

National Highways

Benchmark Apps

Parametric Models User Guide

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Benchmark Apps - Parametric Models Overview

Benchmark apps, built using Microsoft Power Apps, offer an intuitive, cloud-hosted solution for Parametric Models. This application allows Estimators to perform a two-step process, where:

- Estimators can input details about the works to be undertaken in a sophisticated app interface to produce the list of quantities and review these quantities.
 - These quantities are then priced in Benchmark i.e., the Bill of Quantities (BQ or BOQ) is then created back in Benchmark.
- Estimators can also view a summarised or full version of the BQ in the app. At this stage, the BQ in the app is read-only.

Prerequisites

To use the Parametric Models feature in Benchmark, you must have:

- Access to Microsoft Power Apps in your organisation.
- Permission to use the Parametric Models app in Power Apps.
- PowerApps URL configured in Administration > Integration Settings > PowerApps.
Contact your system administrator for more information.
- Parametric Models Library role-based or individual access. An administrator can provide the relevant level of this access to the estimator from the [Estimator Library](#) or [Role Based Access](#) windows.

| Access | Role Based Access |
|--|-------------------------|
| Disallow change to Project status after Wo | No |
| Custom Export Library | Read, Edit, Add, Delete |
| Run Inactive Routines in a Project | No |
| Reports/Exports | View |
| Allow editing in Project Mark-up Calculato | Yes |
| Workflow | Read, Edit, Add, Delete |
| Mark-Up/On-Cost/TEF Calculation Library | Read, Edit, Add, Delete |
| Do not allow Project Client to be edited | No |
| Mark-Up/On-Cost/TEF Percentage Settings | Read, Edit, Add, Delete |
| Display Workbank on My Benchmark | Yes |
| Parametric Models Library | Read, Edit, Add, Delete |

Accessing Parametric Models

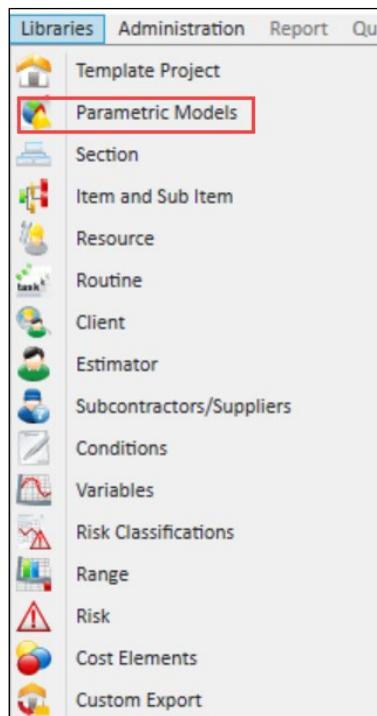
You can access the Parametric Models feature from:

- [Benchmark](#)
- [LoadSpring Homepage](#)

Accessing the App from Benchmark

From the main Benchmark menu:

1. In the **My Benchmark** window, select **Libraries**.
2. Select **Parametric Models**.



3. Open the relevant **Project Section** or **Composite Total**.
4. Select the **Parametric Model**  icon in the toolbar. Alternatively, use the right-click menu option.
5. The app will open in your web browser.



You can continue working in Benchmark when the Parametric Models app is open.

Accessing the App from LoadSpring

You can access the Parametric Models app from the LoadSpring Homepage.

1. Go to the LoadSpring homepage.
2. From My Applications section, select Benchmark Apps - Parametric Models & Business Forms.

The app opens in your web browser.

Navigating the App

There are several model types available and in development for this feature. In this document, we will look at some of the implemented model types, such as Indirect Works and Regional Investment Programme (RIP).

The Indirect Works model is also called the Preliminary model or Prelims model.



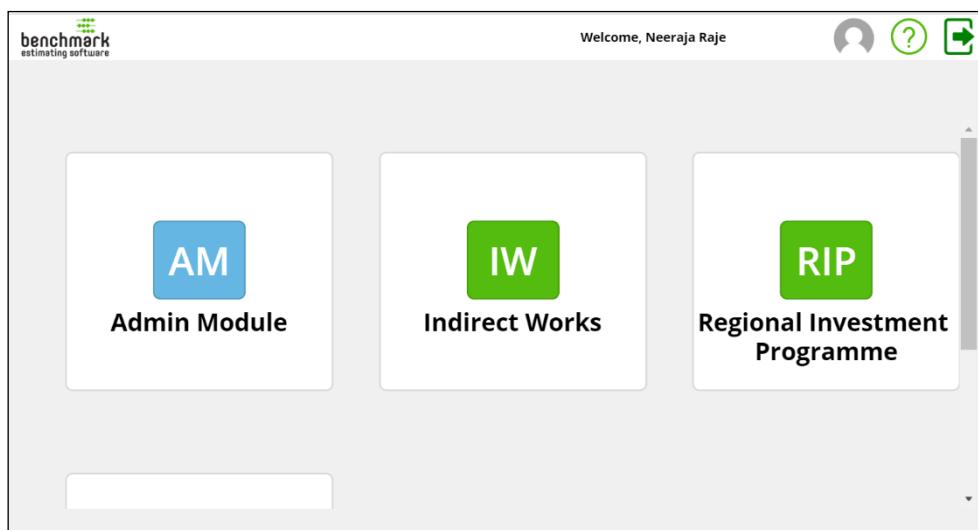
Landing Page

The app landing page allows you to select a model type to view the saved, submitted and archived model instances or create a new one.



Only users with an Administrator role for this application in Power Apps will have access to the Admin Module.

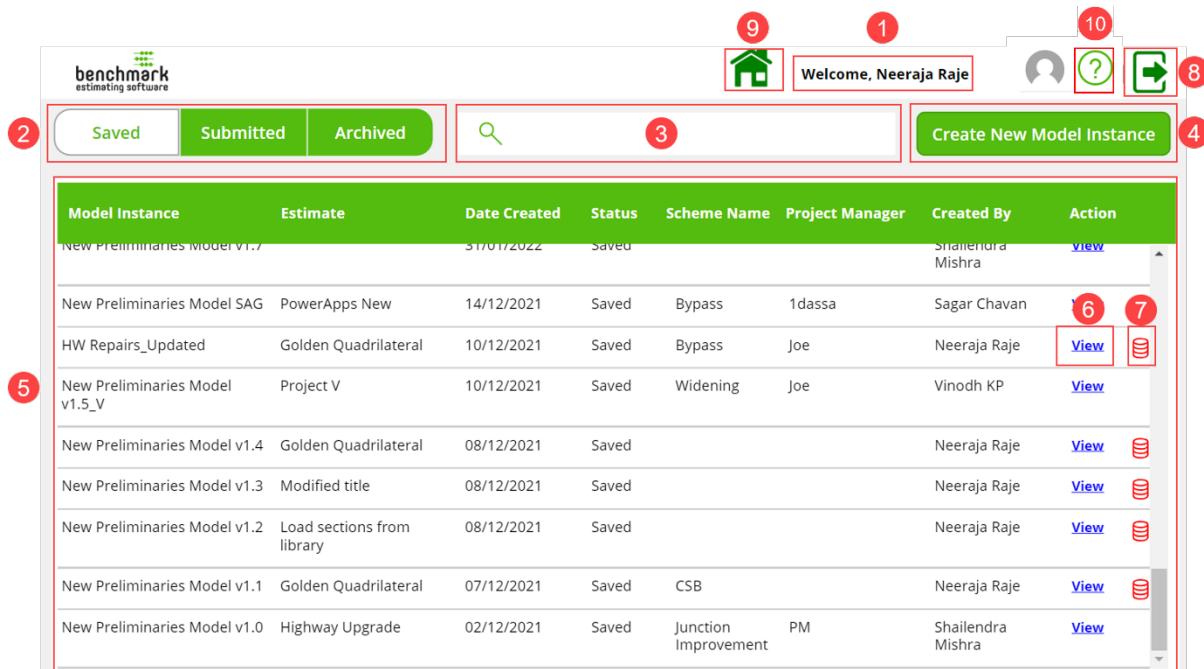
Use the scroll bar on this page to view all the model types available to you.



The screenshot shows the LoadSpring app landing page. At the top right, it says "Welcome, Neeraja Raje" and has icons for profile, help, and sign-out. Below that, there are three cards representing different model types:

- AM Admin Module**: A blue card with a blue square containing the letters "AM".
- IW Indirect Works**: A green card with a green square containing the letters "IW".
- RIP Regional Investment Programme**: A green card with a green square containing the letters "RIP".

Summary Page



The screenshot shows the Summary Page interface. At the top, there is a navigation bar with icons for Home (9), Welcome (1), Help (10), Logout (8), and a search bar (3). Below the navigation bar is a toolbar with buttons for Saved (2), Submitted, Archived, a search icon, and Create New Model Instance (4). The main area displays a grid of model instances (5) with columns for Model Instance, Estimate, Date Created, Status, Scheme Name, Project Manager, Created By, and Action (View and Archive). The first instance in the grid is highlighted.

| Model Instance | Estimate | Date Created | Status | Scheme Name | Project Manager | Created By | Action |
|--------------------------------|----------------------------|--------------|--------|----------------------|-----------------|-------------------|--|
| New Preliminaries Model v1.7 | | 31/01/2022 | Saved | | | Shailendra Mishra | View |
| New Preliminaries Model SAG | PowerApps New | 14/12/2021 | Saved | Bypass | 1dassa | Sagar Chavan | View  |
| HW Repairs_Updated | Golden Quadrilateral | 10/12/2021 | Saved | Bypass | Joe | Neeraja Raje | View  |
| New Preliminaries Model v1.5_V | Project V | 10/12/2021 | Saved | Widening | Joe | Vinodh KP | View |
| New Preliminaries Model v1.4 | Golden Quadrilateral | 08/12/2021 | Saved | | | Neeraja Raje | View  |
| New Preliminaries Model v1.3 | Modified title | 08/12/2021 | Saved | | | Neeraja Raje | View  |
| New Preliminaries Model v1.2 | Load sections from library | 08/12/2021 | Saved | | | Neeraja Raje | View  |
| New Preliminaries Model v1.1 | Golden Quadrilateral | 07/12/2021 | Saved | CSB | | Neeraja Raje | View  |
| New Preliminaries Model v1.0 | Highway Upgrade | 02/12/2021 | Saved | Junction Improvement | PM | Shailendra Mishra | View |

- 1 - Displays the name of the logged in user.
- 2 - Use this toggle to view the list of *Saved*, *Submitted* or *Archived* model instances.
- 3 - Search for model instances.
- 4 - Create new model instances.
- 5 - Displays key information for each of the model instances:
 - Model Name
 - Estimate Name
 - Date the instance was created
 - Status of the model instance – *Saved*, *Submitted* or *Archived*
 - Scheme Name
 - Name of the Project Manager
 - Name of the user who created the model instance
- 6 - View all the details for the selected model instance.
- 7 - Archive the model instance.
- 8 - Log out of the application.

9 - Go back to the Home (previous) screen.

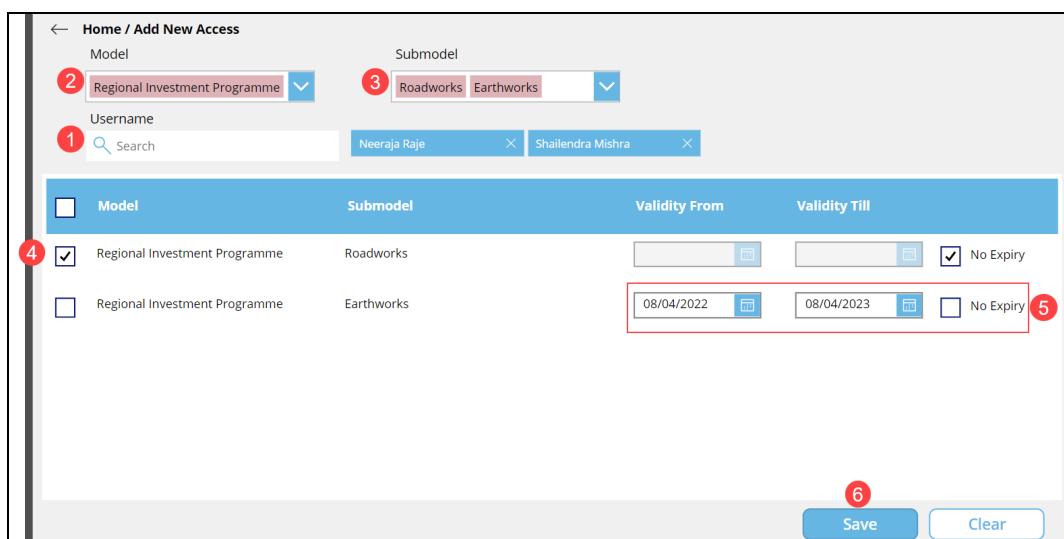
10 - Open this Help document.

Managing User Access

Administrators must grant users access to the relevant model types and sub models. This access can be granted for a set duration, if required.

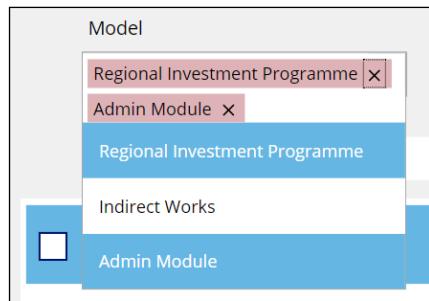
Setting Up New Access

1. [Open](#) the Parametric Models app.
2. Select Admin Module.
3. Select the New Access + button.



| Model | Submodel | Validity From | Validity Till | |
|---|------------|---------------|---------------|---|
| <input checked="" type="checkbox"/> Regional Investment Programme | Roadworks | 08/04/2022 | 08/04/2023 | <input checked="" type="checkbox"/> No Expiry |
| <input type="checkbox"/> Regional Investment Programme | Earthworks | | | <input type="checkbox"/> No Expiry |

4. From the *Username* ① dropdown, search and select the relevant user(s).
To remove a selected user, select x in their username tab.
5. From the *Model* ② dropdown, select all the model types you want this user to be able to access.
For example, *Regional Investment Programme*.
To remove a selected model type, select x.



6. From the *Submodel* **3** dropdown, select all the sub models that you want this user to be able to access.
For example, if you select the model type *Regional Investment Programme*, then *Roadworks, Earthworks, Drainage, Carriageway, Signs & Lighting* will be the sub models available for selection.
To remove a selected sub model, select x.
7. All the selected models / sub models will be added to the grid, with a default validity of one year.
8. Select the relevant row (model / sub model) **4**
Alternatively, use the checkbox in the header to select all the rows.
9. To modify the default access duration, use the *Validity From* and *Validity To* calendar tools or check *No Expiry* **5**
10. Select Save **6**

Modifying User Access

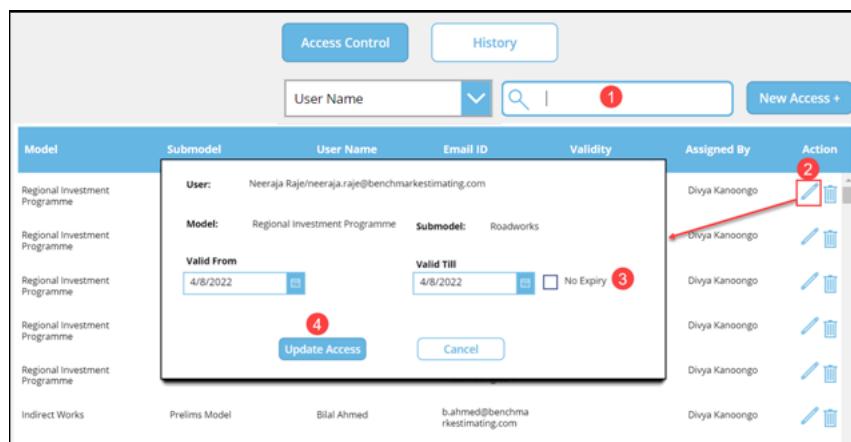
The **Access Control** tab lists all the users and their access within the application. Administrators can modify the duration for which users can access the assigned models/sub models.

1. In the Access Control tab, search **1** the relevant user.

You can also search by:

- Model
- Sub model
- Email
- User who assigned the access

2. Select the **Edit** **2** icon.
3. In the pop-up screen, modify the validity of the user's access to this model/sub model or select *No Expiry* **3**
4. Select **Update Access** **4**



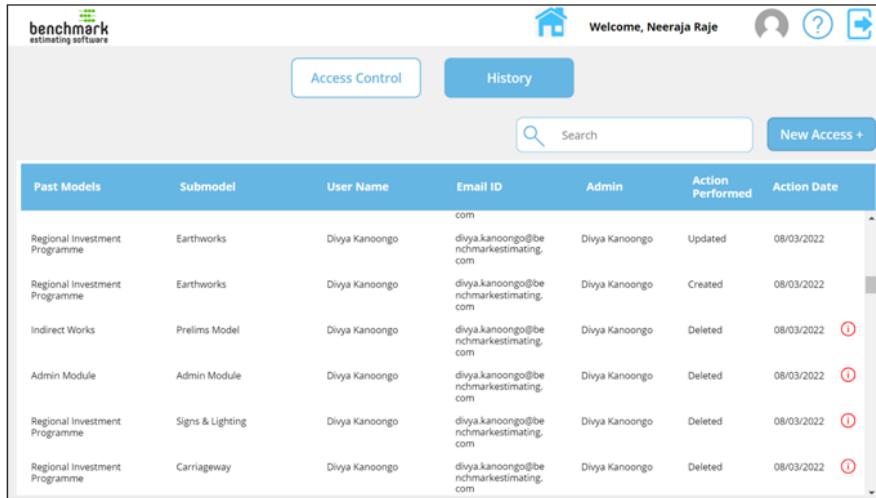
Deleting User Access

Administrators can revoke a user's access to the assigned models / sub models.

1. In the Access Control tab, search the relevant user.
2. Select the Delete icon  for the model / sub model you no longer want this user to access.
The following confirmation prompt displays:
"Are you sure you want to delete <Model Type – Sub Model Name> model access for <Username>?"
3. Enter comments in the text area within the prompt, if required.
4. Select Yes.

Viewing Access History

The **History** tab of the Admin Module shows all the access created, updated and deleted by Administrators.



| Past Models | Submodel | User Name | Email ID | Admin | Action Performed | Action Date |
|-------------------------------|------------------|----------------|---------------------------------------|----------------|------------------|-------------|
| Regional Investment Programme | Earthworks | Divya Kanoongo | divya.kanoongo@benchmarkmarketing.com | Divya Kanoongo | Updated | 08/03/2022 |
| Regional Investment Programme | Earthworks | Divya Kanoongo | divya.kanoongo@benchmarkmarketing.com | Divya Kanoongo | Created | 08/03/2022 |
| Indirect Works | Prelims Model | Divya Kanoongo | divya.kanoongo@benchmarkmarketing.com | Divya Kanoongo | Deleted | 08/03/2022 |
| Admin Module | Admin Module | Divya Kanoongo | divya.kanoongo@benchmarkmarketing.com | Divya Kanoongo | Deleted | 08/03/2022 |
| Regional Investment Programme | Signs & Lighting | Divya Kanoongo | divya.kanoongo@benchmarkmarketing.com | Divya Kanoongo | Deleted | 08/03/2022 |
| Regional Investment Programme | Carriageway | Divya Kanoongo | divya.kanoongo@benchmarkmarketing.com | Divya Kanoongo | Deleted | 08/03/2022 |



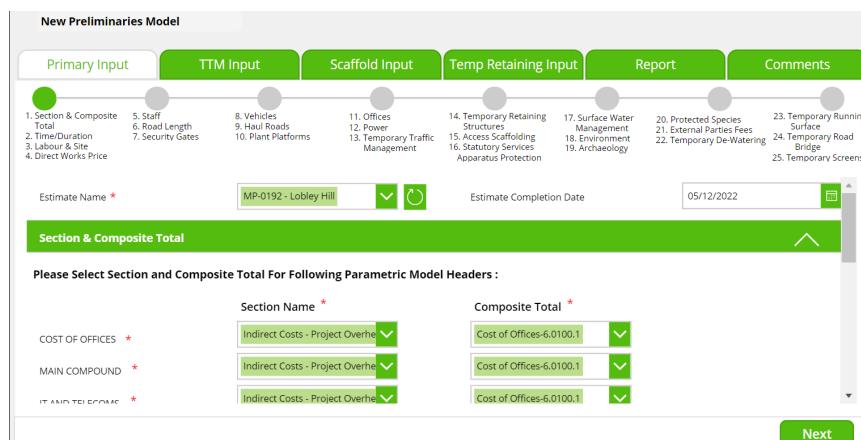
An information icon  displays if a comment was added when deleting an access. Select the icon to view the comment.

Creating New Model Instances

You can create model instances for one or more Projects. Within each of the Projects, Parametric Model headers (Cost Elements) can be mapped to multiple Composite Totals belonging to the Sections within the Project. This allows the app to generate the relevant BQ Items within the selected Composite Total.

Indirect Works (Prelims)

1. [Open](#) the Parametric Models app.
2. Select Indirect Works > Prelims Model.
3. Select Create New Model Instance.
4. In the Primary Input tab, select the *Estimate Name* and *Estimate Completion Date*.
Select the Reload Estimate Name List button  to refresh the list of Estimates, if required.
5. In the Section & Composite Total panel, map each of the Cost Elements to the relevant Section and Composite Total.



| Section Name * | Composite Total * |
|--------------------|--------------------------|
| COST OF OFFICES * | Cost of Offices-6.0100.1 |
| MAIN COMPOUND * | Cost of Offices-6.0100.1 |
| IT AND TECHNICAL * | Cost of Offices-6.0100.1 |

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.



7. Enter / select details for all the relevant fields in each of the panels in the screen.
8. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter the model instance name.

9. Enter a unique name and select Continue.

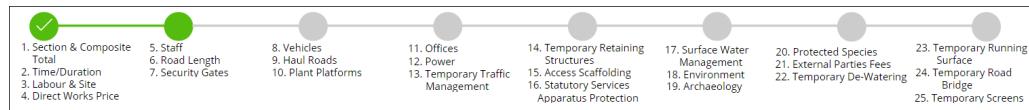


If required, you can edit this name in any of the screens using the Edit icon.

Then, Save the new name.



Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



10. Enter / select details for all the relevant fields in each of the panels in the TTM Input tab.

Prelims for MP-0192

Save As Draft

Primary Input TTM Input Scaffold Input Temp Retaining Input Report Comments

1. Project Information 2. Traffic Safety and Management 3. Installation of Temporary Traffic Management Arrangements 4. Maintenance of Temporary Traffic Management Arrangements 5. Taking Measures for or Construction, Maintenance, Removal of Control Flow Arrangements 6. Recovery Vehicles 7. Temporary Closed Circuit (CCTV) System for the Monitoring of Traffic 8. Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roadworks

Project Information

| | |
|---|----------------|
| Project Type | Smart Motorway |
| Primary Road-Length of the Works (km) | 26.75 |
| Road Type | D2AP |
| Secondary Road-Length of the Works (km) | 8.5 |
| Road Type | D3AP |
| Number of Junctions (no) | 2 |
| Permanent Speed Limit | 50 or 60 mph |
| Permanent Speed Limit | <=40 mph |

Traffic Safety and Management Reality Check

Back Next

11. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

12. Enter / select or review details in each of the panels in the Scaffold Input tab.

Prelims for MP-0192

Save As Draft

Primary Input TTM Input Scaffold Input Temp Retaining Input Report Comments

1. Overbridge Abutments 2. Underbridge Abutments 3. Wing Walls 4. Pile-Cap And Foundation Access 5 Wall Scaffolding
6. Central Reserve Pier Scaffolding 7. Loading Bay Addition
8. Suspended And Bent Scaffolding (Birmingham Box) 9. Cost Engineer Self Price Section

OVERBRIDGE ABUTMENTS

| | Number of Scaffolds of this Size | Scaffolding Number of Faces Front and Rear | Scaffold Length in Metres | Scaffold width in Boards | Scaffold Height in Metres | Number of Staircases | Scaffold Hire Period in weeks | |
|---|--|--|---------------------------|--------------------------|---------------------------|----------------------|-------------------------------|----|
| 1 | Access Scaffold to an Overbridge Abutment carrying 4 lanes x 2 carriageways plus hardstrips and verg | Adjusted Allowance | 2 | 39 | 5 | 7 | 2 | 26 |
| 2 | Access Scaffold to an Overbridge Abutment carrying 3 lanes x 2 carriageways plus hardstrips and verg | Adjusted Allowance | 2 | 32 | 5 | 7 | 1 | 26 |
| 3 | Access Scaffold to an Overbridge Abutment carrying 2 lanes x 2 carriageways plus hardstrips and verg | | | | | | | |

Back Next

13. Select Next to continue proceeding to the next screens.
14. Enter / select or review details in each of the panels in the Temp Retaining Input tab.

