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TURBO | CHART

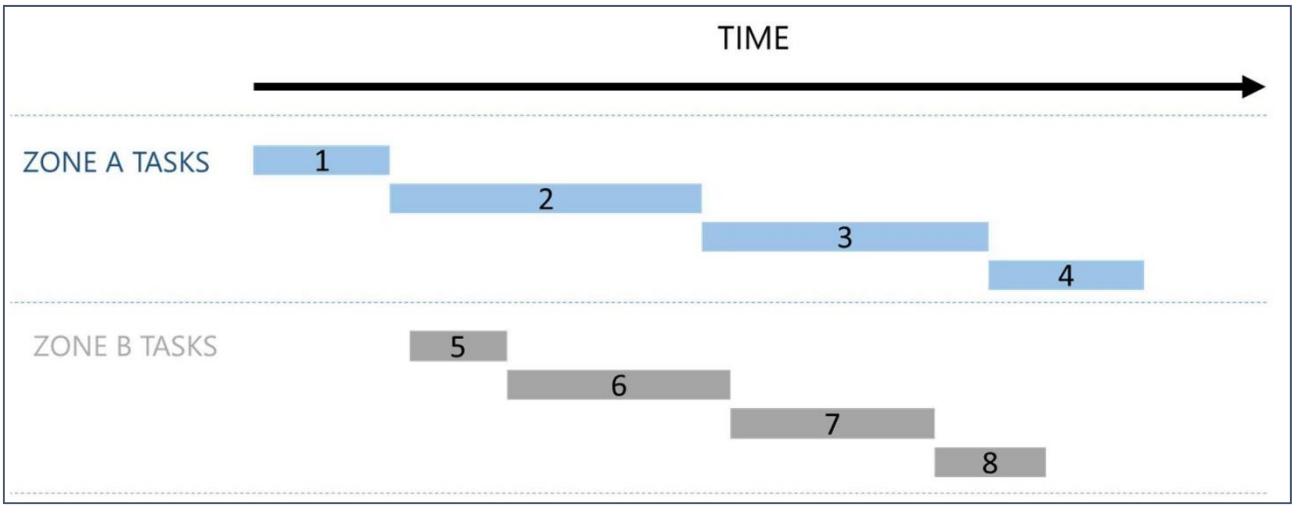
Turbo-Chart User Guide

Contents

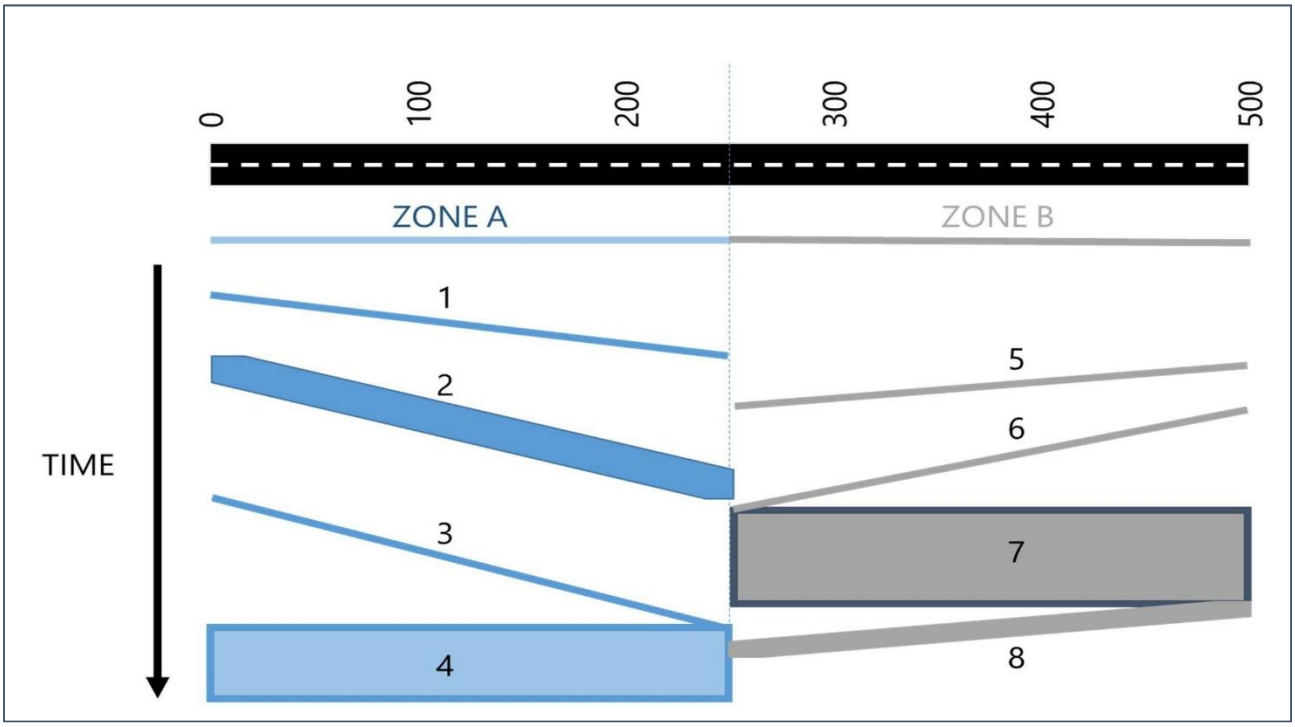
1 TIME LOCATION CHARTS

Time Location charts are an alternative method of presenting project schedule information for Linear Construction and Infrastructure projects. Linear projects are defined as those where works occur continuously or repeatedly over a linear alignment and can also interact with works occurring at fixed locations along the alignment. Typical examples of Linear projects are Tunneling, Highways, Railways, Pipelines but can also be applied to vertical high-rise building projects.

Traditional project schedule information is presented using Gantt or Bar charts, presenting schedule tasks on the vertical axis as a list, grouped by some form of Organizations such as Work Breakdown Structure (WBS) or Activity Coding. The horizonal axis of such charts is time

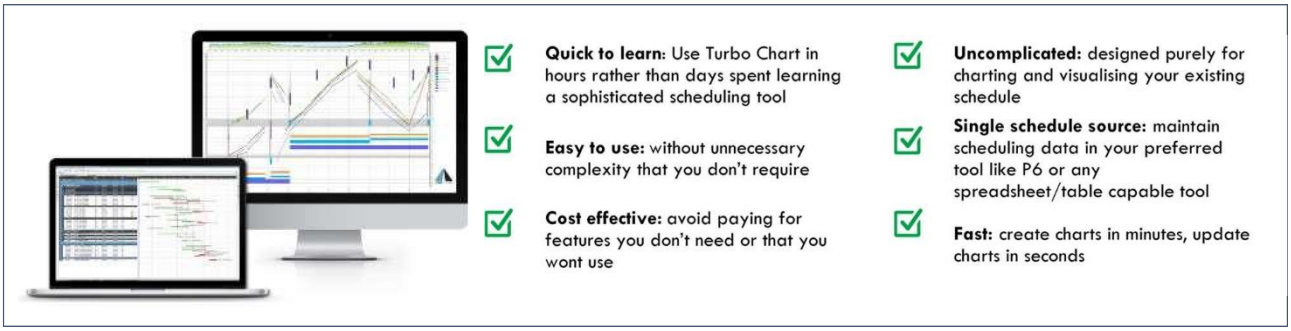


By shifting the axes, appending data representing the location of the works and appending display properties to tasks, it is possible to present the same schedule data in time location format as described below:

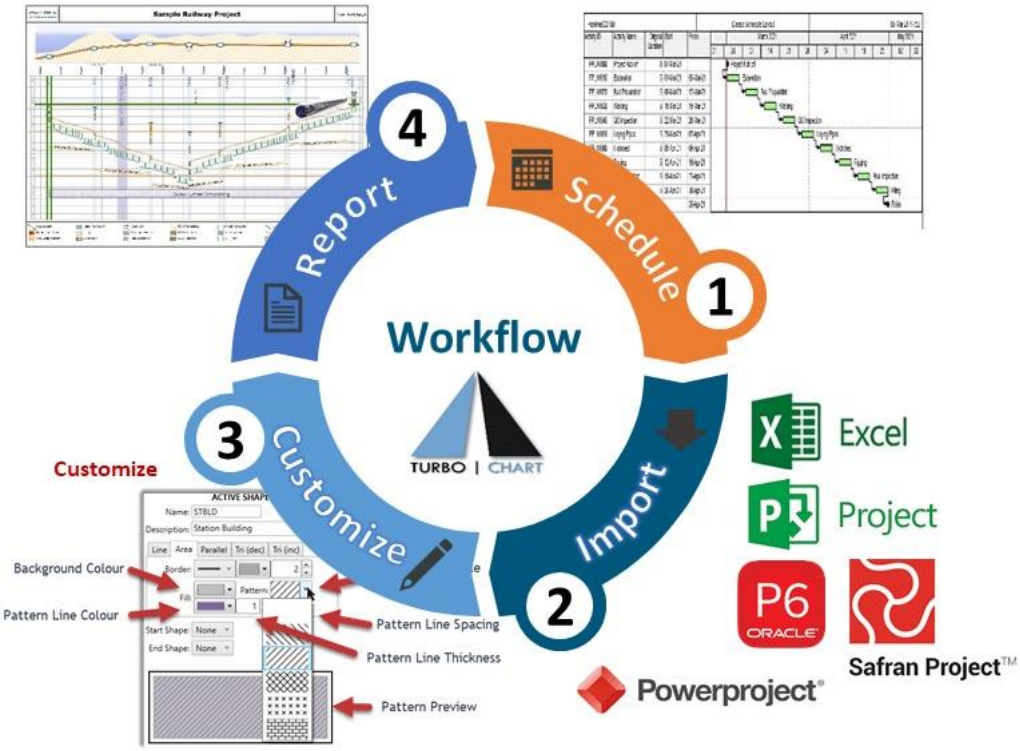


2 TURBO-CHART OVERVIEW

Turbo chart was designed for planners and schedulers wanting Time Location charting that is easy to learn and use, and can produce charts quickly by working with data already prepared in leading scheduling tools (or any spreadsheet data capable tool).



The workflow for using Turbo-Chart is shown in the following diagram:



- **SCHEDULE** Prepare schedule data in scheduling tool, or prepare as spreadsheet data
- **IMPORT** Connect to databases, import from schedule files, or paste from spreadsheet data
- **CUSTOMIZE** Prepare charts from datasets, shape codes, grid and display settings
- **REPORT** Customize multiple charts, synchronize data as schedules are updated

Turbo-Chart currently supports Importing data from the following Scheduling systems:

- **Primavera P6** Release 6 Onwards: Local P6 Databases, P6 XER files, P6 Layout data Copy and Paste (P6 Web & Remote Databases are not currently supported)
- **Microsoft Project** 2010 / 2013 /2016: *.MPP files
- **Safran Risk** / Safran Project V7 onwards
- **Asta Powerproject**: coming soon.
- Any data produced in **tabular / spreadsheet** Format.

