisbane Markets zone precinct	0.70

Column 1 City Plan 2014 zone/ zone precinct code	Column 2 City Plan 2014 zone and precinct	Column 3 LGIP recommended fraction impervious (f_i)
SC4	Specialised centre zone - Large format retail zone precinct	0.90
SC4	Specialised centre zone - Large format retail zone precinct	0.90
SC5	Specialised centre zone - Mixed industry and business zone precinct	0.90
SC5	Specialised centre zone - Mixed industry and business zone precinct	0.90
SC6	Specialised centre zone - Marina zone precinct	0.90
SI	Special industry zone	0.90
SP1	Special purpose zone - Defence zone precinct	Use f_i for existing site
SP2	Special purpose zone - Detention centre zone precinct	Use f_i for existing site
SP3	Special purpose - Transport infrastructure zone precinct	0.70
SP4	Special purpose zone - Utility services zone precinct	Use f_i for existing site
SP5	Special purpose zone - Airport zone precinct	Use f_i for existing site
SP6	Special purpose zone - Port zone precinct	Use f_i for existing site
SP8	Special purpose zone - Utility services zone precinct	0.65
SR SR1 SR2 SR3	Sport and recreation zone Sport and recreation zone - Local zone precinct Sport and recreation zone - District zone precinct Sport and recreation - Metropolitan zone precinct	0.10
T	Township zone	0.50
TA	Tourist accommodation zone	0.90

Table Notes:

(1) f_i values for Low-medium and High density residential zones (this area is designated for mainly multi-unit dwellings) are from Table 4.05.3 (a) in QUDM 2nd Edition 2008 and correspond with the recommended C10 value in Table 7.3.3.1A of the IDPSP.

(2) f_i values for Low density residential zones (mainly one or two storey single houses, excluding roads) and Rural residential are from Table 4.05.3 (a) in QUDM 2nd Edition 2008 and correspond with the recommended C10 values in Table 7.3.3.1A of the IDPSP.

(3) f_i values for Community facilities zone – Major health care, Major sports venue, Education purposes and Rural and Special purposes zone -Railways have been interpolated from Table 4.05.1 in QUDM 2nd Edition 2008 and via reference to Table 3.1 in The Brisbane Priority Infrastructure Plan 2011 Extrinsic Material and Table 3.6 in the Water by Design MUSIC modelling Guidelines.

(4) f_i values for Character residential, Community facilities zone – Cemetery, Emergency services, Health care purposes, and Emerging community, Extractive industry zone and Special purposes – Defence, Correctional Centre, Utility Services, Airport, Port, Major Educational and Research Facility, Entertainment and Conference Centre, Brisbane Markets, Southbank have been adopted as per Table 3.1 in the Brisbane Priority Infrastructure Plan 2016 Extrinsic Material.

(5) f_i values for all other classifications have been derived from Table 4.05.3 (a) in QUDM 2nd Edition 2008.

4.3.4. Determining the existing demand for each lot within its planning scheme designation

To determine the existing impervious area, impervious mapping was generated by Spatial Information Services (GIS) using the 2014 Digital Globe satellite imagery. This imagery was processed and classified to map impervious and pervious surfaces at site level across the identified catchment areas. For each of the nine impervious types (nine in 2014 and six in 2005) shown in the table below, only the "impervious" type fraction (based on QUDM) was applied.

Table 4.3.4.1—Impervious type fraction

Impervious type	Fraction	Impervious Type	Fraction
Bare	0.8	Shrubs	0.53
Cloud	0.7	Trees	0.4
Grass	0.66	Unclassified	0.7
Impervious (e.g. asphalt, concrete, steel)	1	Water	1
Shadow	0.7		

Existing impervious area was processed in ArcGIS using the LUAD Site Base June 2014 version 4, Neighbourhood Plans (NPs) adopted as at 2015 (27 October 2015) QPP Zoning, Stormwater Service Catchment Boundaries feature classes and the 2014 impervious imagery. The data was processed at site level and then aggregated to QPP Zone and stormwater service catchment.

4.3.5. Determining the fraction impervious for each lot within its planning scheme designation at intermediate timeframes (2021-2036)

Demand at Intermediate years (2021-2036) utilises growth forecasting to determine the potential for sites to develop within each 5 year period. As ultimate demand occurs at an unknown point in the future it would not be correct to use a linear increase. In addition, due to the different forecasting methods used for residential and non-residential two methodologies were used.

The existing and ultimate demands are fixed based on actual values and maximum site demand respectively. The intermediate timeframes make use of growth forecasting, vacant/developable land and employment growth to predict the intermediate impact on f_i area. Due to the differences in residential and non-residential forecasting methods residential and non-residential areas are processed separately and summed at the end along with environmental and roads. For sites not flagged as vacant/developable a small uplift, as calculated from an analysis of 2005 and 2014 impervious imagery, was used.

(1) CF1 – Major health care;
(2) CF2 – Major sports venue;
(3) CF3 – Cemetery;
(4) CF4 – Community purpose;
(5) CF5 – Education purpose;
(6) CF6 – Emergency services;
(7) CF7 – Health care purposes;
(8) DC1 – District;
(9) DC2 – Corridor;
(10) EI – Extractive industry;
(11) II – Investigative industry;
(12) IN1 – General industry A;
(13) IN2 – General industry B;
(14) IN3 – General industry C;
(15) LII – Low impact industry;
(16) MC – Major centre;
(17) MU1 – Inner city;
(18) MU2 – Centre frame;
(19) MU3 – Corridor;
(20) NC – Neighbourhood centre;
(21) PC1 – City centre;
(22) PC2 – Regional centre;
(23) PDA1 – State;
(24) PDA2 – State;
(25) PDA3 – State;
(26) PDA4 – State;
(27) RU – Rural;
(28) SBCA – State;
(29) SC1 – Major education and research;
(30) SC2 – Entertainment and conference;
(31) SC3 – Brisbane Markets;
(32) SC4 – Large format retail;
(33) SC5 – Mixed industry/business;
(34) SC6 – Marina;
(35) SI – Special industry;
(36) SP1 – Defence;
(37) SP2 – Detention facility;
(38) SP3 – Transport infrastructure;
(39) SP4 – Utility service;
(40) SP5 – Airport; and
(41) SP6 – Port.

As the BUG dataset specifically predicts residential development only, two additional methods were used to predict non-residential development for demand sequencing. The South East Queensland Council of Mayors (SEQCoM) employment projections, November 2014 (Primary scenario, Queensland Treasury and Trade) were used as a base for the proportion of growth, vacant land identified in LUAD (site must be flagged as vacant with only one use) was used to switch on sites with development potential.

Equation 1 was then used to calculate the impervious area for each site for each 5 year period. Equation 1 used the following non-residential preconditions:

(1) a site is only classed as vacant if it is flagged as vacant and only has one land use;
(2) all sites have an increase in impervious area, the level of which determined by the sites status as occupied (3% see Historical Data) or vacant (formula);
(3) two base and ultimate f_i are used, one for occupied sites and a second for vacant sites;
(4) if the base or growth within a timeframe exceeds the ultimate demand then the site is considered “maxed” therefore there will be no further growth, ultimate f_i will be used;
(5) if there is negative or no growth then the base or previous f_i will be used;
(6) if a previous year had negative growth but the current year has positive growth then the current year will use the last increasing growth value unless the current year’s growth exceeds the last increasing growth value. In this case the increase in growth will be calculated on the difference between the last increasing growth value and the current year growth value not the difference between current and previous years; and
(7) the f_i is only applied to the area of the site occupied by the relevant non-residential zone (if the site is part residential then this part is processed separately as residential).

The environmental zones[2] are extracted from this dataset and appended to the relevant BUG growth data. The zones classified as environmental are:

2 For sites that comprised of more than one zone that site was split as part of the base calculation process so that the only residential portion of the site is exported.

(1) CN – Conservation;
(2) CN1 – Local;
(3) CN2 – District;
(4) CN3 – Metropolitan;
(5) EM – Environmental Management;
(6) OS – Open Space;
(7) OS1 – Local;
(8) OS2 – District;
(9) OS3 – Metropolitan;
(10) SR – Sport and Recreation;
(11) SR1 – Local;
(12) SR2 – District; and
(13) SR3 – Metropolitan.

To calculate the environmental impervious areas the environmental sites were clipped to the impervious raster. The result was then grouped by stormwater catchment and reported.

Environmental sites were assumed to have no increase in impervious area over time.

The area of f_i for roads was added to each stormwater service catchment after the residential and non-residential f_i were calculated:

(1) closed road (temporarily);
(2) esplanade;
(3) intersection; and
(4) road.

The resulting feature classes were then used to clip {clip} the impervious area raster as for residential and non-residential zones then the rasters converted to polygon feature classes. The total area for each table was compared to build a table of f_i per stormwater catchment.

Roads were assumed to have no increase in impervious area over time.

Roads use the road easements that contain significant areas that could be classed as CN/EM in nature and median strips. Although the QUDM states a value of f_i of 0.9 should be used, this is thought to only refer to the paved surface as f_i based on the 2014 impervious layer is ~0.73 due to the presence of nature areas within the road easements.

Residential, non-residential, environmental and roads were consolidated into the final output table. The data was aggregated to stormwater service catchments. The base and ultimate values were used without modification whilst the intermediate values were summed together for each time frame. For residential and non-residential this meant each non-residential time frame was added to the respective residential time frame. As the environmental and roads values did not change the same value for each was added to the summed residential/non-residential time frame.

Lastly, the values were divided by 10,000 to output hectares.

4.3.6. Equivalent impervious hectares

'Equivalent impervious hectare' is an area of a catchment that would produce the same runoff characteristics as that estimated for the catchment if that area had a runoff coefficient of 1. Table 4.3.6.1 below provides the Equivalent Impervious hectares by service catchment within the Priority Infrastructure Area.

Table 4.3.6.1—Equivalent Impervious hectares by service catchment

Service Catchment	Existing and projected demand (equivalent impervious hectares)				
	2016 (base date)	2021	2026	2031	Ultimate development
Cabbage Tree Creek	2,534	2,548	2,571	2,584	2,648
Nundah Downfall Creek	2,562	2,572	2,578	2,581	2,703
Kedron Brook	6,428	6,509	6,563	6,579	6,715
Breakfast Creek	2,102	2,111	2,118	2,124	2,153
Albion	101	102	102	103	106
ATCN	1,431	1,443	1,463	1,478	1,537
INES	562	568	572	580	592
Pashen Creek LSMP	281	285	289	292	299
Perrin	563	566	570	572	579
ATC South (a)	755	763	770	775	787
Toowong Creeks	1,348	1,355	1,360	1,365	1,378
Cubberla Creek	465	466	467	468	475
Moggill Creek	248	248	249	249	251
Fig Tree Pocket	329	330	331	332	345
Graceville LSMPS	126	126	126	126	126
Graceville	189	189	189	189	189
BBnePrec3	918	926	932	938	954
West End (a)	34	35	35	35	35
West End (b)	36	36	36	36	36
Norman Creek	2,164	2,180	2,193	2,206	2,244
ATC South (b)	558	564	570	577	596
ATC South (c)	211	212	214	215	218
Wynnum West (a)	69	70	70	70	71

Service Catchment	Existing and projected demand (equivalent impervious hectares)				
	2016 (base date)	2021	2026	2031	Ultimate development
Wakerley (a)	172	172	173	173	178
Wakerley (b)	167	167	168	168	174
Lota	218	219	219	219	222
Tingalpa Creek	1	1	1	1	1
Scrubby Creek	719	723	727	728	751
Calamvale	463	466	470	471	492
Oxley Creek	7,363	7,403	7,432	7,454	7,542
Pullen Pullen Creek	141	141	141	141	141
Farm	1,433	1,438	1,440	1,441	1,451
Wolston	437	439	439	440	445
Richlands (a)	375	379	382	385	395
Richlands (b)	265	268	270	273	278
Richlands (c)	281	282	283	283	285
Richlands (d)	236	240	246	253	284
Richlands (e)	257	258	260	261	282
Doolandella	249	251	252	253	267
Rochedale (a)	113	113	120	121	132
Rochedale (b)	164	166	171	175	195
Rochedale (c)	44	44	47	47	50
Rochedale (d)	202	206	211	215	245
Rochedale (e)	4	4	4	4	4
Wynnum	792	795	796	797	803
Wynnum West (b)	264	265	267	267	269
Wynnum West (c)	55	55	55	55	55

Service Catchment	Existing and projected demand (equivalent impervious hectares)				
	2016 (base date)	2021	2026	2031	Ultimate development
Bald Hills Creek	1,368	1,372	1,375	1,377	1,391
BBnePrec1	302	302	305	305	307
Bulimba Creek	5,932	5,954	5,975	5,988	6,103
Western Creeks LSMPS	587	590	592	594	602

4.4. Priority infrastructure area and service catchments

The PIA is the area that a local government has prioritised for the provision of trunk infrastructure.