Primary Input TTM Input Scaffold Input Temp Retaining Input Report Comments

Sheet Piled Wall King Piled Wall Gabion Walls Cofferdam

Sheet Piled Wall

Select from here

Retaining Wall Constructed in Select from here Sheet Piles Working in Cantilever

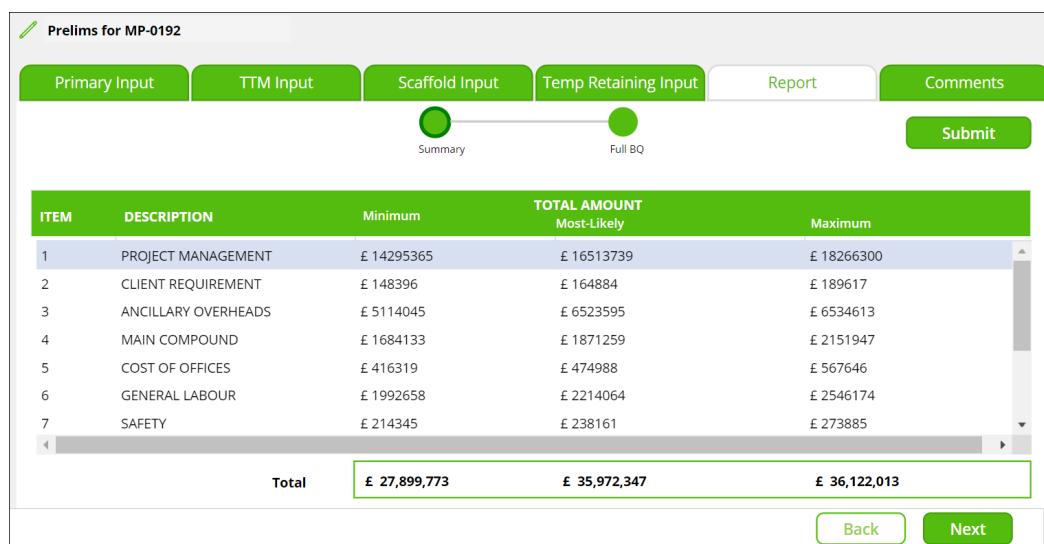
| | Number of Walls | Retained Height | Length of Wall | Calculated Pile length | Ground Conditions | Pre-auger | Buy Back / Removal Percentage |
|--------------------|-----------------|-----------------|----------------|------------------------|-------------------|-----------|-------------------------------|
| Adjusted Allowance | 3 | 100 | 8 | Unknown | 50% | 50% | |

Select from here

Back Next

15. Select Next to continue proceeding to the next screens.

16. In the Report screen, review the summary of the BQ.

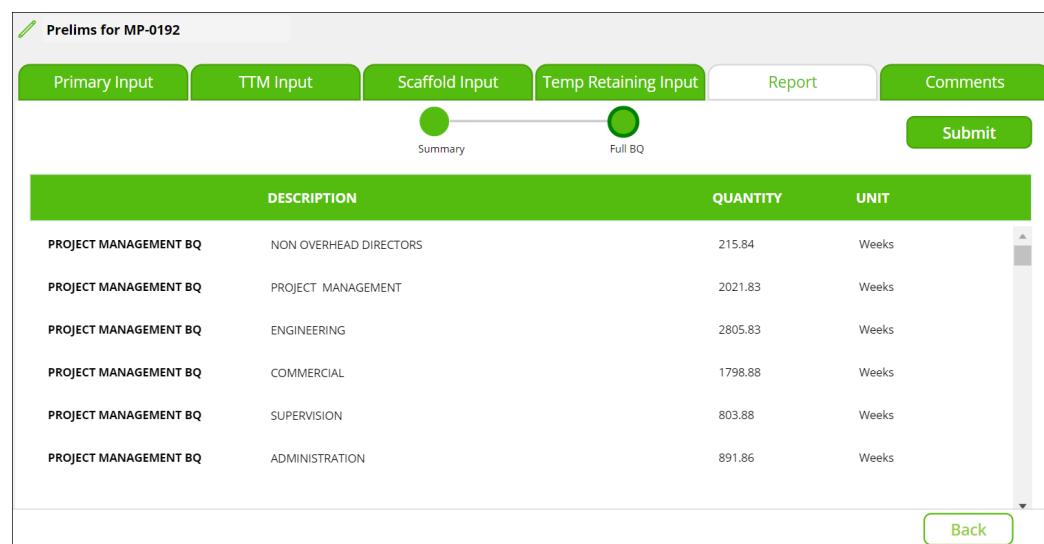


The screenshot shows a software interface titled 'Prelims for MP-0192'. At the top, there are tabs for 'Primary Input', 'TTM Input', 'Scaffold Input', 'Temp Retaining Input', 'Report' (which is selected), and 'Comments'. Below the tabs is a horizontal slider with two green circular markers labeled 'Summary' and 'Full BQ'. To the right of the slider is a 'Submit' button. The main area contains a table with the following data:

| ITEM | DESCRIPTION | Minimum | TOTAL AMOUNT | | Maximum |
|--------------|---------------------|---------------------|---------------------|--|---------------------|
| | | | Most-Likely | | |
| 1 | PROJECT MANAGEMENT | £ 14295365 | £ 16513739 | | £ 18266300 |
| 2 | CLIENT REQUIREMENT | £ 148396 | £ 164884 | | £ 189617 |
| 3 | ANCILLARY OVERHEADS | £ 5114045 | £ 6523595 | | £ 6534613 |
| 4 | MAIN COMPOUND | £ 1684133 | £ 1871259 | | £ 2151947 |
| 5 | COST OF OFFICES | £ 416319 | £ 474988 | | £ 567646 |
| 6 | GENERAL LABOUR | £ 1992658 | £ 2214064 | | £ 2546174 |
| 7 | SAFETY | £ 214345 | £ 238161 | | £ 273885 |
| Total | | £ 27,899,773 | £ 35,972,347 | | £ 36,122,013 |

At the bottom right are 'Back' and 'Next' buttons.

Alternatively, select Full BQ to review all the details of the Bill of Quantities.



The screenshot shows the same software interface as above, but the 'Full BQ' button on the horizontal slider is highlighted. The main area now displays a table of detailed BQ items:

| DESCRIPTION | QUANTITY | UNIT | |
|-----------------------|------------------------|---------|-------|
| PROJECT MANAGEMENT BQ | NON OVERHEAD DIRECTORS | 215.84 | Weeks |
| PROJECT MANAGEMENT BQ | PROJECT MANAGEMENT | 2021.83 | Weeks |
| PROJECT MANAGEMENT BQ | ENGINEERING | 2805.83 | Weeks |
| PROJECT MANAGEMENT BQ | COMMERCIAL | 1798.88 | Weeks |
| PROJECT MANAGEMENT BQ | SUPERVISION | 803.88 | Weeks |
| PROJECT MANAGEMENT BQ | ADMINISTRATION | 891.86 | Weeks |

At the bottom right is a 'Back' button.

17. Select Submit.

The following confirmation prompt displays:

"No changes to the model are permissible once you submit the item list to Benchmark."

Please press Confirm to continue."

18. Select Confirm.

The BQ Items will be created in Benchmark.

Viewing the BQ

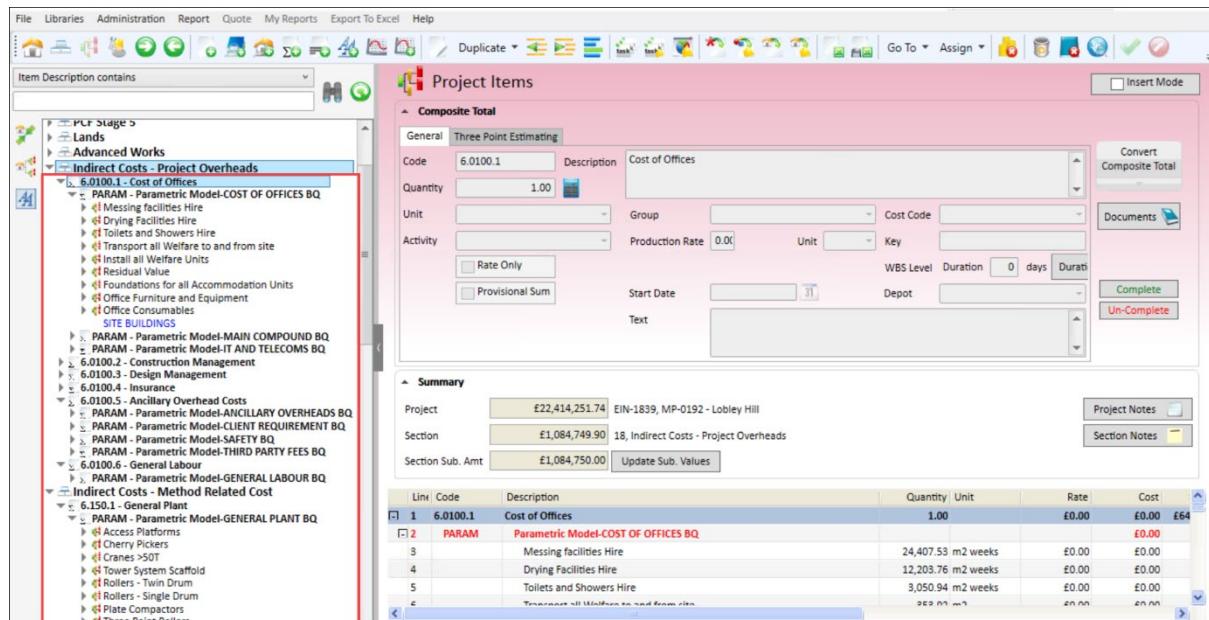
When you submit a model instance from the Parametric Models app:

- A BQ is created back in Benchmark.
- BQ line items are created as part of a Section and Composite Total.
- BQ line items with quantity and units are created as normal items.
- BQ line items without quantity and units are created as text items.
- BQ line items with 0 quantity are not created.

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section and Composite Total.

All the BQ line items are created as Project Items.



| Line | Code | Description | Quantity | Unit | Rate | Cost |
|------|----------|---|----------|------|-------|-------|
| 1 | 6.0100.1 | Cost of Offices | 1.00 | | £0.00 | £0.00 |
| 2 | PARAM | Parametric Model-COST OF OFFICES BQ | | | | £64 |
| 3 | | Messing facilities Hire | | | £0.00 | £0.00 |
| 4 | | Drying Facilities Hire | | | £0.00 | £0.00 |
| 5 | | Toilets & Showers Hire | | | £0.00 | £0.00 |
| 6 | | Transport all Welfare to and from site | | | £0.00 | £0.00 |
| 7 | | Install all Welfare Units | | | £0.00 | £0.00 |
| 8 | | Residual Values | | | £0.00 | £0.00 |
| 9 | | Foundations for all Accommodation Units | | | £0.00 | £0.00 |
| 10 | | Office Furniture and Equipment | | | £0.00 | £0.00 |
| 11 | | Office Consumables | | | £0.00 | £0.00 |
| 12 | | SITE BUILDINGS | | | £0.00 | £0.00 |
| 13 | | PARAM - Parametric Model-MAIN COMPOUND BQ | | | £0.00 | £0.00 |
| 14 | | PARAM - Parametric Model-IT AND TELECOMS BQ | | | £0.00 | £0.00 |
| 15 | | 6.0100.2 Construction Management | | | £0.00 | £0.00 |
| 16 | | 6.0100.3 Design Management | | | £0.00 | £0.00 |
| 17 | | 6.0100.4 Insurance | | | £0.00 | £0.00 |
| 18 | | 6.0100.5 Site related Overhead Costs | | | £0.00 | £0.00 |
| 19 | | PARAM - Parametric Model-ANCILLARY OVERHEADS BQ | | | £0.00 | £0.00 |
| 20 | | PARAM - Parametric Model-CLIENT REQUIREMENT BQ | | | £0.00 | £0.00 |
| 21 | | PARAM - Parametric Model-SAFETY BQ | | | £0.00 | £0.00 |
| 22 | | PARAM - Parametric Model-THIRD PARTY FEES BQ | | | £0.00 | £0.00 |
| 23 | | 6.0100.6 General Labour | | | £0.00 | £0.00 |
| 24 | | PARAM - Parametric Model-GENERAL LABOUR BQ | | | £0.00 | £0.00 |
| 25 | | Indirect Costs - Method Related Cost | | | £0.00 | £0.00 |
| 26 | | 6.150.1 General Plant | | | £0.00 | £0.00 |
| 27 | | PARAM - Parametric Model-GENERAL PLANT BQ | | | £0.00 | £0.00 |
| 28 | | Access Platforms | | | £0.00 | £0.00 |
| 29 | | Cherry Pickers | | | £0.00 | £0.00 |
| 30 | | Cranes >50t | | | £0.00 | £0.00 |
| 31 | | Tower Systems Scaffolding | | | £0.00 | £0.00 |
| 32 | | Rollers - Twin Drum | | | £0.00 | £0.00 |
| 33 | | Rollers - Single Drum | | | £0.00 | £0.00 |
| 34 | | Plate Compactors | | | £0.00 | £0.00 |
| 35 | | Three Point Rollers | | | £0.00 | £0.00 |

You can also view these items in the app using the **Full BQ** option (read-only BQ) in the Report tab.



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.

Prelims for MP-0192
Last Modified Date : 05/12/2022 Last Modified By : Neeraja Raj

Primary Input TTM Input Scaffold Input Temp Retaining Input Report Comments

Summary Full BQ Submit

| DESCRIPTION | QUANTITY | UNIT | |
|-----------------------|------------------------|---------|-------|
| PROJECT MANAGEMENT BQ | NON OVERHEAD DIRECTORS | 215.84 | Weeks |
| PROJECT MANAGEMENT BQ | PROJECT MANAGEMENT | 2021.83 | Weeks |
| PROJECT MANAGEMENT BQ | ENGINEERING | 2805.83 | Weeks |
| PROJECT MANAGEMENT BQ | COMMERCIAL | 1798.88 | Weeks |
| PROJECT MANAGEMENT BQ | SUPERVISION | 803.88 | Weeks |
| PROJECT MANAGEMENT BQ | ADMINISTRATION | 891.86 | Weeks |

Back

Regional Investment Programme (RIP)

The RIP model includes the following sub models:

- Roadworks
- Earthworks
- Drainage
- Carriageway
- Signs & Lighting



This topic describes the process of creating a Roadworks submodel instance in the application to generate a Bill of Quantities (BQ). You can create other submodel instances following a similar process.

1. [Open](#) the Parametric Models app.
2. Select Regional Investment Programme.
3. Select Roadworks.
4. Select Create New Model Instance.
5. In the Options Parameters tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.

| Site Information | | | | | | |
|---|-----------------|------------|-------------------------|-----------------------------------|-------------------------|-----------------|
|  | | | | | | |
| Site Information | | | | | | |
| Existing Network | Length (Kms) | Standard | Elevated Sections (kms) | Grade Separated Interchanges (No) | At Grade Junctions (No) | Side Roads (No) |
| Rural: | Primary 10 | S2 (rural) | | | | 2 |
| | Secondary 10 | S2 (rural) | | | | 2 |

7. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter the model instance name.

8. Enter a unique name and select Continue.



If required, you can edit this name in any of the screens using the Edit icon.

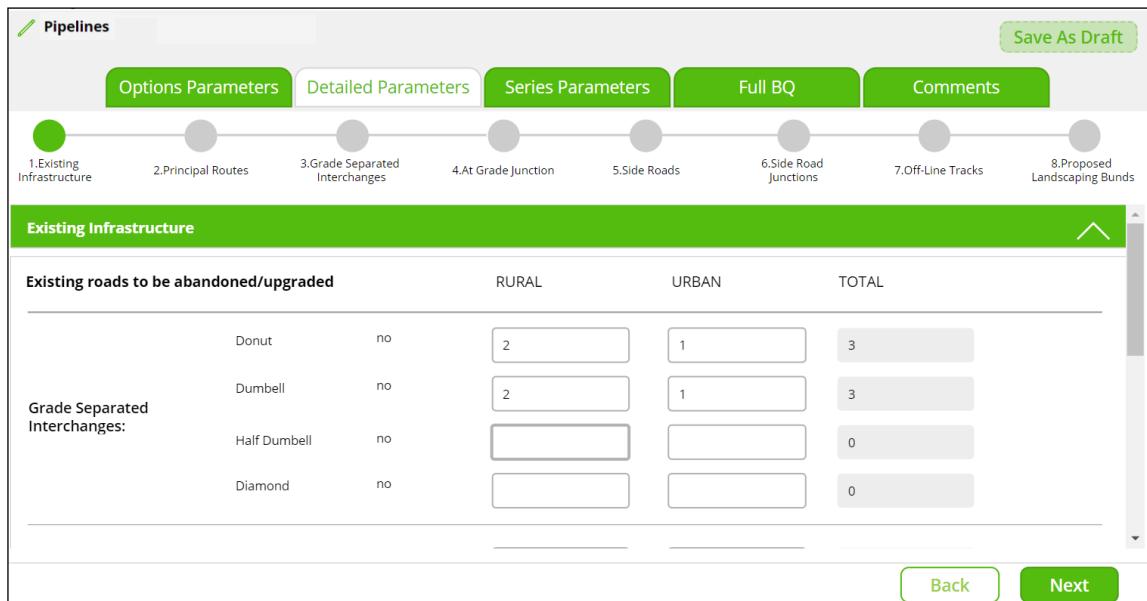
Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. Enter / select details for all the relevant fields in each of the panels in the Detailed Parameters screen.



| Existing roads to be abandoned/upgraded | | RURAL | URBAN | TOTAL | |
|---|--------------|-------|-------|-------|---|
| Grade Separated Interchanges: | Donut | no | 2 | 1 | 3 |
| | Dumbell | no | 2 | 1 | 3 |
| | Half Dumbell | no | | | 0 |
| | Diamond | no | | | 0 |

10. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

11. Enter / select details for all the relevant fields in each of the panels in the Series Parameters tab.

Pipelines

Save As Draft

| Options Parameters | Detailed Parameters | Series Parameters | Full BQ | Comments |
|---|--|--------------------------------------|---|--|
| 1. Proportion of heavily wooded areas requiring clearance | 3. Take down existing safety barriers | 5. Take up existing lighting columns | 7. Take down existing technology | 9. Post and rail boundary fencing |
| 2. Take down existing fences | 4. Take up existing kerbs and channels | 6. Take down existing traffic signs | 8. Temporary Fencing (as specified and shown on the drawings) | 10. Other fencing (excluding Environmental Barriers) |
| | | | | 11. Environmental Barriers |
| | | | | 12. LANDSCAPING & ECOLOGY Planting |
| | | | | 13. Additional habitat creation |
| | | | | 14. Temporary Reptile Fencing |

Proportion of heavily wooded areas requiring clearance

Take down existing fences

Assumptions: All widening in RURAL locations require fences to be taken down on BOTH sides of existing highway boundary.

ADJUST FOR retained fencing associated with:

| Areas of assumed take down both sides of road: | Proportion to be retained | Areas of assumed no fences taken down: | Proportion to be removed |
|--|---------------------------|--|--------------------------|
| Parallel widening | 10% | Symmetric widening with no land take (rural) | 20% |
| Asymmetric widening | 10% | Urban sections | 25% |
| Symmetric widening with land take | 5% | Detrunked sections | 5% |

Back **Next**

12. Select Next to continue proceeding to the next screens.
13. In the Full BQ tab, review all the details of the Bill of Quantities (BQ).

Welcome, Neeraja Raje

Pipelines

| Options Parameters | Detailed Parameters | Series Parameters | Full BQ | Comments | Submit |
|--------------------|--|-------------------|---------|----------|--------|
| Sr No | Description | | Unit | Qty | |
| 1 | General site clearance | | ha | 65.28 | |
| 2 | General site clearance - wooded areas | | ha | 6.95 | |
| 3 | General site clearance - removal of hedges | | m | 0.57 | |
| 4 | Demolition of buildings | | no | 0 | |
| 5 | Demolition of bridges | | no | 0 | |
| 6 | Demolition of retaining walls | | no | 0 | |

14. Select Submit.

The following confirmation prompt displays:

"No changes to the model are permissible once you submit the item list to Benchmark."

Please press Confirm to continue."

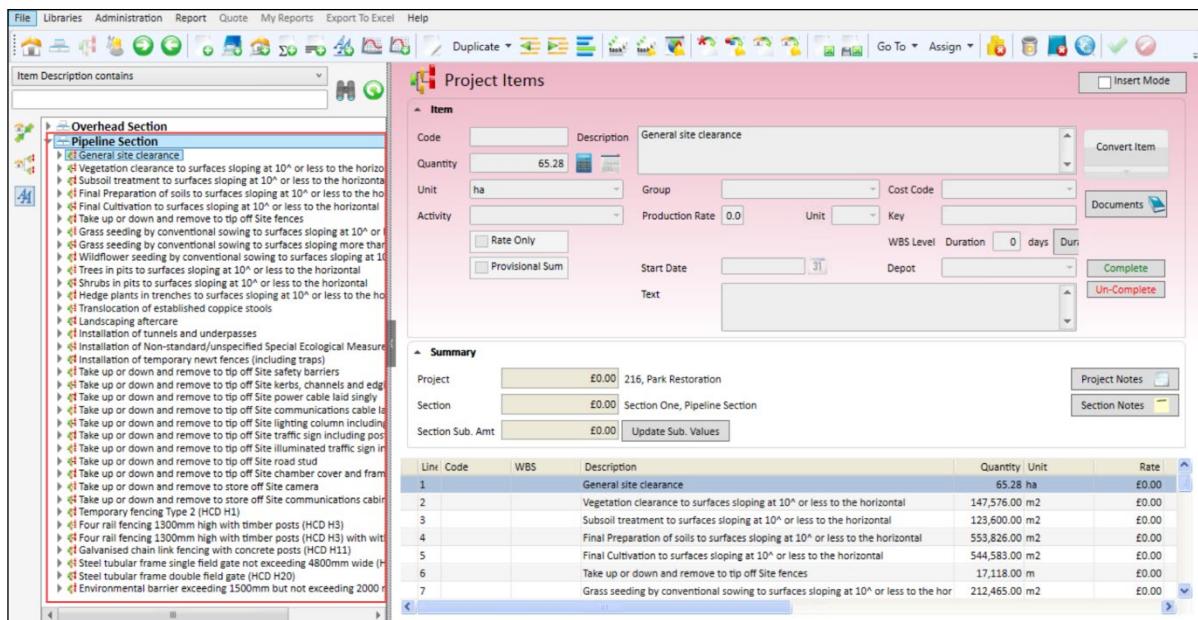
15. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section or Composite Total.

All the BQ line items are created as Project Items.

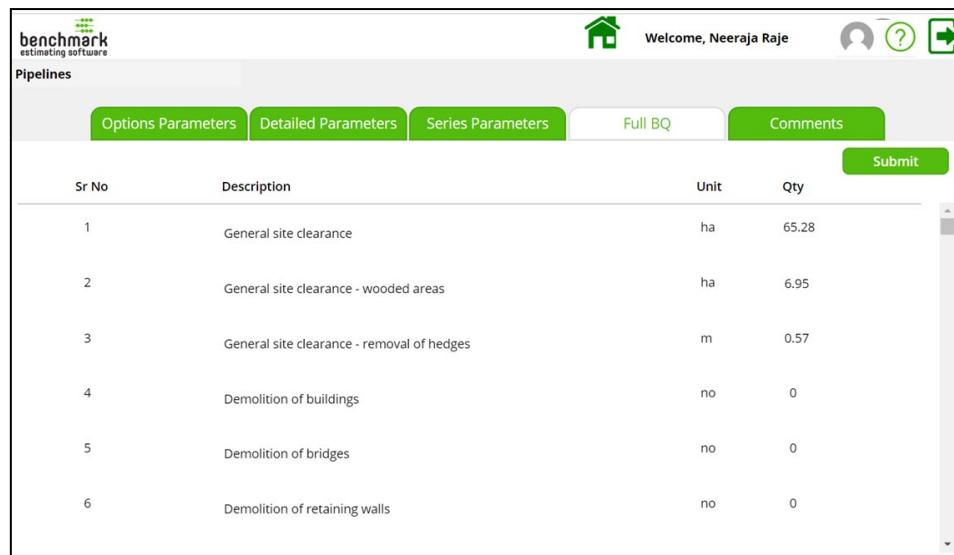


| Line | Code | WBS | Description | Quantity | Unit | Rate |
|------|------|-----|---|------------|----------------|-------|
| 1 | | | General site clearance | 65.28 | ha | £0.00 |
| 2 | | | Vegetation clearance to surfaces sloping at 10° or less to the horizontal | 147,576.00 | m ² | £0.00 |
| 3 | | | Subsoil treatment to surfaces sloping at 10° or less to the horizontal | 123,600.00 | m ² | £0.00 |
| 4 | | | Final Preparation of soils to surfaces sloping at 10° or less to the horizontal | 553,826.00 | m ² | £0.00 |
| 5 | | | Final Cultivation to surfaces sloping at 10° or less to the horizontal | 544,583.00 | m ² | £0.00 |
| 6 | | | Take up or down and remove to tip off Site fences | 17,118.00 | m | £0.00 |
| 7 | | | Grass seeding by conventional sowing to surfaces sloping at 10° or less to the horizontal | 212,465.00 | m ² | £0.00 |

You can also view these items in the app using the **Full BQ** tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



| Sr No | Description | Unit | Qty |
|-------|--|------|-------|
| 1 | General site clearance | ha | 65.28 |
| 2 | General site clearance - wooded areas | ha | 6.95 |
| 3 | General site clearance - removal of hedges | m | 0.57 |
| 4 | Demolition of buildings | no | 0 |
| 5 | Demolition of bridges | no | 0 |
| 6 | Demolition of retaining walls | no | 0 |

Smart Motorway Program (SMP)

The SMP model includes the following sub models:

- Roadworks
- Earthworks
- Drainage
- Carriageway
- Signs & Lighting



This topic describes the process of creating a Drainage submodel instance in the application to generate a Bill of Quantities (BQ). You can create other submodel instances following a similar process.

