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| Bus Route Manager  ESRI Web Solution  James Moloney 2020 |



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Risk level

GACC major  GACC minor  High risk (but not GACC)  Medium risk

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Contents

[Background 1](#_Toc43893053)

[Bus Route Manager 2](#_Toc43893054)

[About 2](#_Toc43893055)

[The Proof of Concept (POC) 2](#_Toc43893056)

[Components 2](#_Toc43893057)

[Bus Route Layers 2](#_Toc43893058)

[Print Tools 3](#_Toc43893059)

[Web Map 5](#_Toc43893060)

[Widget 6](#_Toc43893061)

[Web App 6](#_Toc43893062)

[Future Capability and Integration 7](#_Toc43893063)

[STIMS 7](#_Toc43893064)

[STAS 7](#_Toc43893065)

Table of Figures

No table of figures entries found.

Table of Tables

No table of figures entries found.

# Background

Regional operations Bus Contract Maps

Current Management tool SK Mapper has come to end of life

Data migration process

This is a proof of concept tool to analyse and in future maintain the data

There is a requirement to further integrate systems and this POC has the capability to do so.

# Bus Route Manager

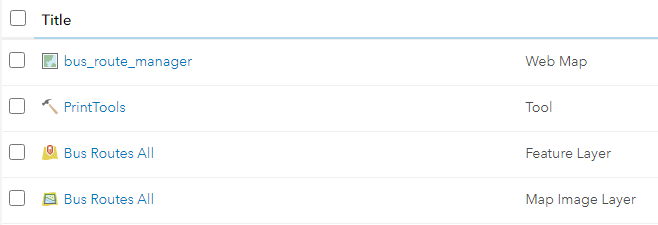
## About

ESRI Solution with ArcGIS Server and ArcGIS Portal.

Built with web app builder, a customs widget and custom geoprocessing tools

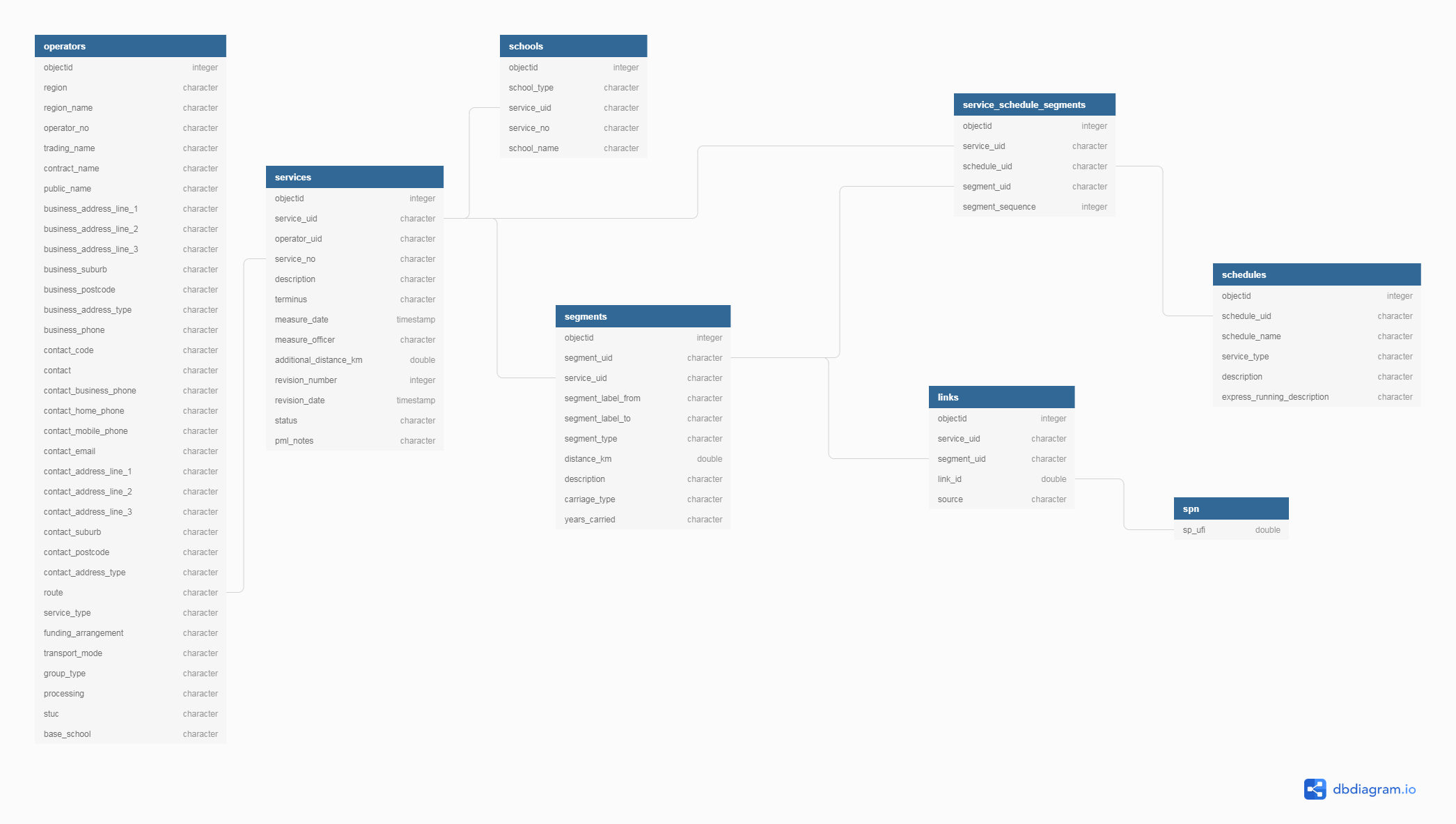
## The Proof of Concept (POC)