3 TURBO-CHART SAMPLE DATA

After downloading and installing Turbo-Chart, users can download a zip file containing sample data from the **HELP** menu. The latest contents of the zip file are listed in a document within the zip file titled "TCHART SAMPLE DATA RELEASE NOTES".

The sample data is provided at a single zip file containing the following folders and files:

FOLDER	FILE	DESCRIPTION
GENERAL	TCHART_SQLite.db	Primavera P6R15.1 SQLite Database containing sample data
	TCHART_WBS ACTIVITY VIEW.plf	Primavera P6R15.1 Activity Layout file
	TCHART_SPREADSHEET IMPORT VIEW.plf	Primavera P6R15.1 Activity Layout file
	TCHART_SPREADSHEET TEMPLATE.xlsm	MS Excel Spreadsheet Template for Importing Data (Macro enabled)
DEMO1	TCHART_DEMO1.xer	Primavera P6R7.0 XER of Demo 1 Sample Data
	TCHART_DEMO1.tchart	Turbo Chart Demo 1 Sample File
	TCHART_DEMO1.tclib	Turbo Chart Demo 1 Shape Library File
	TCHART_DEMO1 TOP IMAGE.jpg	Demo 2 Sample Top Image
	TCHART_DEMO1 CHART.pdf	Demo 1 Chart output
DEMO2	TCHART_DEMO2.xer	Primavera P6 R7.0 XER of Demo 2 Sample Data
	TCHART_DEMO2.tchart	Turbo Chart Demo 2 Sample File
	TCHART_DEMO2.tclib	Turbo Chart Demo 2 Shape Library File
	TCHART_DEMO2 SPREADSHEET.xlsm	MS Excel Demo 2 Data for Importing (Macro enabled)
	TCHART_DEMO2 TOP IMAGE.jpg	Demo 2 Sample Top Image
	TCHART_DEMO2 CHART.pdf	Demo 2 Chart output
HIGHRISE DEMO	Turbo Chart HIGH RISE DEMO.tchart	Turbo Chart High Rise Sample File
	Turbo Chart High Rise Demo Shape Library.tclib	Turbo Chart High Rise Sample Shape Library File
	HIGHRISE Acts.xlsx	MS Excel High Rise Sample Data for Spreadsheet Importing

FOLDER	FILE	DESCRIPTION
METRO TUNNEL	TURBO CHART METRO TUNNEL EXAMPLE.xer	Primavera P6 R7.0 XER of Metro Tunnel Sample Data
	METRO TUNNEL.tchart	Turbo Chart Metro Tunnel Sample File
	Metro Tunnel Shapes.tclib	Turbo Chart Metro Tunnel Shape Library File
	METRO_SCHEMATIC2.png	Metro Tunnel Sample Top Image
	Metro Tunnel Highlights.tchiliter	Metro Tunnel Highlighter File
	METRO TUNNEL ANNOTATIONS.tcgraphics	Metro Tunnel Annotations File
	STANDARD PAGE LAYOUT.tcpagelayout	Turbo Chart Standard Page Layout File
	METRO PAGE LAYOUT.tcpagelayout	Turbo Chart Metro Tunnel Page Layout File

*.tchart data contains all the information to produce Charts from Turbo Chart, including:

- Task (Activity) data
- Shape Libraries
- Top Images
- Highlighters
- Annotations
- Datasets
- Multi-Chart Definitions

Select **FILE > OPEN** within Turbo Chart to open and access the sample data.

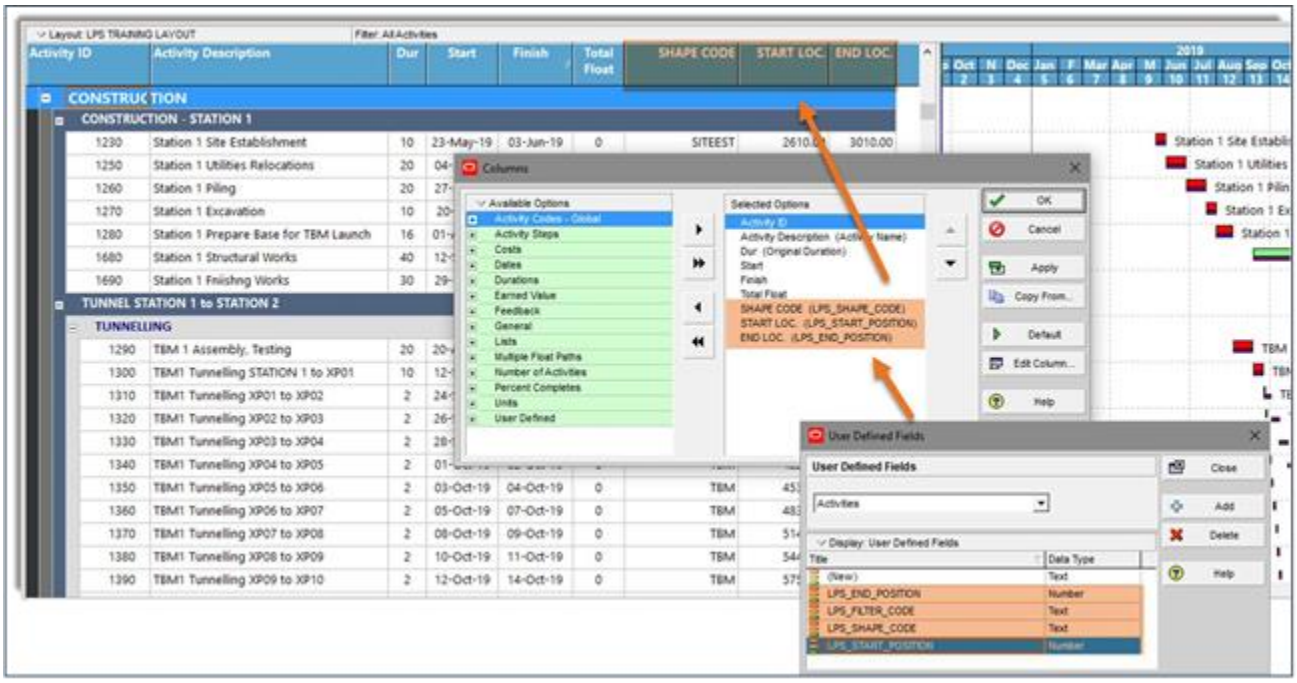
4 PREPARING PRIMAVERA P6 SCHEDULE DATA

4.1 Creating Additional Data Fields

The additional location and display data to be added to tasks for producing Time Location charts in Turbo- Chart, require activity User Defined Fields (UDFs) to be populated. The following are the activity UDFs required:

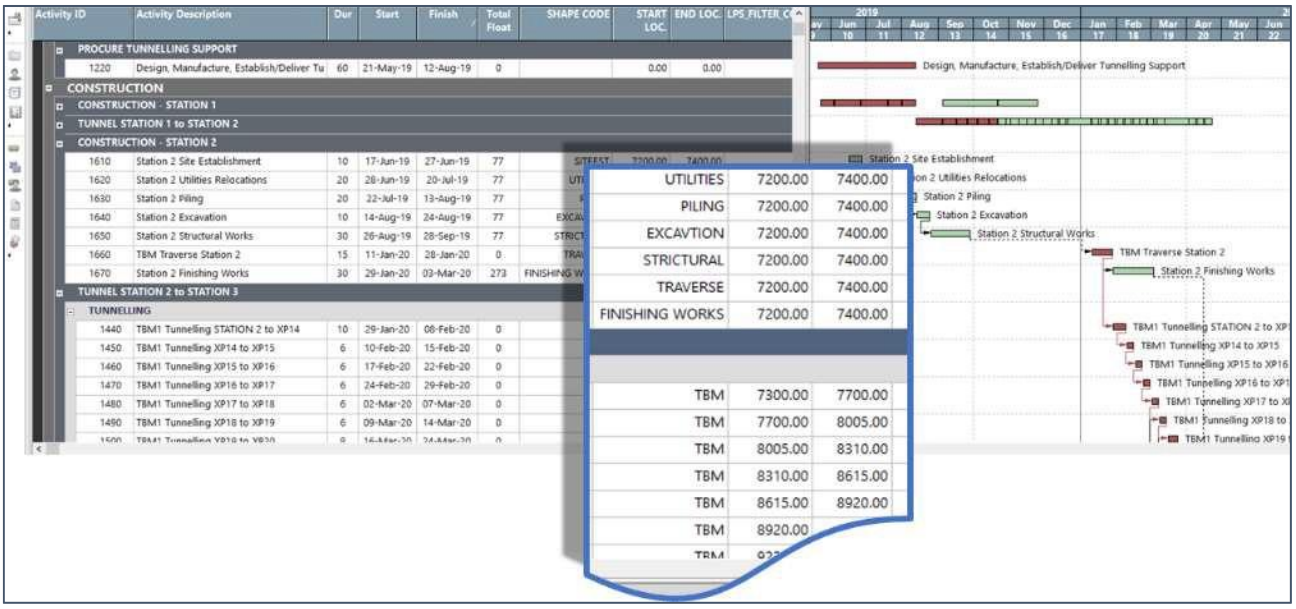
UDF Field	Field Type	Required?	Used for
Start Position	Numeric	Yes	Defining the start position (along the project alignment) for the task
End Position	Numeric	Yes	Defining the end position (along the project alignment) for the task
Shape Code	Text	Yes	Used to generate the display shape, colors etc. on the chart
Filter Code	Text	No	A secondary code for filtering purposes (not mandatory)

Add these UDF fields to the activity layout used for schedule preparation by modifying the activity layout columns:



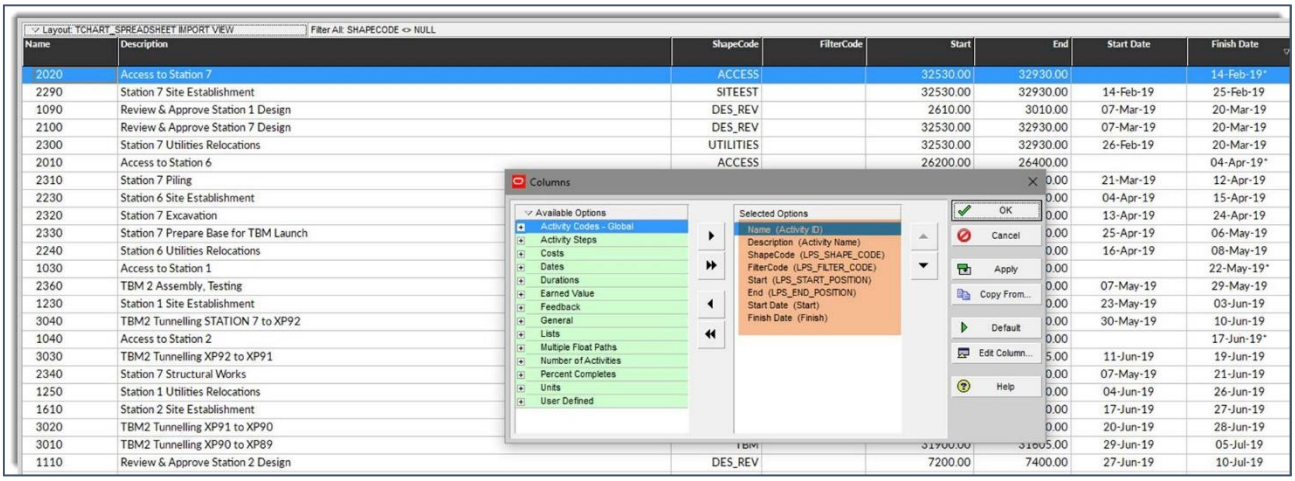
4.2 Populate Additional Data Fields

For schedule tasks to be displayed upon the Time Location charts, populate the UDF fields with the required data. When complete, press F10 to commit data to the P6 Database if required.