Council plans to service the 10 year stormwater network demand within the PIA, however it is acknowledged that demand will also be generated and serviced outside the PIA boundary.

In determining appropriate service catchments for infrastructure networks, a number of factors were considered including:

(1) trunk infrastructure items operating as a system to service both citywide and local catchments;
(2) reasonable apportionment of establishment costs of trunk infrastructure;
(3) clarity of boundary definitions for both open and closed networks;
(4) administration of a financial system supporting the LGIP; and
(5) Council's DSS, land acquisition, capital works and expenditure program.

The stormwater network service catchments are based on Brisbane's major catchments and sub-catchments as well as current Local Stormwater Management Plans (LSMPs) and Stormwater Management Plans (SMPs) which provide greater detail in relation to catchments. The service catchments for stormwater reflect the natural catchment boundaries and DSS for stormwater infrastructure.

The PIA and stormwater network service catchments can be found at Map A1 and A3.

4.5. Desired standards of service

The stormwater network DSS can be found at Part 4.4.1 of the planning scheme.

The DSS details the standards that comprise an infrastructure network suitable for the local context. It is a summary of the service standards which are then supported by the detailed network design standards included in planning scheme policies or other published and controlled design standards, codes or manuals.

For standards relating to the appropriate level of flood immunity, refer to the Stormwater code, Flood overlay code and the IDPSP. For water quality objectives, refer to section 7.9 of the IDPSP. For the minimum desired capacity of minor and major drainage infrastructure refer to section 7.2 of the IDPSP. For the maximum total depth of flow in a roadway, refer to section 7.2 of the IDPSP.

4.6. Plans for trunk infrastructure

The stormwater network plans and associated SoW provide indicative layouts and sizing of trunk stormwater quantity and quality infrastructure items which have been prepared for the purposes of providing high level solutions to facilitate ultimate future development of catchments within the PIA.

Trunk stormwater quantity and quality infrastructure items have been determined through local and regional catchment scale network planning studies which have been carried out to varying levels of detail. The types of network planning studies used to determine future infrastructure requirements are briefly described below.

LSMPs: These are detailed investigations carried out within fully developed drainage catchments experiencing population growth through intensification of development primarily from conversion of single lot residential to multi-residential or mixed use development. Hydrologic and hydraulic modelling using commercially available industry standard software was carried out to assess stormwater and flooding issues within catchments. Preliminary infrastructure layout options and sizing including locations of manholes and inlets were developed to mitigate flood impacts to facilitate development. Stakeholder engagement, limited site inspection and pipe survey, route alignment, options cost/benefit analysis and prioritisation of infrastructure works were undertaken as part of the options development. Opportunities to improve the quality of stormwater runoff were also identified.

Stormwater Investigations: These investigations were carried out following receipt of flooding complaints from residents to investigate the cause of flooding and recommend possible solutions to mitigate flood impacts. The capacity of existing underground infrastructure was investigated using Rational Method spreadsheet analysis to identify size of infrastructure required to meet the DSS. Site inspection, pipe survey, options, route alignment, manhole and inlet locations, and options cost/benefit analysis were considered in the determination of the recommended option. Opportunities to improve the quality of stormwater runoff were generally not considered.

Sketch Planning: These investigations were carried out in neighbourhood planning areas. The capacity of existing underground infrastructure was investigated using Rational Method spreadsheet analysis to identify size of infrastructure required to meet the DSS. These investigations did not consider flooding impacts, manhole and inlet locations, options for route alignment, cost/benefit analysis of options or opportunities to improve the quality of stormwater runoff.

Future trunk stormwater infrastructure items identified on the stormwater network plans and associated SoW to meet the DSS and facilitate ultimate development of the catchment include:

(1) **New:** New infrastructure at locations where there is no existing infrastructure. Infrastructure is sized to meet the DSS;
(2) **Relief**: Infrastructure to augment the capacity of existing infrastructure which does not meet the DSS;
(3) **Replacement**: Infrastructure to replace existing infrastructure which does not meet the DSS and which has been identified as being in poor condition through pipe survey. Infrastructure is sized to meet the DSS; and
(4) **Rehabilitation:** Works required to improve, repair, stabilise or alter existing infrastructure.

The trunk stormwater infrastructure network plans and associated SoW have been prepared on the following basis:

(1) future trunk infrastructure layouts and sizing have been prepared solely on the basis of proposed future land use and neighbourhood plans which outline the high level overall planning schemes identified in *City Plan 2014*;
(2) proposed trunk infrastructure layouts and sizing are indicative only and are not intended as a detailed design;
(3) proposed trunk infrastructure layouts provide a possible solution to draining catchments. Alternative solutions may be possible;

(4) trunk infrastructure layouts have been prepared independent of other infrastructure network and urban design considerations;
(5) Aerial Laser Survey (ALS) data and aerial imagery has been used to provide topographical information. No site survey or 'ground-truthing' of assumptions has been undertaken unless indicated in documentation supporting the infrastructure items; and
(6) infrastructure is required to service future development consistent with planning assumptions in the LGIP at the DSS and that some infrastructure may also be required to address problems in the network servicing existing development.

It should be clearly acknowledged that the final trunk infrastructure layouts and sizing at the time of individual development approval may differ from the indicative future trunk stormwater drainage shown on the stormwater network plans and associated SoW due to factors which include:

(1) the actual sequence of development within catchments;
(2) individual development characteristics including extent, topography, internal road and allotment configuration, and land shaping to facilitate drainage;
(3) availability of access to suitable lawful points of discharge points at the time of individual development approval, particularly where property owner permission is required to construct trunk stormwater infrastructure through adjoining properties;
(4) location of other utility services (e.g. sewer, water, gas, electrical, communications) and clearance requirements between services;
(5) urban design considerations;
(6) outcomes of detailed on-ground investigations; and
(7) detailed hydrologic, hydraulic and water quality analysis, modelling and design using industry standard software and associated cost/benefit, constructability and risk management assessments.

The stormwater network PFTI can be found at Part 4.5 the planning scheme.

4.6.1. Determination of trunk infrastructure types and sizing

Trunk infrastructure sizes and types for quantity management have been determined through an assessment of capacity using recognised hydrologic and hydraulic analysis methods outlined in the QUDM. Commercially available industry standard software has been used for more detailed capacity assessments. Details of methodology and software used for analysis are outlined in assessment reports for each individual catchment.

Trunk infrastructure sizes and types for quality management have been determined through high level concept water quality treatment train analyses using industry standard software such as MUSIC.

4.6.2. Infrastructure scheduling

Stormwater Infrastructure in the LGIP is prioritised to support the needs of development and its ability to relieve flooding to high-growth precincts. There are a number of information sources and circumstances that contribute to the selection of infrastructure for the LGIP. Some of these factors are; the net benefit to the public to increase flood immunity, proximity to development, opportunistic timing of developments, available budget, and development likelihood based on the either the Brisbane Urban Growth Model (BUG) or the development assessment process.

The BUG is used to predict which areas of Brisbane will develop within five, ten, fifteen and twenty year horizons. Depending on the extent and nature of the development, it may influence the priority of the infrastructure needed to service the development. The BUG receives information from development applications, which show accurately the location of development in the short term. The location of stormwater infrastructure is often under buildings or in narrow or busy roads within high- growth precincts. Infrastructure planned in these locations is often prioritised for practical and economic reasons to align with the construction of the building.

Infrastructure is categorised into two delivery date ranges as stipulated by the LGIP Statutory Guidelines; 2016-2021 and 2021-2026. The amount of infrastructure scheduled for the timeframes is based on several factors also, including the budgeted amount for Stormwater Infrastructure as detailed in the Brisbane City Council's Annual Plan and Budget. Infrastructure projects prioritised within the immediate five year timeframe of 2016-2021 have a higher degree of certainty for construction than those in 2021-2026. Not all of the projects in the LGIP will be constructed in the timeframes indicated. The schedule is revised yearly, as are the priorities and funding availability.

Due to a variety of circumstances, the project delivery date and the project details may change. For example, the BUG uses the best available information to form growth patterns; however development patterns are not entirely predictable, which in turn influences the sequencing of stormwater infrastructure. As information about the project becomes more specific through successive designs and investigations, the details of the project may become more accurate and are therefore updated.

4.7. Schedule of works

SoW is a table including information derived from the Excel based SoW model.

The table states the following for each item of future trunk infrastructure identified on the plans:

(1) unique map reference to cross reference the item shown on the PFTI map(s);
(2) brief description - the description for the item provides a brief overview of the infrastructure's function (or hierarchy), type and size;
(3) estimated timing - the estimated timing is expressed in terms of specific years or time periods (e.g. 2011–2016); and
(4) establishment cost for land or works. The establishment cost is stated in current cost terms and is consistent with the SPA definition of 'establishment cost'.

The SoW lists the establishment cost for the delivery of planned trunk infrastructure projects in 30 June 2016 dollars. The cost includes a work component and a separate land component where applicable.

The stormwater network SoW can be found at SC3.2 of the planning scheme and the expanded version in section 5.2 of this report.

4.7.1. Establishment costs – standard unit rates – works component

Establishment costs are based on projects being delivered to the requirements set in Council's IDPSP, Brisbane Standard Drawings (BSD), and Infrastructure Installation and Construction Requirement Manual. Establishment costs for projects in the SoW are based on estimated $/m unit rates for piped, culvert and open channel drainage works, and estimated unit costs for stormwater quality improvement devices (SQID).

The standard unit rate and cost build-ups are based on the following general assumptions:

(1) construction will be undertaken to Council's current standards, requirements and industry construction practices;
(2) the construction projects will be administered under a traditional form of contract whereby the contractor will undertake to complete the construction phase of the project from already prepared detailed design and project documentation;
(3) construction will be undertaken during normal hours;
(4) the cost estimate is a strategic estimate as per Department of Transport and Main Roads (DTMR) Project Cost Estimating Manual (Sixth Edition): September 2015;
(5) a local qualified suitable construction organisation will construct the project after an open competitive tender process on the open market;
(6) labour will be a combination of permanent and contract labour;
(7) productivity rates are as expected in the industry for a project of this nature; and

(8) no allowance for PUP upgrade.

General exclusions include:

(1) demolition works;
(2) finance and holding costs;
(3) Goods and Services Tax (GST) and associated holding costs;
(4) Public Authorities Charges, Levies and Contributions, if any; and
(5) on-going maintenance

The methodology used to estimate delivery cost of the projects in the SoW includes:

(1) direct construction cost of drainage, culvert or SQID infrastructure; plus
(2) indirect construction cost allowance; plus
(3) project costs, an on cost allowance for professional services to deliver the project (design, supervision, project management); plus
(4) allowance for contingency.

It is noted that direct construction costs and indirect construction costs are mutually exclusive. The methodology for calculating the establishment cost for each project type is set out in more detail in Section 5.1.

4.7.1.1 Direct construction costs

Direct construction costs are on site labour, materials and plant costs to deliver the project, and depending on the project generally include, but not limited to:

(1) site establishment;
(2) site preparation work;
(3) traffic management;
(4) environmental management work;
(5) excavation and earthworks;
(6) supply and installation of drainage works;
(7) bedding and backfilling;
(8) supply and installation of drainage structures;
(9) connection to existing works; and
(10) restoration.

A more detailed list and explanation of the direct cost inclusions for each project is set out in section 5.2.

4.7.1.2 Indirect construction costs

Indirect construction costs are on and off site costs that cover the contractor's overheads. The cost is applied as an on cost to the direct construction cost to deliver the project works. Indirect construction costs equate to 17% of the direct construction cost. The 17% reflects current Council and market experience.

4.7.1.3 Project costs

Project costs are an allowance for professional fees to provide detailed design, survey, geotechnical investigations, project management, engineering supervision of works, and certification of the works from a Registered Professional Engineer of Queensland. Project costs equate to 13% of the direct and indirect construction costs, and comply with the minimum value set in the LGIP Statutory Guideline.

4.7.1.4 Contingency rates

Contingency rates are based on the project delivery date, and applied to the construction cost plus professional fees plus on costs. Contingencies equate to 7.5% for projects with a delivery date up to 2021 and 15% for projects with a delivery date of up to 2026. The values comply with the LGIP Statutory Guideline.

4.7.2. Land valuation rates

The valuation of land in the stormwater network was undertaken by a qualified Council land valuer in accordance with the following approach.

The value of each individual land project was determined as the estimated market value of properties based on sales evidence. Factors considered in this evidence included:

(1) location;
(2) zoning;
(3) surrounding development; and
(4) constraints such as flooding, overland water-flow and topography.