### Components



### Bus Route Layers

#### Schema Diagram



#### SPN

Street Pro Nav Data

#### Services

Services derived from SK Mapper Tab files.

#### Segments

Service Segments derived from SK Mapper Tab files

#### Links

Links were derived by intersecting street pro nav data with segments

#### Schedules

Schedules were derived from SK Mapper Data

#### Service Schedule Segments

This is a many to many join table to associate the service with the schedule based on what segments and the order they occur

#### Operators

This was an example table to demonstrate how operator information that resides in stims could be joined to the bus route information and presented in the report export.

#### Bus Routes All View

A materialized view was created to be consumed by the web app.

This view consisted of a series of left joins to produce a flatten table for the web app to display and query data.

A materialized view was decided to improve performance and the interval a which data was updated was not real time and frequent refreshes of the materialized view would suffice in a production environment

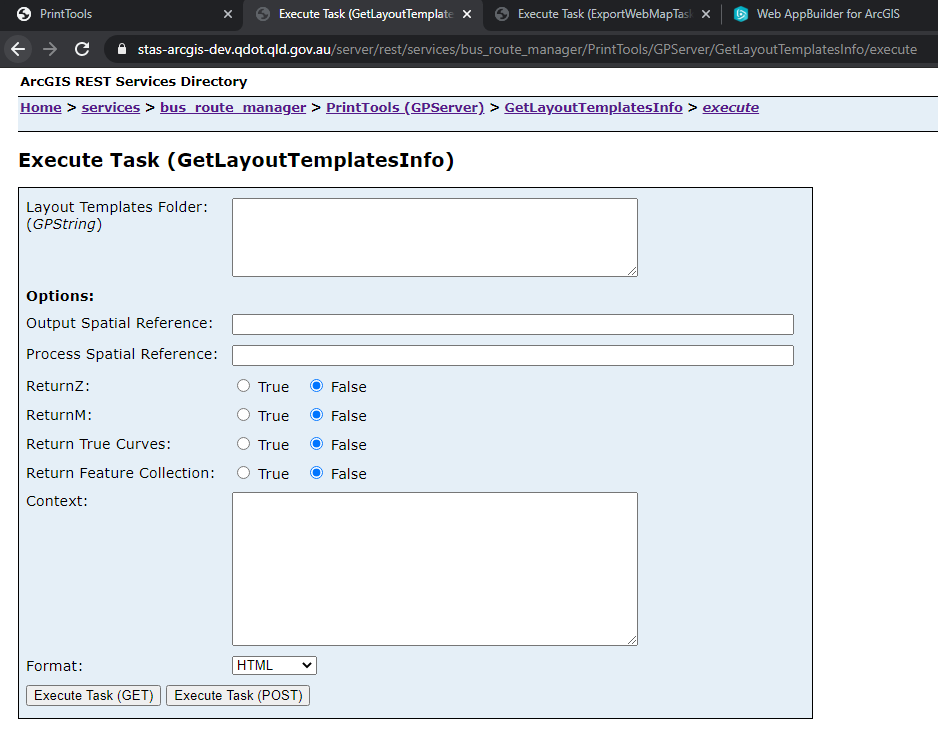
### Print Tools

Is a geoprocessing service developed in python. It has 2 tools within the geoprocessing service.