4.3 Preparing P6 Layout for Spreadsheet Import

It is possible to create a layout within P6 that allows for spreadsheet copy and pasting into Turbo-Chart, the layout needs to identify the following:



Name	Description	ShapeCode	FilterCode	Start	End	Start Date	Finish Date
2020	Access to Station 7	ACCESS		32530.00	32930.00		14-Feb-19*
2290	Station 7 Site Establishment	SITEEST		32530.00	32930.00	14-Feb-19	25-Feb-19
1090	Review & Approve Station 1 Design	DES_REV		2610.00	3010.00	07-Mar-19	20-Mar-19
2100	Review & Approve Station 7 Design	DES_REV		32530.00	32930.00	07-Mar-19	20-Mar-19
2300	Station 7 Utilities Relocations	UTILITIES		32530.00	32930.00	26-Feb-19	20-Mar-19
2010	Access to Station 6	ACCESS		26200.00	26400.00		04-Apr-19*
2310	Station 7 Piling				0.00	21-Mar-19	12-Apr-19
2230	Station 6 Site Establishment				0.00	04-Apr-19	15-Apr-19
2320	Station 7 Excavation				0.00	13-Apr-19	24-Apr-19
2330	Station 7 Prepare Base for TBM Launch				0.00	25-Apr-19	06-May-19
2240	Station 6 Utilities Relocations				0.00	16-Apr-19	08-May-19
1030	Access to Station 1				0.00		22-May-19*
2360	TBM 2 Assembly, Testing				0.00	07-May-19	29-May-19
1230	Station 1 Site Establishment				0.00	23-May-19	03-Jun-19
3040	TBM2 Tunnelling STATION 7 to XP92				0.00	30-May-19	10-Jun-19
1040	Access to Station 2				0.00		17-Jun-19*
3030	TBM2 Tunnelling XP92 to XP91				5.00	11-Jun-19	19-Jun-19
2340	Station 7 Structural Works				0.00	07-May-19	21-Jun-19
1250	Station 1 Utilities Relocations				0.00	04-Jun-19	26-Jun-19
1610	Station 2 Site Establishment				0.00	17-Jun-19	27-Jun-19
3020	TBM2 Tunnelling XP91 to XP90				0.00	20-Jun-19	28-Jun-19
3010	TBM2 Tunnelling XP90 to XP89	TBM		31900.00	31805.00	29-Jun-19	05-Jul-19
1110	Review & Approve Station 2 Design	DES_REV		7200.00	7400.00	27-Jun-19	10-Jul-19

Column Heading	P6 Data Field	Data Type
Name	Activity ID	Text Values
Description	Activity Name	Text Values
ShapeCode	P6 UDF for Shapes	Text Values
FilterCode	P6 UDF for Filters	Text Values
Start	P6 UDF for Start Position	Numeric Values
End	P6 UDF for End Position	Numeric Values
Start Date	Start	Date Format
Finish Date	Finish	Date Format

4.4 P6 Schedule Data Preparation Tips

- Not all schedule tasks require populating, only those to be displayed
- Values used for Start and End location should be in the direction the work will occur, i.e. Start value can be greater than the End value.
- Saving layouts specific for Time Location charting that includes the Turbo-Chart fields can assist in Schedule preparation

5 IMPORTING SCHEDULE DATA INTO TURBO-CHART

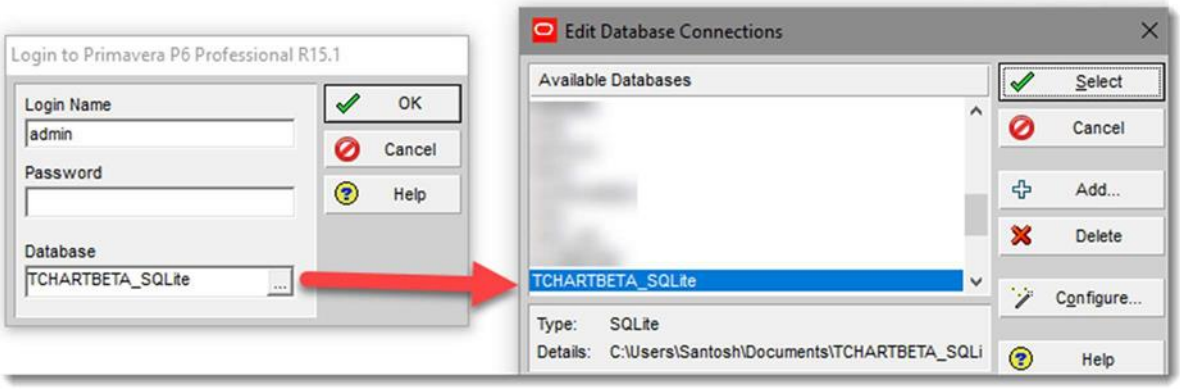
Once schedule data is prepared, it can be imported into Turbo-Chart as a dataset, note that Turbo-Chart can contain multiple datasets. Data can be imported by either:

- Connecting directly to the scheduling system (e.g. Primavera P6 Database)
- Connecting to Data exported form the scheduling System (e.g. Primavera P6 XER file)
- Connecting to via Web Services (E.g. Primavera P6 Cloud Databases)
- Pasting Spreadsheet data into a Turbo-Chart Dataset

5.1 Connecting to a local P6 Database

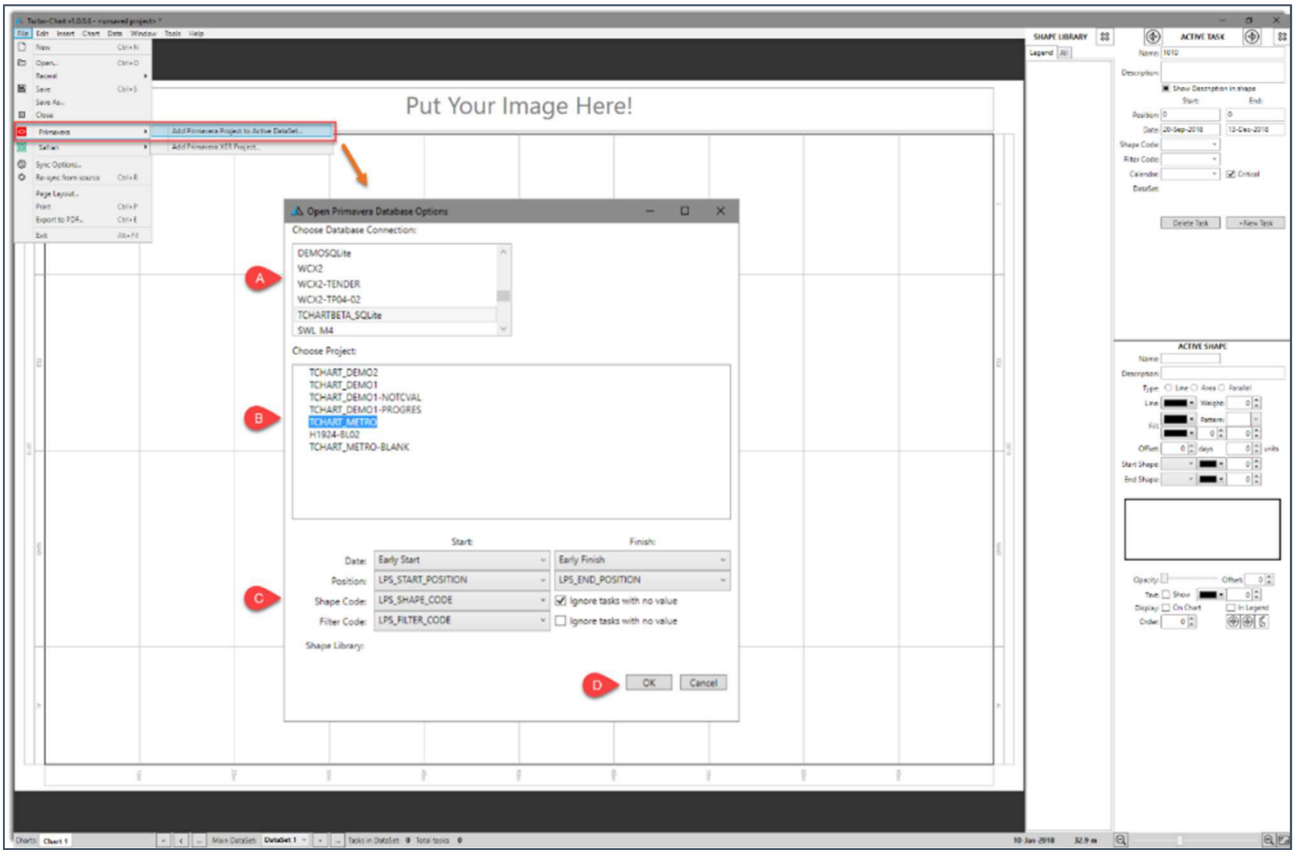
For local Primavera P6 database, after launching Turbo-Chart, select **File> Primavera > Add Primavera Project to Active Dataset**

A. Select Database connection – Requires the P6 Client to be installed. Connections listed will be the same as connections selectable from the P6 Client. Note Users will require that the P6 Database allows read-access to the database, that may require Privileged user passwords