1. [Open](#) the Parametric Models app.
2. Select Smart Motorway Program.
3. Select Drainage.
4. Select Create New Model Instance.
5. In the Options Parameters tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite *Total Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.

Site Information

Site Information

| Existing motorway | Length (kms) | Elevated Sections (m) | Standard (A-side) | Standard (A-side) | Length of Central Reserve existing VCB (kms) | Lit? |
|-------------------|--------------|-----------------------|---|---|--|---|
| Link 1 | 20 | 10 | D2M (rural) <input checked="" type="checkbox"/> | D3M (rural) <input checked="" type="checkbox"/> | 2 | No <input checked="" type="checkbox"/> |
| Link 2 | 15 | 5 | D3M (rural) <input checked="" type="checkbox"/> | D4M (rural) <input checked="" type="checkbox"/> | 1.5 | Yes <input checked="" type="checkbox"/> |
| Link 3 | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Link 4 | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |

Back **Next**

7. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter a model instance name.

8. Enter a unique name and select Continue.



If required, you can edit this name in any of the screens using the Edit icon.

Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. Enter / select details for all the relevant fields in each of the panels in the Detailed Parameters screen.

Project Overheads

Save As Draft

Options Parameters Detailed Parameters Series Parameters Full BQ Comments

1.Existing Infrastructure 2.Proposed Mainline 3.Emergency Refuge Areas 4.Interchanges 5.Service Areas, Work Depots And Turnaround Facilities 6.Side Roads

Existing Infrastructure

| | A-side | | | | B-side | | | |
|--------|----------------------|----------------------|------------|----------------------------|----------------------------|--------------------------------------|----------------------------|----------------------------|
| | Start Chainage | End Chainage | Length (m) | Existing carriageway width | Existing verge width (ave) | Existing Central Reserve width (ave) | Existing carriageway width | Existing verge width (ave) |
| Link 1 | <input type="text"/> | <input type="text"/> | 10000 | Standard | Standard | Standard | Standard | Standard |
| Link 2 | <input type="text"/> | <input type="text"/> | 20000 | Standard | Specify | Standard | Standard | Standard |
| | | | | | 20 | | | |
| ... | | | | | | | | |

Back **Next**

10. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

11. Enter / select details for all the relevant fields in each of the panels in the Series Parameters tab.

Options Parameters Detailed Parameters Series Parameters Full BQ Comments

1.Drainage 2.Emergency Refuge Areas 3.Interchanges 4.Service Areas, Work depots and turnaround facilities 1 5. Side Roads

Drainage

| Proposed Drainage Types and Renewal | | | | | | | | | |
|-------------------------------------|----------------------|----------------------|------------|-------------|---------------------------------|---------------------------|---------------------------------|---------------------------|--------------|
| A-CARRIAGEWAY | Start Chainage | End Chainage | Length (m) | Upgrade | % of Kerb & Gully Drainage Type | % of Kerb & Gully Renewed | % of Filter Drain Drainage Type | % of Filter Drain Renewed | % of C Drain |
| Link 1 | <input type="text"/> | <input type="text"/> | 20000 | D2M (rural) | 15% | 70% | 10% | 80% | 35% |
| Link 2 | <input type="text"/> | <input type="text"/> | 0 | | 0% | 100% | 0% | 100% | 0% |
| Link 3 | <input type="text"/> | <input type="text"/> | 0 | | 0% | 100% | 0% | 100% | 0% |
| Link 4 | <input type="text"/> | <input type="text"/> | 0 | | 0% | 100% | 0% | 100% | 0% |

Back **Next**

12. Select Next to continue proceeding to the next screens.

13. In the Full BQ tab, review all the details of the Bill of Quantities (BQ).

SMP - Drainage

| SeqNo | Description | Unit | Quantity |
|-------|---|------|----------|
| 301 | 575 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave... | m | 292 |
| 302 | 600 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave... | m | 0 |
| 303 | 600 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceed... | m | 0 |
| 304 | 750 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave... | m | 0 |
| 305 | 750 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceed... | m | 265 |
| 306 | 900 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave... | m | 0 |
| 307 | 900 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceed... | m | 205 |
| 308 | 225 mm internal diameter drain by jacking or thrust boring depth to invert not exceeding 2 metres, average depth t... | m | 0 |
| 309 | 225 mm internal diameter drain by jacking or thrust boring depth to invert exceeding 2 metres but not exceeding 4 ... | m | 0 |
| 310 | 300 mm internal diameter drain by jacking or thrust boring depth to invert not exceeding 2 metres, average depth t... | m | 0 |
| 311 | 375 mm internal diameter drain by jacking or thrust boring depth to invert not exceeding 2 metres, average depth t... | m | 0 |
| 312 | 100mm Duct cast in verge/concrete infill | item | 0 |
| 313 | 150 mm internal diameter filter drain in trench specified design group 2 to 6 depth to invert not exceeding 2 metres | m | 3000 |

14. Select Submit.

The following confirmation prompt displays:

“No changes to the model are permissible once you submit the item list to Benchmark.

Please press Confirm to continue.”

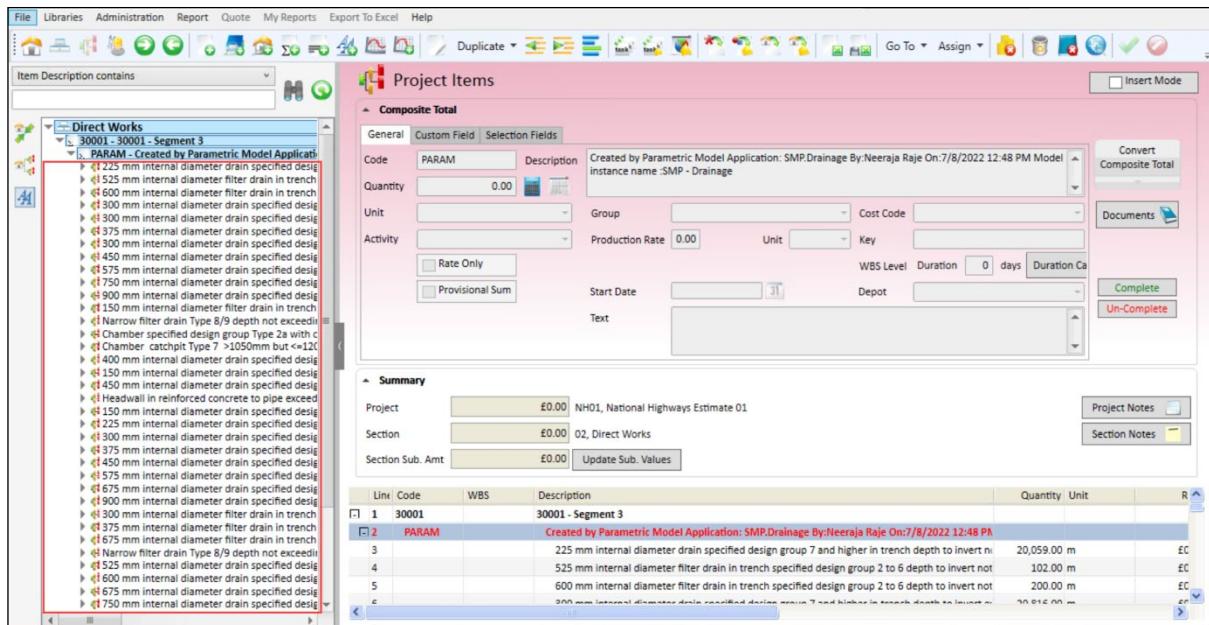
15. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section > Composite Total.

All the BQ line items are created as Project Items.



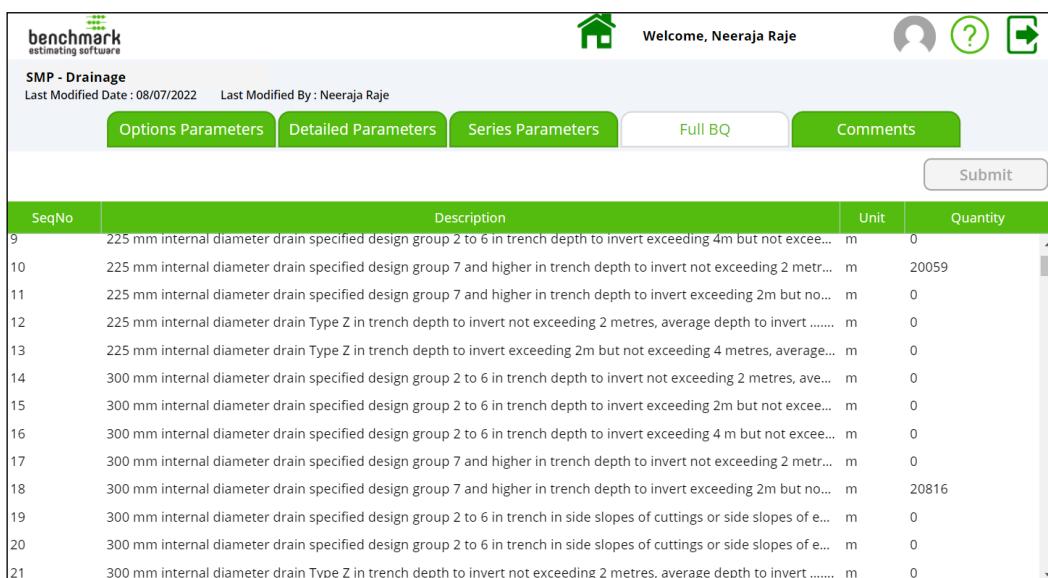
The screenshot shows the 'Project Items' screen in Benchmark. The 'Composite Total' tab is selected. On the left, there's a tree view under 'Direct Works' for '30001 - Segment 3' containing a large list of BQ items. The main panel shows project details like 'Code: PARAM', 'Quantity: 0.00', and a summary table for 'Project', 'Section', and 'Section Sub. Amt'. Below this is a detailed table of BQ items with columns for Line, Code, WBS, Description, Quantity, Unit, and Rate.

| Line | Code | WBS | Description | Quantity | Unit | Rate |
|------|-------|-------------------|---|-----------|------|------|
| 1 | 30001 | 30001 - Segment 3 | Created by Parametric Model Application: SMP:Drainage By:Neeraja Raje On:7/8/2022 12:48 PM Model | | | |
| 2 | PARAM | | 225 mm internal diameter drain specified design group 7 and higher in trench depth to invert exceeding 4m but not exceeding 2metres, average depth to invert..... | 20,059.00 | m | EC |
| 3 | | | 225 mm internal diameter filter drain in trench specified design group 2 to 6 depth to invert not exceeding 2 metres, average depth to invert..... | 102.00 | m | EC |
| 4 | | | 300 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, average depth to invert..... | 200.00 | m | EC |
| 5 | | | 300 mm internal diameter drain specified design group 7 and higher in trench depth to invert not exceeding 2 metres, average depth to invert..... | 20,816.00 | m | EC |

You can also view these items in the app using the Full BQ tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



The screenshot shows the 'Full BQ' tab in the Benchmark mobile app. At the top, it shows the project name 'SMP - Drainage' and last modified date '08/07/2022'. Below this is a table with columns for 'SeqNo', 'Description', 'Unit', and 'Quantity'. The table lists various BQ items with their descriptions, units (m), and quantities (0 or 20059).

| SeqNo | Description | Unit | Quantity |
|-------|---|------|----------|
| 9 | 225 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 4m but not exceeding 2metres, average depth to invert..... | m | 0 |
| 10 | 225 mm internal diameter drain specified design group 7 and higher in trench depth to invert not exceeding 2 metres, average depth to invert..... | m | 20059 |
| 11 | 225 mm internal diameter drain specified design group 7 and higher in trench depth to invert exceeding 2m but not exceeding 4m, average depth to invert..... | m | 0 |
| 12 | 225 mm internal diameter drain Type Z in trench depth to invert not exceeding 2 metres, average depth to invert..... | m | 0 |
| 13 | 225 mm internal diameter drain Type Z in trench depth to invert exceeding 2m but not exceeding 4 metres, average depth to invert..... | m | 0 |
| 14 | 300 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, average depth to invert..... | m | 0 |
| 15 | 300 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceeding 4m, average depth to invert..... | m | 0 |
| 16 | 300 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 4 m but not exceeding 6m, average depth to invert..... | m | 0 |
| 17 | 300 mm internal diameter drain specified design group 7 and higher in trench depth to invert not exceeding 2 metres, average depth to invert..... | m | 0 |
| 18 | 300 mm internal diameter drain specified design group 7 and higher in trench depth to invert exceeding 2m but not exceeding 4m, average depth to invert..... | m | 20816 |
| 19 | 300 mm internal diameter drain specified design group 2 to 6 in trench in side slopes of cuttings or side slopes of embankments, average depth to invert..... | m | 0 |
| 20 | 300 mm internal diameter drain specified design group 2 to 6 in trench in side slopes of cuttings or side slopes of embankments, average depth to invert..... | m | 0 |
| 21 | 300 mm internal diameter drain Type Z in trench depth to invert not exceeding 2 metres, average depth to invert..... | m | 0 |

Structure

The Structure model includes the following sub models:

- Box Culverts
- Footbridges
- Gantryes
- Overbridges
- Piped Culverts
- Retaining Walls
- Underbridges
- Viaducts



This topic describes the process of creating a Footbridges submodel instance in the application to generate a Bill of Quantities (BQ). You can create other submodel instances following a similar process.

1. [Open](#) the Parametric Models app.
2. Select Structure.
3. Select Footbridges.
4. Select Create New Model Instance.
5. In the Scheme Credentials tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.

Structure Details



| Structure Details | | | | | |
|---------------------------------------|-------------|---|----------|------|------------|
| Structure Name | Paved Areas | Location | Chainage | Type | Footbridge |
| Principal Route under planned bridge: | WS2 |  | | | |
| Total Carriageway width (m) | Standard |  | | | |
| Total Verge width (m) | Standard |  | | | |
| Total Central Reserve width (m) | Standard |  | | | |

7. Select **Next** to proceed to the next screen.

You can select **Back** to return to the previous screen and make changes.

When you proceed from the first screen, you will be prompted to enter the model instance name.

8. Enter a unique name and select **Continue**.



If required, you can edit this name in any of the screens using the **Edit** icon.

Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle  in the progress line.

Active screens are denoted by a green circle . Screens pending completion are denoted

by grey circles .

9. Enter / select details for all the relevant fields in the **Structure Details** screen.
10. Select **Next** to generate and review the Bill of Quantities (BOQ) in the **Full BQ** tab.

| SeqNo | Description | Quantity | Unit |
|-------|---|----------|------|
| 40 | Disposal of unacceptable material class U1A | 1044 | m3 |
| 41 | Imported acceptable material Class 1A in fill to structures | 0 | m3 |
| 42 | Imported acceptable material Class 6I/J in reinforced earth structures | 0 | m3 |
| 43 | Imported acceptable material Class 6N/P in reinforced earth structures | 1937 | m3 |
| 44 | Imported acceptable material Class 6N/P in fill to structures | 798 | m3 |
| 45 | Imported acceptable material Class 6N/P in fill above structural concrete foundations | 72 | m3 |
| 46 | Compaction of acceptable material in reinforced earth structures | 1937 | m3 |
| 47 | Compaction of acceptable material in fill to structures | 798 | m3 |
| 48 | Compaction of acceptable material in fill above structural concrete foundations | 72 | m3 |
| 49 | In situ concrete reference C7.5 in blinding 75 mm or less in thickness | 0 | m3 |
| 50 | In situ concrete reference C8/10 in blinding 75 mm or less in thickness | 0 | m3 |
| 51 | In situ concrete reference C32/40 | 0 | m3 |

11. Select Submit.

The following confirmation prompt displays:

“No changes to the model are permissible once you submit the item list to Benchmark.

Please press Confirm to continue.”

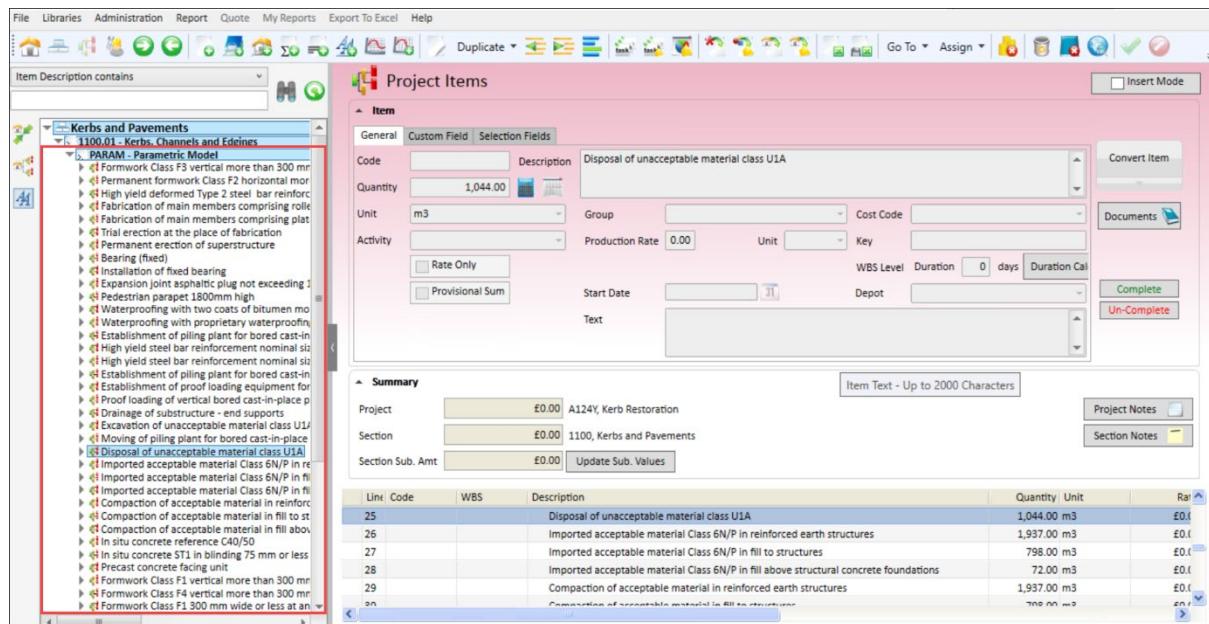
12. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section > Composite Total.

All the BQ line items are created as Project Items.

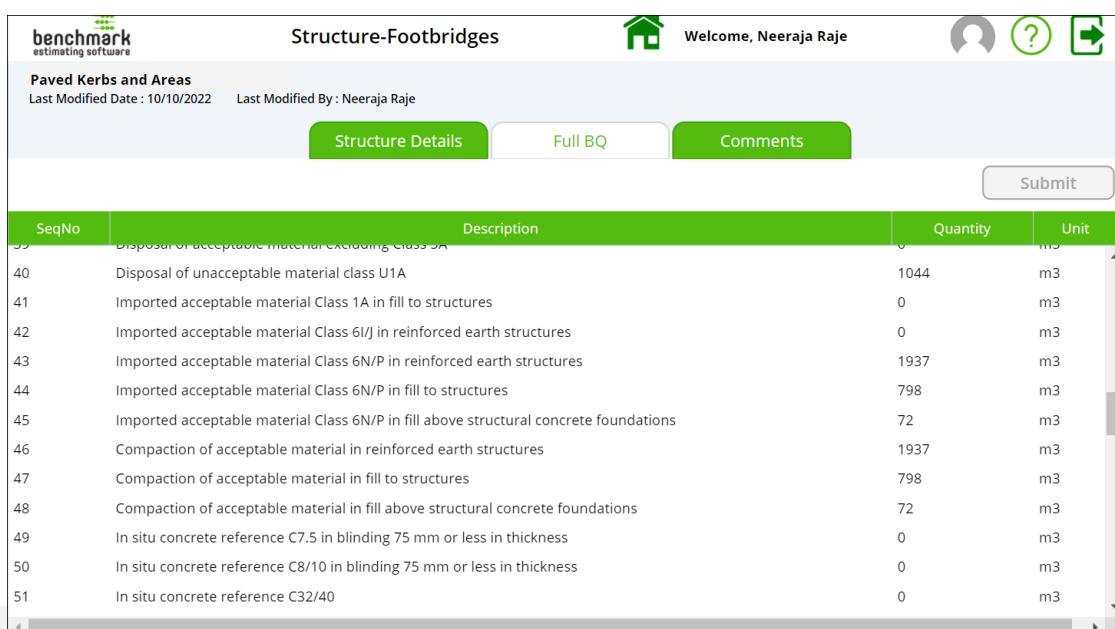


| Line | Code | WBS | Description | Quantity | Unit | Rate |
|------|------|-----|---|----------|------|------|
| 25 | | | Disposal of unacceptable material class U1A | 1,044.00 | m3 | £0.0 |
| 26 | | | Imported acceptable material Class 6N/P in reinforced earth structures | 1,937.00 | m3 | £0.0 |
| 27 | | | Imported acceptable material Class 6N/P in fill to structures | 798.00 | m3 | £0.0 |
| 28 | | | Imported acceptable material Class 6N/P in fill above structural concrete foundations | 72.00 | m3 | £0.0 |
| 29 | | | Compaction of acceptable material in reinforced earth structures | 1,937.00 | m3 | £0.0 |
| 30 | | | Compaction of acceptable material in fill to structures | 798.00 | m3 | £0.0 |
| 31 | | | Compaction of acceptable material in fill above structural concrete foundations | 72.00 | m3 | £0.0 |
| 32 | | | In situ concrete reference C40/50 | 0 | m3 | £0.0 |
| 33 | | | In situ concrete ST1 in blinding 75 mm or less | 0 | m3 | £0.0 |
| 34 | | | Precast concrete facing unit | 0 | m3 | £0.0 |
| 35 | | | Formwork Class F1 vertical more than 300 mm | 0 | m3 | £0.0 |
| 36 | | | Formwork Class F4 vertical more than 300 mm | 0 | m3 | £0.0 |
| 37 | | | Formwork Class F1 300 mm wide or less at an | 0 | m3 | £0.0 |

You can also view these items in the app using the **Full BQ** tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



| SeqNo | Description | Quantity | Unit |
|-------|---|----------|------|
| 35 | Disposal of unacceptable material class U1A | 1044 | m3 |
| 40 | Imported acceptable material Class 1A in fill to structures | 0 | m3 |
| 42 | Imported acceptable material Class 6I/J in reinforced earth structures | 0 | m3 |
| 43 | Imported acceptable material Class 6N/P in reinforced earth structures | 1937 | m3 |
| 44 | Imported acceptable material Class 6N/P in fill to structures | 798 | m3 |
| 45 | Imported acceptable material Class 6N/P in fill above structural concrete foundations | 72 | m3 |
| 46 | Compaction of acceptable material in reinforced earth structures | 1937 | m3 |
| 47 | Compaction of acceptable material in fill to structures | 798 | m3 |
| 48 | Compaction of acceptable material in fill above structural concrete foundations | 72 | m3 |
| 49 | In situ concrete reference C7.5 in blinding 75 mm or less in thickness | 0 | m3 |
| 50 | In situ concrete reference C8/10 in blinding 75 mm or less in thickness | 0 | m3 |
| 51 | In situ concrete reference C32/40 | 0 | m3 |

Technology

1. [Open](#) the Parametric Models app.
2. Select Technology > Technology
3. Select Create New Model Instance.
4. In the Scheme Credentials tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

5. Use the up and down arrows on the accordions to expand or collapse panels in the screen.

| | |
|----------------------------|-------------------------------------|
| Scheme Requirements | <input checked="" type="checkbox"/> |
| Scheme Requirements | |
| Mainline | <input checked="" type="checkbox"/> |
| Intervention Type | <input type="button" value="▼"/> |
| Technology Intervention | |
| | |

6. Enter / select details for all the relevant fields in each of the panels in the Base Information screen.
You can select Back to return to the previous screen and make changes.
When you proceed from the first screen, you will be prompted to enter the model instance name.
7. Select Next to proceed to the next screen.
8. Enter a unique name and select Continue.



If required, you can edit this name in any of the screens using the Edit icon.