4.7.3. Valuation of existing assets

The cost of construction of existing trunk stormwater infrastructure was sourced from Council's Financial Asset Register at 2015/16.

Since 2001, Council's infrastructure charges planning scheme policies and subsequent Priority Infrastructure Plan have included trunk stormwater network items. On this basis, the Department of Infrastructure, Local Government and Planning has agreed it is appropriate for Council to only include existing trunk stormwater network waterway corridor land acquisitions since 2001, rather than identifying items before this date.

Council's financial asset register does not include land values for existing trunk stormwater network waterway corridor land acquisitions. On this basis, the Department of Infrastructure, Local Government and Planning has agreed it is appropriate for Council to apply the equivalent $/m2 land value estimates for future trunk infrastructure items, to existing trunk infrastructure items. The majority of the existing trunk stormwater network waterway corridor land is located in Rochedale and was costed in line with the methodology for costing the future trunk land acquisitions in that area ($15/m2).

5 Attachments

5.1. Methodology for determining stormwater network unit rates and costs

5.1.1. Piped and culvert drainage

The estimated delivery cost of future drainage and culvert infrastructure has been calculated using unit cost rates of $ per lineal metre.

Rates for the supply and installation of pipe and culvert drainage, have built up from Council's estimating system and actual cost records for similar works, and take into account current standards, work practices and materials.

The rates include the following:

(1) all works association with supply and construction of pipes or culverts;
(2) excavation in trench, backfill of trench;
(3) bedding material and bedding of pipes;
(4) saw cut of existing asphaltic concrete pavements at depths to 75 mm as required;
(5) supply, place and removal of sandbags as required;
(6) supply, place and removal of shoring of trench box only as required;
(7) dewatering of trenches as required using a flex drive pumps only;
(8) placement of lifting plugs as required;
(9) backfill in roadways which includes supply, placement and compaction of bedding sand or screenings, granular crushed rock or similar, fine crushed rock or similar, and asphaltic concrete surface to 50 mm by hand only;
(10) cut in and make good at existing manholes, chambers and gullies;
(11) cut pipes to length and make mitred ends using standard bandage joints if required; and
(12) disposal of spoil to an approved site including cartage up to 7 km and tip.

Construction costs for piped drainage are based on the supply and construction of drainage using reinforced concrete pipes (RCPs) and reinforced concrete box culverts (RCBCs).

A twenty per cent (20%) allowance for construction of structures was added to the supply and construction cost of the pipework. The allowance reflects current Council and market experience.

A forty per cent (40%) allowance for ancillary works was added to the combined cost (i.e. supply and construction of pipe plus allowance for construction of structures) to arrive at the total construction cost of the pipe or culvert. The allowance reflects current Council and market experience.

Ancillary works include the following items:

(1) site establishment;
(2) compliance with an environmental management plan (EMP);
(3) provision for traffic;
(4) locate services;
(5) safety fencing;
(6) dewatering trenches;
(7) traffic barriers;
(8) service alteration; and
(9) restoration.

Table 5.1.1.1—Standard Unit Rates RCPs

Nom Dia (mm)	Construction				Overheads		Total Unit Rate $/m
	Supply and Construct Base Unit Rate $/m	Structures (20% of Base Unit Rate)	Ancillary Costs (40% of Base Unit Rate and Structures)	Total Direct Construction Unit Rate (Base Unit Rate, Structures & Ancillary Costs) $/m	Indirect Construction Cost (17% of Total Direct Construction Unit Rate)	Project Costs (13% of Total Direct and Indirect Construction Rates)	
750	$742	$148	$356	$1,247	$212	$190	$1,649
825	$797	$159	$382	$1,338	$228	$204	$1,769
900	$888	$178	$426	$1,493	$254	$227	$1,973
1050	$1,043	$209	$501	$1,753	$298	$267	$2,318
1200	$1,202	$240	$577	$2,019	$343	$307	$2,670
1350	$1,399	$280	$671	$2,350	$399	$357	$3,107
1500	$1,666	$333	$800	$2,799	$476	$426	$3,701
1650	$1,920	$384	$921	$3,225	$548	$490	$4,264
1800	$2,121	$424	$1,018	$3,564	$606	$542	$4,712
1950	$2,400	$480	$1,152	$4,031	$685	$613	$5,330
2100	$2,704	$541	$1,298	$4,543	$772	$691	$6,007
2,400	$2,960	$592	$1,421	$4,973	$845	$756	$6,575
2,700	$3,515	$703	$1,687	$5,905	$1,004	$898	$7,807
3,000	$4,070	$814	$1,954	$6,838	$1,162	$1,040	$9,040

The standard unit rates for RCPs, in the preceding table, are based on the delivery of single barrel drains up to 10 metres in lengths.

The following length allowance has been applied in the SoW, where applicable, to the base unit rates for supply and construction of RCP pipework to arrive at the total construction cost of the drain. The allowance reflects current Council and market experience.

Table 5.1.1.2—Length allowance RCPs (only)

Length	Factor
10-30m	0.94
Greater than 30m	0.89

Table 5.1.1.3—Standard Unit Rates RCBCs

Nom Size (mm)	Construction				Overheads		Total Unit Rate $/m
	Supply and Construct Base Unit Rate $/m	Structures (20% of Base Unit Rate)	Ancillary Costs (40% of Base Unit Rate and Structures)	Total Direct Construction Unit Rate (Base Unit Rate, Structures and Ancillary Costs) $/m	Indirect Construction Cost (17% of Total Direct Construction Unit Rate)	Project Costs (13% of Total Direct and Indirect Construction Rates)	
1500 x 1500	$2,433	$487	$1,168	$4,087	$695	$622	$5,403
1800 x 1200	$2,619	$524	$1,257	$4,401	$748	$669	$5,818
2100 x 900	$2,922	$584	$1,403	$4,909	$835	$747	$6,490
2100 x 1500	$3,262	$652	$1,566	$5,481	$932	$834	$7,246
2100 x 2100	$3,840	$768	$1,843	$6,451	$1,097	$981	$8,529
2700 x 900	$4,073	$815	$1,955	$6,843	$1,163	$1,041	$9,047
2700 x 1200	$4,204	$841	$2,018	$7,064	$1,201	$1,074	$9,339
3000 x 1500	$5,325	$1,065	$2,556	$8,947	$1,521	$1,361	$11,829
3000 x 1800	$5,459	$1,092	$2,620	$9,171	$1,559	$1,395	$12,124
3000 x 2100	$5,688	$1,138	$2,730	$9,556	$1,625	$1,454	$12,635
3000 x 2700	$6,150	$1,230	$2,952	$10,331	$1,756	$1,571	$13,659
3300 x 1500	$5,988	$1,198	$2,874	$10,060	$1,710	$1,530	$13,300
3300 x 2100	$6,492	$1,298	$3,116	$10,906	$1,854	$1,659	$14,419

The standard unit rates for RCBCs, in the preceding table, are based on the delivery of single barrel drains.

5.1.1.1 Multiple Barrel Allowance

The following allowances have been applied in the SoW, where applicable, to the base unit rates for supply and construction of RCP and RCBC drainage to arrive at the total estimated cost of multiple barrel drainage. The allowance reflects current Council and market experience.

Table 5.1.1.4—Multiple Barrels Factors

Barrels	1	2	3	4	5	6	7	8	9	10
Factor	1	1.9	2.8	3.7	4.6	5.5	6.4	7.3	8.2	9.1

5.1.2. Open Channel Drainage

The estimated delivery cost of future open channel infrastructure has been calculated using unit cost rates of $ per lineal metre.

Rates for the supply of material and construction of the drain, were derived from Council's estimating system, actual cost records for similar works and tenders for similar works.

The rates include the following:

(1) the supply of materials;
(2) excavation of channel;
(3) supply and placement of channel lining (reinforced concrete, turf, rock;
(4) channel end treatments;
(5) restoration of adjoining works and land;
(6) an allowance for acid sulphate soil; and
(7) disposal of spoil to an approved site including cartage and tip.

5.1.2.1 Pinkenba – Open Channel Drainage

The estimated construction costs of the future open channel drain are derived from the Trunk Stormwater Infrastructure Review of the Myrtletown Precinct, Pinkenba – Eagle Farm Neighbourhood Plan, dated 25 May 2016.

The Base Unit Rate includes a 10% allowance for acid sulphate soils. The allowance reflects current Council and market experience.

Table 5.1.2.1—Standard Unit Rates – Constructed Open Channel Drainage

Channel Type	Description	Direct Construction Unit Rate $/m	Indirect Construction Cost (17% of Direct Construction Unit Rate)	Project Costs (13% of Total Direct and Indirect Construction Unit Rates)	Total Unit Rate $/m
Roadside Channel	Concrete lined - 5m width - 3m base width	$499	$85	$76	$659
Marine Road Channel	Concrete lined - 8m width - 6m base width	$640	$109	$97	$846
Natural Channel	Turf lined - 20m top width - 3m terrace - 1 in 3 max sides – Type 1	$490	$253	$226	$1,968
Natural Channel	Turf lined - 20m top width - 3m terrace - 1 in 3 max sides – Type 2	$940	$83	$74	$647
Park Channel	Concrete lined - 18m width - grass sides 1 in 6 max slope - 10m base width	$1,489	$160	$143	$1,242

5.1.2.2 Willawong – Open Channel Drain

The estimated construction cost for the future open drain has been derived from Council's estimating system and actual cost records for similar works.

The Base Unit Rate includes a 10% allowance for acid sulphate soils. The allowance reflects current Council and market experience.

Table 5.1.2.2—Standard Unit Rates – Constructed Open Channel Drainage

Channel Type	Description	Direct Construction Unit Rate ($/m)	Indirect Construction Cost (17% of Direct Construction Unit Rate)	Project Costs (13% of Total Direct and Indirect Construction Unit Rates)	Total Unit Rate ($/m)
Roadside	Natural Channel Improvement	$449	$76	$68	$594

5.1.2.3 Pallara – Open Channel Drain

The estimated construction cost for the future natural channels in Pallara has been derived by adjusting the standard unit rates for a 20 metre natural channel to suit the design and additional site preparation costs (e.g. tree clearing) associated with the delivery of natural channels in Pallara.

Table 5.1.2.3—Standard Unit Rates – Constructed Natural Channel Drainage

Channel Type	Description	Direct Construction Unit Rate ($/m)	Indirect Construction Cost (17% of Direct Construction Unit Rate)	Project Costs (13% of Total Direct and Indirect Construction Unit Rates)	Total Unit Rate ($/m)
Natural channel	15m wide base x 1.5m deep. 1 in 6 batter slopes. 33m top width	$3,018	$513	$459	$3,990
Natural channel	15m wide base x 1.2m deep. 1 in 6 batter slopes. 29.4m top width	$2,741	$466	$417	$3,624
Natural channel	15m wide x 0.6m deep	$2,562	$436	$390	$3,387

5.1.3. Stormwater Quality Improvement Devices (SQIDs)

The estimated costs of future biopods, gross pollutant traps (GPT) and bio-retention basins infrastructure have been calculated as a lump sum for the delivery of the units.

The estimated costs have been calculated by using the construction value in the Brisbane *City Plan 2014*, Priority Infrastructure Plan and escalating the value to 30 June 2016 dollars.

5.1.3.1 Biopods

The unit costs include the following:

(1) excavation works;
(2) supply of materials;
(3) pipework;
(4) placement of liners, filter medias and materials;
(5) plantings;
(6) restoration of adjoining works and land; and
(7) disposal of spoil to an approved site including cartage and tip.

Table 5.1.3.1—Standard Unit Cost – Biopods

Type	Description	Direct Construction Unit Cost	Indirect Construction Cost (17% of Direct Construction Unit Cost)	Project Costs (13% of Total Direct and Indirect Construction Unit Costs)	Total Unit Cost
SQID	Biopod	$22,025	$3,744	$3,350	$29,119

5.1.3.1 Gross Pollutant Traps (GPT)

The unit costs include the following:

(1) excavation and backfilling of works;
(2) supply of materials including the propriety GPT;
(3) pipework;
(4) restoration of adjoining works and land; and
(5) disposal of spoil to an approved site including cartage and tip.

Table 5.1.3.2—Standard Unit Costs – GPTs

Type	Description	Direct Construction Unit Cost	Indirect Construction Cost (17% of Direct Construction Unit Cost)	Project Costs (13% of Total Direct and Indirect Construction Unit Costs)	Total Unit Cost
GPT	Design to treat 2.65 m^3/s flow	$74,958	$12,743	$11,401	$99,102
GPT	Design to treat 3.02 m^3/s flow	$798,174	$135,690	$121,402	$1,055,266
GPT	Design to treat 0.15 m^3/s flow	$74,829	$12,721	$11,381	$98,931
GPT	Design to treat 0.43 m^3/s flow	$141,343	$24,028	$21,498	$186,870
GPT	Design to treat 1.55 m^3/s flow	$266,058	$45,230	$40,467	$351,755

5.1.3.2 Bio-retention basin

The unit costs include the following:

(1) site preparation – clearing, removal of weeds and decontamination if necessary;
(2) earthworks; and
(3) supply and planting of selected vegetation.