B. Select project to import

C. Map data fields containing data

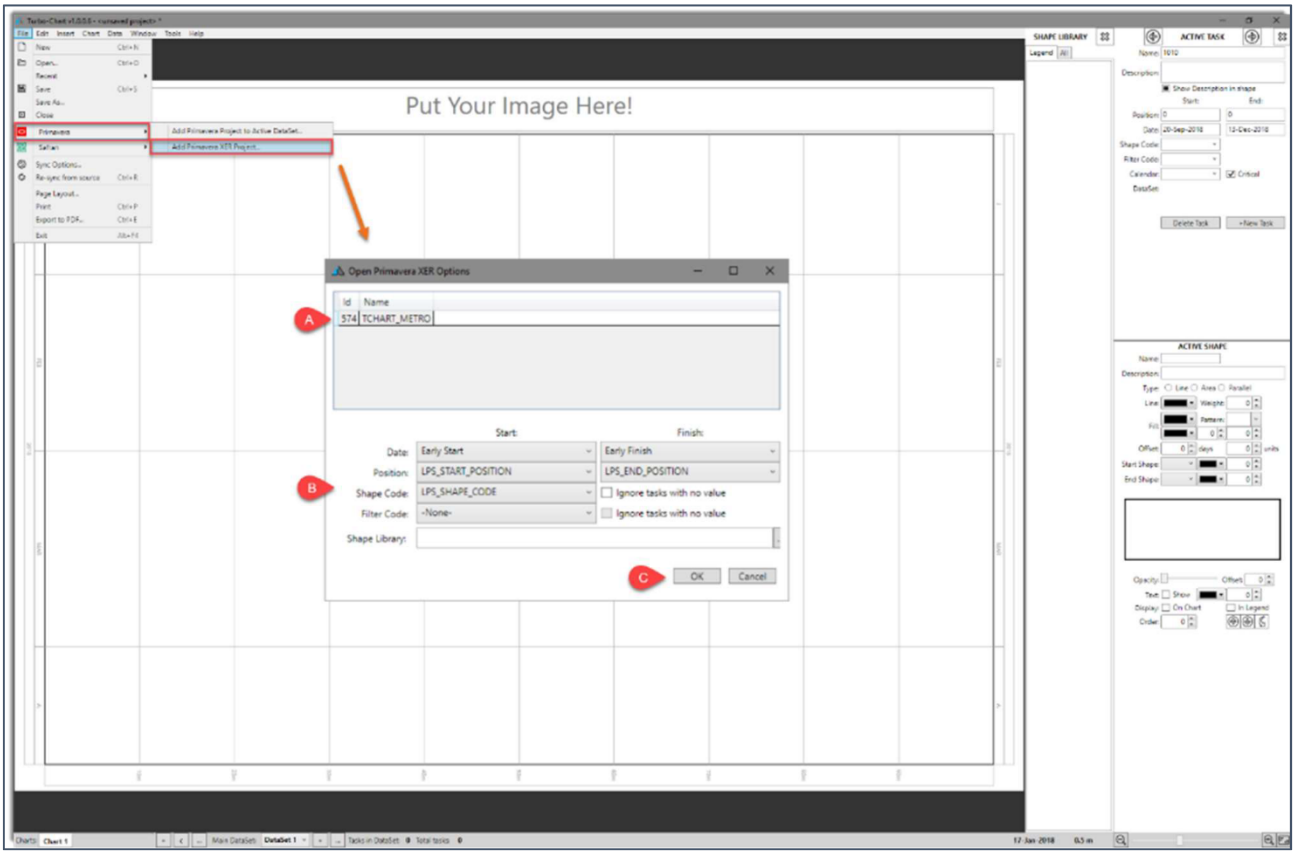


D. Press ok for data to be imported from P6 as a new dataset

5.2 Importing from P6 XER file

To import from an XER file, after launching Turbo-Chart, select **File > Primavera > Add Primavera XER Project** and locate the XER file to import, or select **File > Open** and change the file type to **XER**

A. Select the Project to import
B. Map data fields containing data

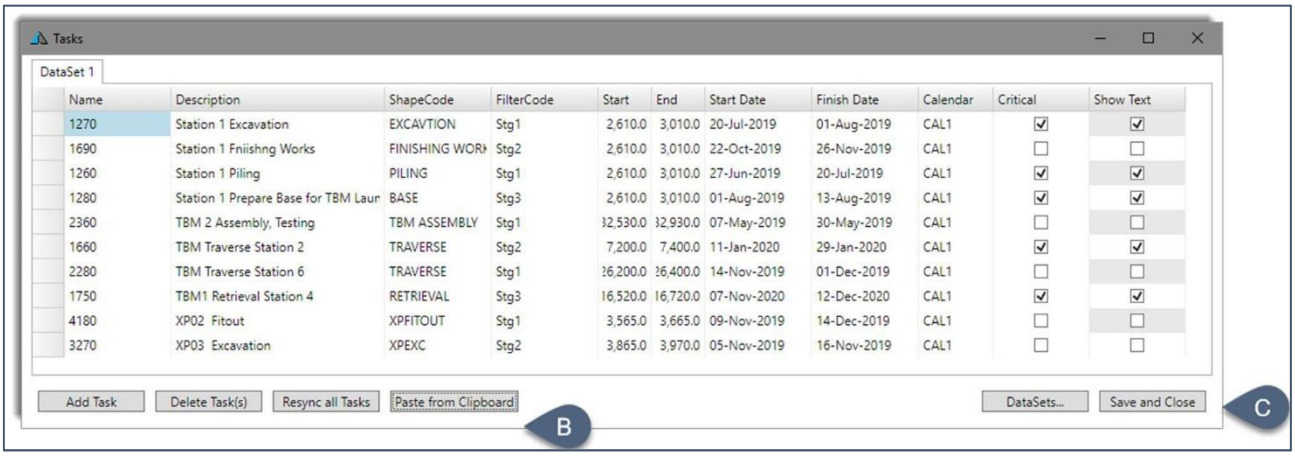


C. Press ok for data to be imported from the P6 XER as a new dataset

5.3 Importing from Spreadsheet Data

To import from spreadsheet data, after launching Turbo-Chart, select **Data > Tasks** to view the task list for the selected Dataset.

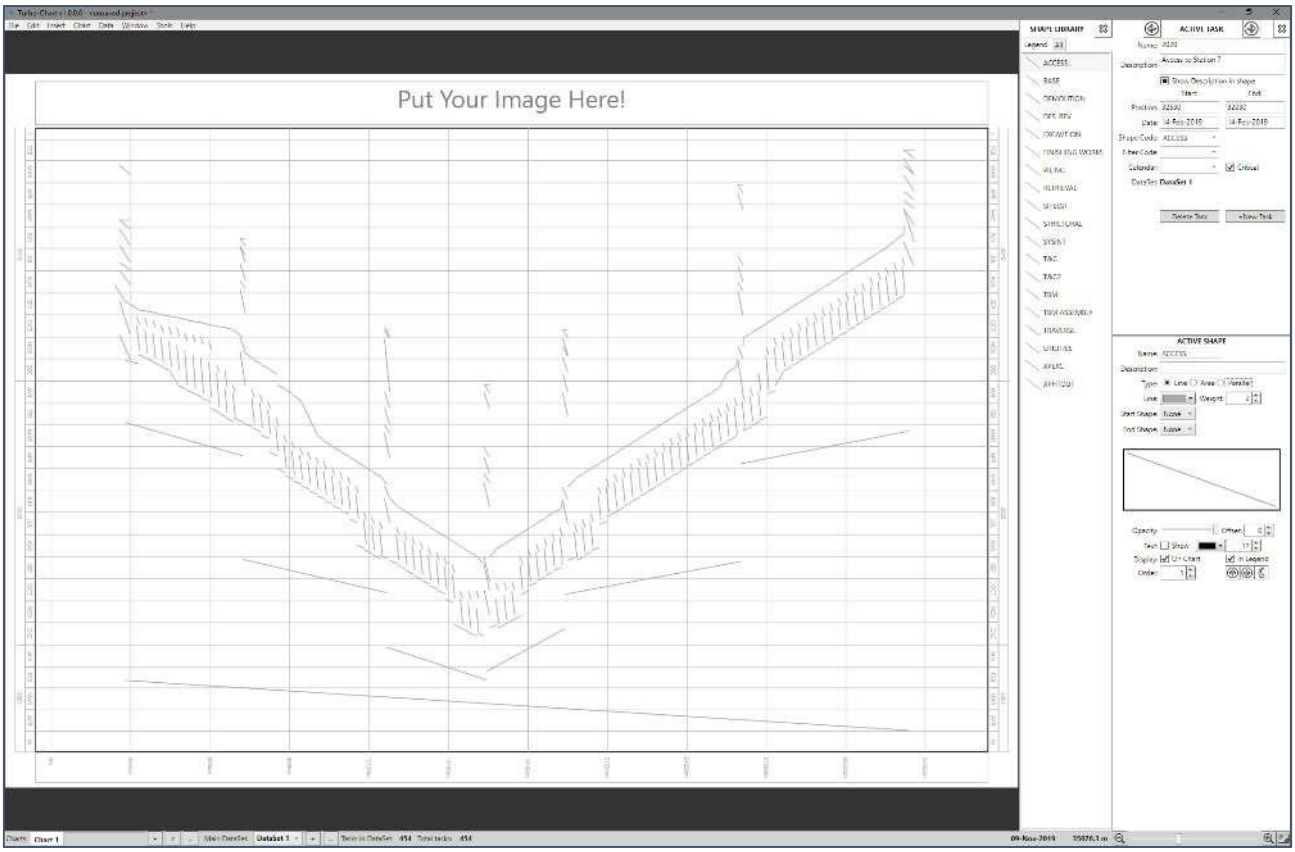
A. Copy the spreadsheet data from the source (including headers) to clipboard
B. Select **Paste from Clipboard** to paste the data



C. Select **Save and Close** to save the Turbo-Chart file with pasted spreadsheet data.

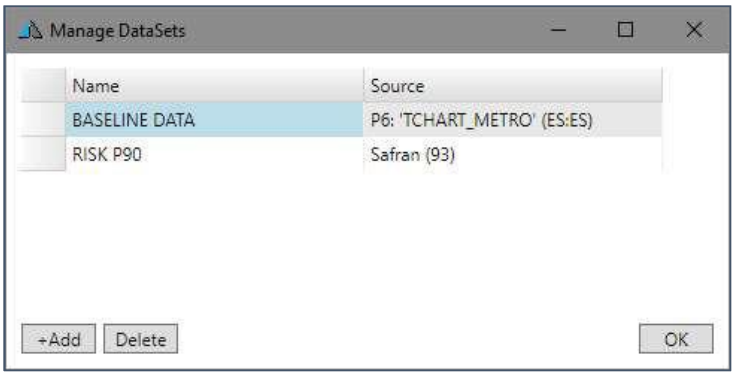
5.4 Post Importing

After importing from data, the chart may require fitting to view the extents by location and dates of the imported data. Press CTRL+F5 to fit chart to imported data, or select **Chart > Best Fit** for options to fit only time or location axis.
The Imported data without any customization will appear as such, and will be ready for customization



5.5 Managing Datasets

Datasets in Turbo-Chart are used to store the task data that has been imported, pasted or manually developed within Turbo-Chart. Each dataset can have its own source, that may be from varying scheduling systems, or may represent a snapshot of the same project.
Turbo-Chart files can contain multiple Datasets from any source. To view the source for any dataset, select **Data > Datasets** from the menu to view the name and source of each dataset.