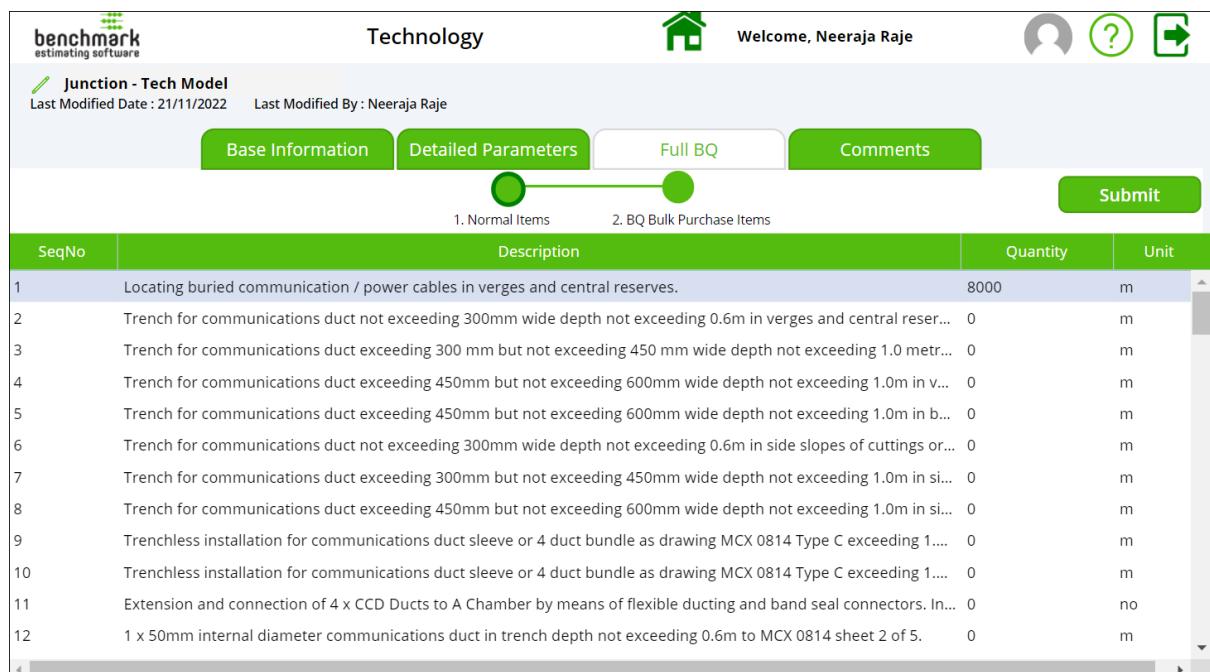
Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle  in the progress line.

Active screens are denoted by a green circle . Screens pending completion are denoted by grey circles .

9. Enter / select details for all the relevant fields in each of the panels in the Detailed Parameters screen.
10. Select Next to generate and review the Bill of Quantities (BOQ) in the Full BOQ tab:
 - a. Select Normal Items to review the normal Items in the BoQ.
 - b. Select and BQ Bulk Purchase to review the bulk purchase output in the BoQ.



| SeqNo | Description | Quantity | Unit |
|-------|---|----------|------|
| 1 | Locating buried communication / power cables in verges and central reserves. | 8000 | m |
| 2 | Trench for communications duct not exceeding 300mm wide depth not exceeding 0.6m in verges and central reser... | 0 | m |
| 3 | Trench for communications duct exceeding 300 mm but not exceeding 450 mm wide depth not exceeding 1.0 metr... | 0 | m |
| 4 | Trench for communications duct exceeding 450mm but not exceeding 600mm wide depth not exceeding 1.0m in v... | 0 | m |
| 5 | Trench for communications duct exceeding 450mm but not exceeding 600mm wide depth not exceeding 1.0m in b... | 0 | m |
| 6 | Trench for communications duct not exceeding 300mm wide depth not exceeding 0.6m in side slopes of cuttings or... | 0 | m |
| 7 | Trench for communications duct exceeding 300mm but not exceeding 450mm wide depth not exceeding 1.0m in si... | 0 | m |
| 8 | Trench for communications duct exceeding 450mm but not exceeding 600mm wide depth not exceeding 1.0m in si... | 0 | m |
| 9 | Trenchless installation for communications duct sleeve or 4 duct bundle as drawing MCX 0814 Type C exceeding 1.... | 0 | m |
| 10 | Trenchless installation for communications duct sleeve or 4 duct bundle as drawing MCX 0814 Type C exceeding 1.... | 0 | m |
| 11 | Extension and connection of 4 x CCD Ducts to A Chamber by means of flexible ducting and band seal connectors. In... | 0 | no |
| 12 | 1 x 50mm internal diameter communications duct in trench depth not exceeding 0.6m to MCX 0814 sheet 2 of 5. | 0 | m |

11. Select Submit.
The following confirmation prompt displays:
"No changes to the model are permissible once you submit the item list to Benchmark.
Please press Confirm to continue."
12. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section > Composite Total.

All the Normal BQ line items are created as Project Items under a new Parametric Model

– Normal Items Composite Total:

| Line | Code | WBS | Description | Quantity | Unit | Rate |
|------|---------|-----|--|----------|------|-------|
| 1 | CT12.01 | | Tech Input | | | |
| 2 | CT14.01 | | Junction A4 Widening | | | |
| 3 | PARAM | | Parametric Model - Normal Items | | | |
| 4 | | | Locating buried communication / power cables in verges and central reserves. | 8,000.00 | m | £0.0 |
| 5 | | | SAT 2 Testing | 5.00 | Item | £0.0 |
| e | | | SAT 3 Testing | £ 0.00 | Item | £ 0.0 |

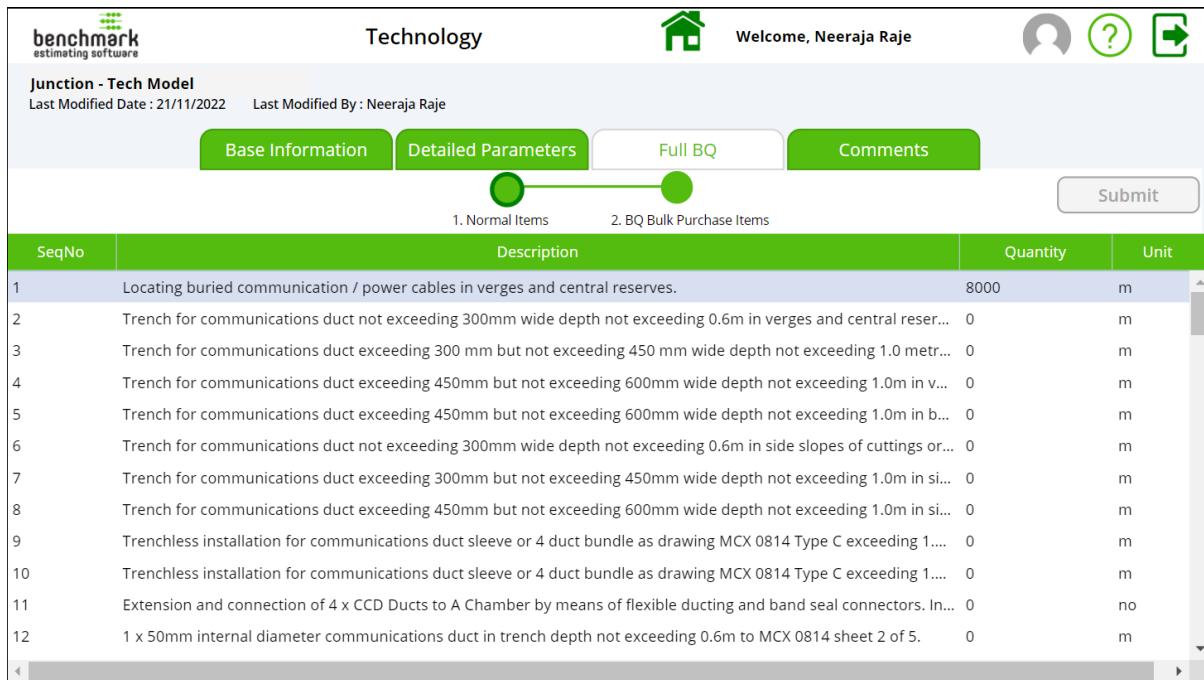
The Bulk Purchase Output line items are created as Project Items under a new Parametric Model – Bulk Purchase Items Composite Total:

| Line | Code | WBS | Description | Quantity | Unit | Rate |
|------|---------|-----|--|----------|------|-------|
| 1 | CT12.01 | | Tech Input | | | |
| 2 | CT14.01 | | Junction A4 Widening | | | |
| 3 | PARAM | | Parametric Model - Normal Items | | | |
| 4 | | | Locating buried communication / power cables in verges and central reserves. | 8,000.00 | m | £0.0 |
| 5 | | | SAT 2 Testing | 5.00 | Item | £0.0 |
| e | | | SAT 3 Testing | £ 0.00 | Item | £ 0.0 |

You can also view these items in the app using the **Full BQ** tab within the relevant sub tabs:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



| SeqNo | Description | Quantity | Unit |
|-------|---|----------|------|
| 1 | Locating buried communication / power cables in verges and central reserves. | 8000 | m |
| 2 | Trench for communications duct not exceeding 300mm wide depth not exceeding 0.6m in verges and central reser... | 0 | m |
| 3 | Trench for communications duct exceeding 300 mm but not exceeding 450 mm wide depth not exceeding 1.0 metr... | 0 | m |
| 4 | Trench for communications duct exceeding 450mm but not exceeding 600mm wide depth not exceeding 1.0m in v... | 0 | m |
| 5 | Trench for communications duct exceeding 450mm but not exceeding 600mm wide depth not exceeding 1.0m in b... | 0 | m |
| 6 | Trench for communications duct not exceeding 300mm wide depth not exceeding 0.6m in side slopes of cuttings or... | 0 | m |
| 7 | Trench for communications duct exceeding 300mm but not exceeding 450mm wide depth not exceeding 1.0m in si... | 0 | m |
| 8 | Trench for communications duct exceeding 450mm but not exceeding 600mm wide depth not exceeding 1.0m in si... | 0 | m |
| 9 | Trenchless installation for communications duct sleeve or 4 duct bundle as drawing MCX 0814 Type C exceeding 1.... | 0 | m |
| 10 | Trenchless installation for communications duct sleeve or 4 duct bundle as drawing MCX 0814 Type C exceeding 1.... | 0 | m |
| 11 | Extension and connection of 4 x CCD Ducts to A Chamber by means of flexible ducting and band seal connectors. In... | 0 | no |
| 12 | 1 x 50mm internal diameter communications duct in trench depth not exceeding 0.6m to MCX 0814 sheet 2 of 5. | 0 | m |

Other Works

This model includes two sub models:

- Other Work Cost
- Statutory Undertaking

Other Work Cost

1. [Open](#) the Parametric Models app.
2. Select Other Works.
3. Select Other Work Cost.
4. Select Create New Model Instance.
5. In the Options Parameters tab, select the *Estimate Name*, *Section Name* and *Composite Total*.
Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.



The screenshot shows a user interface for managing project assurance. At the top, there's a section titled "Technical Assurance" with a checked checkbox. Below it is a green-highlighted section titled "Commercial Assurance / Project Controls" with an unchecked checkbox. Underneath these sections, there's a dropdown menu labeled "Resources" with a dropdown arrow, and the text "Average % for Region". At the bottom right of the screen are two buttons: "Back" and "Next".

7. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter a model instance name.

8. Enter a unique name and select Continue.



If required, you can edit this name in any of the screens using the Edit icon.

Then, Save  the new name.



The screenshot shows a form for creating a new model instance. The name field contains "Other Cost" with a red circle and edit icon above it. Below the name field are four tabs: "Option Parameters" (highlighted in green), "Detailed Parameters", "Full BQ", and "Comments". A "Save As Draft" button is located at the top right.

Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. Enter / select details for all the relevant fields in each of the panels in the Detailed Parameters screen.

OW - Other Work Cost

Welcome, Neeraja Raje

[Save As Draft](#)

Other Cost

Option Parameters Detailed Parameters Full BQ Comments

1. Assessed Project Split 2.WA001 - Technical Assurance 3. WA002 - Commercial Assurance / Project Controls 4. WA003 - On site works - Engineer in Chief, Design Co-ordination & Supervision

WA001 - Technical Assurance Only applicable if percentage option is not chosen

| Resource Title | Resource Code | No. of Resources | Start Phase Utilisation (%) | Middle Phase Utilisation (%) | End Phase Utilisation (%) | Final Account Utilisation (%) |
|---|---------------|------------------|-----------------------------|------------------------------|---------------------------|-------------------------------|
| Project Director | WAR021 | 20 | 10 | 20 | 30 | 40 |
| Programme Director & Accredited Professional Highways | WAR034 | 10 | 50 | 10 | 20 | 20 |
| PM & Regular Reporting Assistant | WAR035 | | | | | |
| Technical Advisor Lead | WAR036 | | | | | |
| Technical Advisor | WAR037 | | | | | |

[Back](#) [Next](#)

10. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

11. In the Full BQ tab, review all the details of the Bill of Quantities (BQ).

OW - Other Work Cost

Welcome, Neeraja Raje

[Save As Draft](#)

Other Cost

Option Parameters Detailed Parameters **Full BQ** Comments

[Submit](#)

| SeqNo | Description | Unit | Quantity |
|-------|---|-----------|----------|
| 1 | PCF Stage 6 % - TA | Value (£) | 0 |
| 2 | PCF Stage 7 % - TA | Value (£) | 0 |
| 3 | Project Director | Hours | 0 |
| 4 | Programme Director & Accredited Professional Highways | Hours | 0 |
| 5 | PM & Regular Reporting Assistant | Hours | 0 |
| 6 | Technical Advisor Lead | Hours | 0 |
| 7 | Technical Advisor | Hours | 0 |
| 8 | Expenses - Technical Assurance | Months | 11.57 |
| 9 | PCF Stage 6 & 7 % - PC | % | 0 |
| 10 | Contract Advisor | Hours | 0 |
| 11 | NEC Contract Administrator | Hours | 0 |
| 12 | Planner | Hours | 0 |

12. Select Submit.

The following confirmation prompt displays:

"No changes to the model are permissible once you submit the item list to Benchmark."

Please press Confirm to continue."

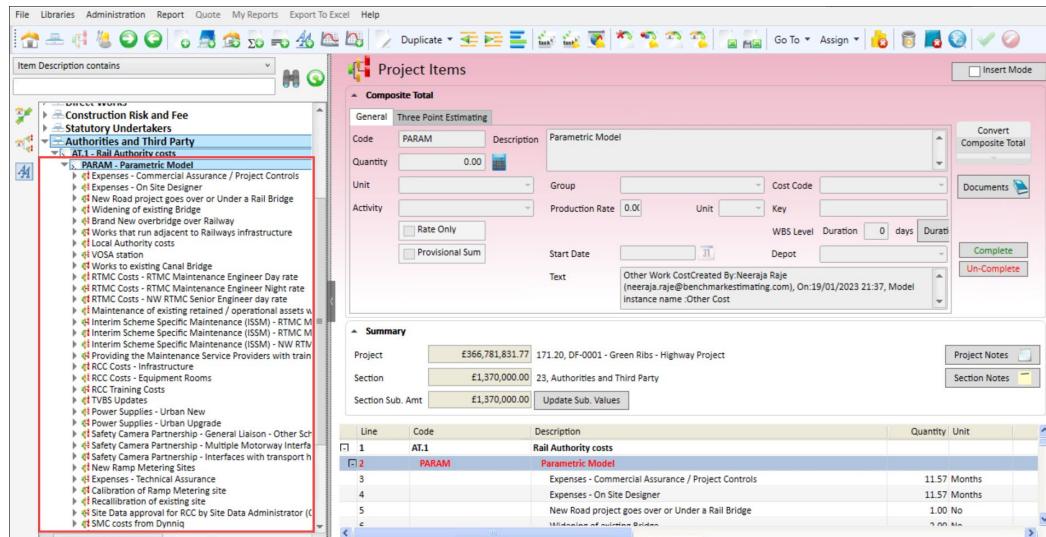
13. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section > Composite Total.

All the BQ line items are created as Project Items.

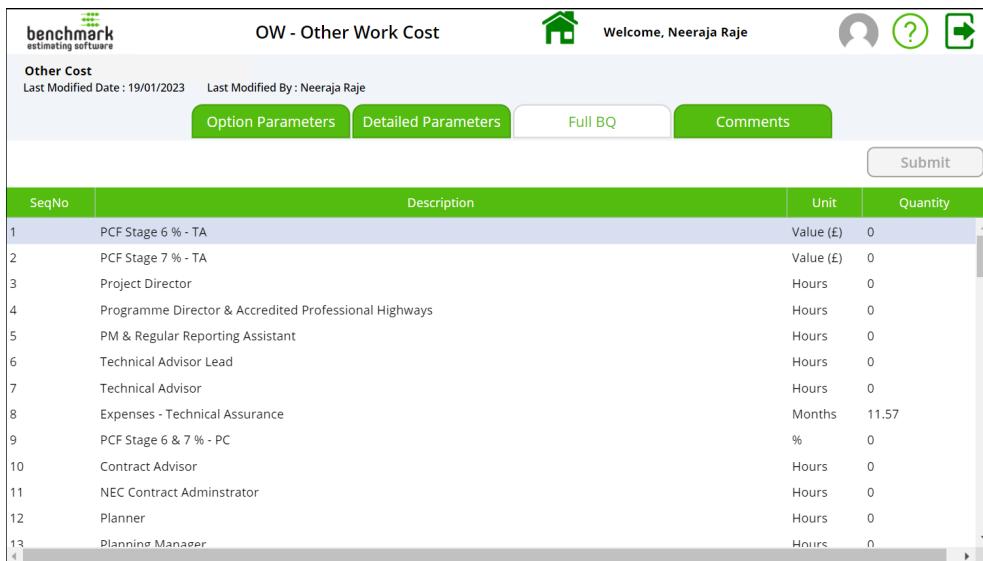


The screenshot shows the Benchmark software interface. On the left, there's a navigation tree under 'DIRECT WORKS' with categories like Construction Risk and Fee, Statutory Undertakers, Authorities and Third Party, and AT.1 - Rail Authority costs. A red box highlights the 'AT.1 - Rail Authority costs' node. The main workspace is titled 'Project Items' and shows a 'Composite Total' entry for 'AT.1 - Rail Authority costs'. The 'General' tab is selected, displaying fields for Code (PARAM), Description (Parametric Model), Quantity (0.00), Unit, Activity, Rate Only, Provisional Sum, Start Date, Text, and various cost-related dropdowns. The 'Summary' tab shows a breakdown of the project by section and sub-section, with values like £366,781,831.77 for the project and £1,370,000.00 for the section. Below the summary is a table of line items with columns for Line, Code, Description, Quantity, and Unit.

You can also view these items in the app using the Full BQ tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



| SeqNo | Description | Unit | Quantity |
|-------|---|-----------|----------|
| 1 | PCF Stage 6 % - TA | Value (£) | 0 |
| 2 | PCF Stage 7 % - TA | Value (£) | 0 |
| 3 | Project Director | Hours | 0 |
| 4 | Programme Director & Accredited Professional Highways | Hours | 0 |
| 5 | PM & Regular Reporting Assistant | Hours | 0 |
| 6 | Technical Advisor Lead | Hours | 0 |
| 7 | Technical Advisor | Hours | 0 |
| 8 | Expenses - Technical Assurance | Months | 11.57 |
| 9 | PCF Stage 6 & 7 % - PC | % | 0 |
| 10 | Contract Advisor | Hours | 0 |
| 11 | NEC Contract Administor | Hours | 0 |
| 12 | Planner | Hours | 0 |
| 13 | Planning Manager | Hours | 0 |

Statutory Undertaking

1. [Open](#) the Parametric Models app.
2. Select Other Works.
3. Select Statutory Undertaking.
4. Select Create New Model Instance.
5. In the Options Parameters tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

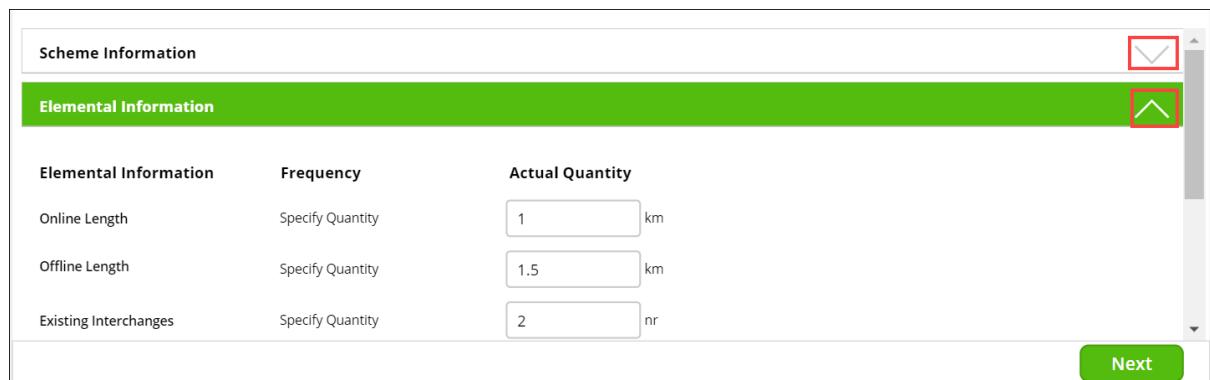
Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



The Scheme Information panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.



| Elemental Information | Frequency | Actual Quantity |
|-----------------------|------------------|-----------------|
| Online Length | Specify Quantity | 1 km |
| Offline Length | Specify Quantity | 1.5 km |
| Existing Interchanges | Specify Quantity | 2 nr |

Next

7. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter a model instance name.

8. Enter a unique name and select Continue.



If required, you can edit this name in any of the screens using the Edit icon.

Then, Save  the new name.



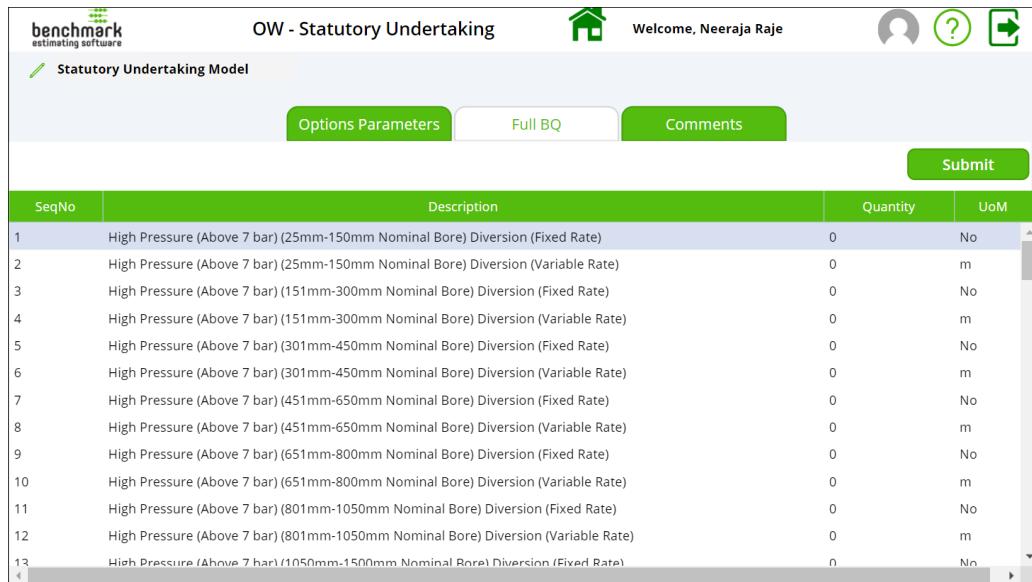
Statutory Undertaking Model

Options Parameters Full BQ Comments Save As Draft

Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. In the Full BQ tab, review all the details of the Bill of Quantities (BQ).



| SeqNo | Description | Quantity | UoM |
|-------|---|----------|-----|
| 1 | High Pressure (Above 7 bar) (25mm-150mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |
| 2 | High Pressure (Above 7 bar) (25mm-150mm Nominal Bore) Diversion (Variable Rate) | 0 | m |
| 3 | High Pressure (Above 7 bar) (151mm-300mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |
| 4 | High Pressure (Above 7 bar) (151mm-300mm Nominal Bore) Diversion (Variable Rate) | 0 | m |
| 5 | High Pressure (Above 7 bar) (301mm-450mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |
| 6 | High Pressure (Above 7 bar) (301mm-450mm Nominal Bore) Diversion (Variable Rate) | 0 | m |
| 7 | High Pressure (Above 7 bar) (451mm-650mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |
| 8 | High Pressure (Above 7 bar) (451mm-650mm Nominal Bore) Diversion (Variable Rate) | 0 | m |
| 9 | High Pressure (Above 7 bar) (651mm-800mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |
| 10 | High Pressure (Above 7 bar) (651mm-800mm Nominal Bore) Diversion (Variable Rate) | 0 | m |
| 11 | High Pressure (Above 7 bar) (801mm-1050mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |
| 12 | High Pressure (Above 7 bar) (801mm-1050mm Nominal Bore) Diversion (Variable Rate) | 0 | m |
| 13 | High Pressure (Above 7 bar) (1050mm-1500mm Nominal Bore) Diversion (Fixed Rate) | 0 | No |

10. Select Submit.

The following confirmation prompt displays:

"No changes to the model are permissible once you submit the item list to Benchmark."

Please press Confirm to continue."

11. Select Confirm.

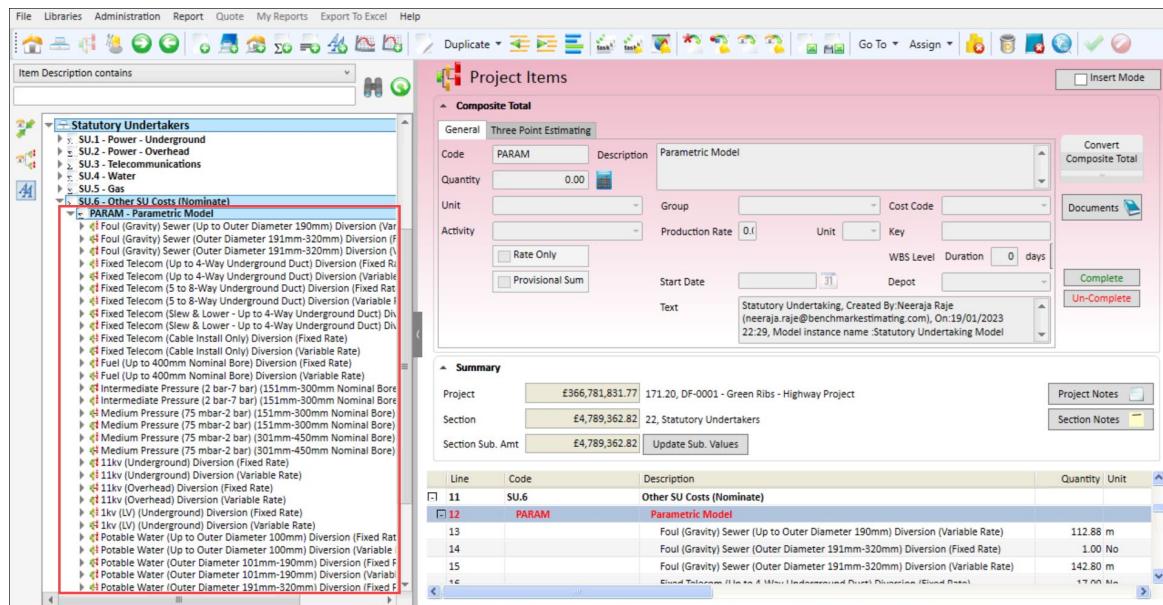
Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.