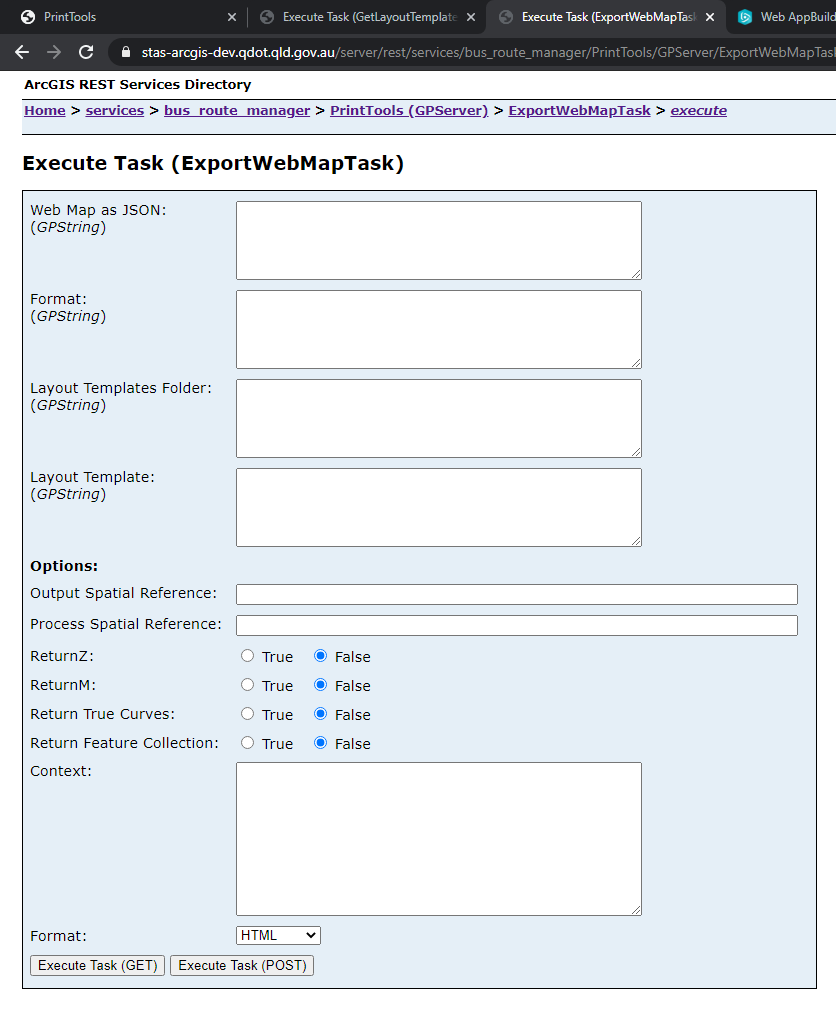
* Get Layout Template Info
* Export Web Map Task