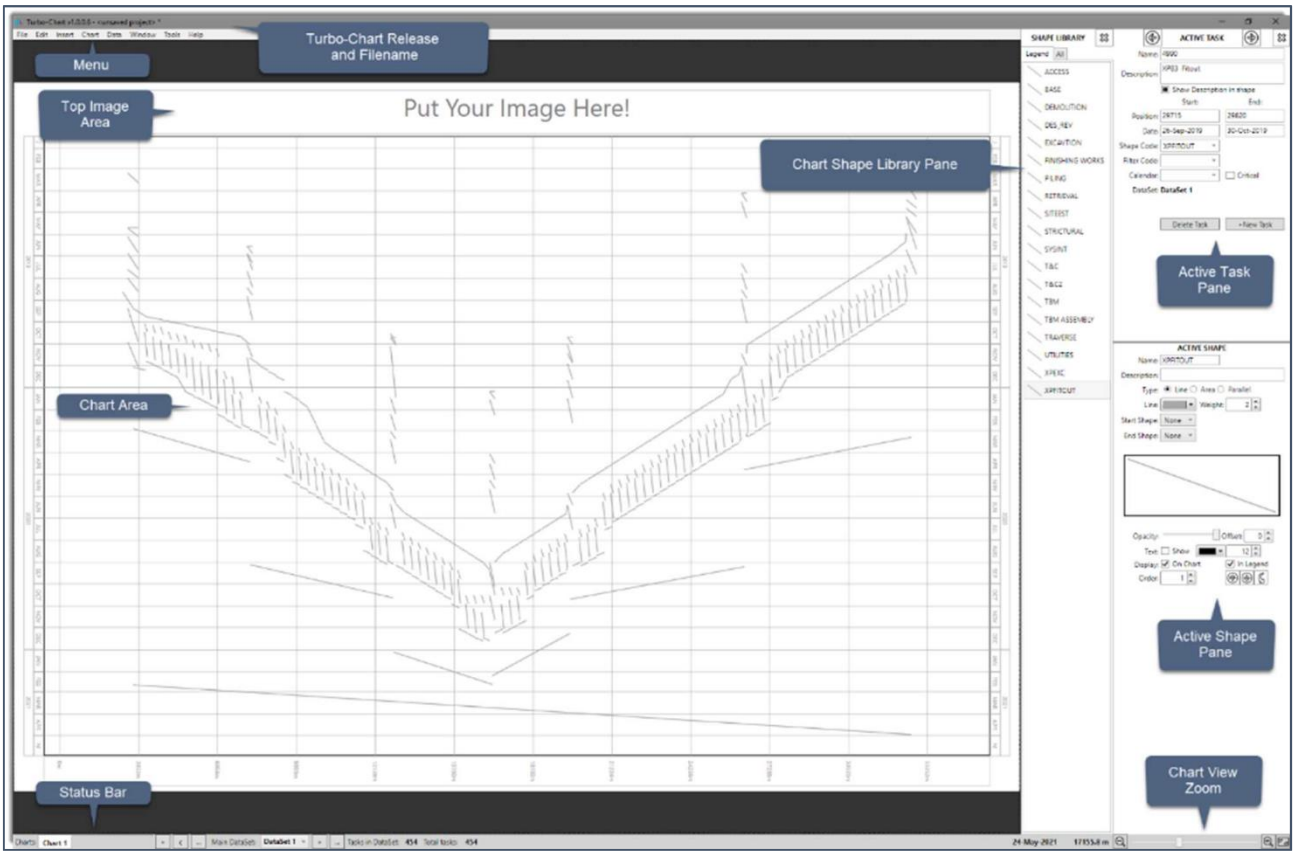
To modify any datasets name, click in the Name cell and edit. Use the +**ADD** and **Delete** buttons to create new datasets or to delete existing datasets. Further uses for datasets are detailed in this guide section "Adding datasets from updated spreadsheet/XER files"

5.6 Tips on Importing and Managing Datasets

- The task contents of any dataset can be viewed by selecting **Data > Tasks**
- Once data is imported into a dataset, any further imports require a new dataset to be added and selected.
- If a Dataset indicates a source, then the dataset can be synchronized (updated)
- If no source is shown, the dataset can only be updated manually, or by overwriting using the Spreadsheet Paste function
- Connection to databases allow existing datasets to by updated via Synchronization
- Spreadsheet import requires headers that match the required format. Refer to the Sample data for a template XLS file.
- Spreadsheet pasting into existing data will overwrite fields where the "name" field is matched. If no existing name match exists, a new task will be added to the dataset.

6 NAVIGATING AROUND TURBO-CHART

Turbo-Chart consists of the following main areas of the Application window:



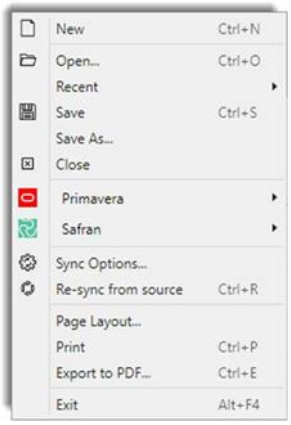
6.1 Turbo-Chart Release and Filename

The top bar of the Turbo-Chart application window will show the current release of Turbo-Chart being used (Update options will be presented when launching Turbo-Chart if connected to the Internet and a later release is available).
The current filename of the Turbo-Chart file being used will also be shown, with an Asterisk (*) indicating unsaved changes exist for this file.

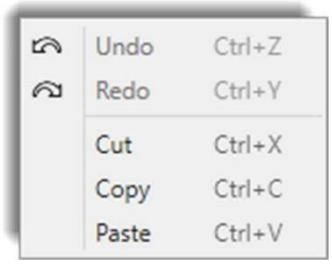
6.2 Menu

Additional functionality for Turbo Chart can be accessed from the menus as shown below:

File Menu



Edit Menu



Insert Menu

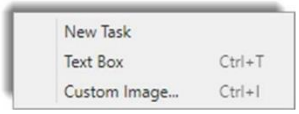
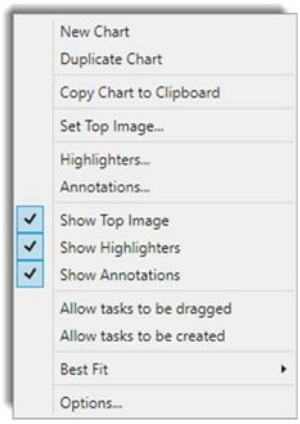
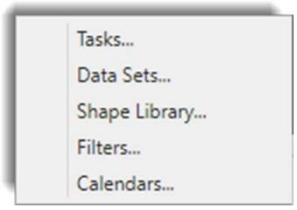


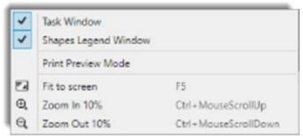
Chart Menu



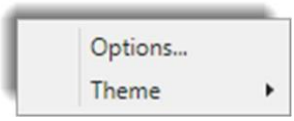
Data Menu



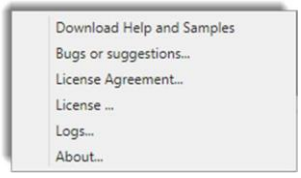
Window Menu



Tools Menu



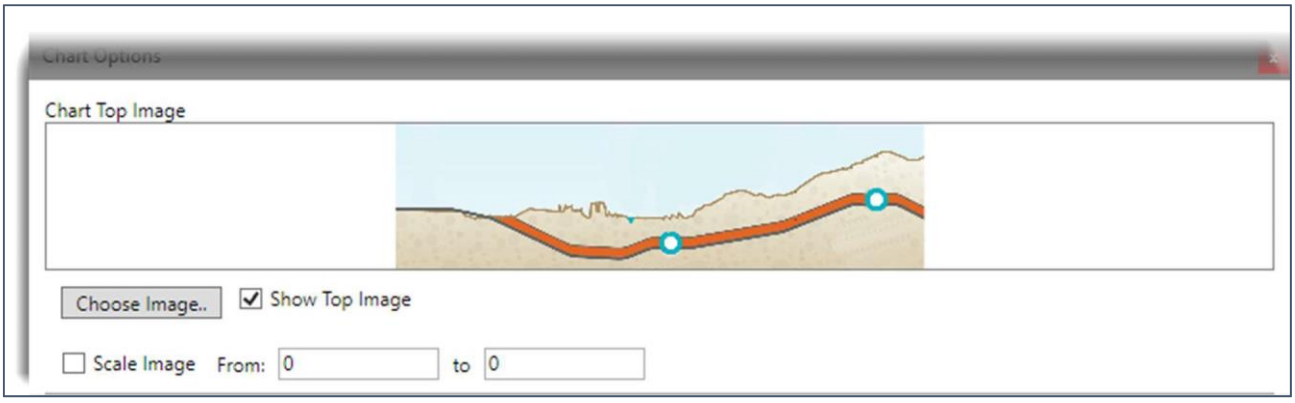
Help Menu



6.3 Top Image Area

Top images allow a graphic to be placed at the top of each chart to assist in representing the linear alignment of the project. Any *.png or *.jpg graphic image can be used, with best results obtained from a graphic that has a width: height ratio of 6:1 or more. Other images will be scaled to fit. Images can be added by either:

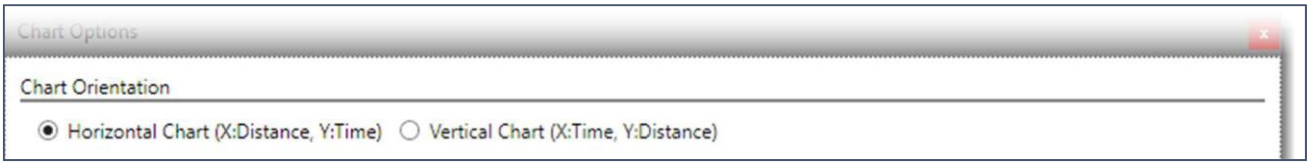
- Double Clicking on the top image area and selecting an image
- Selecting **Chart > Options** from the menu and setting options in the Chart Top Image area of the Chart Options



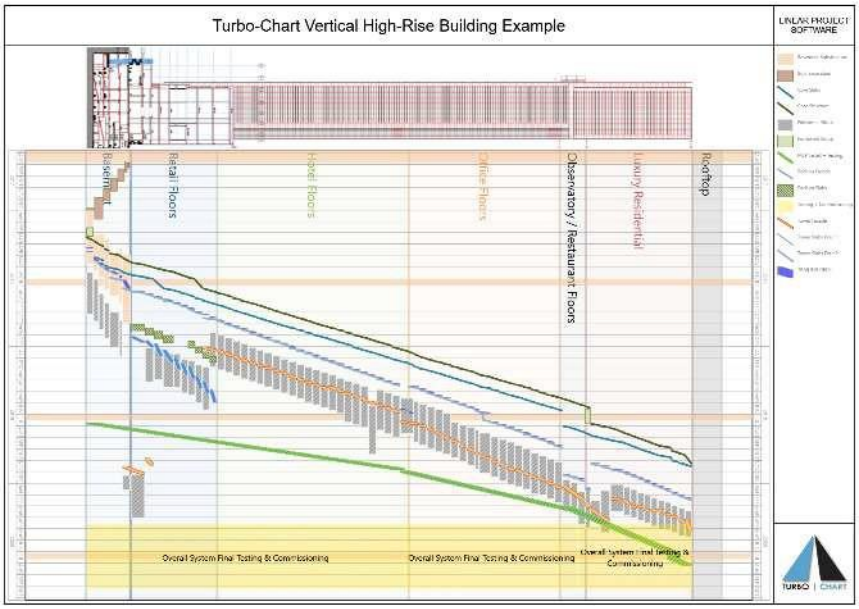
The Chart Options also sets the image to be displayed or not. And to fix the image extents within specified location values. **NOTE**: options for top images are chart specific, and may be changed for each chart in the current Turbo-Chart file.