Table 5.1.3.3—Standard Unit Costs – Bio-retention Basins

Type	Description	Direct Construction Unit Cost	Indirect Construction Cost (17% of Direct Construction Unit Cost)	Project Costs (13% of Total Direct and Indirect Construction Unit Costs)	Total Unit Cost
Bio-retention Basin	Design area 7ha	$56,546	$9,613	$8,601	$74,759

Bio-retention Basin	Design area 10.3ha	$74,398	$12,648	$11,316	$98,362

5.1.4. Wetland

The estimated construction cost for the future wetland in Pallara has been calculated as a lump sum for the delivery of the wetland.
The cost has been calculated using a first principles estimating approach as this is a unique stormwater project.

The establishment cost for the wetland includes all associated construction costs including direct, indirect, project and contingency costs.

5.1.5. Backflow Prevention Devices (BPDs)

There are no planned BDP projects included in the SoW, subsequently no costing methodology or values are included.

5.2. Extrinsic Material Schedule of Works

LGIP ID [1]	Map reference	Suburb	Project description	Service catchment	Estimated year of completion [2]	Diameter (mm)	Height (mm)	Length (m)	Total number of barrels	Area (m²)	Land cost ($)	Direct construction cost ($)	Indirect construction cost ($) (3)	Project cost ($) (4)	Construction contingency cost ($) (5)	Total construction cost ($) (6)	Value of the trunk infrastructure ($) (7)	Establishment cost ($) (8)
ACR-PN-001	SW271	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	53	1	-	-	110,272	18,746	16,772	10,934	156,724	156,724	156,724
ACR-PN-002	SW271	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	208	1	-	-	435,340	74,008	66,215	43,167	618,730	618,730	618,730
ACR-PN-004	SW292	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,200	-	128	1	-	-	229,886	39,081	34,966	22,795	326,728	326,728	326,728
ACR-PN-005	SW292	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	56	1	-	-	117,205	19,925	17,827	11,622	166,579	166,579	166,579
ACR-PN-006	SW292	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	146	1	-	-	305,491	51,933	46,465	30,292	434,181	434,181	434,181
ACR-PN-008	SW292	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,050	-	51	1	-	-	80,003	13,601	12,169	7,933	113,706	113,706	113,706
ACR-PN-009	SW292	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	86	1	-	-	180,237	30,640	27,414	17,872	256,163	256,163	256,163
ACR-PN-010	SW292	Acacia Ridge	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	129	1	-	-	269,470	45,810	40,986	26,720	382,986	382,986	382,986
ACR-SQ-001	SW271	Acacia Ridge	SQID	Oxley Creek	2016 - 2021	-	-	10	-	-	-	22,025	3,744	3,350	2,184	31,303	31,303	31,303
ACR-SQ-002	SW292	Acacia Ridge	SQID	Oxley Creek	2016 - 2021	-	-	10	-	-	-	22,025	3,744	3,350	2,184	31,303	31,303	31,303
ACR-SQ-003	SW292	Acacia Ridge	SQID	Oxley Creek	2016 - 2021	-	-	10	-	-	-	22,025	3,744	3,350	2,184	31,303	31,303	31,303
ALB-PR-082	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,050	-	51	2	-	-	151,133	25,693	22,987	14,986	214,799	214,799	214,799
ALB-PR-084	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,050	-	25	1	-	-	40,910	6,955	6,222	4,057	58,144	58,144	58,144
ALB-PR-085	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,050	-	66	1	-	-	102,811	17,478	15,638	10,195	146,122	146,122	146,122
ALB-PR-088	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,350	-	67	2	-	-	264,387	44,946	40,213	26,216	375,762	375,762	375,762
ALB-PR-089	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,350	-	42	2	-	-	166,953	28,382	25,394	16,555	237,284	237,284	237,284
ALB-PR-092	SW153	Albion	Pipe - Relief	Albion	2021 - 2026	1,650	-	16	4	-	-	176,067	29,931	26,780	34,917	267,695	267,695	267,695
ALB-PR-093	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,650	-	81	4	-	-	863,774	146,842	131,380	85,650	1,227,646	1,227,646	1,227,646
ALB-PR-094	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,650	-	73	4	-	-	772,447	131,316	117,489	76,594	1,097,846	1,097,846	1,097,846
ALB-PR-095	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,650	-	12	1	-	-	37,309	6,343	5,675	3,700	53,027	53,027	53,027
ALB-PR-096	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,650	-	35	4	-	-	372,653	63,351	56,681	36,951	529,636	529,636	529,636
ALB-PR-102	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,800	-	34	3	-	-	298,383	50,725	45,384	29,587	424,079	424,079	424,079
ALB-PR-103	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,800	-	47	3	-	-	421,102	71,587	64,050	41,755	598,494	598,494	598,494
ALB-PR-104	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,800	-	20	3	-	-	192,137	32,663	29,224	19,052	273,076	273,076	273,076
ALB-PR-108	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,500	-	103	2	-	-	485,999	82,620	73,920	48,190	690,729	690,729	690,729
ALB-PR-109	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	1,650	-	80	2	-	-	435,115	73,970	66,181	43,145	618,411	618,411	618,411
ALB-PR-125	SW153	Albion	Pipe - Relief	Albion	2021 - 2026	825	-	59	2	-	-	133,589	22,710	20,319	26,493	203,111	203,111	203,111
ALB-PR-129	SW153	Albion	Pipe - Relief	Albion	2016 - 2021	2,700	900	78	1	-	-	531,686	90,387	80,869	52,721	755,663	755,663	755,663
BNE-PR-008	SW192	Brisbane City	Pipe - Relief	Citywide	2021 - 2026	1,500	-	124	1	-	-	308,920	52,516	46,987	61,263	469,686	469,686	469,686
BNE-PR-009	SW192	Brisbane City	Pipe - Relief	Citywide	2021 - 2026	1,350	-	108	2	-	-	429,136	72,953	65,272	85,104	652,465	652,465	652,465
BNE-PR-010	SW192, SW193	Brisbane City	Pipe - Relief	Citywide	2021 - 2026	1,500	-	303	2	-	-	1,434,234	243,820	218,147	284,430	2,180,631	2,180,631	2,180,631
BUL-PR-007	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,800	-	19	2	-	-	119,199	20,264	18,130	11,819	169,412	169,412	169,412
BUL-PR-008	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,800	-	134	2	-	-	806,943	137,180	122,736	80,014	1,146,873	1,146,873	1,146,873
BUL-PR-009	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,800	-	75	2	-	-	449,046	76,338	68,300	44,526	638,210	638,210	638,210
BUL-PR-010	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,800	-	62	2	-	-	371,829	63,211	56,555	36,870	528,465	528,465	528,465
BUL-PR-011	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,800	-	77	2	-	-	462,203	78,575	70,301	45,831	656,910	656,910	656,910
BUL-PR-022	SW174	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	36	3	-	-	247,857	42,136	37,699	24,577	352,269	352,269	352,269
BUL-PR-023	SW173, SW174	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	44	3	-	-	308,957	52,523	46,992	30,635	439,107	439,107	439,107
BUL-PR-024	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	115	3	-	-	805,459	136,928	122,510	79,867	1,144,764	1,144,764	1,144,764
BUL-PR-025	SW174	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	84	3	-	-	586,984	99,787	89,280	58,204	834,255	834,255	834,255
BUL-PR-026	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	55	3	-	-	381,370	64,833	58,006	37,816	542,025	542,025	542,025
BUL-PR-027	SW174	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	90	3	-	-	628,523	106,849	95,598	62,323	893,293	893,293	893,293
BUL-PR-028	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	41	3	-	-	287,724	48,913	43,763	28,530	408,930	408,930	408,930
BUL-PR-029	SW173	Bulimba	Pipe - Relief	Pashen Creek LSMP	2016 - 2021	1,500	-	104	3	-	-	724,591	123,180	110,210	71,849	1,029,830	1,029,830	1,029,830
CHE-PR-047	SW112	Chermside	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	1,350	-	55	1	-	-	115,230	19,589	17,526	22,852	175,197	175,197	175,197
CHE-PR-049	SW113, SW112	Chermside	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	1,500	-	33	1	-	-	83,184	14,141	12,652	16,497	126,474	126,474	126,474
CHE-PR-050	SW113	Chermside	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	2,100	1,500	210	3	-	-	3,222,798	547,876	490,188	639,129	4,899,991	4,899,991	4,899,991
COO-PR-121	SW213	Coorparoo	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	93	1	-	-	296,549	50,413	45,105	58,810	450,877	450,877	450,877
COO-PR-122	SW213	Coorparoo	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	63	1	-	-	198,732	33,784	30,227	39,411	302,154	302,154	302,154
CVE-CU-001	SW313	Calamvale	Culvert	Calamvale	2016 - 2021	1,350	-	68	3	-	-	399,568	67,927	60,774	39,620	567,889	567,889	567,889
CVE-CU-002	SW313	Calamvale	Culvert	Calamvale	2016 - 2021	2,700	3,000	53	3	-	-	1,530,430	260,173	232,778	151,754	2,175,135	2,175,135	2,175,135
CVE-CU-004	SW313	Calamvale	Culvert	Calamvale	2016 - 2021	1,200	2,700	75	3	-	-	1,483,479	252,191	225,637	147,098	2,108,405	2,108,405	2,108,405
CVE-PR-005	SW313	Calamvale	Pipe - Relief	Calamvale	2016 - 2021	1,050	-	500	1	-	-	780,100	132,617	118,653	77,353	1,108,723	1,108,723	1,108,723
DOO-CU-002	SW311	Doolandella	Culvert	Doolandella	2016 - 2021	1,500	1,500	16	3	-	-	185,732	31,574	28,250	18,417	263,973	263,973	263,973
DOO-PR-009	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,500	-	76	1	-	-	188,763	32,090	28,711	18,717	268,281	268,281	268,281
DOO-PR-016	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,050	-	162	1	-	-	252,175	42,870	38,356	25,005	358,406	358,406	358,406
DOO-PR-018	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,650	-	282	1	-	-	809,471	137,610	123,121	80,265	1,150,467	1,150,467	1,150,467
DOO-PR-025	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,050	-	81	1	-	-	127,107	21,608	19,333	12,604	180,652	180,652	180,652
DOO-PR-030	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,200	-	24	1	-	-	44,782	7,613	6,811	4,440	63,646	63,646	63,646
DOO-PR-031	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,050	-	51	1	-	-	79,271	13,476	12,057	7,860	112,664	112,664	112,664
DOO-PR-036	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,200	-	177	1	-	-	318,318	54,114	48,416	31,564	452,412	452,412	452,412
DOO-PR-037	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,650	-	101	1	-	-	291,028	49,475	44,265	28,858	413,626	413,626	413,626
DOO-PR-039	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,350	-	46	1	-	-	97,092	16,506	14,768	9,627	137,993	137,993	137,993
DOO-PR-041	SW311	Doolandella	Pipe - Relief	Doolandella	2016 - 2021	1,050	-	46	1	-	-	72,435	12,314	11,017	7,182	102,948	102,948	102,948
DUR-SQ-001	SW291	Durack	SQID	Oxley Creek	2016 - 2021	-	-	-	-	-	-	22,025	3,744	3,350	2,184	31,303	31,303	31,303
EVP-PR-024	SW111	Everton Park	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	1,650	-	17	1	-	-	52,618	8,945	8,003	10,435	80,001	80,001	80,001
EVP-PR-025	SW111	Everton Park	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	1,650	-	33	1	-	-	94,050	15,989	14,305	18,652	142,996	142,996	142,996
EVP-PR-026	SW111	Everton Park	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	1,650	-	13	1	-	-	38,116	6,480	5,797	7,559	57,952	57,952	57,952
EVP-PR-027	SW111	Everton Park	Pipe - Relief	Nundah Downfall Creek	2021 - 2026	1,650	-	50	1	-	-	143,111	24,329	21,767	28,381	217,588	217,588	217,588
FTP-CU-005	SW250	Fig Tree Pocket	Culvert	Fig Tree Pocket	2021 - 2026	1,350	-	13	4	-	-	106,391	18,086	16,182	21,099	161,758	161,758	161,758
FVA-PR-005	SW173	Fortitude Valley, Bowen Hills	Pipe - Relief	INES	2021 - 2026	2,100	-	93	1	-	-	377,283	64,138	57,385	74,821	573,627	573,627	573,627
FVA-PR-015	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,050	-	36	1	-	-	55,993	9,519	8,517	11,104	85,133	85,133	85,133
FVA-PR-016	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,200	-	30	1	-	-	54,294	9,230	8,258	10,767	82,549	82,549	82,549
FVA-PR-017	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,350	-	60	1	-	-	125,353	21,310	19,066	24,859	190,588	190,588	190,588
FVA-PR-018	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,200	-	39	1	-	-	70,152	11,926	10,670	13,912	106,660	106,660	106,660
FVA-PR-019	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,350	-	150	1	-	-	313,134	53,233	47,628	62,099	476,094	476,094	476,094
FVA-PR-020	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,200	-	35	1	-	-	63,360	10,771	9,637	12,565	96,333	96,333	96,333
FVA-PR-021	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,200	-	91	1	-	-	163,052	27,719	24,800	32,336	247,907	247,907	247,907
FVA-PR-022	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,800	-	51	1	-	-	161,124	27,391	24,507	31,953	244,975	244,975	244,975
FVA-PR-023	SW173	Fortitude Valley, Newstead	Pipe - Relief	INES	2021 - 2026	1,800	-	89	1	-	-	281,091	47,785	42,754	55,745	427,375	427,375	427,375
FVA-PR-024	SW173	Fortitude Valley, Newstead	Pipe - Relief	INES	2021 - 2026	2,100	-	142	1	-	-	576,027	97,925	87,614	114,235	875,801	875,801	875,801
FVA-PR-025	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,800	-	16	1	-	-	52,579	8,938	7,997	10,427	79,941	79,941	79,941
FVA-PR-026	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	2,100	-	109	1	-	-	442,158	75,167	67,252	87,687	672,264	672,264	672,264
FVA-PR-027	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,050	-	105	1	-	-	164,435	27,954	25,011	32,610	250,010	250,010	250,010
FVA-PR-028	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	2,400	-	119	1	-	-	528,585	89,859	80,398	104,826	803,668	803,668	803,668
FVA-PR-029	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	3,000	-	76	1	-	-	465,288	79,099	70,770	92,274	707,431	707,431	707,431
FVA-PR-032	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,800	-	32	1	-	-	101,984	17,337	15,512	20,225	155,058	155,058	155,058
FVA-PR-033	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,800	-	119	1	-	-	378,381	64,325	57,552	75,039	575,297	575,297	575,297
FVA-PR-034	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,050	-	32	1	-	-	49,631	8,437	7,549	9,843	75,460	75,460	75,460
FVA-PR-035	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,050	-	175	1	-	-	273,123	46,431	41,542	54,164	415,260	415,260	415,260
FVA-PR-036	SW173	Fortitude Valley	Pipe - Relief	INES	2016 - 2021	1,200	-	26	1	-	-	48,910	8,315	7,439	4,850	69,514	69,514	69,514
FVA-PR-037	SW173	Fortitude Valley	Pipe - Relief	INES	2016 - 2021	1,200	-	65	2	-	-	221,038	37,576	33,620	21,918	314,152	314,152	314,152
FVA-PR-038	SW173	Fortitude Valley	Pipe - Relief	INES	2016 - 2021	1,200	-	41	2	-	-	140,927	23,958	21,435	13,974	200,294	200,294	200,294
FVA-PR-039	SW173	Fortitude Valley	Pipe - Relief	INES	2016 - 2021	2,100	-	158	2	-	-	1,214,447	206,456	184,717	120,422	1,726,042	1,726,042	1,726,042
FVA-PR-040	SW173	Fortitude Valley	Pipe - Relief	INES	2016 - 2021	2,100	-	50	2	-	-	384,666	65,393	58,508	38,143	546,710	546,710	546,710
FVA-PR-041	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	2,100	-	133	1	-	-	538,390	91,526	81,889	106,771	818,576	818,576	818,576
FVA-PR-042	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,800	-	10	1	-	-	34,072	5,792	5,182	6,757	51,803	51,803	51,803
FVA-PR-043	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,800	-	55	1	-	-	175,903	29,904	26,755	34,884	267,446	267,446	267,446
FVA-PR-044	SW173	Fortitude Valley	Pipe - Relief	INES	2016 - 2021	1,050	-	186	1	-	-	289,990	49,298	44,107	28,755	412,150	412,150	412,150
FVA-PR-051	SW173	Fortitude Valley	Pipe - Relief	INES	2021 - 2026	1,050	-	3	1	-	-	5,927	1,008	902	1,176	9,013	9,013	9,013
GAP-PN-001	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,800	1,500	56	1	-	-	177,635	30,198	27,018	35,228	270,079	270,079	270,079
GAP-PN-002	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	31	2	-	-	146,736	24,945	22,319	29,100	223,100	223,100	223,100
GAP-PN-003	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	10	2	-	-	53,185	9,041	8,089	10,547	80,862	80,862	80,862
GAP-PN-004	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	10	2	-	-	33,308	5,662	5,066	6,605	50,641	50,641	50,641
GAP-PN-005	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,200	-	55	2	-	-	187,816	31,929	28,567	37,247	285,559	285,559	285,559