2. Select the relevant Section > Composite Total.

All the BQ line items are created as Project Items.

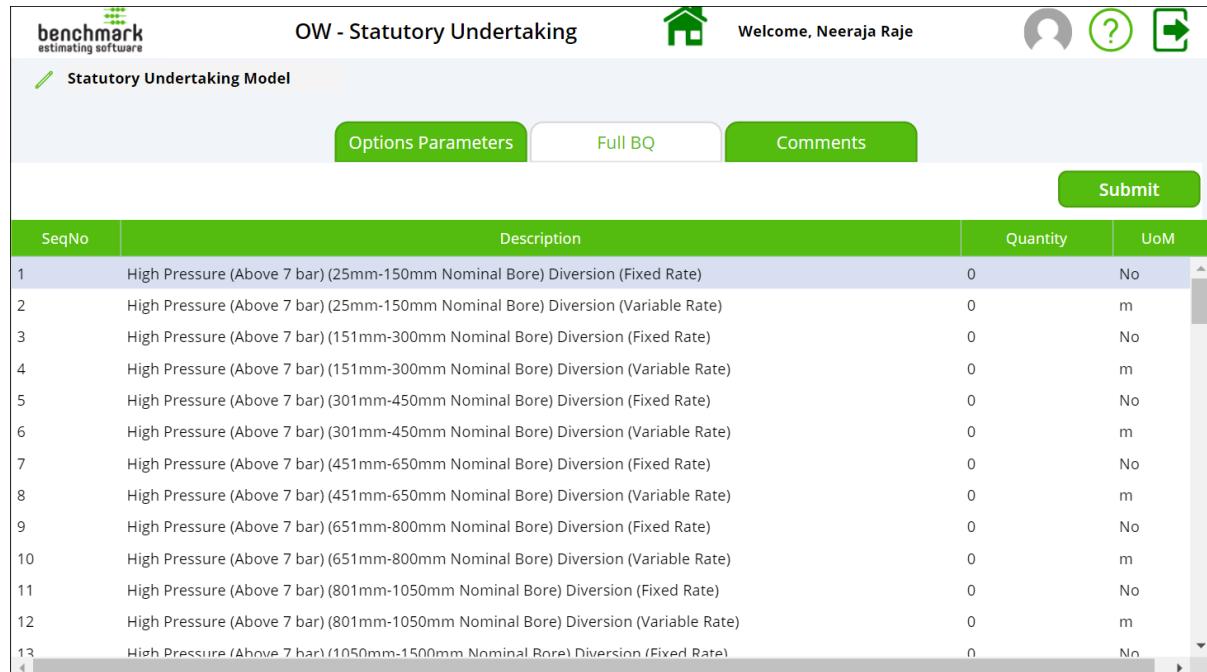


| Line | Code | Description | Quantity | Unit |
|------|-------|--|----------|------|
| 11 | SU.6 | Other SU Costs (Nominate) | | |
| 12 | PARAM | Parametric Model | | |
| 13 | | Foul (Gravity) Sewer (Up to Outer Diameter 190mm) Diversions (Variable Rate) | 112.88 | m |
| 14 | | Foul (Gravity) Sewer (Outer Diameter 191mm-320mm) Diversions (Fixed Rate) | 1.00 | No |
| 15 | | Foul (Gravity) Sewer (Outer Diameter 191mm-320mm) Diversions (Variable Rate) | 142.80 | m |

You can also view these items in the app using the Full BQ tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



| SeqNo | Description | Quantity | UoM |
|-------|--|----------|-----|
| 1 | High Pressure (Above 7 bar) (25mm-150mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |
| 2 | High Pressure (Above 7 bar) (25mm-150mm Nominal Bore) Diversions (Variable Rate) | 0 | m |
| 3 | High Pressure (Above 7 bar) (151mm-300mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |
| 4 | High Pressure (Above 7 bar) (151mm-300mm Nominal Bore) Diversions (Variable Rate) | 0 | m |
| 5 | High Pressure (Above 7 bar) (301mm-450mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |
| 6 | High Pressure (Above 7 bar) (301mm-450mm Nominal Bore) Diversions (Variable Rate) | 0 | m |
| 7 | High Pressure (Above 7 bar) (451mm-650mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |
| 8 | High Pressure (Above 7 bar) (451mm-650mm Nominal Bore) Diversions (Variable Rate) | 0 | m |
| 9 | High Pressure (Above 7 bar) (651mm-800mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |
| 10 | High Pressure (Above 7 bar) (651mm-800mm Nominal Bore) Diversions (Variable Rate) | 0 | m |
| 11 | High Pressure (Above 7 bar) (801mm-1050mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |
| 12 | High Pressure (Above 7 bar) (801mm-1050mm Nominal Bore) Diversions (Variable Rate) | 1.00 | No |
| 13 | High Pressure (Above 7 bar) (1050mm-1500mm Nominal Bore) Diversions (Fixed Rate) | 0 | No |

Other Functions

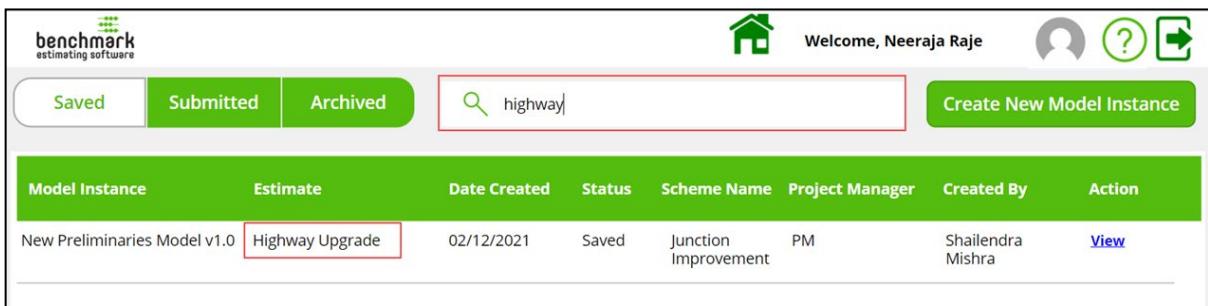
Searching Model Instances

You can search the model instances by the following search criteria:

- Model name
- Estimate name
- Creation date
- Scheme name
- Project manager
- User who created the model instance

In the example below, we will search the model instances by Estimate name:

1. [Open](#) the Parametric Models app.
2. Select the relevant model type.
For example, **Indirect Works**.
3. In the Search bar, enter the search term.
For example, Highway.
4. This displays the list of model instances containing the search term.



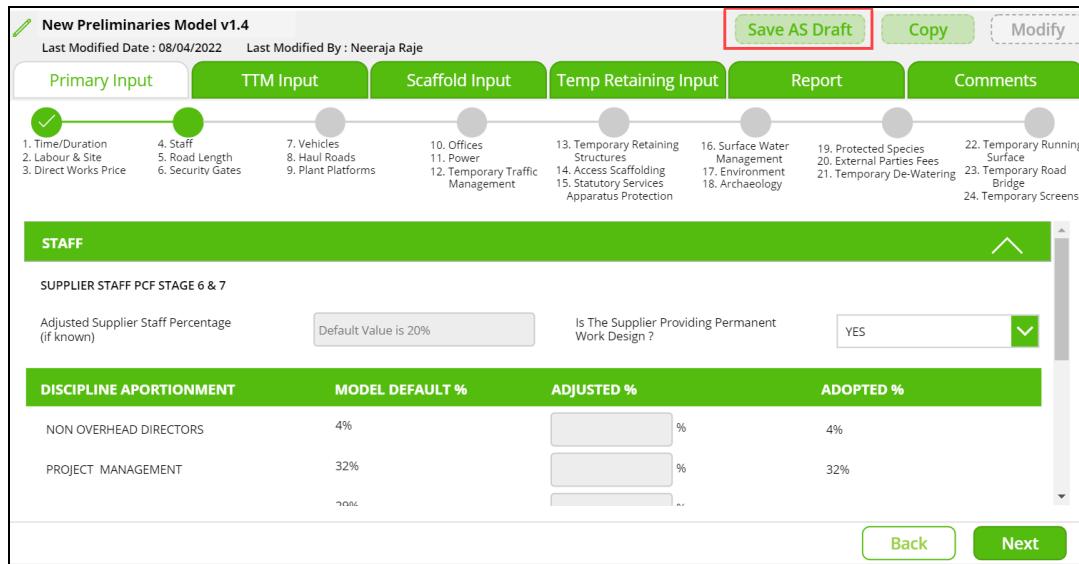
The screenshot shows the Parametric Models application interface. At the top, there is a navigation bar with the benchmark logo, a home icon, a user profile 'Welcome, Neeraja Raje', and a help icon. Below the navigation bar, there are three buttons: 'Saved', 'Submitted', and 'Archived'. A search bar contains the text 'highway'. To the right of the search bar is a green button labeled 'Create New Model Instance'. Below the search bar, a table lists model instances. The columns are: Model Instance, Estimate, Date Created, Status, Scheme Name, Project Manager, Created By, and Action. One row is visible, showing 'New Preliminaries Model v1.0' as the Model Instance, 'Highway Upgrade' as the Estimate, '02/12/2021' as the Date Created, 'Saved' as the Status, 'Junction Improvement' as the Scheme Name, 'PM' as the Project Manager, 'Shailendra Mishra' as the Created By, and a 'View' link under Action.

Clear the search term to view the unfiltered list of model instances again.

Saving Model Instances

When working on a model instance, you can choose to save the details and submit it later.

- Select **Save As Draft** to save the entered details.



The screenshot shows the 'New Preliminaries Model v1.4' interface. At the top right, there are buttons for 'Save AS Draft' (highlighted with a red box), 'Copy', and 'Modify'. Below these are tabs for 'Primary Input', 'TTM Input', 'Scaffold Input', 'Temp Retaining Input', 'Report', and 'Comments'. A horizontal timeline below the tabs lists items 1 through 24. The 'STAFF' section is expanded, showing fields for 'Adjusted Supplier Staff Percentage (if known)' (Default Value is 20%) and 'Is The Supplier Providing Permanent Work Design?' (YES selected). The 'DISCIPLINE APORTIONMENT' section shows percentages for Non Overhead Directors (4%) and Project Management (32%). The 'MODEL DEFAULT %' column shows 4% for Non Overhead Directors and 32% for Project Management. The 'ADJUSTED %' and 'ADOPTED %' columns show corresponding values. At the bottom are 'Back' and 'Next' buttons.

- These drafts display with a status of **Saved** in the list of model instances.
- Select **View** to open the draft.
- Select **Modify** to continue working on the model instance.

You can view but not modify the model instances created by other users.



Errors

A red circle denotes errors in the section. Go to the relevant section and rectify the error.



Adding Comments

You can add comments to a model instance, when creating it or editing a saved draft. You can also add comments for the model instances created by other users.

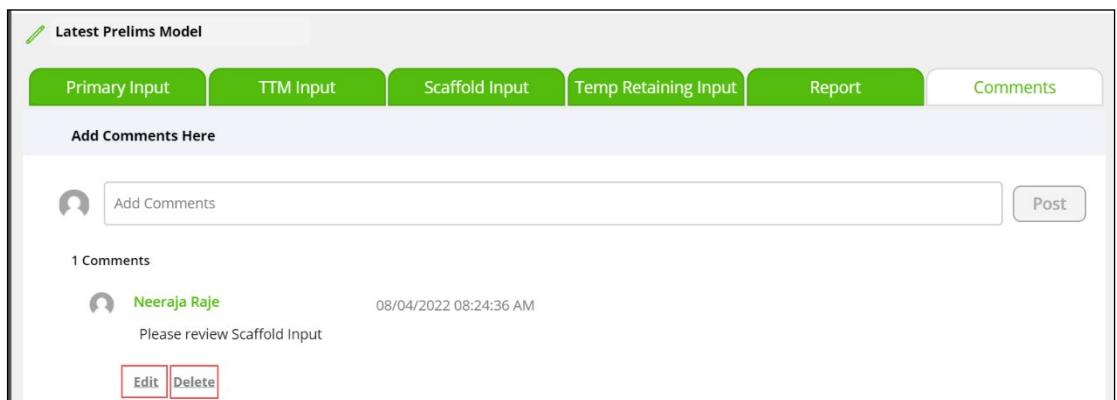
To add comments:

1. Select the Comment tab for the relevant model instance.



The screenshot shows the 'Comments' tab selected in the top navigation bar. Below the navigation bar, there is a section titled 'Add Comments Here'. A user profile icon and the text 'Please review Scaffold Input' are visible in the comment input field. A green 'Post' button is located to the right of the input field. At the bottom of the screen, there is a message indicating '0 Comments'.

2. Enter the comment and select Post.
3. Once posted, the comment will be listed in the tab.
4. Select:
 - a. Edit to modify and save your comment.
 - b. Delete to delete your comment.



The screenshot shows the 'Comments' tab selected. A single comment is listed under the heading '1 Comments'. The comment is from a user named 'Neeraja Raje' posted on '08/04/2022 08:24:36 AM' with the text 'Please review Scaffold Input'. Below the comment, there are two red-bordered buttons labeled 'Edit' and 'Delete'.

Archiving Model Instances

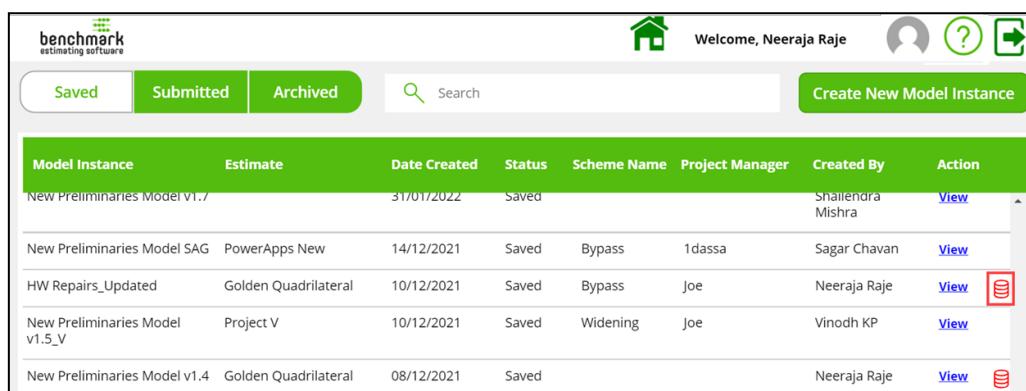
If you no longer need a model instance, you can archive it. This can be particularly useful when you need to manage a large list of model instances in the application.

You can only archive your saved model instances. You cannot archive:

- Your submitted model instances.
- The model instances created by other users.

To archive:

1. Go to the **Saved** tab.
2. Select the **Archive Model** icon for the relevant model instance.



| Model Instance | Estimate | Date Created | Status | Scheme Name | Project Manager | Created By | Action |
|--------------------------------|----------------------|--------------|--------|-------------|-----------------|-------------------|--|
| New Preliminaries Model v1.7 | PowerApps New | 31/01/2022 | Saved | | | Shailendra Mishra | View |
| New Preliminaries Model SAG | Golden Quadrilateral | 14/12/2021 | Saved | Bypass | 1dassa | Sagar Chavan | View |
| HW Repairs_Updated | Golden Quadrilateral | 10/12/2021 | Saved | Bypass | joe | Neeraja Raje | View  |
| New Preliminaries Model v1.5_V | Project V | 10/12/2021 | Saved | Widening | joe | Vinodh KP | View |
| New Preliminaries Model v1.4 | Golden Quadrilateral | 08/12/2021 | Saved | | | Neeraja Raje | View  |

The following confirmation prompt displays:

“Are you sure you want to archive <model instance name>?”

3. Add a comment within the text area in the prompt, if required.
4. Select Yes.

The model instance will be removed from the **Saved** tab, and added to the **Archived** tab.

You can view or [copy](#) these archived model instances, but not submit them.

Copying Model Instances

This functionality facilitates:

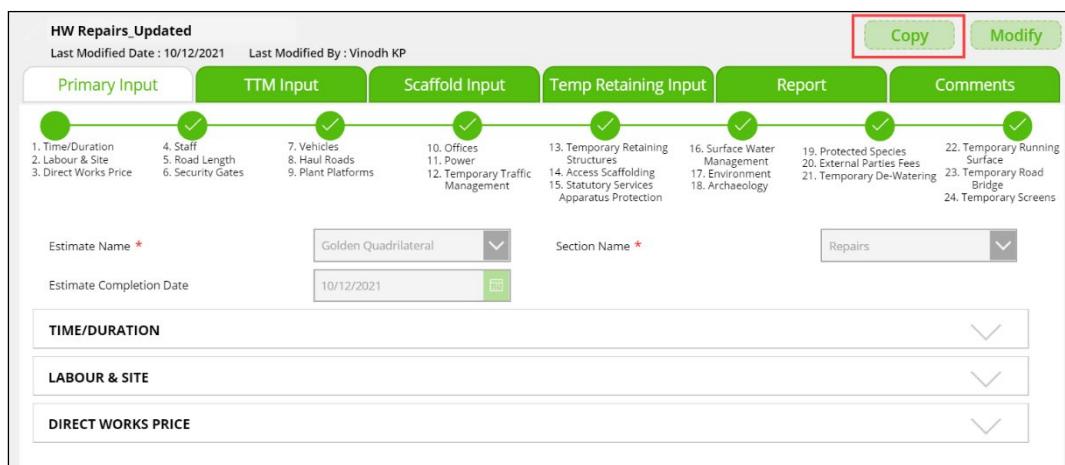
- Easy reuse of the same model instance between different estimates.
- Creation of multiple versions of the same model instance within the same estimate. Each version may be different from the other. Users can then compare these versions and submit the relevant model instance.



You can only submit one version per model instance. The others can be archived.

To copy a model instance:

1. From the list of saved/submitted/archived model instances, select **View** to open the model instance you want to copy.
2. Select **Copy**.



The screenshot shows the 'HW Repairs_Updated' model instance. At the top right, there are 'Copy' and 'Modify' buttons. The 'Copy' button is highlighted with a red box. Below the buttons, there are six tabs: Primary Input, TTM Input, Scaffold Input, Temp Retaining Input, Report, and Comments. Under each tab, there is a list of items with green checkmarks. The 'Report' tab is currently selected. At the bottom, there are fields for Estimate Name (Golden Quadrilateral), Section Name (Repairs), Estimate Completion Date (10/12/2021), and three expandable sections: TIME/DURATION, LABOUR & SITE, and DIRECT WORKS PRICE.

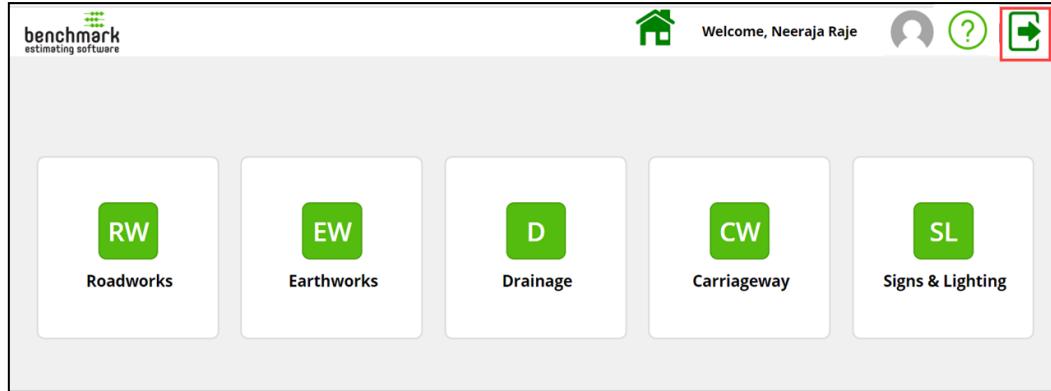
| Primary Input | TTM Input | Scaffold Input | Temp Retaining Input | Report | Comments |
|-----------------------|-------------------|--------------------|----------------------------------|---|-------------------------------|
| 1. Time/Duration | 4. Staff | 7. Vehicles | 10. Offices | 13. Temporary Retaining Structures | 16. Surface Water Management |
| 2. Labour & Site | 5. Road Length | 8. Haul Roads | 11. Power | 14. Access Scaffolding | 19. Protected Species |
| 3. Direct Works Price | 6. Security Gates | 9. Plant Platforms | 12. Temporary Traffic Management | 15. Statutory Services Apparatus Protection | 20. External Parties Fees |
| | | | | 17. Environment | 21. Temporary De-Watering |
| | | | | 18. Archaeology | 22. Temporary Running Surface |
| | | | | | 23. Temporary Road Bridge |
| | | | | | 24. Temporary Screens |

3. This creates a copy of the selected model instance.
4. Select the new Estimate Name and Section Name.
5. Enter/select details for the new model instance using standard functionality.

Logging Out

To log out of this application:

1. From any page within the application, select the Logout icon.



The following confirmation prompt displays:

“Are you sure you want to Logout?”

2. Select Yes.

Appendix

The sections below map the input screens in the app to the relevant worksheets.

Indirect Works

Forms in the app user interface map to their corresponding Parametric Model worksheets (MP Model v51.5).

Primary Input

Primary Input

TEMPORARY RUNNING SURFACE

- Is there a requirement for Temporary Running Surface to the Highway? YES
- Do you know the dimensions of the Temporary Road? NO
- You may adjust the defaults within preset limits Default Value is 3.50%

TEMPORARY ROAD BRIDGE

- Is there a requirement for Temporary Road Bridges? YES
- Choose the dimensions that best suits the application 10m x 6m
- Enter the number of Temporary Bridges 1
- Enter the hire Period 2

INDIRECT PRICE CALCULATOR / NEW PRELIMS MODEL

This calculator is used for schemes over £10,000,000.

Project Information: Scheme Selection from the Project or Scheme Selection from the Project

TIME / DURATION: Enter the duration of the scheme in weeks. Default value is 10 weeks.

LABOUR & SITE: Enter the labour and site costs.

Costs: Enter the cost of the scheme.

Outputs: Project management fee, Client requirement fee.

TTM Input

New Preliminaries Model v1.0

Project Information

- Project Type: Junction Improvement
- Primary Road Length of the Works (km): 0
- Road Type: Permanent Speed Limit
- Secondary Road Length of the Works (km): 0
- Road Type: Permanent Speed Limit
- Number of Junctions (no):

Traffic, Safety and Management

- Import problems: Number: 0, Days per week: 0, % of project duration: 0
- Adapted dimensions: Number: 0, Days per week: 0, % of project duration: 0

TEMPORARY TRAFFIC MANAGEMENT INPUT SHEET

Project Information: Project ID: 00000000000000000000000000000000, Smart Address: 00000000000000000000000000000000, Road base: Permanent speed limit, Project Duration: 10 weeks, Direct Cost of Construction: £100,000.00, Direct Labour Cost: £100,000.00.

Traffic, Safety and Management: Traffic Safety and Management Reality Check: The reality check will highlight potential issues and risks. Leave blank if no document or the default values are required. New file - Drivers.

| | | | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------------|
| item 11 | item 12 | item 13 | item 14 | item 15 | item 16 | item 17 | item 18 | item 19 | item 20 | item 21 | item summary |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------------|

Scaffold Input

New Preliminaries Model v1.0

OVERBRIDGE ABUTMENTS

| Access Scaffold to an Overbridge Abutment carrying 4 lanes x 2 carriageways plus hardstrips and verg | Adjusted Allowance: 2, 39, 5, 7, 2, 26 |
|--|--|
| Access Scaffold to an Overbridge Abutment carrying 3 lanes x 2 carriageways plus hardstrips and verg | Adjusted Allowance: 2, 32, 5, 7, 1, 26 |
| Access Scaffold to an Overbridge Abutment carrying 2 lanes x 2 carriageways plus hardstrips and verg | Adjusted Allowance: 2, 30, 5, 7, 1, 26 |

SCAFFOLDING INPUT

1. Access Scaffold to an Overbridge Abutment carrying 4 lanes x 2 carriageways plus hardstrips and verg: Default Allowance: 2, 39, 5, 7, 2, 26, Total Price: £ 20,402.24 x 20,200.00 = 51,804.48

2. Access Scaffold to an Overbridge Abutment carrying 3 lanes x 2 carriageways plus hardstrips and verg: Default Allowance: 2, 32, 5, 7, 1, 26, Total Price: £ 20,075.58 x 20,000.00 = 50,151.16

3. Access Scaffold to an Overbridge Abutment carrying 2 lanes x 2 carriageways plus hardstrips and verg: Default Allowance: 2, 30, 5, 7, 1, 26, Total Price: £ 20,075.58 x 20,000.00 = 50,151.16

4. Access Scaffold to an Underbridge Abutment carrying 3 lanes x 2 carriageways plus hardstrips and verg: Default Allowance: 2, 32, 5, 7, 1, 26, Total Price: £ 20,075.58 x 20,000.00 = 50,151.16

5. Access Scaffold to an Underbridge Abutment carrying 2 lanes x 2 carriageways plus hardstrips and verg: Default Allowance: 2, 30, 5, 7, 1, 26, Total Price: £ 20,075.58 x 20,000.00 = 50,151.16

... scaffold input | passed page | data sheet | piling summary | dropbooks | input power | grid calculator 1 | generator calculator 1 | water & sewage | business r ...