6.4 Chart Area

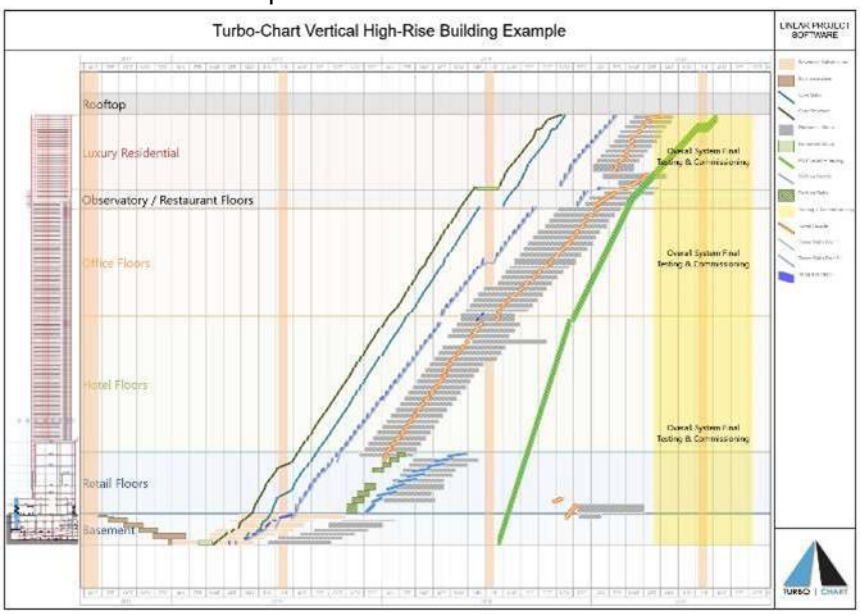
The chart area is displays the imported schedule tasks. Holding the mouse over any task provides key information about the task. Selecting a task also activates the **Active Task Pane** and **Active Shape Pane** with details of the selected task.
A number of options regarding the chart can be accessed by selecting **Chart > Options** from the Menu. **NOTE**: options for chart area are chart specific, and may be changed for each chart in the current Turbo- Chart file.
Chart Orientation allows the Chart to be **Horizontal** with the location axis being horizontal and time vertical, or, Vertical with the location axis running down the page and time in a horizontal. Similar to how a Gantt chart may appear.



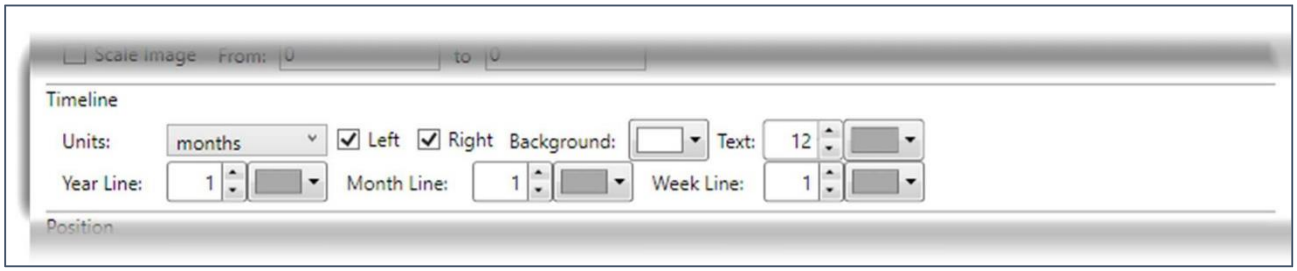
Horizontal Chart Example:



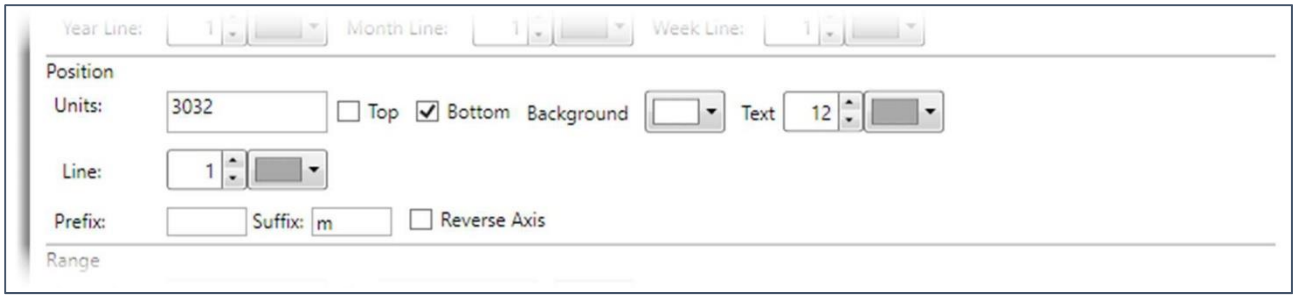
Vertical Chart Example:



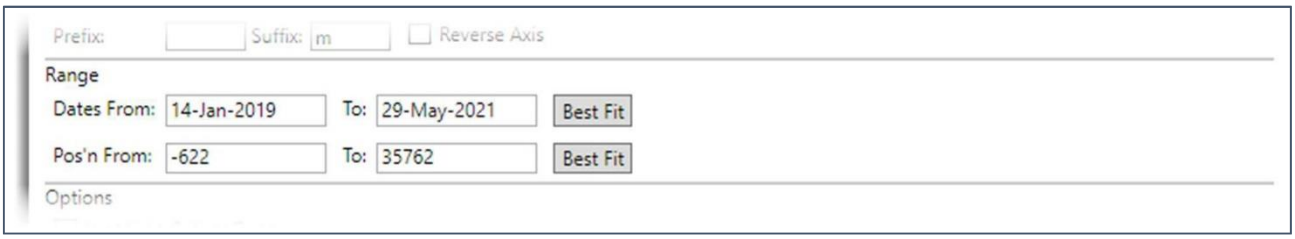
Timeline options configure the date axis:



Position options configures the Location axis:

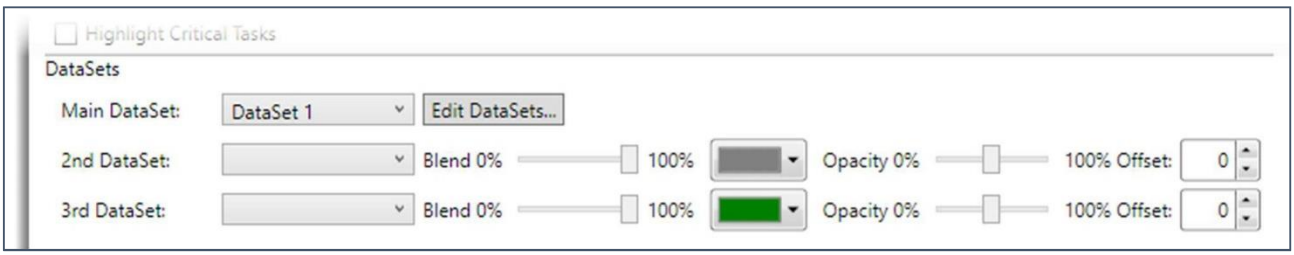


Range options configures the location and date ranges to be displayed for the chart. Selecting Best Fit will ensure that all data contained within the dataset will be displayed:



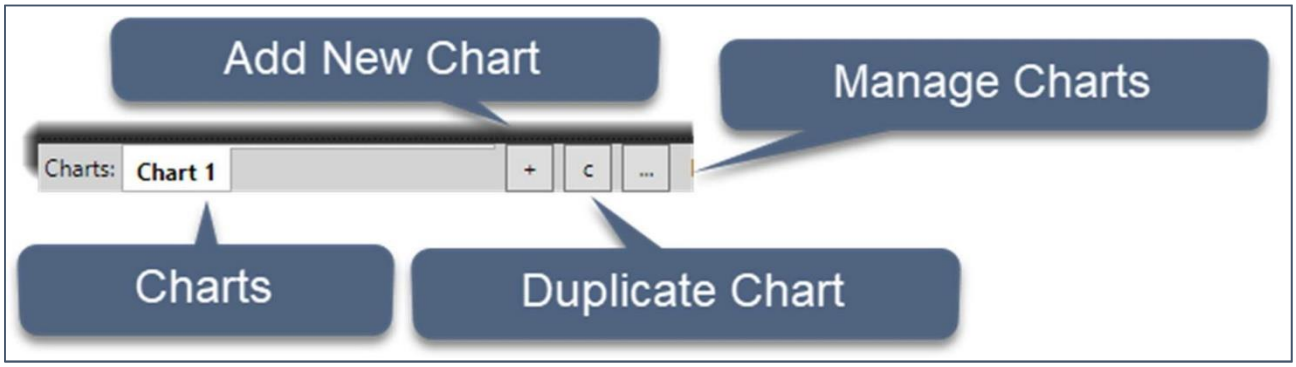
Options allows critical tasks (defined as Total Float as zero or less) to be highlighted:

Dataset Display options allow multiple datasets to be displayed, with options for the color blending, transparency and location offset to be applied to the other datasets:

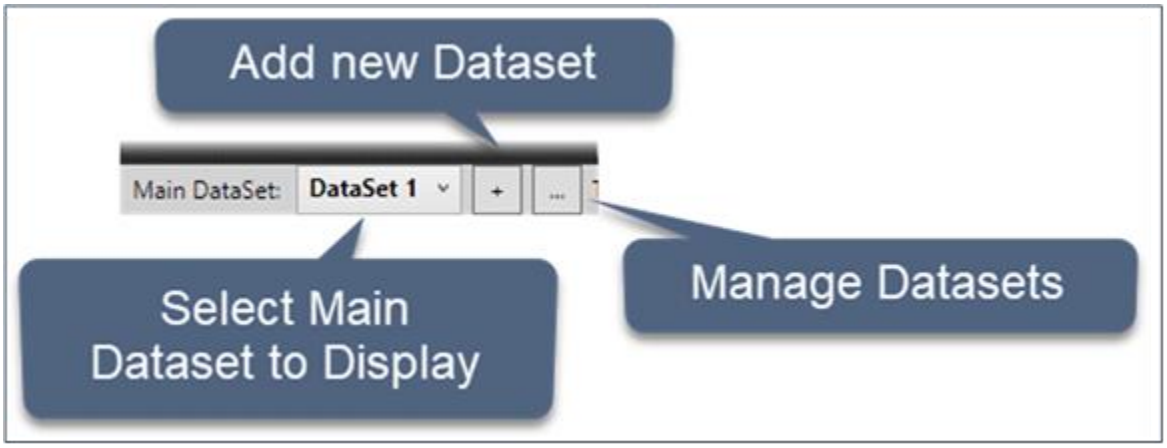


6.5 Status Bar

The status bar allows quick access to chart and dataset options, and provides general information. Chart Options to create new charts, duplicate existing or manage charts, to rename or delete:



