Transforming GDA94 <> GDA2020 using 12d Model

Assumptions:

- Data falls within the (mainland) Mackay Local Government Area (i.e. UTM Zone 55)
- Dataset is in grid coordinates (i.e. Easting and Northing)
- If using the MRC Datum Transformation Toolbar, the dataset string names comply with mrc survey codes and layers.pdf
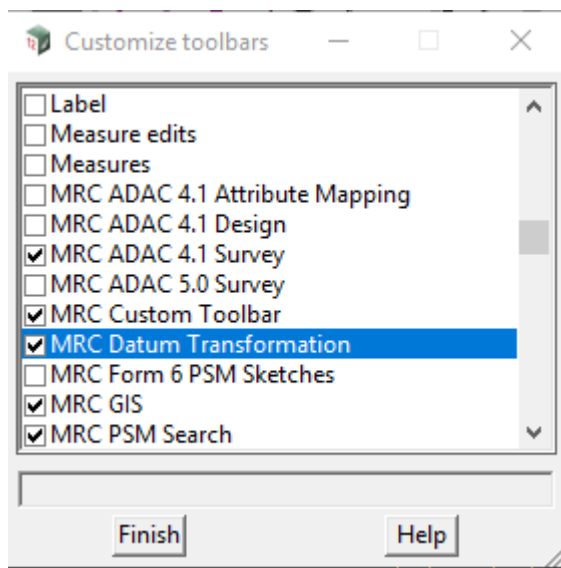
Pre-requisites:

- 12d Model version 14 with Survey module
- Any Super Alignments must be converted to Alignments
- Existing TINs must be retriangulated or a new TIN created

Using MRC Datum Transformation Toolbar
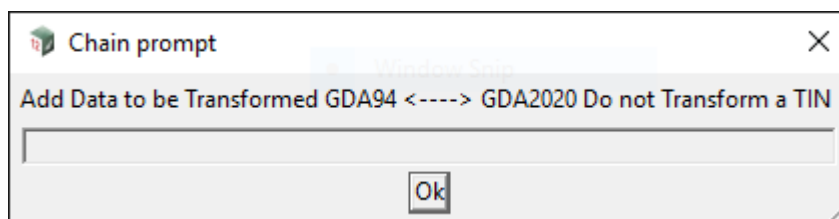
Step 1: Add Toolbar to the Project
View > **Toolbars** > **MRC Datum Transformation**

Step 2: Convert the Data
BUTTON 1 - CREATE 'DATA TO TRANSFORM' VIEW

Select the **Create View** icon (button 1)

This fact sheet provides an overview of the steps to follow when converting from the GDA94 datum to the GDA2020 datum or vice versa using 12d Model software.

Further Information

Refer to 12d Model Reference manual:

Survey > Conversions > GDA94 <---> GDA2020

For detailed information about GDA94<>GDA2020 transformations refer to the Technical Manuals and Factsheet on the ICSM website:
https://www.icsm.gov.au/gda2020-and-gda94-technical-manuals

General information and resources relating to the datum modernisation – including a simple explanatory animation, frequently asked questions, fact sheets, technical tools and progress updates – are available on the ICSM website:
www.icsm.gov.au

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This button will create a view called *Data to Transform* and prompt you to add data to this view. Data that is added to this view will be transformed using other options on the toolbar. Do not to add any TINs to this view.

## BUTTON 2 - MGA94 TO MGA2020 TRANSFORMATION

1. Add all data to be converted from MGA94 to MGA2020 into the '*Data to Transform'* view

2. Select the **MGA94 to MGA2020 Transform** icon (button 2)

This button will run a chain to:

- check if there is any data that has previously been transformed by using this toolbar. If such data is found, the chain will stop and a prompt stating that the data has already been transformed will show
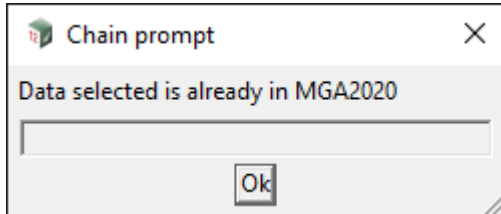
NOTE: This prompt will only recognise data has been transformed if it was transformed using the options on this toolbar. If you have not transformed the data yourself, always check the datum before applying any transformations. Remember to "know your data, know your datum"

- copy the original MGA94 models to models with the prefix '*mga94.*' These models are added to the project for you to manually check and confirm the correct transformation has been applied and in case the MGA2020 data needs to be cleaned and the transformation started again.