Temp Retaining Input



| | Length of Wall | Calculated Pile Length | Ground Conditions | Backfill / Removal Percentage |
|------------------|----------------|------------------------|-------------------|-------------------------------|
| Sheet Piled Wall | 100 | 100 | Unknown | 50% |
| King Head Wall | 100 | 100 | Unknown | 50% |
| Gabion Walls | 100 | 100 | Unknown | 50% |
| Cofferdam | 100 | 100 | Unknown | 50% |



| | Length of Wall | Calculated Pile Length | Ground Conditions | Backfill / Removal Percentage |
|------------------|----------------|------------------------|-------------------|-------------------------------|
| Sheet Piled Wall | 100 | 100 | Unknown | 50% |
| King Head Wall | 100 | 100 | Unknown | 50% |
| Gabion Walls | 100 | 100 | Unknown | 50% |
| Cofferdam | 100 | 100 | Unknown | 50% |

Regional Investment Programme (RIP)

Roadworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Roadworks General – RIP – V2.0).

Options Parameters



| Existing Network | Length (km) | Standard | Realigned Sections (km) | Grade Separated Interchanges (No.) | At Grade Junctions (No.) | Side Roads (No.) |
|------------------|-------------|----------|-------------------------|------------------------------------|--------------------------|------------------|
| Rural: | Primary | 100 | 100 | 100 | 100 | 100 |
| | Secondary | 100 | 100 | 100 | 100 | 100 |
| Urban: | Primary | 100 | 100 | 100 | 100 | 100 |
| | Secondary | 100 | 100 | 100 | 100 | 100 |

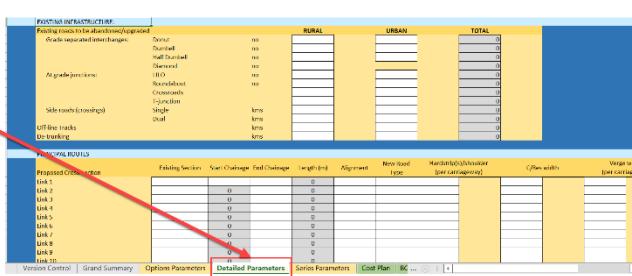


| Scheme Credentials | Scheme Name | Project Manager | Cost Engineer | PC Stage of Scheme | Delivery Type | Date of Initiation | Scheme Type | Site Location |
|--------------------|-------------|-----------------|---------------|--------------------|---------------|--------------------|-------------|---------------|
| Existing Network | Rural | Primary | Secondary | Urban | Urban | Urban | Urban | Urban |
| Geography | RURAL | Primary | Secondary | URBAN | Primary | Secondary | URBAN | URBAN |

Detailed Parameters



| Existing Infrastructure | RURAL | URBAN | TOTAL |
|-------------------------|-------|-------|-------|
| Donut | 100 | 100 | 100 |
| Dumbell | 100 | 100 | 100 |
| Half Dumbell | 100 | 100 | 100 |
| Diamond | 100 | 100 | 100 |



| EXISTING INFRASTRUCTURE | Existing roads to be abandoned/upgraded | Grade-separated Interchanges | RURAL | URBAN | TOTAL |
|----------------------------|---|------------------------------|-------|-------|-------|
| All grade junctions | None | None | None | None | None |
| Side roads (existing) | None | None | None | None | None |
| Off-line tracks (existing) | None | None | None | None | None |

Series Parameters

New Workroads Model

| Options Parameters | Detailed Parameters | Series Parameters | Full BQ | Comments | | | | | | |
|--|---|--|--|----------|--------|--------|--------|--------|--------|---------|
| 1 Proportion of heavily wooded areas requiring clearance 2 Takeover costs per hectare | 3 The over clearing factor 4 The cost of removing trees and shrubs per hectare | 5 Scale-based pricing 6 Tree species 7 Total price ceiling 8 The number of trees to be removed 9 Plot size and boundary 10 Landowner names 11 Administrative details 12 Cost of removing trees and shrubs per hectare | 13 Administrative details 14 Radio Policy | | | | | | | |
| Proportion of heavily wooded areas requiring clearance | | | | | | | | | | |
| Principal route | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
| Location | | | | | | | | | | |
| Start Change | | | | | | | | | | |
| End Change | | | | | | | | | | |
| Extent of heavily wooded areas | <input checked="" type="checkbox"/> | | | | | | | | | |
| | <input checked="" type="checkbox"/> | | | | | | | | | |
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Earthworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Earthworks General – RIP – V2.0).

Options Parameters

Earthworks Model

Options Parameters **Detailed Parameters** **EWKS Parameters** **Full BQ** **Comments** **Save As Draft**

Site Information

| Existing Network | Length (km) | Standard | Elevated Sections (km) | Grade Separated Interchanges (No.) | At Grade Junctions (No.) | Side Roads (No.) |
|------------------|-------------|----------------------|-------------------------------------|------------------------------------|--------------------------|----------------------|
| Urban | Primary | <input type="text"/> | <input checked="" type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Secondary | <input type="text"/> | <input checked="" type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Urban | Primary | <input type="text"/> | <input checked="" type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Secondary | <input type="text"/> | <input checked="" type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Schematic Requirements

| Primary | Secondary | Primary | Secondary | Primary | Secondary | Primary | Secondary |
|----------------------|----------------------|------------------------|------------------------------------|--------------------------|----------------------|----------------------|----------------------|
| Length (km) | Standard | Elevated Sections (km) | Grade Separated Interchanges (No.) | At Grade Junctions (No.) | Side Roads (No.) | Length (km) | Standard |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Sheet 1 | Subcontract Library | Options Parameters | Detailed Parameters | EWKS Parameters | Summary Rule Schedule | Back | Next

Detailed Parameters

EWKS Parameters

New Earthworks Model

Save As Draft

Options Parameters Detailed Parameters **EWKS Parameters** Full BQ Comments

| | | | | | |
|---------------|-------------------------------|--------------------------|----------------|-------------|----------------------------|
| Topsoil Strip | Allowable acceptable material | Allowable route material | Allowing roads | Start layer | Interval of starting roads |
|---------------|-------------------------------|--------------------------|----------------|-------------|----------------------------|

Topsoil Strip

| Principal Route | Link 1 | Link 2 | Link 3 | Link 4 |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Intersections | | | | |
| Start Change | | | | |
| End Change | | | | |
| Predominant land use | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Average depth of topsoil strip (mm) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

EWKS Parameters

| Principal Route | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Intersections | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Start Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| End Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Predominant land use | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average depth of topsoil strip (mm) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Principal Route | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Intersections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Start Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| End Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Predominant land use | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average depth of topsoil strip (mm) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Principal Route | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Intersections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Start Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| End Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Predominant land use | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average depth of topsoil strip (mm) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Soil Roads

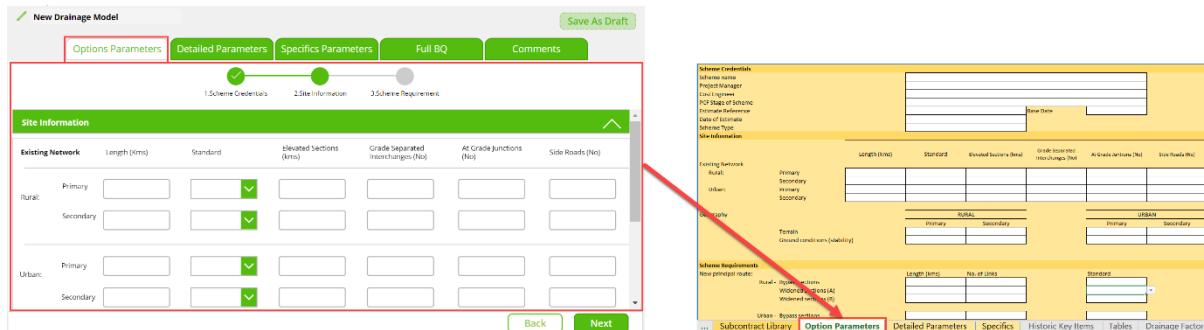
| Principal Route | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Intersections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Start Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| End Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Predominant land use | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average depth of topsoil strip (mm) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Subcontractor library Options Parameters Detailed Parameters **EWKS Parameters** **Dynamic Job Schedules** **Definitions** **...** **Help**

Drainage

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Drainage – RIP – V2.0).

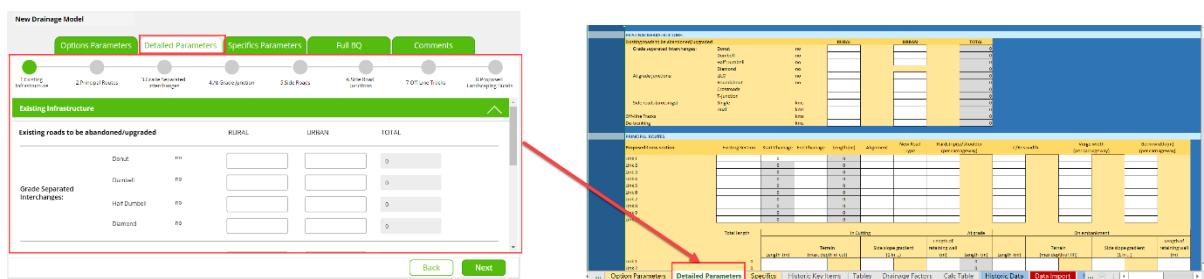
Options Parameters



The screenshot shows the 'New Drainage Model' application interface. The top navigation bar includes tabs for 'Save As Draft', 'Options Parameters' (highlighted in green), 'Detailed Parameters', 'Specifics Parameters', 'Full BQ', and 'Comments'. Below the tabs is a progress bar with three steps: 1. Scheme Details, 2. Site Information, and 3. Scheme Requirements. The main area is titled 'Site Information' and contains sections for 'Existing Network' (Rural and Urban) and 'Grade Separated Interchanges'. At the bottom are 'Back' and 'Next' buttons.

The right side shows the corresponding DWCM Parametric Model worksheet for 'Option Parameters'. It includes sections for 'Scheme Details' (Scheme name, Project Manager, Lead Engineer, PCU Stage of Scheme, Environmental Statement, Date of Estimate, Scheme Type, Site Information), 'Existing Network' (Urban and Rural categories), 'Scheme Requirements' (New principal route, Grade Separated Interchanges, Watercourse crossings), and 'Drainage Factors' (Urban, Bypass routes). The 'Option Parameters' tab is highlighted in red.

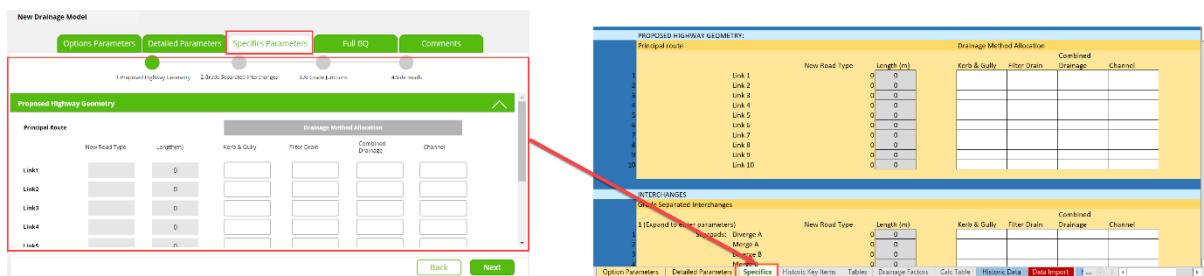
Detailed Parameters



The screenshot shows the 'New Drainage Model' application interface. The top navigation bar includes tabs for 'Save As Draft', 'Options Parameters', 'Detailed Parameters' (highlighted in green), 'Specifics Parameters', 'Full BQ', and 'Comments'. Below the tabs is a progress bar with seven steps: 1. Existing Infrastructure, 2. Principal Route, 3. Grade Separated Interchanges, 4. Bypass Junction, 5. Side Roads, 6. Other Roads, and 7. Off-Road Landscaping Areas. The main area is titled 'Existing Infrastructure' and contains sections for 'Existing roads to be abandoned/upgraded' (RURAL, URBAN, TOTAL) and 'Grade Separated Interchanges' (Diamond, Hot Diamond, Half Diamond). At the bottom are 'Back' and 'Next' buttons.

The right side shows the corresponding DWCM Parametric Model worksheet for 'Detailed Parameters'. It includes sections for 'Existing Roads to be abandoned/upgraded' (Rural and Urban categories), 'Grade Separated Interchanges' (Diamond, Hot Diamond, Half Diamond), 'Proposed Roads', 'Proposed Interchanges', 'Proposed Roads', 'Proposed Interchanges', 'Proposed Roads', 'Proposed Interchanges', and 'Proposed Roads'. The 'Detailed Parameters' tab is highlighted in red.

Specifics Parameters



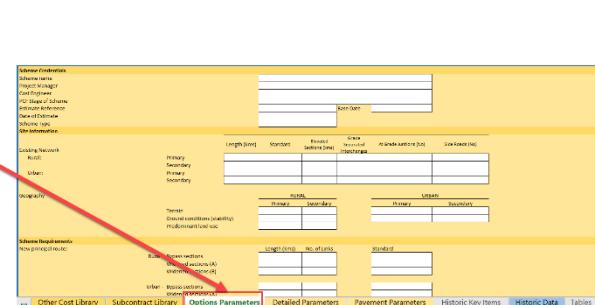
The screenshot shows the 'New Drainage Model' application interface. The top navigation bar includes tabs for 'Save As Draft', 'Options Parameters', 'Detailed Parameters', 'Specifics Parameters' (highlighted in green), 'Full BQ', and 'Comments'. Below the tabs is a progress bar with four steps: 1. Proposed Highway Geometry, 2. Grade Separated Interchanges, 3. Drainage Methods, and 4. Side Roads. The main area is titled 'Proposed Highway Geometry' and contains sections for 'Principal Route' (New Road Type, Length, Kerb & Gully, Filter Drain, Combined Drainage, Channel) and 'Interchanges' (Link 1 to Link 10). At the bottom are 'Back' and 'Next' buttons.

The right side shows the corresponding DWCM Parametric Model worksheet for 'Specifics'. It includes sections for 'Proposed Highway Geometry' (Principal route, Drainage Method Allocation), 'Interchanges' (Grade Separated Interchanges), and 'Drainage Method Allocation' (Kerb & Gully, Filter Drain, Combined Drainage, Channel). The 'Specifics' tab is highlighted in red.

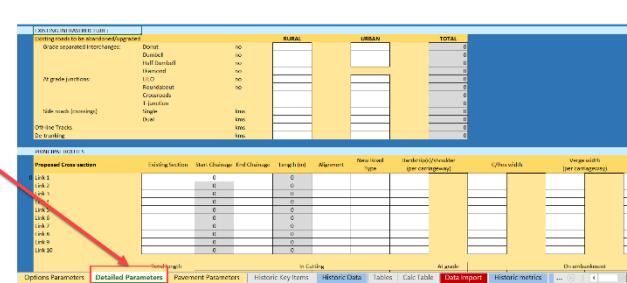
Carriageway

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Carriageway – RIP – V2.1).

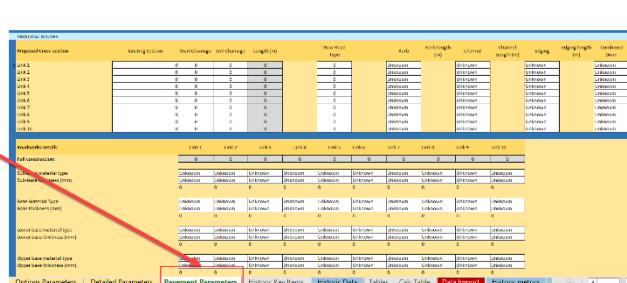
Options Parameters

Detailed Parameters

Pavement Parameters

Signs & Lighting

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Signs Lighting – RIP – V2.1).

Options Parameters

Detailed Parameters

New Signs & Lighting Model

| | | | | | |
|--------------------|---------------------|------------------|-------------------------|---------|----------|
| Options Parameters | Detailed Parameters | Signs Parameters | Road Marking Parameters | Full SQ | Comments |
|--------------------|---------------------|------------------|-------------------------|---------|----------|

Existing Infrastructure

| | | | | |
|---|------|-------|-------|-------|
| Existing roads to be abandoned/upgraded | | RURAL | URBAN | TOTAL |
| Grade Separated Interchanges: | None | 0 | 0 | 0 |
| Dumbell | None | 0 | 0 | 0 |
| Half-Dumbell | None | 0 | 0 | 0 |
| Diamond | None | 0 | 0 | 0 |

EXISTING INFRASTRUCTURE:

| | | | | |
|---|--------|-------|-------|-------|
| Existing roads to be abandoned/upgraded | | RURAL | URBAN | TOTAL |
| Grade-separated interchanges: | None | 0 | 0 | 0 |
| Half-Dumbell | None | 0 | 0 | 0 |
| Dumbell | None | 0 | 0 | 0 |
| LSD | None | 0 | 0 | 0 |
| Roundabout | None | 0 | 0 | 0 |
| Crossroads | None | 0 | 0 | 0 |
| T-junction | Single | kms | kms | 0 |
| Side roads (crossings) | None | 0 | 0 | 0 |
| Off-line Tracks | None | kms | kms | 0 |
| Winding | None | 0 | 0 | 0 |

PRINCIPAL ROADS:

| Principle Cross section | Existing Section | Start Challenge | End Challenge | Length (m) | Alignment | New Road Type | Hardship/scholarships (per category) | C/Bus width | Vessel width (per category) |
|-------------------------|------------------|-----------------|---------------|------------|-----------|---------------|--------------------------------------|-------------|-----------------------------|
| I-4L1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I-4L10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Back
Next

Signs Parameters

| New Signs & Lighting Model | | Road Marking Parameters | | | | | Save As Draft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------|-------------------------|------------|------------------|---------------|------------|---------------|------------|------------|----------------------|------------------|--------------|------------|-------------|---------------|------------|------------|------------|------------|--------|---|----------|---|---|-----------|-----------|-----------|-----------|-----------|--------|--|--|--|---|-----------|-----------|-----------|-----------|-----------|--------|--|--|--|---|-----------|-----------|-----------|-----------|-----------|--------|--|--|--|---|-----------|-----------|-----------|-----------|-----------|--------|--|--|--|---|-----------|-----------|-----------|-----------|-----------|
| Options Parameters | | Detailed Parameters | | Signs Parameters | | Full BD | | Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Principal Route</p> <table border="1"> <thead> <tr> <th>Proposed CRD Section</th> <th>Existing Section</th> <th>Start Change</th> <th>End Change</th> <th>Length (ft)</th> <th>Non-Road Type</th> <th>Unit Inv 1</th> <th>Unit Inv 2</th> <th>Unit Inv 3</th> <th>Unit Inv 4</th> </tr> </thead> <tbody> <tr> <td>Link 1</td> <td></td> <td></td> <td></td> <td>0</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> </tr> <tr> <td>Link 2</td> <td></td> <td></td> <td></td> <td>0</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> </tr> <tr> <td>Link 3</td> <td></td> <td></td> <td></td> <td>0</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> </tr> <tr> <td>Link 4</td> <td></td> <td></td> <td></td> <td>0</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> </tr> <tr> <td>Link 5</td> <td></td> <td></td> <td></td> <td>0</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> <td>✓ Unknown</td> </tr> </tbody> </table> | | | | | | | | | | Proposed CRD Section | Existing Section | Start Change | End Change | Length (ft) | Non-Road Type | Unit Inv 1 | Unit Inv 2 | Unit Inv 3 | Unit Inv 4 | Link 1 | | | | 0 | ✓ Unknown | Link 2 | | | | 0 | ✓ Unknown | Link 3 | | | | 0 | ✓ Unknown | Link 4 | | | | 0 | ✓ Unknown | Link 5 | | | | 0 | ✓ Unknown |
| Proposed CRD Section | Existing Section | Start Change | End Change | Length (ft) | Non-Road Type | Unit Inv 1 | Unit Inv 2 | Unit Inv 3 | Unit Inv 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 1 | | | | 0 | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 2 | | | | 0 | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 3 | | | | 0 | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 4 | | | | 0 | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 5 | | | | 0 | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | ✓ Unknown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Intersections</p> <p>Proposed Interchanges:</p> <p>1) [Empty to enter parameters]</p> <table border="1"> <thead> <tr> <th>Ref/Name</th> <th>Required?</th> <th>Road Type</th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>Change A</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Change B</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Change C</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> | | | | | | | | | | Ref/Name | Required? | Road Type | Length | Change A | 0 | 0 | 0 | Change B | 0 | 0 | 0 | Change C | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ref/Name | Required? | Road Type | Length | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Change A | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Change B | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Change C | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

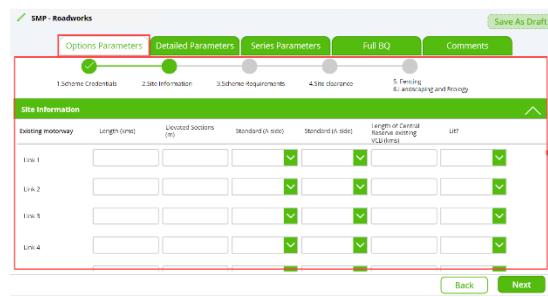
Road Marking Parameters

Smart Motorway Program (SMP)

Roadworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Roadworks General – SMP – V2.0).

Options Parameters



| | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Existing motorway | | | | | | | | | | |
| Length (m) | | | | | | | | | | |
| Divided Sections (no) | | | | | | | | | | |
| Standard (A side) | | | | | | | | | | |
| Standard (B side) | | | | | | | | | | |
| Length or Central Reserve (m) | | | | | | | | | | |
| UR | | | | | | | | | | |

| | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Interchanges | No | 1 | | | | | | | | |
| Grade separated | | | | | | | | | | |

Scheme Credentials

Project Manager: [Redacted]
Cost Engineer: [Redacted]
Type of Scheme: [Redacted]
Estimate Reference: [Redacted]
Date of Estimate: [Redacted]

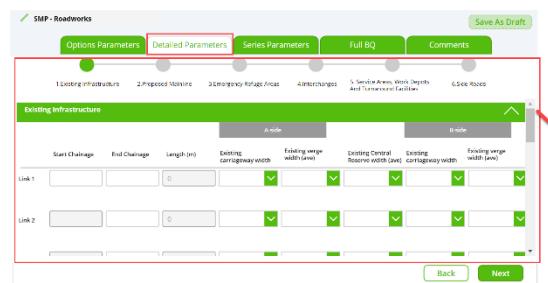
Site Information

Existing motorway: Link 1, Length: 10.00, Divided Sections: 1, Standard (A side): D3M (rural), Standard (B side): D3M (rural), Length of Central Reserve: 1.00, UR: No.

Interchanges: Grade separated: 1, Other: Service areas: 3, A-side: 1, B-side: 1.

Version Control: [Redacted], Grand Summary: [Redacted], Cost Plan: [Redacted], IQ: [Redacted], Base Rate Build ups: [Redacted].

Detailed Parameters



| | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Start Change | | | | | | | | | | |
| End Change | | | | | | | | | | |
| Length (m) | | | | | | | | | | |
| Existing carriageways | | | | | | | | | | |
| Existing verge width (m) | | | | | | | | | | |
| Existing Central Reserve (m) | | | | | | | | | | |
| Existing verge width (m) | | | | | | | | | | |

| | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Start Change | | | | | | | | | | |
| End Change | | | | | | | | | | |
| Length (m) | | | | | | | | | | |
| Existing carriageways | | | | | | | | | | |
| Existing verge width (m) | | | | | | | | | | |
| Existing Central Reserve (m) | | | | | | | | | | |
| Existing verge width (m) | | | | | | | | | | |

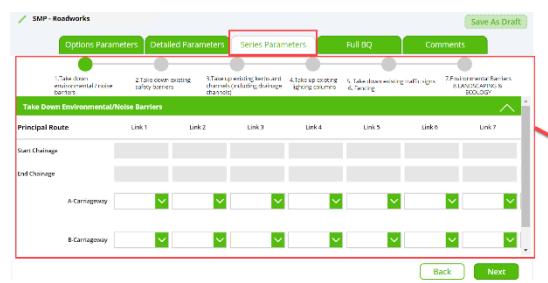
Existing Infrastructure

Existing Infrastructure: Link 1, Start Change: 0, End Change: 0, Length: 0, Existing carriageways: 0, Existing verge width (m): 0, Existing Central Reserve (m): 0, Existing verge width (m): 0.