LGIP ID [1]	Map reference	Suburb	Project description	Service catchment	Estimated year of completion [2]	Diameter (mm)	Height (mm)	Length (m)	Total number of barrels	Area (m²)	Land cost ($)	Direct construction cost ($)	Indirect construction cost ($) (3)	Project cost ($) (4)	Construction contingency cost ($) (5)	Total construction cost ($) (6)	Value of the trunk infrastructure ($) (7)	Establishment cost ($) (8)
GAP-PN-006	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,200	-	17	2	-	-	61,313	10,423	9,326	12,159	93,221	93,221	93,221
GAP-PN-007	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,200	-	13	2	-	-	46,887	7,971	7,132	9,299	71,289	71,289	71,289
GAP-PN-008	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	16	2	-	-	50,094	8,516	7,619	9,934	76,163	76,163	76,163
GAP-PN-009	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	40	2	-	-	118,574	20,158	18,035	23,515	180,282	180,282	180,282
GAP-PN-010	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,800	-	9	2	-	-	60,945	10,361	9,270	12,086	92,662	92,662	92,662
GAP-PN-011	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	38	2	-	-	112,646	19,150	17,133	22,339	171,268	171,268	171,268
GAP-PN-012	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	12	2	-	-	37,572	6,387	5,715	7,451	57,125	57,125	57,125
GAP-PN-013	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	18	2	-	-	56,357	9,581	8,572	11,177	85,687	85,687	85,687
GAP-PN-014	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	11	2	-	-	34,440	5,855	5,238	6,830	52,363	52,363	52,363
GAP-PN-015	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,050	-	38	2	-	-	112,646	19,150	17,133	22,339	171,268	171,268	171,268
GAP-PN-016	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,500	1,200	25	1	-	-	65,780	11,183	10,005	13,045	100,013	100,013	100,013
GAP-PN-017	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,500	1,200	26	1	-	-	68,413	11,630	10,406	13,567	104,016	104,016	104,016
GAP-PN-018	SW170	The Gap	Pipe - New	Breakfast Creek	2021 - 2026	1,650	-	23	2	-	-	132,468	22,520	20,148	26,270	201,406	201,406	201,406
HEM-CU-005	SW176	Hemmant	Culvert	ATC South (a)	2016 - 2021	1,700	3,000	25	4	-	-	861,820	146,509	131,083	85,456	1,224,868	1,224,868	1,224,868
HEM-CU-008	SW176	Hemmant	Culvert	Bulimba Creek	2021 - 2026	1,200	-	29	3	-	-	153,806	26,147	23,394	30,502	233,849	233,849	233,849
HEM-PR-013	SW176	Hemmant	Pipe - Relief	ATC South (a)	2016 - 2021	1,350	-	89	1	-	-	186,126	31,641	28,310	18,456	264,533	264,533	264,533
HEM-PR-014	SW176	Hemmant	Pipe - Relief	Bulimba Creek	2016 - 2021	1,200	-	209	1	-	-	375,631	63,857	57,133	37,247	533,868	533,868	533,868
INA-CU-001	SW290	Inala, Richlands	Culvert	Richlands (b)	2021 - 2026	1,350	-	15	3	-	-	92,770	15,771	14,110	18,398	141,049	141,049	141,049
IND-PR-034	SW211	Indooroopilly, Taringa	Pipe - Relief	Toowong Creeks	2021 - 2026	1,500	-	51	1	-	-	128,219	21,797	19,502	25,428	194,946	194,946	194,946
MGE-PR-001	SW254	Mount Gravatt East	Pipe - Relief	Norman Creek	2016 - 2021	1,950	-	60	1	-	-	214,993	36,549	32,700	21,318	305,560	305,560	305,560
MGE-PR-002	SW254	Mount Gravatt East	Pipe - Relief	Norman Creek	2016 - 2021	1,050	-	49	1	-	-	76,339	12,978	11,611	7,570	108,498	108,498	108,498
MGE-PR-006	SW254	Mount Gravatt East	Pipe - Relief	Bulimba Creek	2016 - 2021	1,500	-	35	1	-	-	85,949	14,611	13,073	8,522	122,155	122,155	122,155
NUN-PN-001	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	13	1	-	-	24,678	4,195	3,753	4,894	37,520	37,520	37,520
NUN-PN-002	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	57	1	-	-	102,445	17,416	15,582	20,316	155,759	155,759	155,759
NUN-PN-003	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	26	1	-	-	49,355	8,390	7,507	9,788	75,040	75,040	75,040
NUN-PN-004	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	18	1	-	-	34,168	5,809	5,197	6,776	51,950	51,950	51,950
NUN-PN-005	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	162	1	-	-	291,159	49,497	44,285	57,741	442,682	442,682	442,682
NUN-PN-006	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	8	1	-	-	16,155	2,746	2,457	3,204	24,562	24,562	24,562
NUN-PN-007	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	19	1	-	-	36,066	6,131	5,486	7,152	54,835	54,835	54,835
NUN-PN-008	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,200	-	155	1	-	-	278,578	47,358	42,372	55,246	423,554	423,554	423,554
NUN-PN-009	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,050	-	31	1	-	-	48,366	8,222	7,356	9,592	73,536	73,536	73,536
NUN-PN-010	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,800	600	17	1	-	-	56,954	9,682	8,663	11,295	86,594	86,594	86,594
NUN-PN-011	SW134	Nundah	Pipe - New	Kedron Brook	2021 - 2026	1,050	-	45	1	-	-	70,209	11,936	10,679	13,924	106,748	106,748	106,748
NUN-PR-017	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,500	-	78	1	-	-	193,269	32,856	29,396	38,328	293,849	293,849	293,849
NUN-PR-018	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,500	-	65	1	-	-	162,474	27,621	24,712	32,221	247,028	247,028	247,028
NUN-PR-019	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	50	1	-	-	159,219	27,067	24,217	31,575	242,078	242,078	242,078
NUN-PR-021	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,500	-	93	1	-	-	231,650	39,381	35,234	45,940	352,205	352,205	352,205
NUN-PR-025	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	40	1	-	-	126,685	21,536	19,269	25,124	192,614	192,614	192,614
NUN-PR-029	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	58	1	-	-	184,138	31,303	28,007	36,517	279,965	279,965	279,965
NUN-PR-047	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,500	-	4	1	-	-	11,626	1,976	1,768	2,306	17,676	17,676	17,676
NUN-PR-126	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	16	1	-	-	54,274	9,227	8,255	10,763	82,519	82,519	82,519
NUN-PR-127	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	41	1	-	-	129,578	22,028	19,709	25,697	197,012	197,012	197,012
NUN-PR-128	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	36	1	-	-	114,828	19,521	17,465	22,772	174,586	174,586	174,586
NUN-PR-129	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	56	1	-	-	178,587	30,360	27,163	35,417	271,527	271,527	271,527
NUN-PR-130	SW134	Nundah	Pipe - Relief	Kedron Brook	2021 - 2026	1,800	-	32	1	-	-	102,774	17,472	15,632	20,382	156,260	156,260	156,260
NWS-PR-004	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	2,100	-	145	1	-	-	586,112	99,639	89,148	58,117	833,016	833,016	833,016
NWS-PR-005	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	2,700	-	6	1	-	-	33,146	5,635	5,042	3,287	47,110	47,110	47,110
NWS-PR-006	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,500	-	40	1	-	-	100,743	17,126	15,323	9,989	143,181	143,181	143,181
NWS-PR-007	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	2,700	-	23	2	-	-	244,166	41,508	37,138	48,422	371,234	371,234	371,234
NWS-PR-008	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	2,100	-	58	1	-	-	233,271	39,656	35,481	46,261	354,669	354,669	354,669
NWS-PR-009	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	2,700	-	241	2	-	-	2,403,097	408,526	365,511	238,285	3,415,419	3,415,419	3,415,419
NWS-PR-010	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	2,700	-	170	1	-	-	891,697	151,588	135,627	176,837	1,355,749	1,355,749	1,355,749
NWS-PR-011	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	2,100	-	53	2	-	-	404,003	68,681	61,449	80,120	614,253	614,253	614,253
NWS-PR-012	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	2,100	-	86	1	-	-	346,512	58,907	52,704	68,718	526,841	526,841	526,841
NWS-PR-013	SW173	Newstead, Fortitude Valley	Pipe - Relief	INES	2021 - 2026	2,400	-	81	2	-	-	683,392	116,177	103,944	135,527	1,039,040	1,039,040	1,039,040
NWS-PR-017	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	26	1	-	-	99,816	16,969	15,182	9,898	141,865	141,865	141,865
NWS-PR-018	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	15	1	-	-	58,726	9,983	8,932	5,823	83,464	83,464	83,464
NWS-PR-019	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	73	1	-	-	260,592	44,301	39,636	25,840	370,369	370,369	370,369
NWS-PR-020	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	45	1	-	-	163,143	27,734	24,814	16,177	231,868	231,868	231,868
NWS-PR-021	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	79	1	-	-	283,256	48,154	43,083	28,087	402,580	402,580	402,580
NWS-PR-022	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	47	1	-	-	167,531	28,480	25,481	16,612	238,104	238,104	238,104
NWS-PR-023	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	11	1	-	-	41,321	7,025	6,285	4,097	58,728	58,728	58,728
NWS-PR-024	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	34	1	-	-	122,040	20,747	18,562	12,101	173,450	173,450	173,450
NWS-PR-025	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	7	1	-	-	29,973	5,095	4,559	2,972	42,599	42,599	42,599
NWS-PR-026	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	1,200	-	72	1	-	-	128,552	21,854	19,553	25,494	195,453	195,453	195,453
NWS-PR-027	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	1,350	-	61	1	-	-	127,804	21,727	19,439	25,346	194,316	194,316	194,316
NWS-PR-028	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	1,350	-	86	1	-	-	179,244	30,471	27,263	35,547	272,525	272,525	272,525
NWS-PR-029	SW173	Newstead	Pipe - Relief	INES	2021 - 2026	1,200	-	71	1	-	-	127,339	21,648	19,368	25,253	193,608	193,608	193,608
NWS-PR-033	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,500	-	35	1	-	-	87,800	14,926	13,354	8,706	124,786	124,786	124,786
NWS-PR-034	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,500	-	135	1	-	-	336,047	57,128	51,113	33,322	477,610	477,610	477,610
NWS-PR-036	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,050	-	68	1	-	-	106,161	18,047	16,147	10,527	150,882	150,882	150,882
NWS-PR-037	SW173	Newstead	Pipe - Relief	INES	2016 - 2021	1,500	-	27	1	-	-	70,548	11,993	10,730	6,995	100,266	100,266	100,266
OXY-PR-027	SW270	Oxley	Pipe - Relief	Richlands (b)	2021 - 2026	1,350	1,500	35	2	-	-	250,900	42,653	38,162	49,757	381,472	381,472	381,472
OXY-PR-040	SW271	Oxley	Pipe - Relief	Oxley Creek	2021 - 2026	1,950	-	18	2	-	-	128,355	21,820	19,523	25,455	195,153	195,153	195,153
OXY-PR-046	SW271	Oxley	Pipe - Relief	Oxley Creek	2021 - 2026	1,650	-	86	1	-	-	245,414	41,720	37,327	48,669	373,130	373,130	373,130
OXY-PR-053	SW271	Oxley	Pipe - Relief	Oxley Creek	2021 - 2026	2,100	-	61	1	-	-	245,451	41,727	37,333	48,677	373,188	373,188	373,188
OXY-PR-056	SW271	Oxley	Pipe - Relief	Oxley Creek	2021 - 2026	1,050	-	116	1	-	-	180,671	30,714	27,480	35,830	274,695	274,695	274,695
PAL-CU-005	SW312	Pallara	Culvert	Oxley Creek	2021 - 2026	2,700	-	20	2	-	-	304,505	51,766	46,315	60,388	462,974	462,974	462,974
PAL-CU-008	SW312	Pallara	Culvert	Oxley Creek	2021 - 2026	2,700	-	20	3	-	-	373,157	63,437	56,757	74,003	567,354	567,354	567,354
PAL-CU-010	SW312	Pallara	Culvert	Oxley Creek	2021 - 2026	1,500	900	17	3	-	-	166,226	28,258	25,283	32,965	252,732	252,732	252,732
PAL-CU-011	SW312	Pallara	Culvert	Oxley Creek	2021 - 2026	1,800	600	20	3	-	-	218,928	37,218	33,299	43,417	332,862	332,862	332,862
PAL-NC-001	SW312	Pallara	Natural channel	Oxley Creek	2021 - 2026	-	-	400	-	11,885	1,009,867	1,207,200	205,224	183,615	239,406	1,835,445	2,845,312	2,845,312
PAL-NC-002	SW312	Pallara	Natural channel	Oxley Creek	2021 - 2026	-	-	475	-	26,500	494,880	1,301,975	221,336	198,030	258,201	1,979,542	2,474,422	2,474,422
PAL-NC-003	SW312	Pallara	Natural channel	Oxley Creek	2021 - 2026	-	-	423	-	25,100	468,735	1,083,726	184,233	164,835	214,919	1,647,713	2,116,448	2,116,448
PAL-PN-001	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,050	-	200	1	-	-	312,040	53,047	47,461	61,882	474,430	474,430	474,430
PAL-PN-002	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	200	1	-	-	418,261	71,104	63,617	82,947	635,929	635,929	635,929
PAL-PN-003	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	200	2	-	-	794,695	135,098	120,873	157,600	1,208,266	1,208,266	1,208,266
PAL-PN-004	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	15	3	-	-	92,770	15,771	14,110	18,398	141,049	141,049	141,049
PAL-PN-005	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	104	3	-	-	608,988	103,528	92,627	120,771	925,914	925,914	925,914
PAL-PN-006	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	110	3	-	-	644,122	109,501	97,971	127,739	979,333	979,333	979,333
PAL-PN-007	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,500	900	60	3	-	-	418,537	71,151	63,659	83,002	636,349	636,349	636,349
PAL-PN-008	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	20	2	-	-	83,934	14,269	12,766	16,645	127,614	127,614	127,614
PAL-PN-009	SW312	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	195	2	-	-	774,828	131,721	117,851	153,660	1,178,060	1,178,060	1,178,060
PAL-PN-010	SW312, SW332	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	111	1	-	-	232,134	39,463	35,308	46,036	352,941	352,941	352,941
PAL-PN-011	SW312, SW332	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	340	1	-	-	711,043	120,877	108,150	141,011	1,081,081	1,081,081	1,081,081
PAL-PN-012	SW312,SW332	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	120	1	-	-	250,957	42,663	38,171	49,769	381,560	381,560	381,560
PAL-PN-013	SW312, SW332	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	25	2	-	-	104,918	17,836	15,958	20,807	159,519	159,519	159,519
PAL-PN-014	SW312,SW332	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	80	2	-	-	317,878	54,039	48,349	63,040	483,306	483,306	483,306
PAL-PN-015	SW312, SW332	Pallara	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	45	2	-	-	178,806	30,397	27,196	35,460	271,859	271,859	271,859
PAL-WL-001	SW312	Pallara	Wetland	Oxley Creek	2021 - 2026	-	-	-	-	16,800	423,542	1,411,850	-	-	-	1,411,850	1,835,392	1,835,392
PIN-CC-001	SW116	Pinkenba	Concrete Lined Channel	ATCN	2021 - 2026	-	-	205	-	-	-	102,277	17,387	15,556	20,283	155,503	155,503	155,503
PIN-CC-002	SW116	Pinkenba	Concrete Lined Channel	ATCN	2021 - 2026	-	-	231	-	-	-	147,904	25,144	22,496	29,332	224,876	224,876	224,876
PIN-CC-004	SW116	Pinkenba	Concrete Lined Channel	ATCN	2021 - 2026	-	-	256	-	-	-	127,495	21,674	19,392	25,284	193,845	193,845	193,845