- replace the existing MGA94 data with the transformed MGA2020 data i.e. the model names will not change, and the transformed data will appear on the *Data to Transform* view once the chain has run
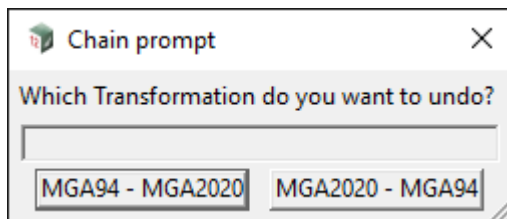
BUTTON 3 - RESET TRANSFORMED MODELS

1. Add all data to be reset back to its original datum into the *'Data to Transform'* view

2. Select the **Reset Transformed Models** icon (button 3)
3. Select which transformation you applied.

- If you transformed MGA94 data to MGA2020 data and wish to reset the MGA2020 data back to MGA94, select **MGA94 – MGA2020**
- If you transformed MGA2020 data to MGA94 data and wish to reset the MGA94 data back to MGA2020, select **MGA2020 – MGA94**

This button will run a chain to delete the transformed models, then revert to the original data copied into the prefixed models which were created as part of the transformation chain. WARNING: any data that you may have added to the transformed models will be lost.

## BUTTON 4 - MGA2020 TO MGA94 TRANSFORMATION

1. Add all data to be converted from MGA2020 to MGA94 into the '*Data to Transform'* view

2. Select the **MGA2020 to MGA94 Transform** icon (button 4)

It is expected that this option will mainly be used to convert data downloaded from MRC's GIS in order to incorporate it into projects commenced prior to 1 July 2020. This button will run a chain to:

- check if there is any data that has previously been transformed by using this toolbar. If such data is found, the chain will stop and a prompt stating that the data has already been transformed will show
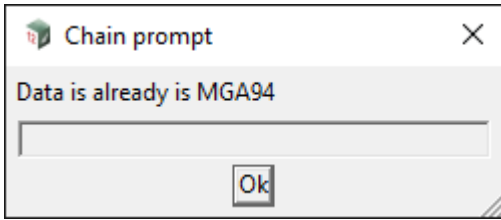
NOTE: This prompt will only recognise data has been transformed if it was transformed using the options on this toolbar. If you have not transformed the data yourself, always check the datum before applying any transformations. Remember to "know your data, know your datum"

- copy the original MGA2020 models to models with the prefix '*mga2020.*' These models are added to the project for you to manually check and confirm the correct transformation has been applied and in case the MGA94 data needs to be cleaned and the transformation started again.

- replace the existing MGA2020 data with the transformed MGA94 data i.e. the model names will not change, and the transformed data will appear on the *Data to Transform* view once the chain has run

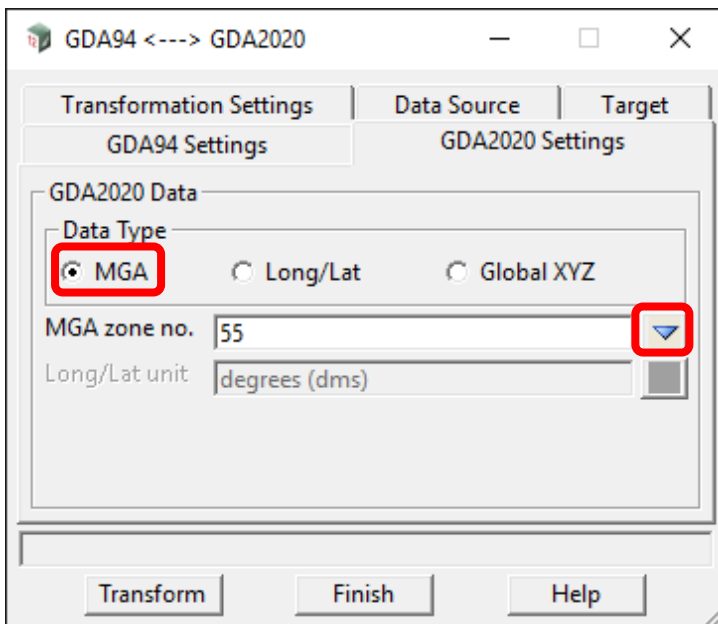## Manually Transforming data using 12d Model's in-built options