DWCM Worksheet: Existing Infrastructure

| Link | Start Change | End Change | Length (m) | Existing carriageways | Existing verge width (m) | Existing Central Reserve (m) | Existing verge width (m) | Existing compaction width | Existing surface area (m²) | Existing compaction width | Existing surface area (m²) | Existing compaction width | Existing surface area (m²) |
|---------|--------------|------------|------------|-----------------------|--------------------------|------------------------------|--------------------------|---------------------------|----------------------------|---------------------------|----------------------------|---------------------------|----------------------------|
| Link 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Series Parameters



| | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Start Change | | | | | | | |
| End Change | | | | | | | |
| A-Carriageway | | | | | | | |
| B-Carriageway | | | | | | | |

| | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Start Change | | | | | | | | | | |
| End Change | | | | | | | | | | |
| A-Carriageway | | | | | | | | | | |
| B-Carriageway | | | | | | | | | | |

Series Parameters

Take Down Environmental/Noise Barriers: Link 1, Link 2, Link 3, Link 4, Link 5, Link 6, Link 7.

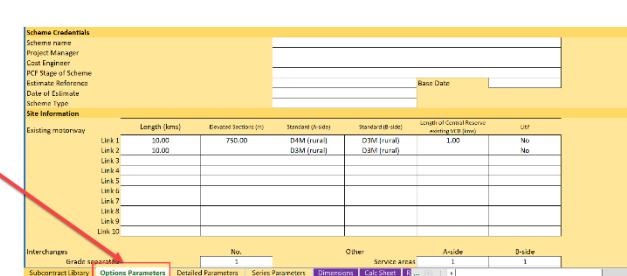
DWCM Worksheet: Take Down Environmental/Noise Barriers

| Link | Start Change | End Change | Length (m) | Take down noise barrier (m) |
|--------|--------------|------------|------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Link 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Link 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

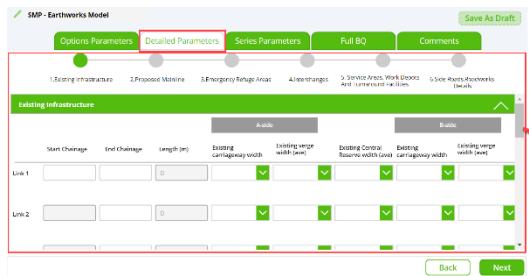
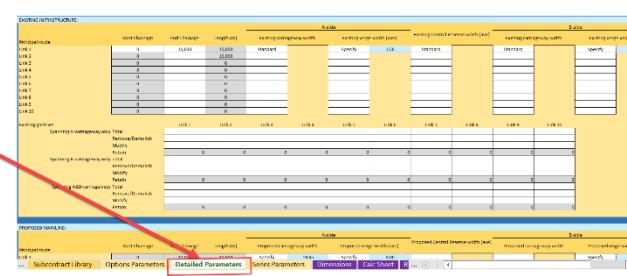
Earthworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Earthworks General – SMP – V2.0).

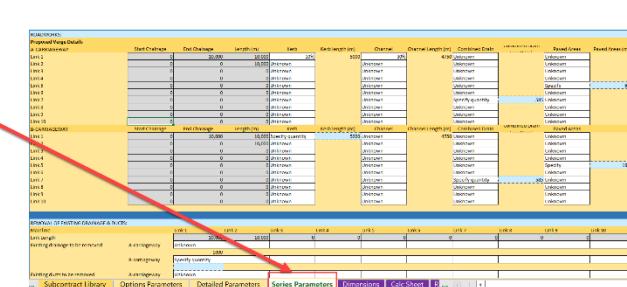
Options Parameters

Detailed Parameters

Series Parameters

Carriageway

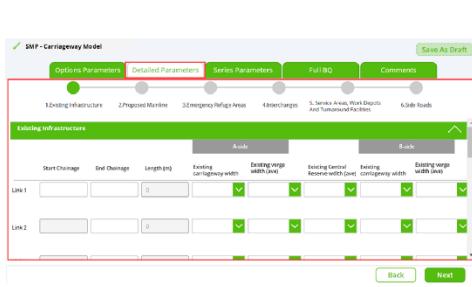
Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Carriageway – SMP – V2.1).

Options Parameters



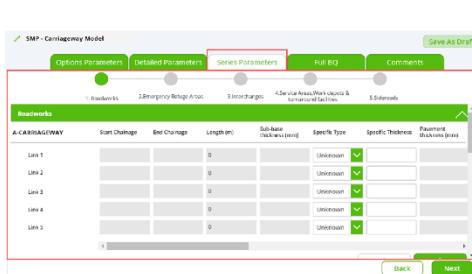
| Scheme Credentials | | | | | |
|---------------------|--------------------|----------------------|--------------------|---------------------|--|
| Scheme name | Project Manager | Cost Engineer | PK Stage of Scheme | Estimated Reference | Date of Estimate |
| Scheme Type | Basic Data | | | | |
| Busting motorway | Length (m) | Updated Sections (m) | Standard (A-side) | Standard (B-side) | Length of Central Reserve (C2) (m) |
| Link 1 | | | | | |
| Link 2 | | | | | |
| Link 3 | | | | | |
| Link 4 | | | | | |
| Link 5 | | | | | |
| Link 6 | | | | | |
| Link 7 | | | | | |
| Link 8 | | | | | |
| Link 9 | | | | | |
| Link 10 | | | | | |
| Interchanges | Grade separated | No. | Other | Service areas | A-side |
| Subcontract library | Options Parameters | Detailed Parameters | Series Parameters | Data Collection | Dimensions Calc Sheet Risk Data Import |

Detailed Parameters



| EXISTING INFRASTRUCTURE | | | | | | | |
|-------------------------|-------------------------------|---------------------|-------------------|--------------------------|--|--|------------------------------|
| Proposed route | | Start Change | End Change | Length (m) | Existing carriageway width | Existing reserve width | Existing central reservation |
| Link 1 | | | | | | | |
| Link 2 | | | | | | | |
| Link 3 | | | | | | | |
| Link 4 | | | | | | | |
| Link 5 | | | | | | | |
| Link 6 | | | | | | | |
| Link 7 | | | | | | | |
| Link 8 | | | | | | | |
| Link 9 | | | | | | | |
| Link 10 | | | | | | | |
| Proposed junctions | Start Change | End Change | Length (m) | Existing emergency width | Existing central reservation width (m) | Existing carriageway width | Incoming verges |
| Proposed junctions | Spanning in-carriageway only | Total | Remove/Demolish | Minorly | Proposed emergency width | Proposed central reservation width (m) | Proposed carriageway width |
| Proposed junctions | Spanning bridge/overpass only | Total | Remove/Demolish | Minorly | Proposed emergency width | Proposed central reservation width (m) | Proposed carriageway width |
| Proposed junctions | Proposed route | Start Change | End Change | Length (m) | Proposed emergency width | Proposed central reservation width (m) | Proposed carriageway width |
| Subcontract library | Options Parameters | Detailed Parameters | Series Parameters | Data Collection | Dimensions Calc Sheet Risk Data Import | | |

Series Parameters

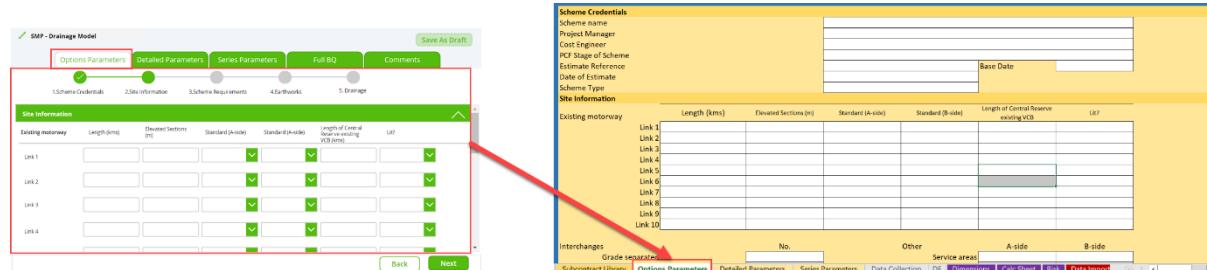


| PROPOSED INFRASTRUCTURE | | | | | | | |
|---------------------------------|--------------------|---------------------|-------------------|-------------------------|--|-------------------------|-------------------------|
| Proposed Infrastructure Details | | Start Change | End Change | Length (m) | Sub-base thickness (mm) | Specific Type | Specific Thickness (mm) |
| Link 1 | | | | | | | |
| Link 2 | | | | | | | |
| Link 3 | | | | | | | |
| Link 4 | | | | | | | |
| Link 5 | | | | | | | |
| Link 6 | | | | | | | |
| Link 7 | | | | | | | |
| Link 8 | | | | | | | |
| Link 9 | | | | | | | |
| Link 10 | | | | | | | |
| Proposed junctions | Start Change | End Change | Length (m) | Sub-base thickness (mm) | Specific Type | Specific Thickness (mm) | Assumed Thickness (mm) |
| Proposed junctions | Start Change | End Change | Length (m) | Sub-base thickness (mm) | Specific Type | Specific Thickness (mm) | Assumed Thickness (mm) |
| Proposed junctions | Proposed route | Start Change | End Change | Length (m) | Sub-base thickness (mm) | Specific Type | Specific Thickness (mm) |
| Subcontract library | Options Parameters | Detailed Parameters | Series Parameters | Data Collection | Dimensions Calc Sheet Risk Data Import | | |

Drainage

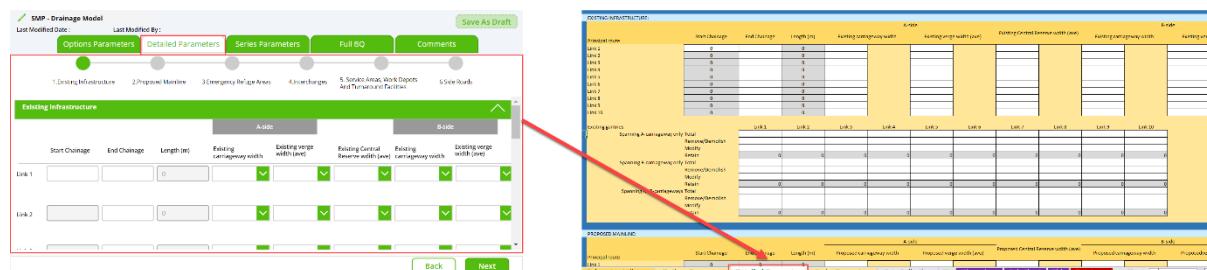
Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Drainage – SMP – V2.0).

Options Parameters



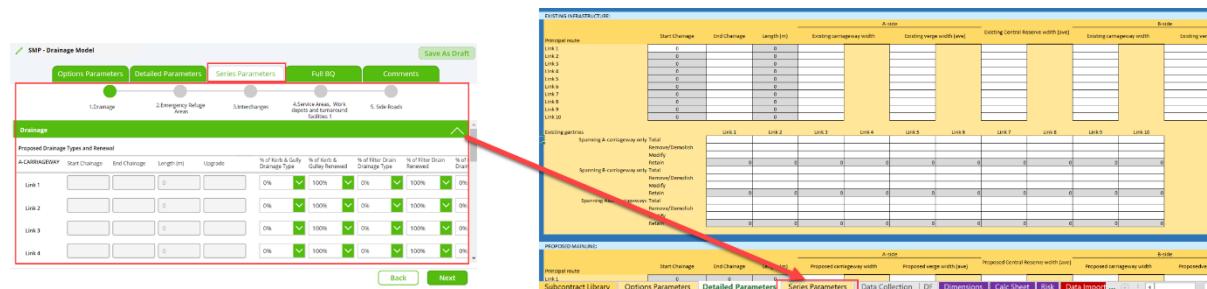
| Link | Length (m) | Deviated Sections (m) | Standard (A-side) | Standard (B-side) | Length of Central Reserve existing VCB (m) |
|--------|------------|-----------------------|-------------------|-------------------|--|
| Link 1 | | | | | |
| Link 2 | | | | | |
| Link 3 | | | | | |
| Link 4 | | | | | |

Detailed Parameters



| Link | Start Change | End Change | Length (m) | Existing Carrigeway width | Existing verges width (m) | Existing Central Reserve width (m) | Existing verge width (m) |
|--------|--------------|------------|------------|---------------------------|---------------------------|------------------------------------|--------------------------|
| Link 1 | | | | | | | |
| Link 2 | | | | | | | |

Series Parameters



| Link | Start Change | End Change | Length (m) | Upgrade | % of Kerb & Gully Drainage Type | % of Filter Drainage Type | % of Filter Drain Renewed | % of Filter Drain Renewal | % of Drains Renewed |
|--------|--------------|------------|------------|---------|---------------------------------|---------------------------|---------------------------|---------------------------|---------------------|
| Link 1 | | | | | | | | | |
| Link 2 | | | | | | | | | |
| Link 3 | | | | | | | | | |
| Link 4 | | | | | | | | | |

Signs & Lighting

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Signs & Lighting – SMP – V2.0).

Options Parameters

| Options | Detailed Parameters | Signs Parameters | Markings Parameters | Lighting Parameters | Full RQ | Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------|----------------------|------------------------|---------------------|--|-----------------|-------------------|--------------------|----------------------|--------------------|---------------------|--|-----------------|--------|--|--|---|---|---|---|--------|--|--|---|---|---|---|--------|--|--|---|---|---|---|--------|--|--|---|---|---|---|------------------|--|--|--|--|--|--|--------|--|--|--|--|--|--|--------|--|--|--|--|--|--|--------|--|--|--|--|--|--|--------|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|
| | 1. Scheme Details | 2. Site Information | 3. Scheme Requirements | 4. Workmarks | 5. Coverage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Site Information</p> <table border="1"> <thead> <tr> <th>Existing motorway</th> <th>Length (km)</th> <th>Divided Sections (m)</th> <th>Standard (A-side)</th> <th>Standard (B-side)</th> <th>Length of Central Reserve existing (m)</th> <th>Lot</th> </tr> </thead> <tbody> <tr> <td>Line 1</td> <td></td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Line 2</td> <td></td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Line 3</td> <td></td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Line 4</td> <td></td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table> | | | | | | | Existing motorway | Length (km) | Divided Sections (m) | Standard (A-side) | Standard (B-side) | Length of Central Reserve existing (m) | Lot | Line 1 | | | ✓ | ✓ | ✓ | ✓ | Line 2 | | | ✓ | ✓ | ✓ | ✓ | Line 3 | | | ✓ | ✓ | ✓ | ✓ | Line 4 | | | ✓ | ✓ | ✓ | ✓ | Base Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Existing motorway | Length (km) | Divided Sections (m) | Standard (A-side) | Standard (B-side) | Length of Central Reserve existing (m) | Lot | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Line 1 | | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Line 2 | | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Line 3 | | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Line 4 | | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>Scheme Credential</p> <table border="1"> <thead> <tr> <th>Scheme name</th> <th>Project Manager</th> <th>Cost Engineer</th> <th>PC Stage of Scheme</th> <th>External Reference</th> <th>Date of Estimate</th> <th>Scheme Type</th> </tr> </thead> </table> | | | | | | | Scheme name | Project Manager | Cost Engineer | PC Stage of Scheme | External Reference | Date of Estimate | Scheme Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scheme name | Project Manager | Cost Engineer | PC Stage of Scheme | External Reference | Date of Estimate | Scheme Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Existing motorway | Length (km) | Divided Sections (m) | Standard (A-side) | Standard (B-side) | Length of Central Reserve existing (m) | Lot | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Link 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>Interchanges</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Other</th> <th>Service areas</th> <th>A-side</th> <th>B-side</th> </tr> </thead> </table> | | | | | | | No. | Other | Service areas | A-side | B-side | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. | Other | Service areas | A-side | B-side | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>Subcontract Usage</p> <table border="1"> <thead> <tr> <th>Usage</th> <th>Options Parameters</th> <th>Detailed Parameters</th> <th>Signs Parameters</th> <th>Markings Parameters</th> <th>Lighting Parameters</th> <th>Data Collection</th> <th>Dim...</th> </tr> </thead> </table> | | | | | | | Usage | Options Parameters | Detailed Parameters | Signs Parameters | Markings Parameters | Lighting Parameters | Data Collection | Dim... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Usage | Options Parameters | Detailed Parameters | Signs Parameters | Markings Parameters | Lighting Parameters | Data Collection | Dim... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Detailed Parameters

The screenshot shows the 'Existing Infrastructure' section of the application. It includes a table with two rows (Line 1 and Line 2) and four columns: Start Change, End Change, Length (m), and three categories of widths: Existing verge, Existing central reserve, and Existing carriageway width. Each category has a green checkmark icon. A red arrow points from the 'Existing Infrastructure' section to a detailed view of the 'Existing Infrastructure' table.

| | Start Change | End Change | Length (m) | Existing verge width [m] | Existing central reserve width [m] | Existing carriageway width [m] |
|--------|----------------------|----------------------|------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Line 1 | <input type="text"/> | <input type="text"/> | 0 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Line 2 | <input type="text"/> | <input type="text"/> | 0 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Signs Parameters

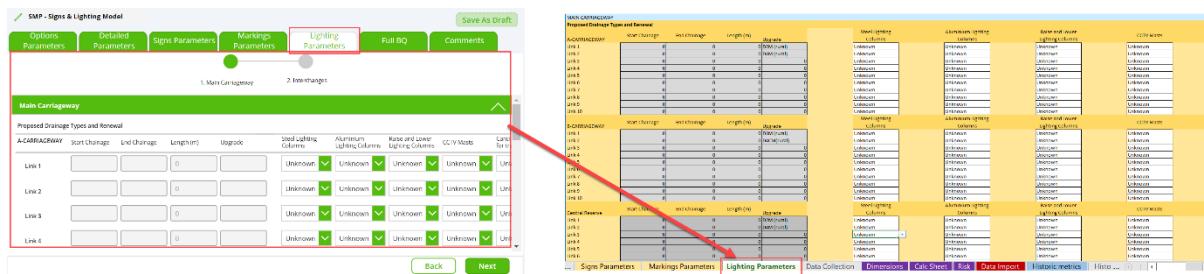
The screenshot shows the 'Main Carriageway' tab selected in the navigation bar. Below it, three sub-sections are displayed:

- Preposed Drainage Types and Renewal:** A table with columns for Start Change, End Change, Length (m), Upgrades, Unit no 1m2, Unit 1 1m2, Unit 1 10m2, Unit Over 10m2, and Unit 10m2.
- A-Cabin/ActivWay:** A table with columns for Start Change, End Change, Length (m), Upgrades, Unit no 1m2, Unit 1 1m2, Unit 1 10m2, Unit Over 10m2, and Unit 10m2.
- Drainage Trough Areas:** A table with columns for Start Change, End Change, Length (m), Upgrades, Unit no 1m2, Unit 1 1m2, Unit 1 10m2, Unit Over 10m2, and Unit 10m2.

Red arrows point from the 'Signs Parameters' button in the top navigation bar to each of the three sub-sections below.

Markings Parameters

Lighting Parameters



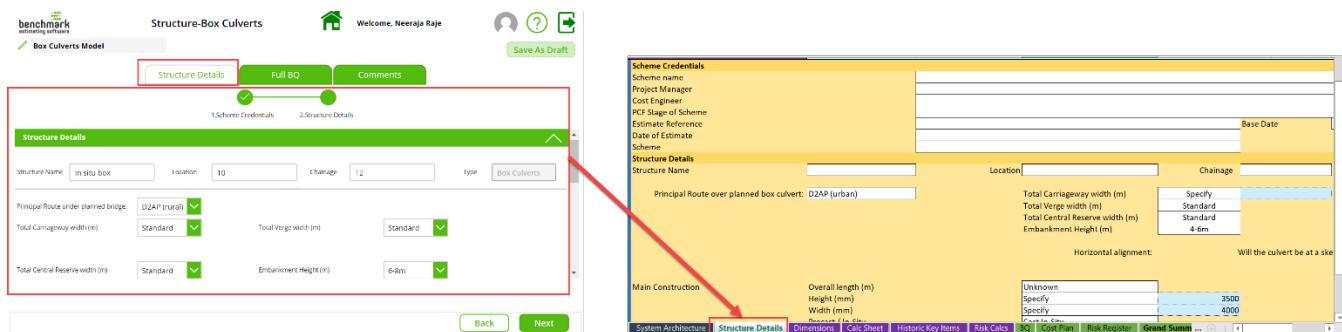
The screenshot shows the 'Lighting Parameters' tab selected in the app's top navigation bar. Below it, a 'MAIN CARRIAGeway' worksheet is displayed, showing a table of drainage types and renewal details for four lanes. The worksheet has tabs for 'Signs Parameters', 'Markings Parameters', and 'Lighting Parameters', with the latter being highlighted.

Structure

Box Culverts

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Box Culverts Model – V2.0).

Structure Details

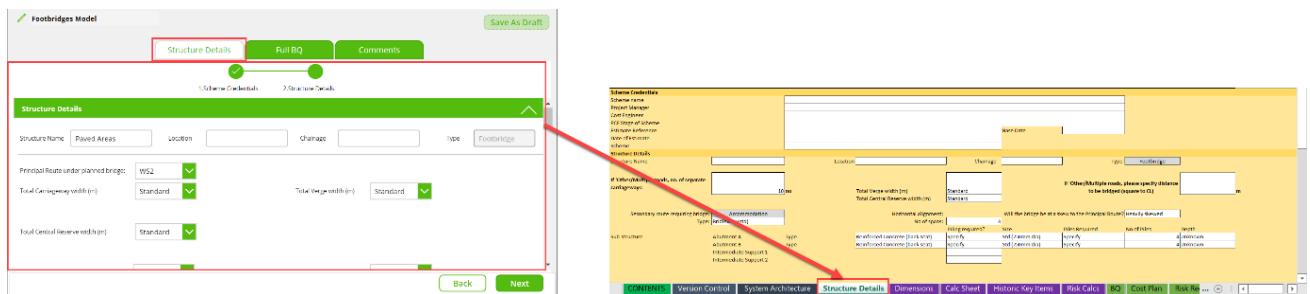


The screenshot shows the 'Structure Details' tab selected in the app's top navigation bar. Below it, a 'Structure-Box Culverts' worksheet is displayed, showing details like structure name, location, and type. The worksheet has tabs for 'Scheme Credentials', 'Structure Details', and 'Dimensions', with the latter being highlighted.

Footbridges

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Footbridges Model – V2.0).

Structure Details

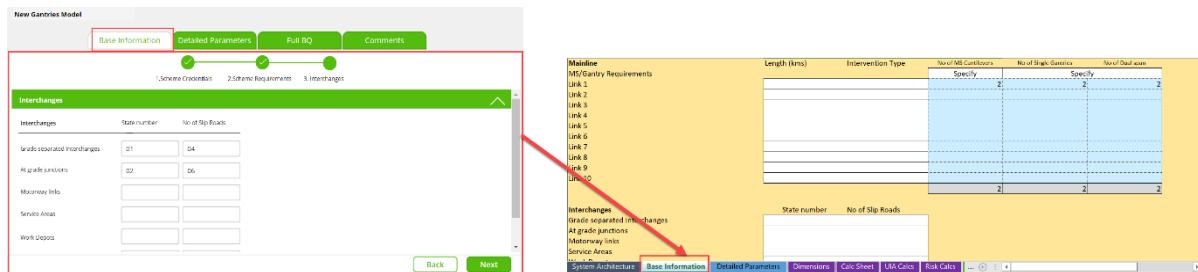


The screenshot shows the 'Structure Details' tab selected in the app's top navigation bar. Below it, a 'Footbridges Model' worksheet is displayed, showing details like structure name, location, and type. The worksheet has tabs for 'Scheme Credentials', 'Structure Details', and 'Dimensions', with the latter being highlighted.

Gantries

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Gantry Model – V2.0).

Base Information



The screenshot shows the 'Base Information' step of a model setup. It includes fields for Scheme Credentials, Scheme Requirements, and Interchanges. The 'Interchanges' section contains tables for Grade-separated Interchanges, At-grade junctions, Motorway links, Service areas, and Work zones. A red arrow points from the 'Interchanges' table in the app to the 'Interchanges' section in the Parametric Model worksheet.

| Link | Link 1 | Link 2 | Link 3 | Link 4 | Link 5 | Link 6 | Link 7 | Link 8 | Link 9 | Link 10 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| | | | | | | | | | | |

Interchanges
Grade-separated interchanges
At-grade junctions
Motorway links
Service areas
Work zones

Length (km) Intervention Type Next MS Corridors No of Single Gantry No of Dual gantry

Specify 2 2 2 2

State number No of Slip Roads

Detailed Parameters



The screenshot shows the 'Detailed Parameters' step of a model setup. It includes fields for Scheme Credentials, Scheme Requirements, and Detailed Parameters. The 'MS CANTILEVER SCHEDULE' section contains tables for Reference, Chainage, Carriageway, Type, Piling, Diameter, No of piles, and Depth. A red arrow points from the 'MS CANTILEVER SCHEDULE' table in the app to the 'MS CANTILEVER SCHEDULE' section in the Parametric Model worksheet.