LGIP ID [1]	Map reference	Suburb	Project description	Service catchment	Estimated year of completion [2]	Diameter (mm)	Height (mm)	Length (m)	Total number of barrels	Area (m²)	Land cost ($)	Direct construction cost ($)	Indirect construction cost ($) (3)	Project cost ($) (4)	Construction contingency cost ($) (5)	Total construction cost ($) (6)	Value of the trunk infrastructure ($) (7)	Establishment cost ($) (8)
PIN-CC-006	SW116	Pinkenba	Concrete Lined Channel	ATCN	2021 - 2026	-	-	218	-	-	-	108,682	18,476	16,531	21,553	165,242	165,242	165,242
PIN-CC-009	SW116	Pinkenba	Concrete Lined Channel	ATCN	2021 - 2026	-	-	157	-	-	-	233,758	39,739	35,555	46,358	355,410	355,410	355,410
PIN-CC-010	SW116	Pinkenba	Concrete Lined Channel	ATCN	2021 - 2026	-	-	247	-	-	-	123,328	20,966	18,758	24,458	187,510	187,510	187,510
PIN-CU-002	SW116	Pinkenba	Culvert	ATCN	2021 - 2026	2,100	900	35	3	-	-	481,071	81,782	73,171	95,404	731,428	731,428	731,428
PIN-NC-001	SW116	Pinkenba	Natural Channel	ATCN	2021 - 2026	-	-	144	-	-	-	135,213	22,986	20,566	26,815	205,580	205,580	205,580
PIN-NC-002	SW116	Pinkenba	Natural Channel	ATCN	2021 - 2026	-	-	71	-	-	-	34,961	5,943	5,318	6,933	53,155	53,155	53,155
PIN-NC-003	SW116	Pinkenba	Natural Channel	ATCN	2021 - 2026	-	-	92	-	-	-	44,835	7,622	6,819	8,891	68,167	68,167	68,167
PIN-NC-004	SW116	Pinkenba	Natural Channel	ATCN	2021 - 2026	-	-	176	-	-	-	86,240	14,661	13,117	17,103	131,121	131,121	131,121
RHI-PN-001	SW172	Red Hill	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	85	1	-	-	211,759	35,999	32,209	41,995	321,962	321,962	321,962
RHI-PN-002	SW172	Red Hill	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	76	1	-	-	189,338	32,187	28,798	37,548	287,871	287,871	287,871
RHI-PN-003	SW172, SW171	Red Hill	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	44	1	-	-	109,617	18,635	16,673	21,739	166,664	166,664	166,664
RHI-PN-004	SW171	Red Hill	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	69	1	-	-	171,899	29,223	26,146	34,090	261,358	261,358	261,358
RHI-PN-005	SW171	Red Hill	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	7	1	-	-	19,594	3,331	2,980	3,886	29,791	29,791	29,791
RHI-PN-006	SW172	Red Hill	Pipe - New	Breakfast Creek	2021 - 2026	1,500	-	53	1	-	-	132,038	22,446	20,083	26,185	200,752	200,752	200,752
RIC-CU-001	SW290	Richlands	Culvert	Richlands (a)	2021 - 2026	1,200	1,800	18	4	-	-	293,079	49,823	44,577	58,122	445,601	445,601	445,601
RIC-CU-002	SW290	Richlands	Culvert	Richlands (a)	2021 - 2026	1,050	-	35	1	-	-	54,911	9,335	8,352	10,890	83,488	83,488	83,488
RIC-PR-004	SW290	Richlands, Wacol	Pipe - Relief	Richlands (d)	2021 - 2026	1,200	-	128	1	-	-	230,511	39,187	35,061	45,714	350,473	350,473	350,473
RIC-PR-007	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,050	-	53	1	-	-	82,463	14,019	12,543	16,354	125,379	125,379	125,379
RIC-PR-008	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,050	-	103	1	-	-	160,569	27,297	24,423	31,843	244,132	244,132	244,132
RIC-PR-009	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,350	-	48	1	-	-	100,160	17,027	15,234	19,863	152,284	152,284	152,284
RIC-PR-129	SW290	Richlands	Pipe - Relief	Richlands (a)	2016 - 2021	1,200	-	41	1	-	-	73,105	12,428	11,119	7,249	103,901	103,901	103,901
RIC-PR-148	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,050	-	49	1	-	-	76,450	12,997	11,628	15,161	116,236	116,236	116,236
RIC-PR-149	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,500	-	49	1	-	-	122,074	20,753	18,568	24,209	185,604	185,604	185,604
RIC-PR-150	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,950	-	317	1	-	-	1,137,373	193,353	172,994	225,558	1,729,278	1,729,278	1,729,278
RIC-PR-176	SW290	Richlands	Pipe - Relief	Richlands (a)	2021 - 2026	1,200	-	46	1	-	-	81,776	13,902	12,438	16,217	124,333	124,333	124,333
RIC-PR-183	SW290	Richlands	Pipe - Relief	Richlands (b)	2021 - 2026	1,200	-	183	1	-	-	328,902	55,913	50,026	65,226	500,067	500,067	500,067
ROC-BS-002	SW276, SW275	Rochedale	Bioretention Swale	Rochedale (d)	2016 - 2021	-	-	854	-	-	-	197,459	33,568	30,034	19,580	280,641	280,641	280,641
ROC-CU-021	SW275	Rochedale	Culvert	Rochedale (d)	2021 - 2026	2,100	3,000	40	2	-	-	731,012	124,272	111,187	144,971	1,111,442	1,111,442	1,111,442
ROC-LA-003	SW275	Rochedale	Land Acquisition - waterway corridor	Rochedale (b)	2016 - 2021	-	-	-	-	8,656	129,833	-	-	-	-	-	129,833	129,833
ROC-LA-004	SW295, SW275	Rochedale	Land Acquisition - waterway corridor	Rochedale (b)	2021 - 2026	-	-	-	-	99,651	1,494,765	-	-	-	-	-	1,494,765	1,494,765
ROC-PR-144	SW276	Rochedale	Pipe - Relief	Rochedale (d)	2021 - 2026	1,050	-	28	1	-	-	46,875	7,969	7,130	9,296	71,270	71,270	71,270
ROC-PR-147	SW276	Rochedale	Pipe - Relief	Rochedale (d)	2021 - 2026	1,650	-	36	1	-	-	102,924	17,497	15,655	20,411	156,487	156,487	156,487
ROC-PR-153	SW276	Rochedale	Pipe - Relief	Rochedale (d)	2021 - 2026	2,400	-	60	3	-	-	741,463	126,049	112,777	147,043	1,127,332	1,127,332	1,127,332
ROC-PR-154	SW276	Rochedale	Pipe - Relief	Rochedale (d)	2021 - 2026	2,400	-	92	2	-	-	772,316	131,294	117,469	153,162	1,174,241	1,174,241	1,174,241
ROC-PR-157	SW276	Rochedale	Pipe - Relief	Rochedale (d)	2021 - 2026	2,400	-	158	2	-	-	1,324,991	225,248	201,531	262,766	2,014,536	2,014,536	2,014,536
ROC-PR-161	SW276	Rochedale	Pipe - Relief	Rochedale (d)	2016 - 2021	1,200	-	131	1	-	-	235,052	39,959	35,751	23,307	334,069	334,069	334,069
ROC-PR-162	SW275, SW276	Rochedale	Pipe - Relief	Rochedale (d)	2016 - 2021	1,350	-	199	1	-	-	416,793	70,855	63,394	41,328	592,370	592,370	592,370
ROC-PR-175	SW275	Rochedale	Pipe - Relief	Rochedale (d)	2021 - 2026	1,200	-	24	2	-	-	88,274	15,007	13,427	17,506	134,214	134,214	134,214
ROC-PR-179	SW275	Rochedale	Pipe - Relief	Rochedale (D)	2016 - 2021	1,350	-	200	1	-	-	418,179	71,090	63,605	41,466	594,340	594,340	594,340
ROC-SQ-033	SW276	Rochedale	SQID	Rochedale (d)	2021 - 2026	-	-	-	-	-	-	74,398	12,648	11,316	14,754	113,116	113,116	113,116
SBR-PR-040	SW192	South Brisbane	Pipe - Relief	BBnePrec3	2016 - 2021	2,400	-	92	2	-	-	773,553	131,504	117,657	76,704	1,099,418	1,099,418	1,099,418
SBR-PR-041	SW192	South Brisbane	Pipe - Relief	BBnePrec3	2016 - 2021	2,400	-	47	2	-	-	395,123	67,171	60,098	39,179	561,571	561,571	561,571
SBR-PR-045	SW192	South Brisbane	Pipe - Relief	BBnePrec3	2021 - 2026	1,200	-	33	2	-	-	111,562	18,966	16,969	22,125	169,622	169,622	169,622
SBR-PR-050	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	1,350	-	16	1	-	-	34,541	5,872	5,254	3,425	49,092	49,092	49,092
SBR-PR-051	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	1,200	-	64	1	-	-	115,030	19,555	17,496	11,406	163,487	163,487	163,487
SBR-PR-053	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	1,650	-	42	1	-	-	120,925	20,557	18,393	11,991	171,866	171,866	171,866
SBR-PR-054	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	2,400	-	39	2	-	-	329,658	56,042	50,141	32,688	468,529	468,529	468,529
SBR-PR-055	SW192	South Brisbane	Pipe - Relief	BBnePrec3	2016 - 2021	2,400	-	71	2	-	-	598,241	101,701	90,992	59,320	850,254	850,254	850,254
SBR-PR-056	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	2,400	-	53	2	-	-	444,382	75,545	67,591	44,064	631,582	631,582	631,582
SBR-PR-057	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	2,400	-	93	2	-	-	784,778	133,412	119,365	77,817	1,115,372	1,115,372	1,115,372
SBR-PR-058	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	2,400	-	49	2	-	-	413,992	70,379	62,968	41,050	588,389	588,389	588,389
SBR-PR-059	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	2,400	-	71	2	-	-	600,697	102,118	91,366	59,564	853,745	853,745	853,745
SBR-PR-060	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	2,400	-	66	2	-	-	551,109	93,689	83,824	54,647	783,269	783,269	783,269
SBR-PR-068	SW192	South Brisbane	Pipe - Relief	West End (b)	2021 - 2026	1,050	-	54	2	-	-	161,028	27,375	24,492	31,934	244,829	244,829	244,829
SBR-PR-069	SW192	South Brisbane	Pipe - Relief	West End (b)	2021 - 2026	1,200	-	21	2	-	-	76,860	13,066	11,690	15,242	116,858	116,858	116,858
SBR-PR-070	SW192	South Brisbane	Pipe - Relief	West End (b)	2021 - 2026	1,200	-	42	2	-	-	144,460	24,558	21,972	28,649	219,639	219,639	219,639
SBR-PR-071	SW192	South Brisbane	Pipe - Relief	West End (b)	2021 - 2026	1,200	-	67	2	-	-	229,122	38,951	34,849	45,438	348,360	348,360	348,360
SBR-PR-072	SW192	South Brisbane	Pipe - Relief	West End (b)	2021 - 2026	1,200	-	46	2	-	-	158,644	26,969	24,130	31,461	241,204	241,204	241,204
SBR-PR-074	SW192	South Brisbane	Pipe - Relief	BBnePrec3	2016 - 2021	2,400	-	42	2	-	-	350,656	59,612	53,335	34,770	498,373	498,373	498,373
SBR-PR-075	SW192	South Brisbane	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	14	1	-	-	23,196	3,943	3,528	2,300	32,967	32,967	32,967
TRF-PR-001	SW173	Teneriffe, Newstead	Pipe - Relief	INES	2016 - 2021	1,950	-	152	1	-	-	544,812	92,618	82,866	54,022	774,318	774,318	774,318
TRF-PR-003	SW173	Teneriffe	Pipe - Relief	INES	2016 - 2021	1,050	-	7	1	-	-	12,845	2,184	1,954	1,274	18,257	18,257	18,257
TRF-PR-006	SW173	Teneriffe	Pipe - Relief	INES	2016 - 2021	1,050	-	11	1	-	-	17,326	2,945	2,635	1,718	24,624	24,624	24,624
UMG-PR-023	SW274	Upper Mount Gravatt	Pipe - Relief	Bulimba Creek	2021 - 2026	1,200	-	88	1	-	-	158,048	26,868	24,039	31,343	240,298	240,298	240,298
UMG-PR-024	SW274	Upper Mount Gravatt	Pipe - Relief	Bulimba Creek	2021 - 2026	2,100	-	6	1	-	-	28,446	4,836	4,327	5,641	43,250	43,250	43,250
UMG-PR-033	SW274	Upper Mount Gravatt	Pipe - Relief	Bulimba Creek	2021 - 2026	1,200	-	12	1	-	-	23,666	4,023	3,600	4,693	35,982	35,982	35,982
VIR-PN-001	SW114	Virginia	Pipe - New	Kedron Brook	2021 - 2026	1,500	900	24	1	-	-	63,150	10,736	9,605	12,524	96,015	96,015	96,015
VIR-PN-002	SW114	Virginia	Pipe - New	Kedron Brook	2021 - 2026	1,500	1,200	33	1	-	-	82,212	13,976	12,504	16,304	124,996	124,996	124,996
VIR-PN-003	SW114	Virginia	Pipe - New	Kedron Brook	2021 - 2026	1,500	1,200	10	1	-	-	27,992	4,759	4,258	5,551	42,560	42,560	42,560
VIR-PN-004	SW114	Virginia	Pipe - New	Kedron Brook	2021 - 2026	2,100	1,300	33	2	-	-	253,530	43,100	38,562	50,279	385,471	385,471	385,471
VIR-PN-005	SW114	Virginia	Pipe - New	Kedron Brook	2021 - 2026	1,800	1,800	19	1	-	-	63,655	10,821	9,682	12,624	96,782	96,782	96,782
VIR-PN-006	SW114	Virginia	Pipe - New	Kedron Brook	2021 - 2026	1,650	-	10	1	-	-	32,248	5,482	4,905	6,395	49,030	49,030	49,030
WCL-LA-001	SW289	Wacol	Land Acquisition - waterway corridor	Richlands (d)	2021 - 2026	-	-	1,831	-	105,071	461,358	-	-	-	-	-	461,358	461,358
WCL-LA-002	SW290, SW270	Wacol, Darra	Land Acquisition - waterway corridor	Richlands (a)	2021 - 2026	-	-	1,428	-	44,377	99,692	-	-	-	-	-	99,692	99,692
WCL-PR-019	SW290	Wacol	Pipe - Relief	Richlands (d)	2021 - 2026	1,950	-	108	1	-	-	388,925	66,117	59,155	77,130	591,327	591,327	591,327
WCL-PR-120	SW289	Wacol	Pipe - Relief	Richlands (c)	2016 - 2021	1,800	-	76	1	-	-	241,077	40,983	36,668	23,905	342,633	342,633	342,633
WCL-PR-129	SW290	Wacol	Pipe - Relief	Richlands (d)	2021 - 2026	1,500	-	135	2	-	-	639,015	108,633	97,194	126,726	971,568	971,568	971,568
WCL-PR-173	SW310	Wacol	Pipe - Relief	Richlands (d)	2016 - 2021	1,350	-	34	1	-	-	70,686	12,017	10,751	7,009	100,463	100,463	100,463
WCL-PR-174	SW310	Wacol	Pipe - Relief	Richlands (d)	2016 - 2021	3,300	1,500	13	1	-	-	125,750	21,378	19,127	12,469	178,724	178,724	178,724
WCL-PR-175	SW310	Wacol	Pipe - Relief	Richlands (d)	2016 - 2021	3,600	1,500	171	1	-	-	1,919,054	326,239	291,888	190,289	2,727,470	2,727,470	2,727,470
WES-PN-023	SW192	West End	Pipe - New	West End (a)	2021 - 2026	1,200	-	23	1	-	-	43,280	7,358	6,583	8,583	65,804	65,804	65,804
WES-PN-024	SW192	West End	Pipe - New	West End (a)	2021 - 2026	1,500	-	56	1	-	-	139,512	23,717	21,220	27,667	212,116	212,116	212,116
WES-PN-025	SW192, SW191	West End	Pipe - New	West End (a)	2021 - 2026	1,500	-	24	1	-	-	63,150	10,736	9,605	12,524	96,015	96,015	96,015
WES-PN-026	SW192	West End	Pipe - New	West End (a)	2021 - 2026	1,500	-	26	1	-	-	68,413	11,630	10,406	13,567	104,016	104,016	104,016
WES-PN-027	SW192	West End	Pipe - New	West End (a)	2021 - 2026	1,200	-	56	1	-	-	100,647	17,110	15,308	19,960	153,025	153,025	153,025
WES-PR-022	SW192	West End	Pipe - Relief	BBnePrec3	2021 - 2026	900	-	96	2	-	-	241,189	41,002	36,685	47,831	366,707	366,707	366,707
WES-PR-088	SW192	West End, South Brisbane	Pipe - Relief	BBnePrec3	2021 - 2026	2,400	-	28	2	-	-	248,591	42,260	37,811	49,299	377,961	377,961	377,961
WES-PR-111	SW192	West End	Pipe - Relief	West End (a)	2016 - 2021	1,050	-	12	2	-	-	37,088	6,305	5,641	3,678	52,712	52,712	52,712
WES-PR-112	SW192	West End	Pipe - Relief	West End (a)	2021 - 2026	1,050	-	37	2	-	-	110,398	18,768	16,792	21,894	167,852	167,852	167,852
WES-PR-113	SW192	West End	Pipe - Relief	West End (a)	2016 - 2021	1,050	-	6	2	-	-	20,365	3,462	3,098	2,019	28,944	28,944	28,944
WES-PR-116	SW192	West End	Pipe - Relief	West End (a)	2021 - 2026	1,050	-	18	2	-	-	56,357	9,581	8,572	11,177	85,687	85,687	85,687
WES-PR-117	SW192	West End	Pipe - Relief	West End (a)	2021 - 2026	1,200	-	27	1	-	-	51,806	8,807	7,880	10,274	78,767	78,767	78,767
WES-PR-118	SW192	West End	Pipe - Relief	West End (a)	2021 - 2026	1,050	-	8	2	-	-	25,741	4,376	3,915	5,105	39,137	39,137	39,137
WES-PR-119	SW192	West End	Pipe - Relief	West End (a)	2021 - 2026	1,050	-	33	2	-	-	96,823	16,460	14,727	19,202	147,212	147,212	147,212
WES-PR-120	SW191	West End	Pipe - Relief	West End (a)	2021 - 2026	1,500	-	93	2	-	-	439,380	74,695	66,830	87,136	668,041	668,041	668,041
WES-PR-122	SW192	West End, South Brisbane	Pipe - Relief	West End (b)	2021 - 2026	1,200	-	36	1	-	-	64,310	10,933	9,782	12,754	97,779	97,779	97,779
WES-PR-141	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	25	1	-	-	41,168	6,999	6,262	4,082	58,511	58,511	58,511
WES-PR-157	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	10	1	-	-	16,829	2,861	2,560	1,669	23,919	23,919	23,919
WES-PR-158	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	13	1	-	-	21,257	3,614	3,233	2,108	30,212	30,212	30,212