#### Publishing from ArcGIS Pro

#### Get Layout Template Info



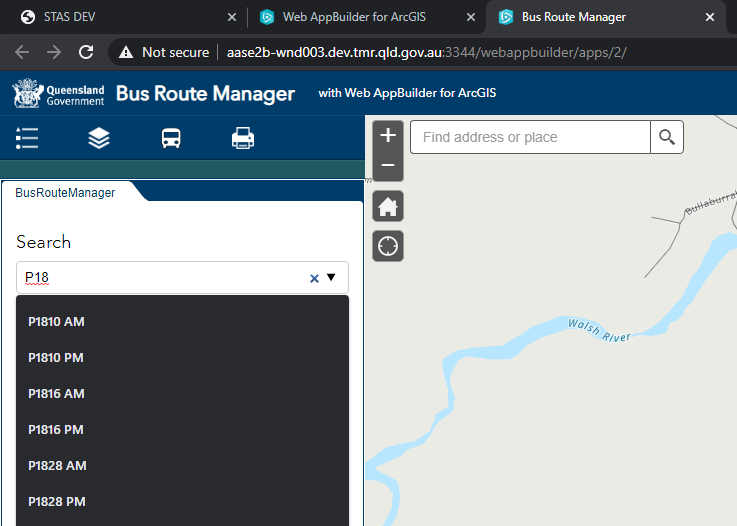
#### Export Web Map Task



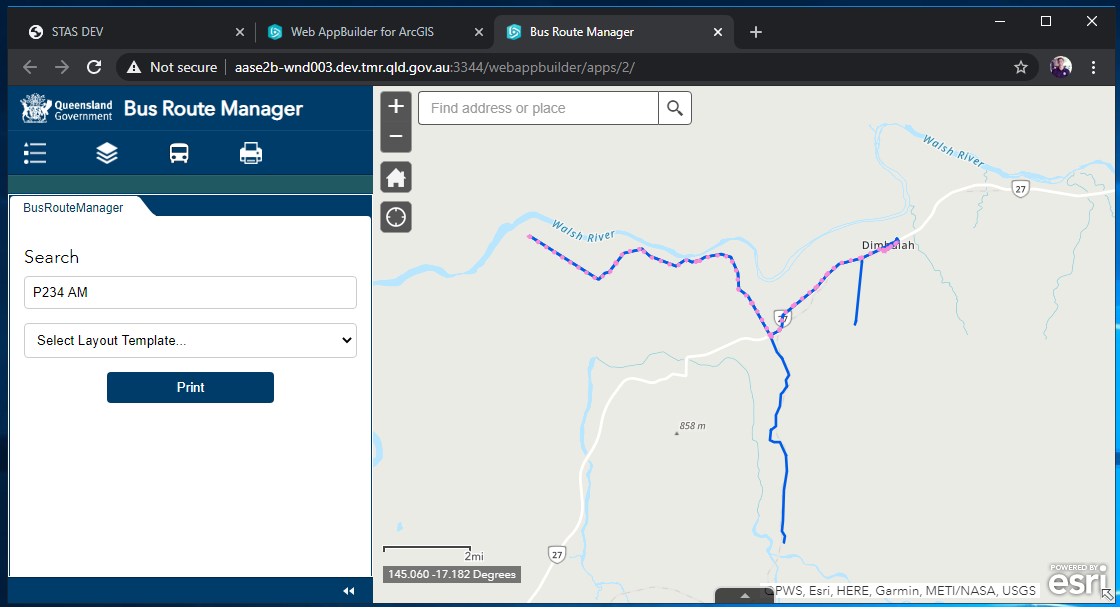
### Web Map

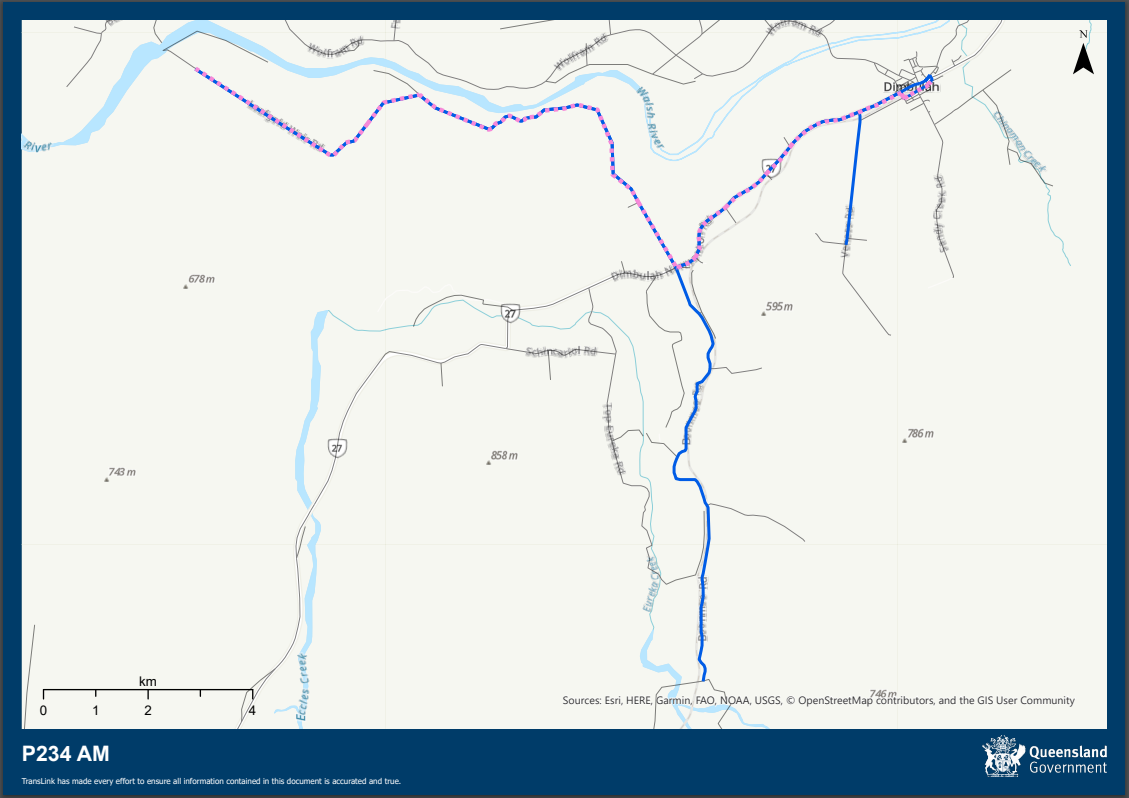
A basic web map was created in ArcGIS Portal and was used as the default base in the web mapping application