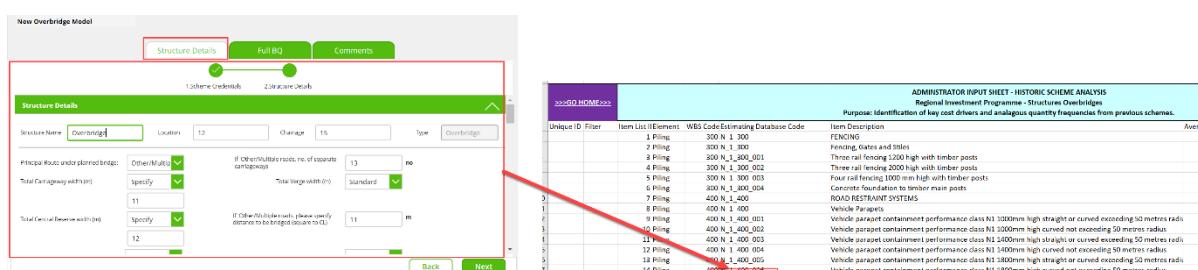
| Reference | Chainage | Carriageway | Type | Piling | Diameter | No of piles | Depth |
|-----------|----------|-------------|------|---------|----------|-------------|--------|
| MS-1 | 38 | A-way | MS3 | Specify | ne 600mm | Unknown | ne 10m |
| MS-2 | 42 | B-way | MS3 | Unknown | | | |
| MS-3 | 60 | A-way | MS4 | Unknown | | | |

MS CANTILEVER SCHEDULE

Overbridges

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Overbridges Model – V2.0).

Structure Details



The screenshot shows the 'Structure Details' step of a model setup. It includes fields for Scheme Credentials, Scheme Requirements, and Structure Details. The 'Structure Details' section contains tables for Structure Name, Location, Chainage, Type, and various input fields for bridge spans and railings. A red arrow points from the 'Structure Details' table in the app to the 'Administrator Input Sheet' section in the Parametric Model worksheet.

| Unique ID | Item List (Element) | WBS Code Estimating Database Code | Item Description |
|-----------|---------------------|-----------------------------------|--|
| 1 | Piling | 300_N_1_300 | FENCING |
| 2 | Piling | 300_N_1_300 | Fencing, Gates and gates |
| 3 | Piling | 300_N_1_400_001 | Three rail fencing 1000 mm high with timber posts |
| 4 | Piling | 300_N_1_400_002 | Three rail fencing 2000 mm high with timber posts |
| 5 | Piling | 300_N_1_300_003 | Four rail fencing 1000 mm high with timber posts |
| 6 | Piling | 300_N_1_300_004 | Concrete foundation to timber main posts |
| 7 | Piling | 400_N_1_400 | Vehicle parapet containment performance class N1 1000mm high straight or curved exceeding 50 metres radius |
| 8 | Piling | 400_N_1_400_001 | Vehicle parapet containment performance class N1 1000mm high curved not exceeding 50 metres radius |
| 9 | Piling | 400_N_1_400_001 | Vehicle parapet containment performance class N1 2400mm high straight or curved exceeding 50 metres radius |
| 10 | Piling | 400_N_1_400_002 | Vehicle parapet containment performance class N1 2400mm high curved not exceeding 50 metres radius |
| 11 | Piling | 400_N_1_400_003 | Vehicle parapet containment performance class N1 2400mm high straight or curved exceeding 50 metres radius |
| 12 | Piling | 400_N_1_400_004 | Vehicle parapet containment performance class N1 2400mm high curved not exceeding 50 metres radius |
| 13 | Piling | 400_N_1_400_005 | Vehicle parapet containment performance class N1 3000mm high straight or curved exceeding 50 metres radius |
| 14 | Piling | 400_N_1_400_006 | Vehicle parapet containment performance class N1 3000mm high curved not exceeding 50 metres radius |
| 15 | Piling | 400_N_1_400_007 | Vehicle parapet containment performance class N1 3000mm high straight or curved exceeding 50 metres radius |
| 16 | Piling | 400_N_1_400_008 | Vehicle parapet containment performance class N1 3000mm high curved not exceeding 50 metres radius |

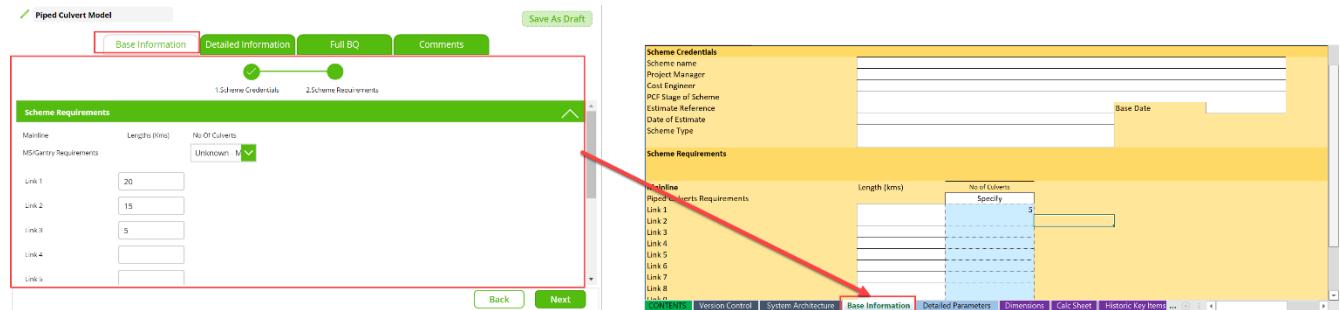
ADMINISTRATOR INPUT SHEET - HISTORIC SCHEME ANALYSIS
Regional Investment Programme - Structures Overbridges
Purpose: Identification of key cost drivers and analogous quantity frequencies from previous schemes.

Version Control System Architecture Structure Details Dimensions Calc Sheet Historic Key Items Risk Calc Back Next

Piped Culverts

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Piped Culverts Model – V2.1).

Base Information



Piped Culvert Model

Save As Draft

1 Scheme Credentials 2 Scheme Requirements

Scheme Requirements

Manline Length (m) No Of Culverts
McGarry Requirements Unknown

Link 1: 20
Link 2: 15
Link 3: 5
Link 4:
Link 5:

Back Next

Scheme Credentials

Scheme Name: Project Manager: Cost Engineer: P&C Stage of Scheme Estimate Reference: Date of Estimate: Scheme Type:

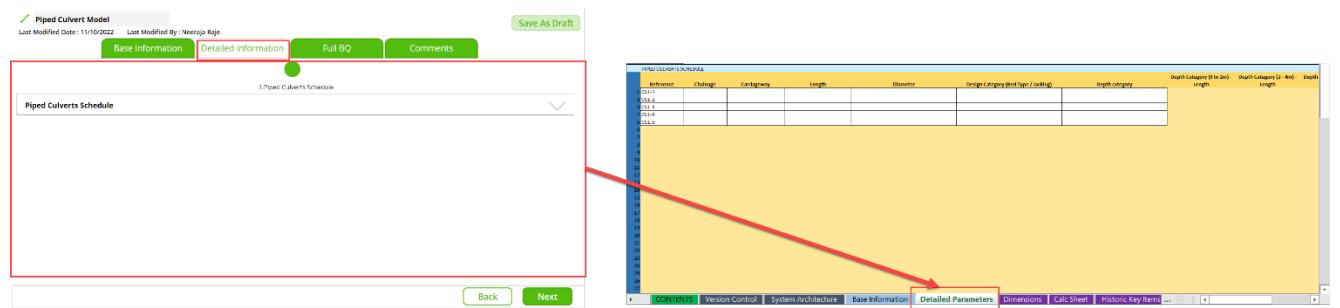
Scheme Requirements

Length (km) No of Culverts
Specify

Links: Link 1, Link 2, Link 3, Link 4, Link 5, Link 6, Link 7, Link 8

CONTENTS Version Control System Architecture Base Information Detailed Parameters Dimensions Calc Sheet Historic Key Items

Detailed Parameters



Piped Culvert Model

Last Modified Date: 11/10/2022 Last Modified By: Neeraja Raju

Save As Draft

1 Piped Culverts Schedule 2 Detailed Information

Piped Culverts Schedule

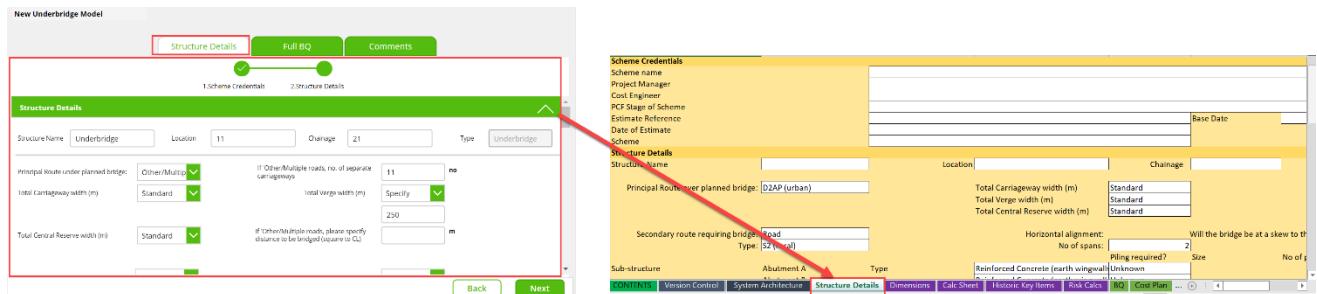
Back Next

RETAINING WALLS

| Ref | Start Challenge | End Challenge | Length | Dimensions | Design Category (Type / Working) | Length Category | Depth Category (0 to 2m) | Depth Category (2 - 4m) | Depth (m) |
|-----|-----------------|---------------|--------|------------|----------------------------------|-----------------|--------------------------|-------------------------|-----------|
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Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Underbridges Model – V2.1).

Structure Details



New Underbridge Model

Structure Details

1 Scheme Credentials 2 Structure Details

Structure Details

Structure Name: Underbridge Location: 11 Chnage: 21 Type: Underbridge

Principal Route under planned bridge: Other/Multi? [✓] If 'Other/Multi' roads, no. of separate carriageways: 11 If 'Other/Multi' roads, please specify distance to be bridged (square to CL): m

Total Carrigeway width (m): Standard [✓] Total Verge width (m): Specify [✓] Total Central Reserve width (m): Standard [✓]

Secondary route requiring bridge: Road Type: [S2 (local)]

Sub-structure: Abutment A Type: Reinforced Concrete (earth wingwall) Reinforced Concrete (earth wingwall): Unknown

Scheme Credentials

Scheme name: [] Location: [] Chnage: []

Project Manager: [] Construction Manager: []

PCF Stage of Scheme: [] Estimate Reference: [] Date of Estimate: []

Structure Details

Structure Name: [] Location: [] Chnage: []

Principal Route over planned bridge: D2AP (urban)

Secondary route requiring bridge: Road Type: [S2 (local)]

Sub-structure: Abutment A Type: Reinforced Concrete (earth wingwall) Reinforced Concrete (earth wingwall): Unknown

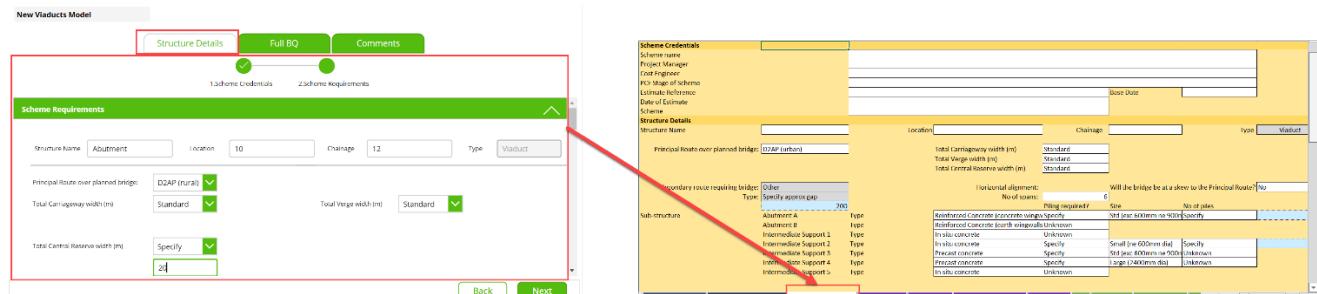
Horizontal alignment: No of spans: 2 Will the bridge be at a skew to the Principal Route? No Piling required? Yes Size: [] No of piles: []

CONTINUE Version Control System Architecture Structure Details Dimensions Calc Sheet Historic Key Items Risk Calc RQ Cost Plan ...

Viaducts

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Viaducts Model – V2.0).

Structure Details



New Viaducts Model

Structure Details

1 Scheme Credentials 2 Scheme Requirements

Scheme Requirements

Structure Name: Abutment Location: 10 Chnage: 12 Type: Viaduct

Principal Route over planned bridge: D2AP (rural) [✓]

Total Carrigeway width (m): Standard [✓] Total Verge width (m): Standard [✓]

Total Central Reserve width (m): Specify [✓] Total Central Reserve width (m): 24

Scheme Credentials

Scheme name: [] Location: [] Chnage: []

Project Manager: [] Construction Manager: []

PCF Stage of Scheme: [] Estimate Reference: [] Date of Estimate: []

Structure Details

Structure Name: [] Location: [] Chnage: []

Principal Route over planned bridge: D2AP (urban)

Secondary route requiring bridge: Other Type: Specified elevation gap: 200

Sub-structure: Abutment A Type: In-situ concrete Reinforced Concrete (earth wingwall): Unknown

Intermediate Support 1 Type: In-situ concrete Reinforced Concrete (earth wingwall): Unknown

Intermediate Support 2 Type: Precast concrete Reinforced Concrete (earth wingwall): Unknown

Intermediate Support 3 Type: Precast concrete Reinforced Concrete (earth wingwall): Unknown

Intermediate Support 4 Type: Precast concrete Reinforced Concrete (earth wingwall): Unknown

Intermediate Support 5 Type: In-situ concrete Reinforced Concrete (earth wingwall): Unknown

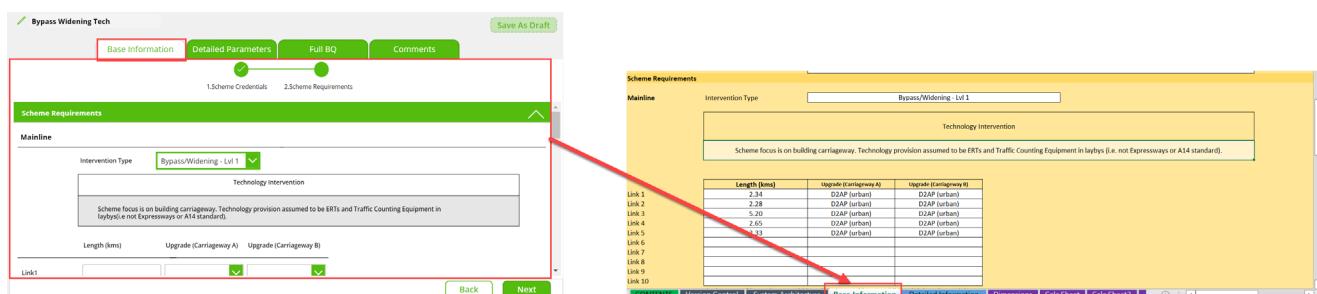
Horizontal alignment: No of spans: 6 Will the bridge be at a skew to the Principal Route? No Piling required? Yes Size: [] No of piles: []

Version Control System Architecture Structure Details Dimensions Calc Sheet Historic Key Items Risk Calc RQ Cost Plan ...

Technology

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Technology – V2.1).

Base Information



Bypass Widening Tech

Base Information

1 Scheme Credentials 2 Scheme Requirements

Scheme Requirements

Mainline

Intervention Type: Bypass/Widening - Lvl 1 [✓]

Technology Intervention

Scheme focus is on building carriageway. Technology provision assumed to be ERTs and Traffic Counting Equipment in laybys (i.e. not Expressways or A14 standard).

Length (km): Upgrade (Carriageway A) Upgrade (Carriageway B)

Link1: [] Link2: [] Link3: [] Link4: [] Link5: [] Link6: [] Link7: [] Link8: [] Link9: [] Link10: []

Scheme Requirements

Mainline: Intervention Type: Bypass/Widening - Lvl 1

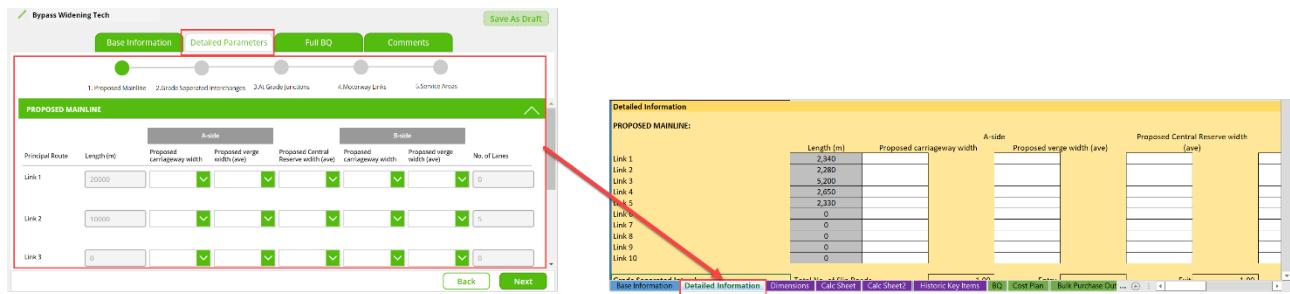
Technology Intervention

Scheme focus is on building carriageway. Technology provision assumed to be ERTs and Traffic Counting Equipment in laybys (i.e. not Expressways or A14 standard).

| Length (km) | Upgrade (Carriageway A) | Upgrade (Carriageway B) |
|-------------|-------------------------|-------------------------|
| Link 1 | 2.34 | D2AP (urban) |
| Link 2 | 2.38 | D2AP (urban) |
| Link 3 | 5.20 | D2AP (urban) |
| Link 4 | 2.65 | D2AP (urban) |
| Link 5 | 2.32 | D2AP (urban) |
| Link 6 | | |
| Link 7 | | |
| Link 8 | | |
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| Link 10 | | |

CONTINUE Version Control System Architecture Base Information Detailed Information Dimensions Calc Sheet Calc Sheet2 ...

Detailed Information / Detailed Parameters



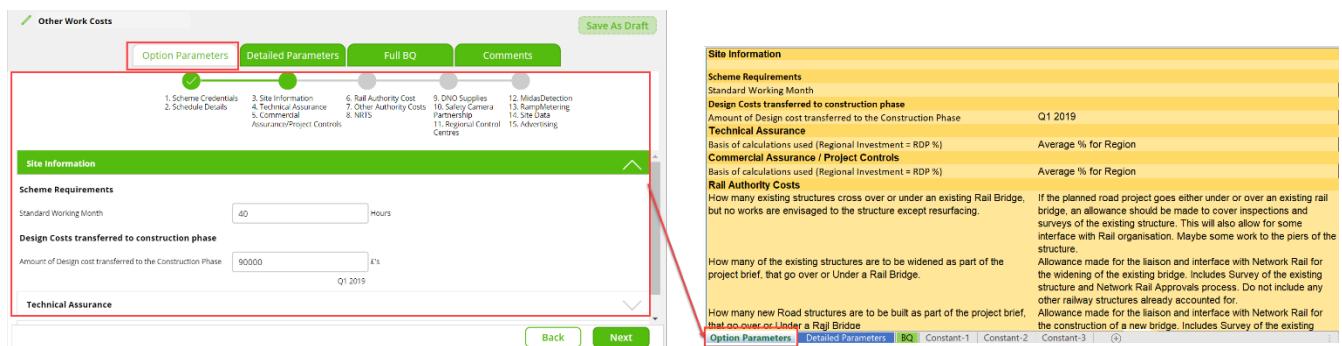
| Principal Route | Length(m) | Proposed carriageway width | Proposed verge width (ave) | Proposed Central Reserve width (ave) | Proposed carriageway width | Proposed verge width (ave) | No. of Lines |
|-----------------|-----------|----------------------------|----------------------------|--------------------------------------|----------------------------|----------------------------|--------------|
| Link 1 | 20000 | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| Link 2 | 10000 | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| Link 3 | 0 | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| Link 4 | | | | | | | |
| Link 5 | | | | | | | |
| Link 6 | | | | | | | |
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Other Works

Other Work Cost

Forms in the app user interface map to their corresponding Parametric Model worksheets (Other Cost Model_Aux_V1.5).

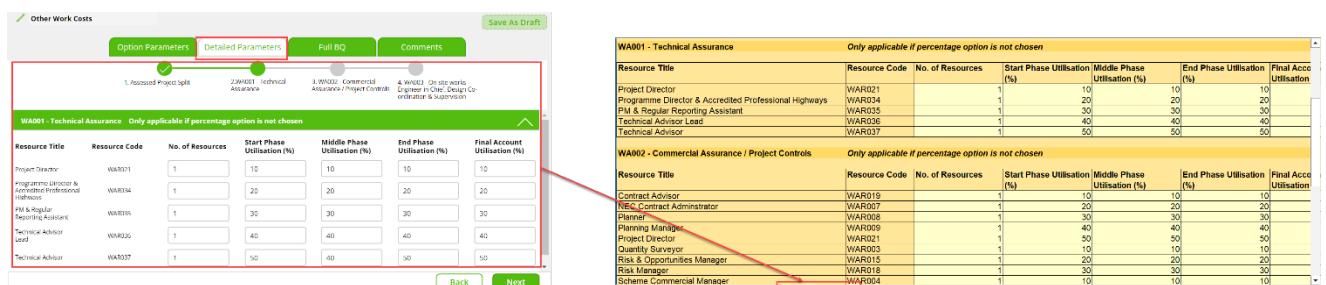
Options Parameters



| Standard Working Month | Hours |
|------------------------|-------|
| 40 | |

| Amount of design cost transferred to the Construction Phase | Q1 2019 |
|---|---------|
| 90000 | 1% |

Detailed Parameters

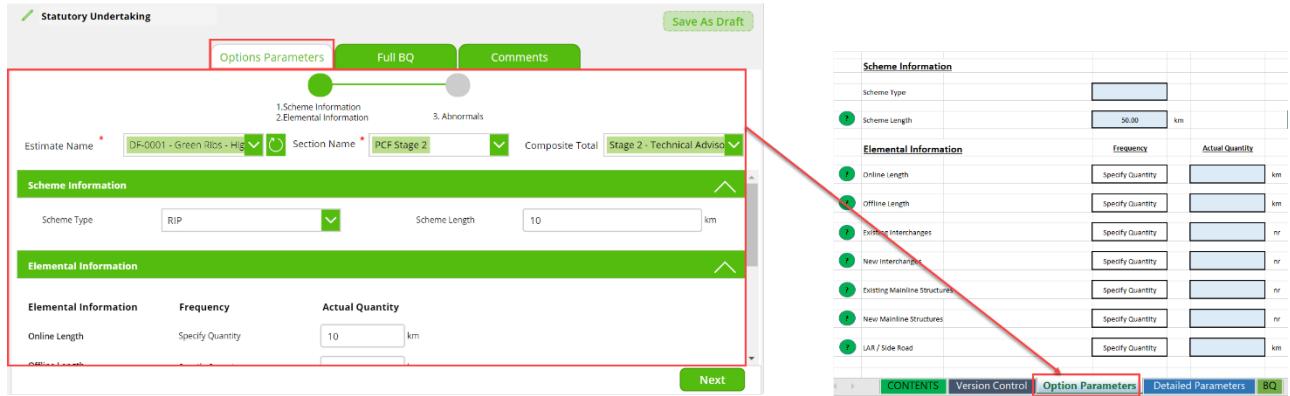


| Resource Title | Resource Code | No. of Resources | Start Phase Utilisation (%) | Middle Phase Utilisation (%) | End Phase Utilisation (%) | Final Account Utilisation (%) |
|--|---------------|------------------|-----------------------------|------------------------------|---------------------------|-------------------------------|
| Project Director | WA0301 | 1 | 10 | 10 | 10 | 10 |
| Project Manager & Accredited Professional Highways | WA0304 | 1 | 20 | 20 | 20 | 20 |
| PM & Regular Reporting Assistant | WA0305 | 1 | 30 | 30 | 30 | 30 |
| Technical Advisor Lead | WA0306 | 1 | 40 | 40 | 40 | 40 |
| Technical Advisor Lead | WA0307 | 1 | 50 | 50 | 50 | 50 |

Statutory Undertaking

Forms in the app user interface map to their corresponding Parametric Model worksheets (SU Model - V1.2).

Options Parameters



The screenshot shows the 'Statutory Undertaking' application interface. At the top, there are three tabs: 'Options Parameters' (highlighted with a red box), 'Full BQ', and 'Comments'. Below the tabs, there are sections for 'Scheme Information' and 'Elemental Information'. In the 'Elemental Information' section, there is a table with columns for 'Elemental Information', 'Frequency', and 'Actual Quantity'. An example row shows 'Online Length' with a frequency of 'Specify Quantity' and an actual quantity of '10 km'. A green button labeled 'Next' is at the bottom right. On the right side, a detailed 'Parametric Model Worksheet' is shown, specifically the 'Option Parameters' page. This page contains sections for 'Scheme Information' and 'Elemental Information', with various parameters like 'Scheme Type' (RIP), 'Scheme Length' (50.00 km), and 'Online Length' (Specify Quantity, 10 km). The 'Option Parameters' tab is also highlighted with a red box here.

Our mission is to help organisations improve their estimating, and the integration of estimating with related business processes; for private enterprise this helps improve your profit and market share; public authorities can deliver more accurate budgets and streamline project delivery.

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