1. In the **Survey** menu, select **Conversions**, then **GDA94 <--> GDA2020**
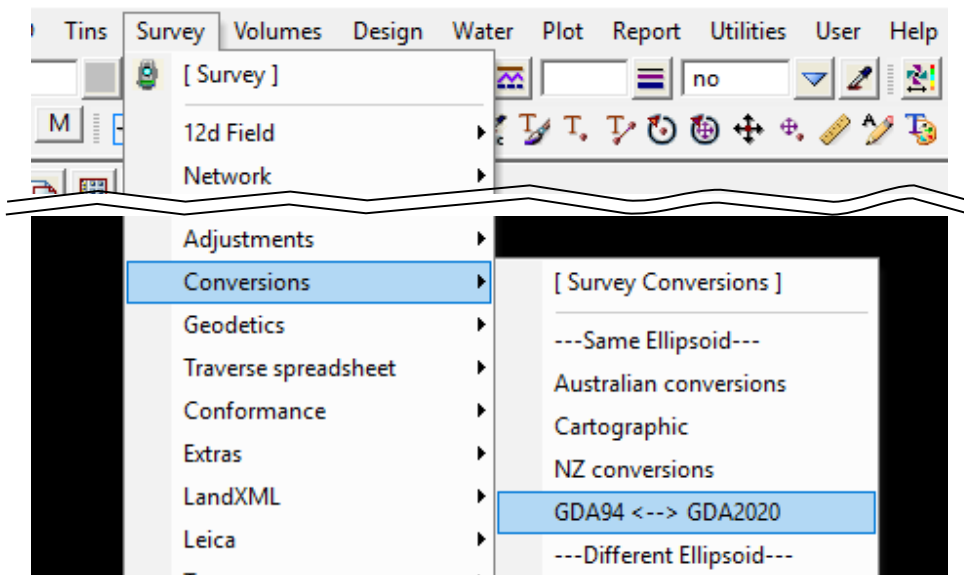

2. On the **GDA94 Settings** tab, select **MGA** as the Data Type, and choose **55** as the MGA zone no.

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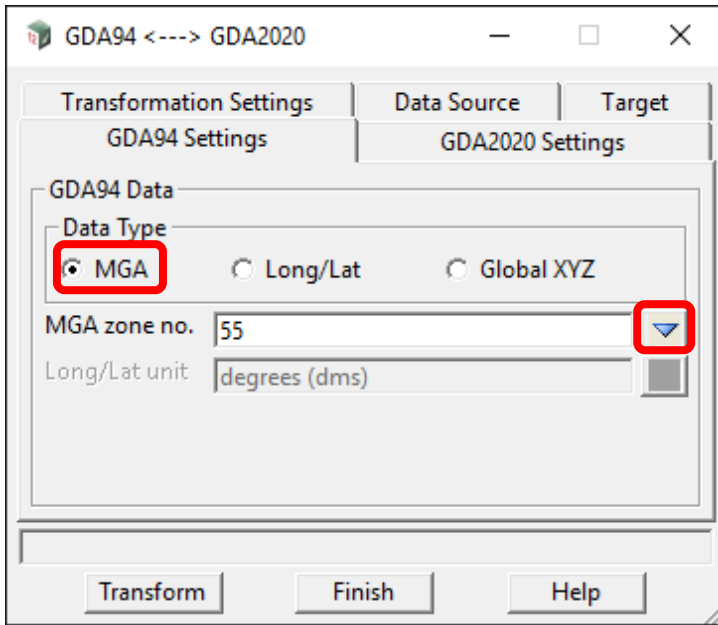
3. On the **GDA2020 Settings** tab, select **MGA** as the Data Type, and choose **55** as the MGA zone no.