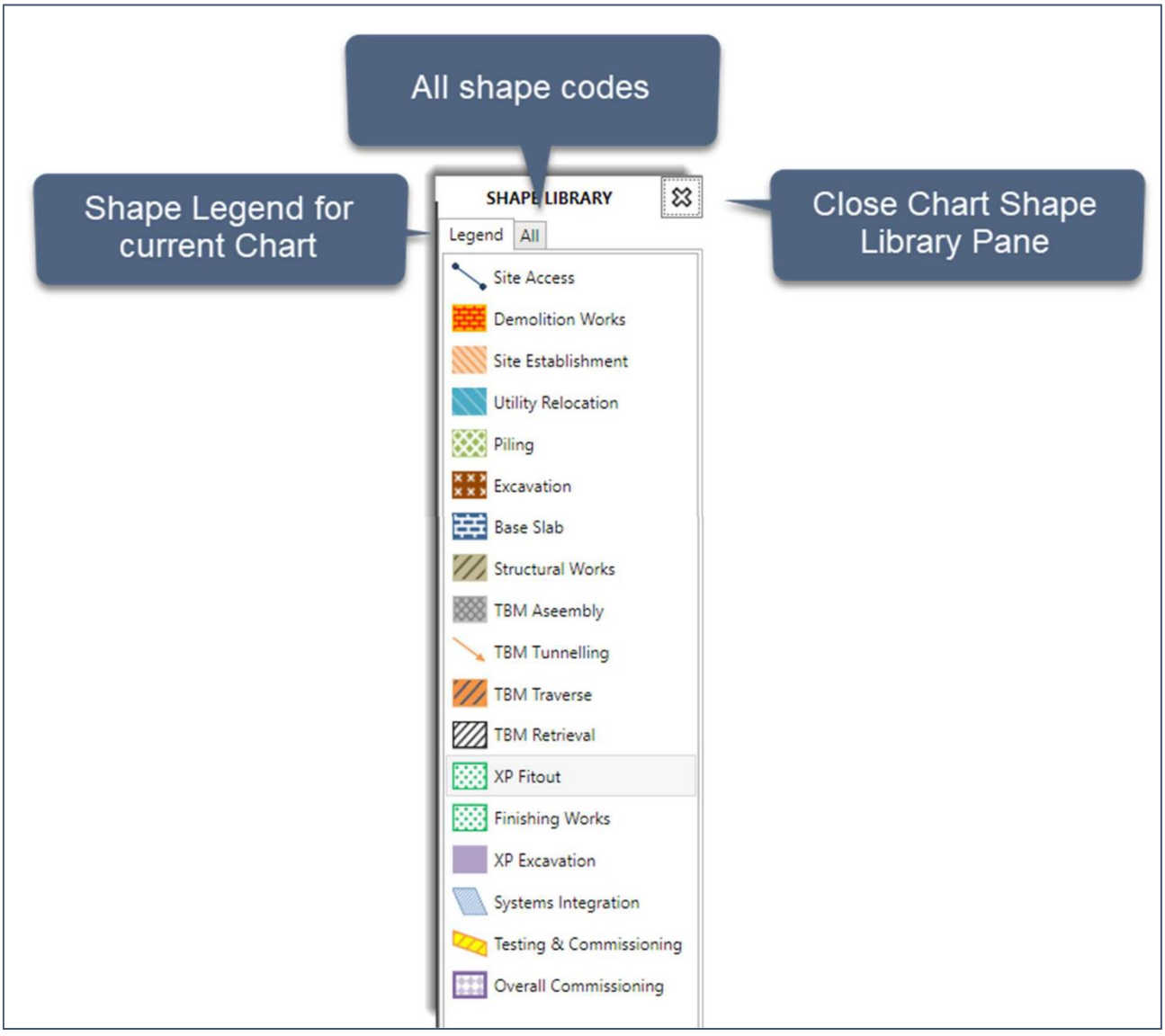
Dataset options to select the displayed dataset, add new datasets or manage datasets, to rename or delete



Additional information on the number of tasks and the location/date position of the mouse on the chart are also shown:

6.6 Chart Shape Library Pane

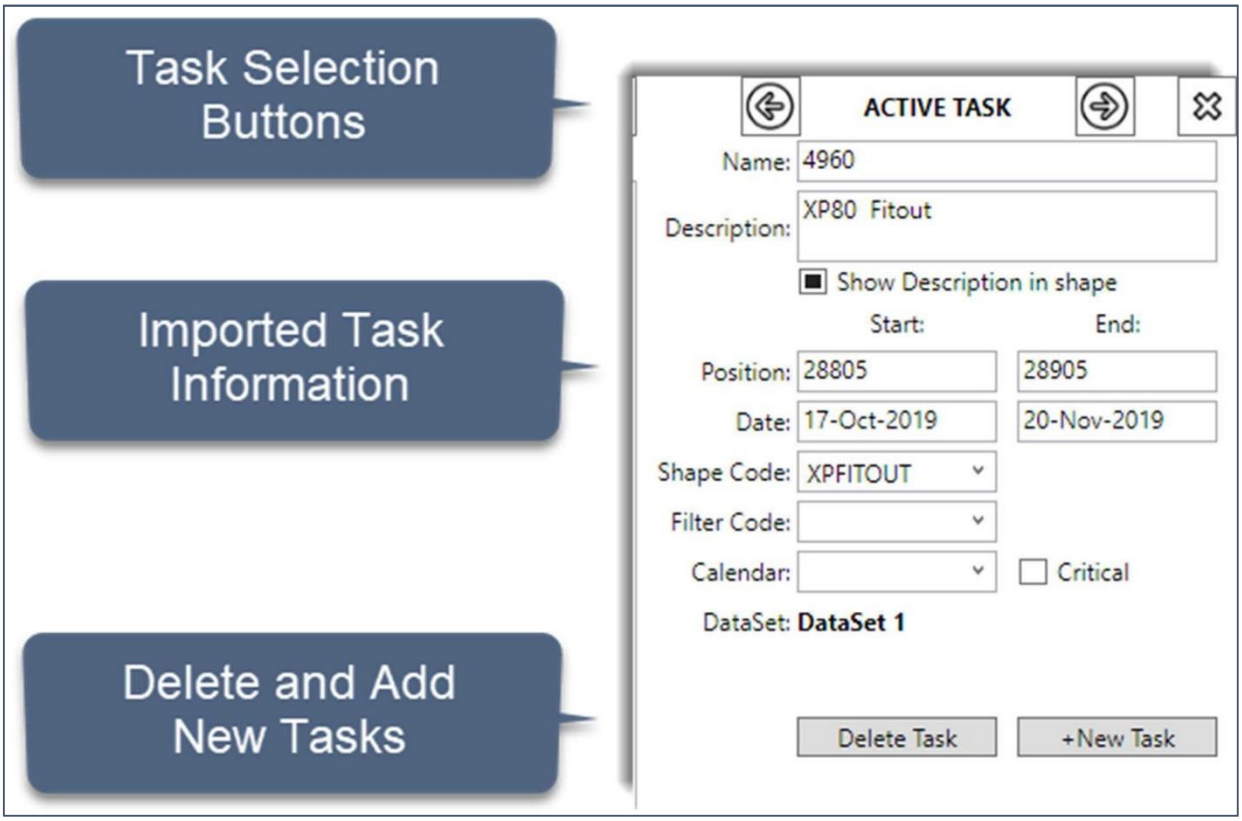
The chart shape library pane contains two tabs. The **Legend** tab presents the list of Shape codes to be displayed on the selected chart legend in Print Preview mode. **Note** options for legends are chart specific, and may be changed for each chart in the current Turbo-Chart file. The **All** tab lists all shape codes being used by all datasets contained in the current Turbo-Chart file.



Selecting an item in this pane, enables configuration of the shape code in the **Active Shape Pane**. To view the Chart Shape Library Pane once closed, select **Window > Shapes Legend Window**

6.7 Active Task Pane

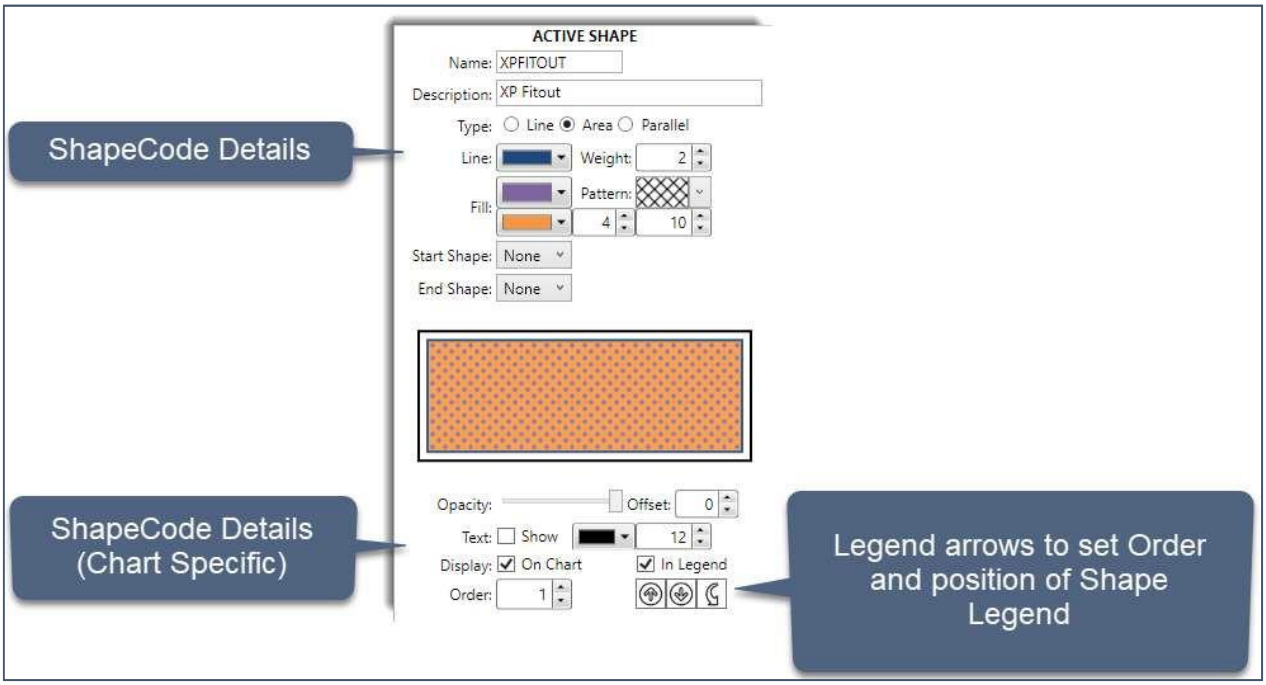
The Active Task pane provides information about tasks that have been selected in the main Chart Area. Changes can be made to the values for tasks, and any modification to imported data will be highlighted in red.