LGIP ID [1]	Map reference	Suburb	Project description	Service catchment	Estimated year of completion [2]	Diameter (mm)	Height (mm)	Length (m)	Total number of barrels	Area (m²)	Land cost ($)	Direct construction cost ($)	Indirect construction cost ($) (3)	Project cost ($) (4)	Construction contingency cost ($) (5)	Total construction cost ($) (6)	Value of the trunk infrastructure ($) (7)	Establishment cost ($) (8)
WES-PR-160	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	53	1	-	-	83,315	14,164	12,672	8,261	118,412	118,412	118,412
WES-PR-162	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	75	1	-	-	117,172	19,919	17,822	11,618	166,531	166,531	166,531
WES-PR-164	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	85	1	-	-	132,461	22,518	20,147	13,134	188,260	188,260	188,260
WES-PR-166	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	1,050	-	18	1	-	-	30,321	5,155	4,612	3,007	43,095	43,095	43,095
WES-PR-167	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	750	-	16	2	-	-	35,211	5,986	5,356	3,491	50,044	50,044	50,044
WES-PR-168	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	825	-	11	2	-	-	27,248	4,632	4,144	2,702	38,726	38,726	38,726
WES-PR-169	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	750	-	7	2	-	-	16,659	2,832	2,534	1,652	23,677	23,677	23,677
WES-PR-170	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	750	-	30	2	-	-	63,418	10,781	9,646	6,288	90,133	90,133	90,133
WES-PR-171	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	825	-	5	2	-	-	11,720	1,992	1,783	1,162	16,657	16,657	16,657
WES-PR-172	SW192	West End	Pipe - Relief	West End (b)	2016 - 2021	825	-	5	2	-	-	11,800	2,006	1,795	1,170	16,771	16,771	16,771
WIL-NC-001	SW291	Willawong	Natural Channel	Oxley Creek	2016 - 2021	-	-	192	1	-	-	86,208	14,655	13,112	8,548	122,523	122,523	122,523
WIL-PN-014	SW292	Willawong	Pipe - New	Oxley Creek	2021 - 2026	1,650	-	61	1	-	-	175,600	29,852	26,709	34,824	266,985	266,985	266,985
WIL-PN-015	SW292	Willawong	Pipe - New	Oxley Creek	2021 - 2026	1,500	-	40	1	-	-	100,150	17,026	15,233	19,861	152,270	152,270	152,270
WIL-PN-016	SW292	Willawong	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	40	1	-	-	83,635	14,218	12,721	16,586	127,160	127,160	127,160
WIL-PN-017	SW292	Willawong	Pipe - New	Oxley Creek	2021 - 2026	1,350	-	39	1	-	-	81,997	13,939	12,472	16,261	124,669	124,669	124,669
WIL-PN-018	SW292	Willawong	Pipe - New	Oxley Creek	2021 - 2026	1,200	-	41	1	-	-	73,055	12,419	11,112	14,488	111,074	111,074	111,074
WIL-PN-027	SW292	Willawong	Pipe - New	Oxley Creek	2021 - 2026	1,500	-	214	1	-	-	533,516	90,698	81,148	105,804	811,166	811,166	811,166
WIL-PN-028	SW292	Willawong	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	64	1	-	-	133,656	22,722	20,329	13,253	189,960	189,960	189,960
WIL-PN-029	SW292	Willawong	Pipe - New	Oxley Creek	2016 - 2021	1,350	-	57	1	-	-	118,894	20,212	18,084	11,789	168,979	168,979	168,979
WIL-PN-030	SW292	Willawong	Pipe - New	Oxley Creek	2016 - 2021	1,200	-	56	1	-	-	100,074	17,013	15,221	9,923	142,231	142,231	142,231
WIL-PN-031	SW292	Willawong	Pipe - New	Oxley Creek	2016 - 2021	1,050	-	57	1	-	-	88,292	15,010	13,429	8,755	125,486	125,486	125,486
WIL-PR-025	SW292	Willawong	Pipe - Relief	Oxley Creek	2021 - 2026	1,650	-	10	1	-	-	32,164	5,468	4,892	6,379	48,903	48,903	48,903
WIL-PR-026	SW292	Willawong	Pipe - Relief	Oxley Creek	2021 - 2026	1,500	-	20	1	-	-	51,348	8,729	7,810	10,183	78,070	78,070	78,070
WIL-PR-027	SW292	Willawong	Pipe - Relief	Oxley Creek	2021 - 2026	1,350	-	76	1	-	-	159,660	27,142	24,284	31,663	242,749	242,749	242,749
WIL-PR-028	SW292	Willawong	Pipe - Relief	Oxley Creek	2021 - 2026	1,350	-	83	1	-	-	173,106	29,428	26,329	34,329	263,192	263,192	263,192
WIL-PR-029	SW292	Willawong	Pipe - Relief	Oxley Creek	2021 - 2026	1,200	-	82	1	-	-	146,568	24,917	22,293	29,067	222,845	222,845	222,845
WIL-PR-030	SW292	Willawong	Pipe - Relief	Oxley Creek	2021 - 2026	1,050	-	83	1	-	-	129,226	21,968	19,655	25,627	196,476	196,476	196,476
WIL-RH-001	SW292	Willawong	Rehabilitation	Oxley Creek	2021 - 2026	-	-	240	-	-	-	217,226	36,928	33,040	43,079	330,273	330,273	330,273
WOO-PR-009	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,050	-	31	1	-	-	48,554	8,254	7,385	9,629	73,822	73,822	73,822
WOO-PR-010	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,050	-	27	1	-	-	43,751	7,438	6,655	8,677	66,521	66,521	66,521
WOO-PR-017	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,200	-	80	1	-	-	142,955	24,302	21,743	28,350	217,350	217,350	217,350
WOO-PR-018	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	137	1	-	-	432,985	73,607	65,857	85,867	658,316	658,316	658,316
WOO-PR-019	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	33	1	-	-	104,995	17,849	15,970	20,822	159,636	159,636	159,636
WOO-PR-020	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	14	1	-	-	47,808	8,127	7,272	9,481	72,688	72,688	72,688
WOO-PR-086	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	53	1	-	-	212,933	36,199	32,387	42,228	323,747	323,747	323,747
WOO-PR-087	SW193	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	27	1	-	-	114,882	19,530	17,474	22,783	174,669	174,669	174,669
WOO-PR-114	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,500	-	35	1	-	-	87,145	14,815	13,255	17,282	132,497	132,497	132,497
WOO-PR-119	SW213	Woolloongabba, East Brisbane	Pipe - Relief	Norman Creek	2021 - 2026	2,400	-	95	1	-	-	418,459	71,138	63,648	82,987	636,232	636,232	636,232
WOO-PR-120	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,400	-	31	1	-	-	135,297	23,000	20,579	26,831	205,707	205,707	205,707
WOO-PR-125	SW193	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	21	1	-	-	90,112	15,319	13,706	17,871	137,008	137,008	137,008
WOO-PR-126	SW193	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	21	1	-	-	90,112	15,319	13,706	17,871	137,008	137,008	137,008
WOO-PR-128	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,200	-	37	1	-	-	67,272	11,436	10,232	13,341	102,281	102,281	102,281
WOO-PR-142	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	40	1	-	-	162,145	27,565	24,662	32,156	246,528	246,528	246,528
WOO-PR-143	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	37	1	-	-	116,096	19,736	17,658	23,024	176,514	176,514	176,514
WOO-PR-148	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	34	1	-	-	108,167	18,388	16,452	21,451	164,458	164,458	164,458
WOO-PR-149	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	28	1	-	-	118,299	20,111	17,993	23,460	179,863	179,863	179,863
WOO-PR-150	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	62	1	-	-	249,688	42,447	37,978	49,517	379,630	379,630	379,630
WOO-PR-151	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	61	1	-	-	193,114	32,829	29,373	38,297	293,613	293,613	293,613
WOO-PR-154	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	22	1	-	-	92,718	15,762	14,102	18,387	140,969	140,969	140,969
WOO-PR-155	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	36	1	-	-	144,920	24,636	22,042	28,740	220,338	220,338	220,338
WOO-PR-156	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	10	1	-	-	43,818	7,449	6,665	8,690	66,622	66,622	66,622
WOO-PR-159	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	27	1	-	-	89,050	15,139	13,545	17,660	135,394	135,394	135,394
WOO-PR-160	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	26	1	-	-	86,806	14,757	13,203	17,215	131,981	131,981	131,981
WOO-PR-161	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,800	-	8	1	-	-	27,229	4,629	4,142	5,400	41,400	41,400	41,400
WOO-PR-169	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	1,050	-	77	1	-	-	119,823	20,370	18,225	23,763	182,181	182,181	182,181
WOO-PR-171	SW213	Woolloongabba	Pipe - Relief	Norman Creek	2021 - 2026	2,100	-	64	1	-	-	257,290	43,739	39,134	51,024	391,187	391,187	391,187
WYN-PR-001	SW177	Wynnum	Pipe - Relief	Wynnum	2021 - 2026	1,950	-	157	1	-	-	564,725	96,003	85,895	111,993	858,616	858,616	858,616
										Total	4,582,672	92,917,529	15,555,968	13,918,012	14,195,995	136,587,504	141,170,176	141,170,176