4. On the **Transformation Settings** tab, select the **High Accuracy: grid shift file based** and browse to **GDA94_GDA2020_conformal.gsb** in the User_Lib folder
    *   If the coordinates of your original data are MGA94 and you wish to convert that data to MGA2020 select the **GDA94 --> GDA2020** option
    *   If the coordinates of your original data are MGA2020 and you wish to convert that data to MGA94 select the **GDA2020 --> GDA94** option
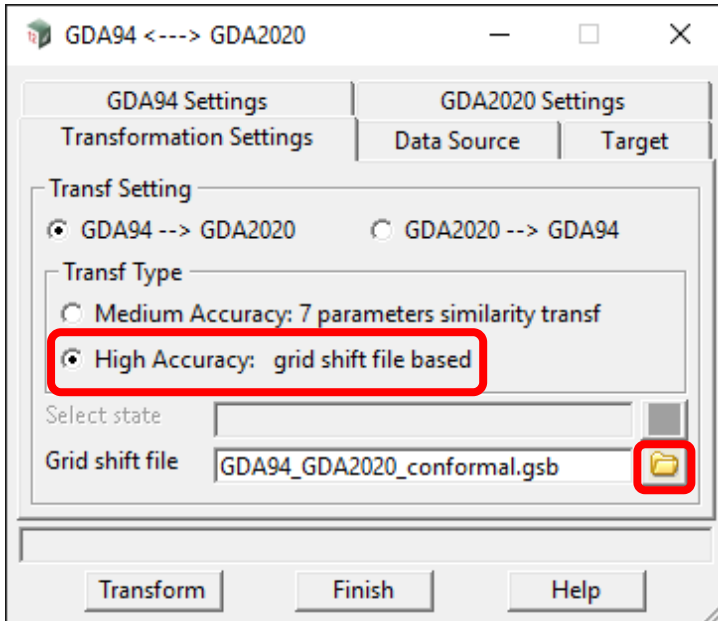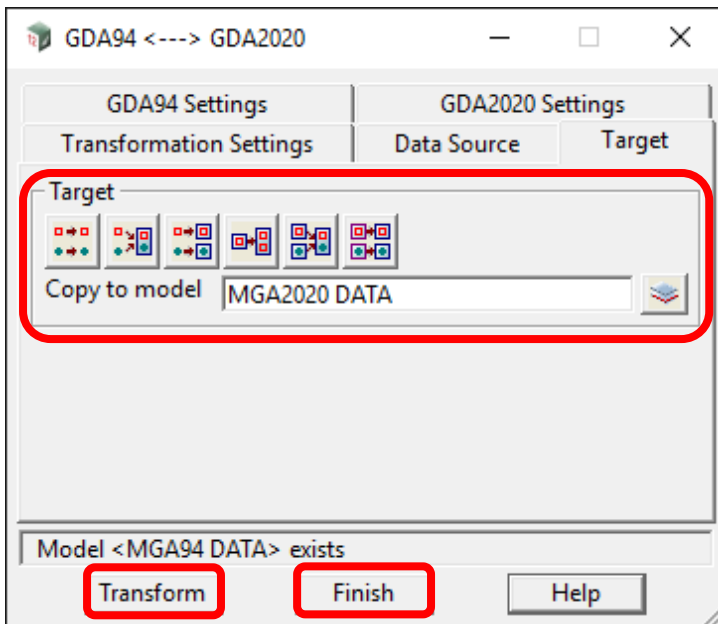
Refer to Table 3.4 of the Geocentric Datum of Australia 2020 Technical Manual

If the gsb file is not in MRC's User_Lib folder, the transformation grids are available from the ICSM website: http://www.icsm.gov.au/gda/grids.html

5. On the **Data Source** tab, tick **Use data source**, and choose your **Data to transform**
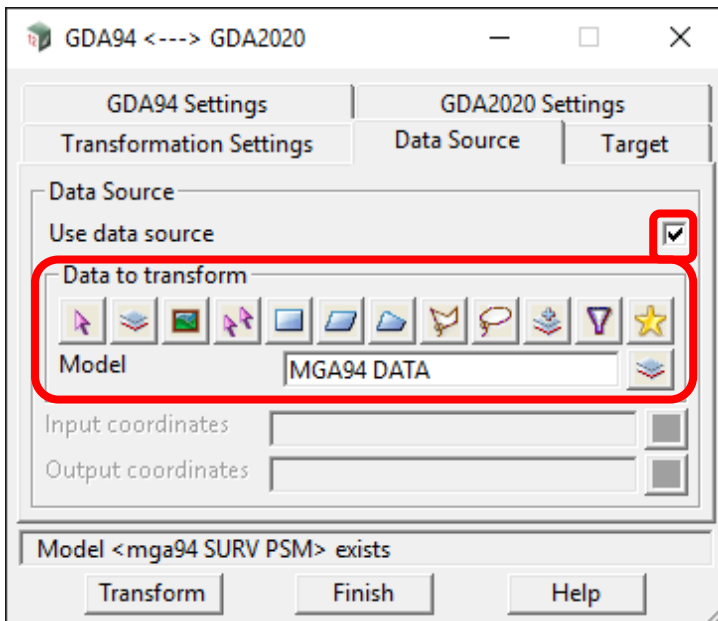
6. On the **Target** tab, choose the **Target**, for the transformed data

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7. Select **Transform**, then **Finish**

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