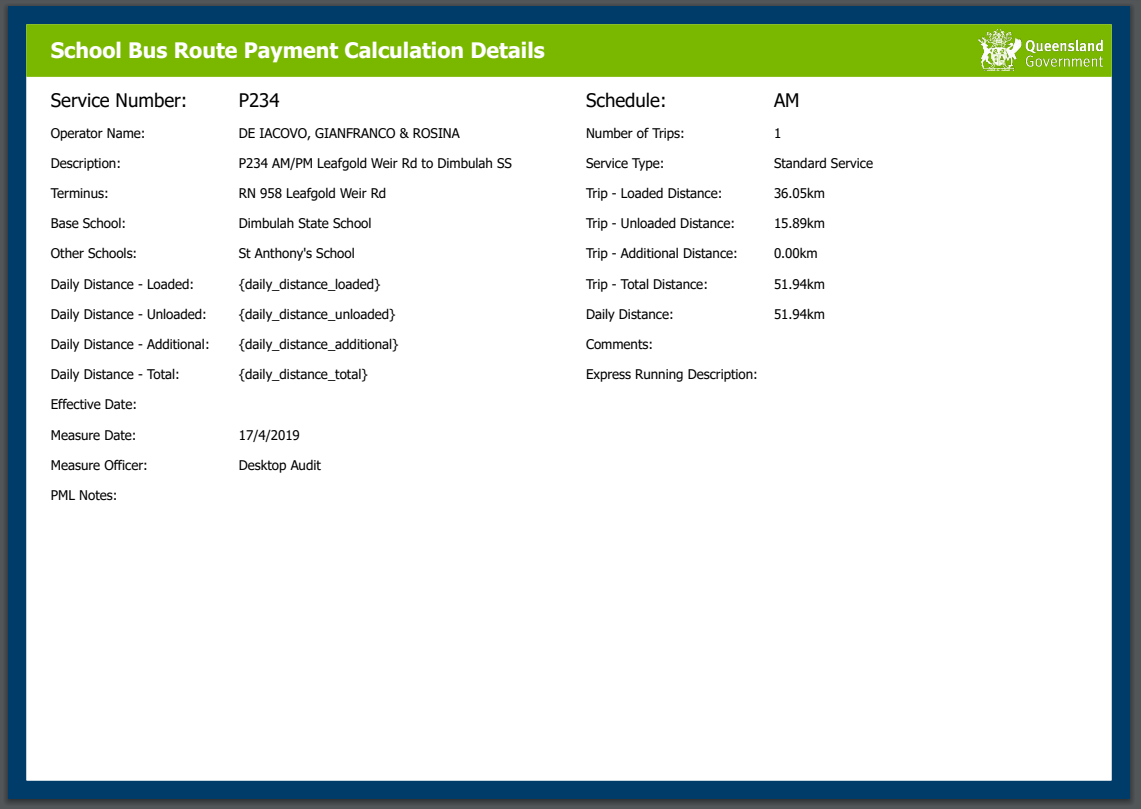
### Widget



### Web App







# Future Capability and Integration

## Editing & Maintaining Routes

Editing and maintain routes within the web app could be developed

An example of this capability has been demonstrated with the heavy vehicle route manager.

## STIMS

All STIMS information is held within an oracle database.

There is a number of possible integration solutions.

* Direct connection to stims database and join with GIS data through a widget to present in the web app
* Create a replica and sanitized data store within the GIS database of the STIM data using tools such as FME and Server to perform scheduled updates

## STAS

Eligibility Assessment Calculations

An example integration