Notes-

(1) Refer to the Local government infrastructure plan identifier (LGIP ID) when identifying the infrastructure projects on the plans for trunk infrastructure maps.

(2) The estimated year of completion is an estimate of the earliest need for the project.

(3) Indirect construction costs are on costs or overheads applied to the direct construction cost, to deliver the project. Indirect construction costs equate to 17% of the direct construction cost.

(4) Project costs are on costs to undertake detailed design, survey, geotechnical investigations, project management, and supervision of construction works and obtain certification from a Registered Professional Engineer of Queensland. Project costs equate to 13% of the direct and indirect construction costs.

(5) Contingency costs are based on the project delivery date, and applied to the direct construction cost, indirect construction cost and project cost. Contingencies equate to 7.5% for projects with a delivery date up to 2021 and 15% for projects with a delivery date up to 2026.

(6) Total construction cost is the sum of direct construction cost, indirect construction cost, project cost and construction contingency cost, at 30 June 2016. For PAL-WL-001, the total construction cost reflects the lump sum for constructing the project, based on a first principles estimate.

(7) Value of the trunk infrastructure is the sum of land cost and total construction cost, at 30 June 2016.

(8) Establishment cost is the total value of the trunk infrastructure item, comprising the total infrastructure cost, at 30 June 2016.

(-) A dash denotes that the field is not applicable.