Task selection buttons cycle through the next task on the chart in order of the date within the same shape code ("i.e. Across the chart, and then down the chart), and then progresses to the next Shapecode.
Tasks may also be deleted or created using the respective buttons.
Note All Task information can also be viewed by selecting **Data > Tasks** from the menu.

6.8 Active Shape Pane

When a task is selected in the Chart Area, or a ShapeCode is selected in the Chart Shape Library Pane, the details of the selected ShapeCode are displayed, from which modifications to details of that shape code can be made.



Note

- All ShapeCode information can also be viewed by selecting **Data > Shape Library** from the menu.
- Changing any shape property will affect all tasks across all charts using that ShapeCode
- Clicking the Legend removes the Active Task Pane, and only Active Shape Pane is selectable

6.9 Tips on Creating ShapeCodes in 2 Steps

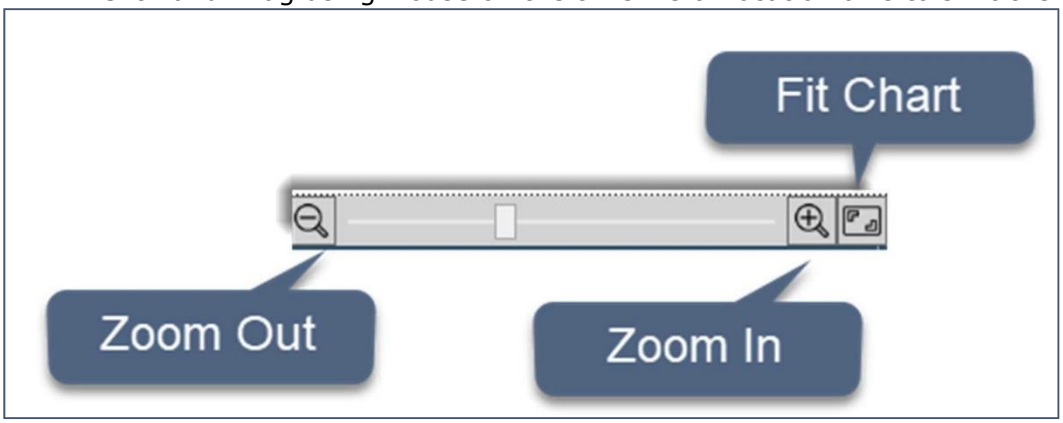
- Click on a task with a ShapeCode you want to copy
- In the Active Task Pane, Edit the Shape code

A New Shape code is created and assigned the selected task. that replicates the previously selected shape code settings

6.10 Chart View Zoom

Use the magnify buttons or slider bar to zoom in or out of the chart. Select **Fit Chart** to fit the entire chart onto the screen. Scrolling across the chart can also be achieved using the following actions:

- Holding CTRL+Mouse Wheel up/down to zoom in and out
- Mouse Wheel Moves Chart up and down if zooned In.
- Holding SHIFT+Mouse Wheel to move left/right
- Hold ALT + Mouse Wheel to move up/down
- Click CTRL + Mouse on the timeline or location axis and move the mouse to zoom the ranges
- Click and Drag using Mouse on the timeline or location axis to shift the ranges



7 CUSTOMIZING CHARTS

After importing data into Turbo-Chart, Time Location charts can be prepared by customizing the following elements:

- **Shape Library**: display definitions for Shape Codes and to assigned tasks
- **Top Image**: insert a graphic used as reference against the location axis
- **Highlighters**: add text or shaded areas within set location and date ranges
- **Annotations**: add text or graphic annotations to the chart

7.1 Customizing Shape Library

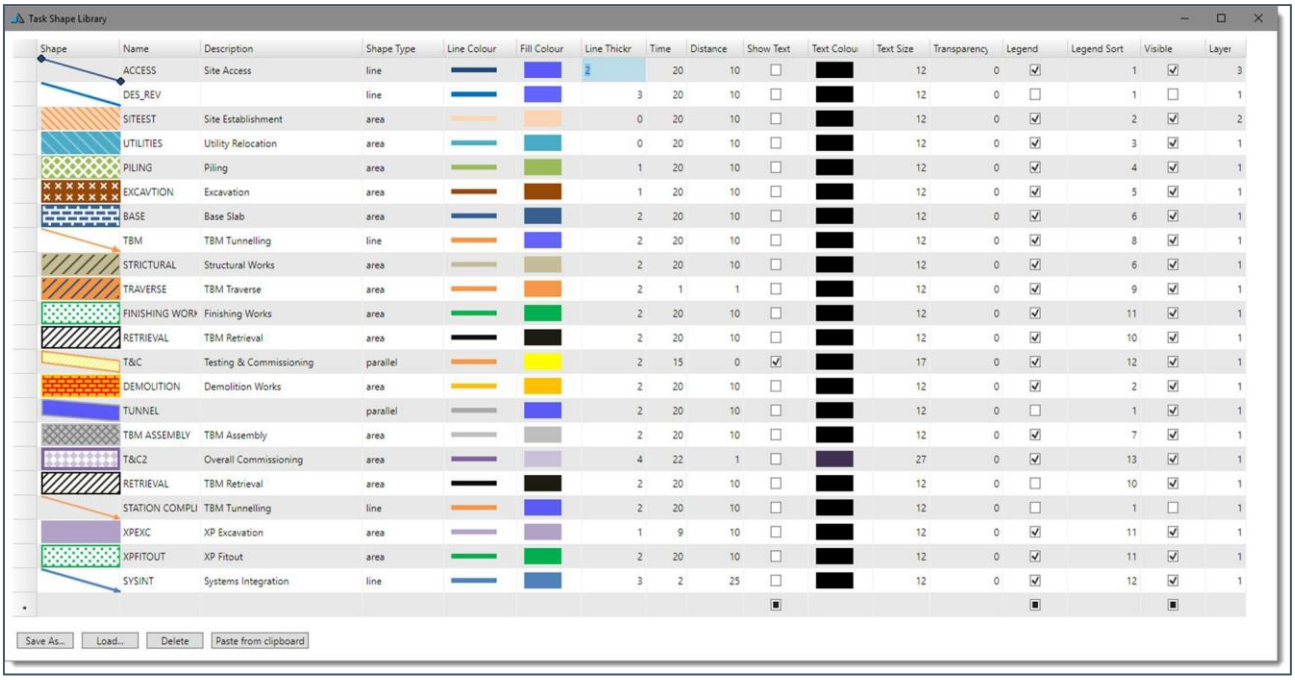
The shape library defines the properties applied for each ShapeCode in the dataset and to the tasks that are assigned to the respective ShapeCodes. These properties include:

- Shape description: text used in the chart legend (default is the shape code value)
- The shape type: Line, area or parallel
- Shape display settings for color, line weight, fill patterns and start/end shapes

After importing data, there are three methods of customizing the shape library

7.1.1 METHOD ONE: SHAPE LIBRARY

Select **DATA > Shape LIBRARY** from the menu to view the shape library window, from which all imported Task shape codes are displayed:



The Shape library window also allows saving and loading of Shape Library files, for exchanging with other Turbo-Chart files and users.
Shape Library values can also be copied and pasted into a spreadsheet for bulk data entry, either single rows of the shape library by selecting the left most cell, or selecting the entire shape library in the top left cell. Column headers must be

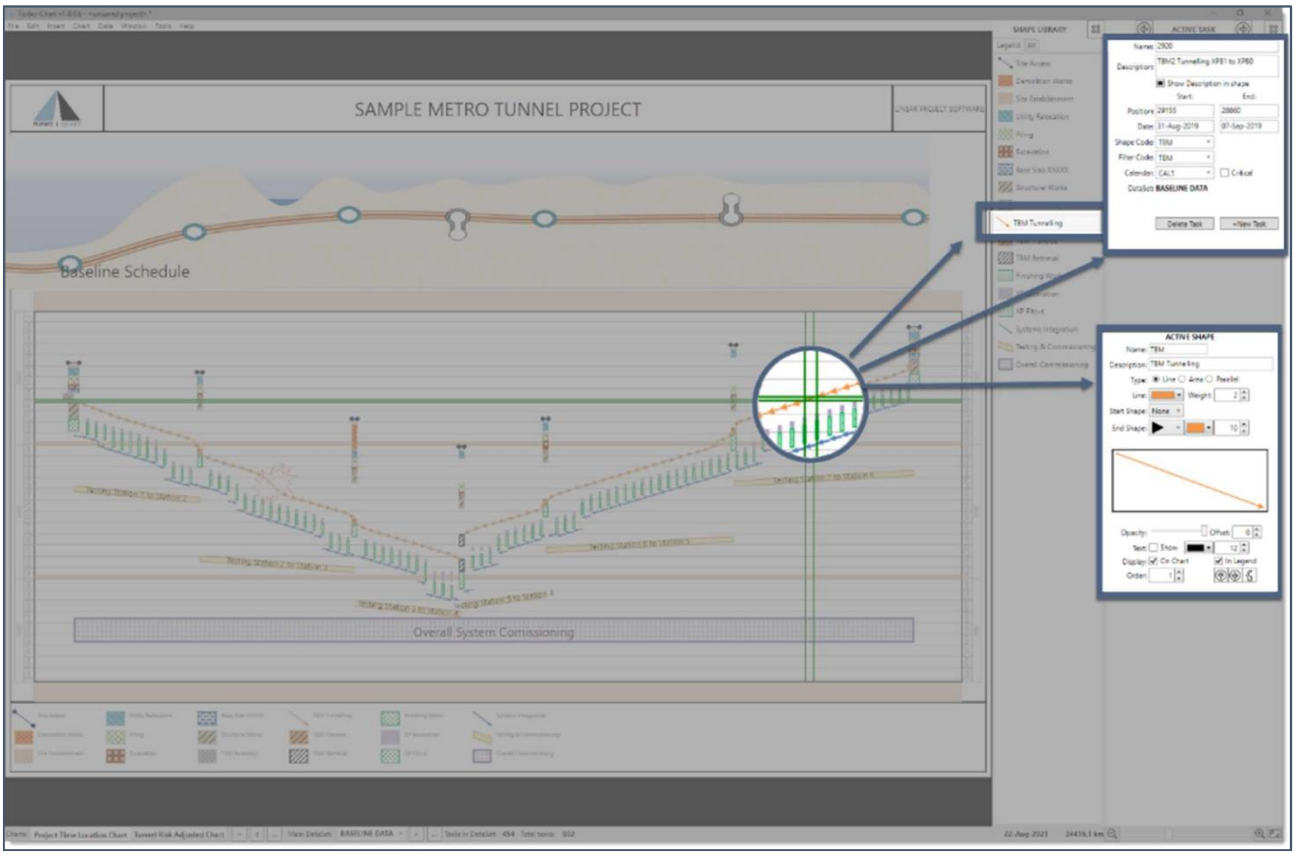
included when copying from Spreadsheet and using the **Paste from clipboard** option.

7.1.2 METHOD TWO: SELECTING CHART SHAPE LIBRARY LEGEND PANE

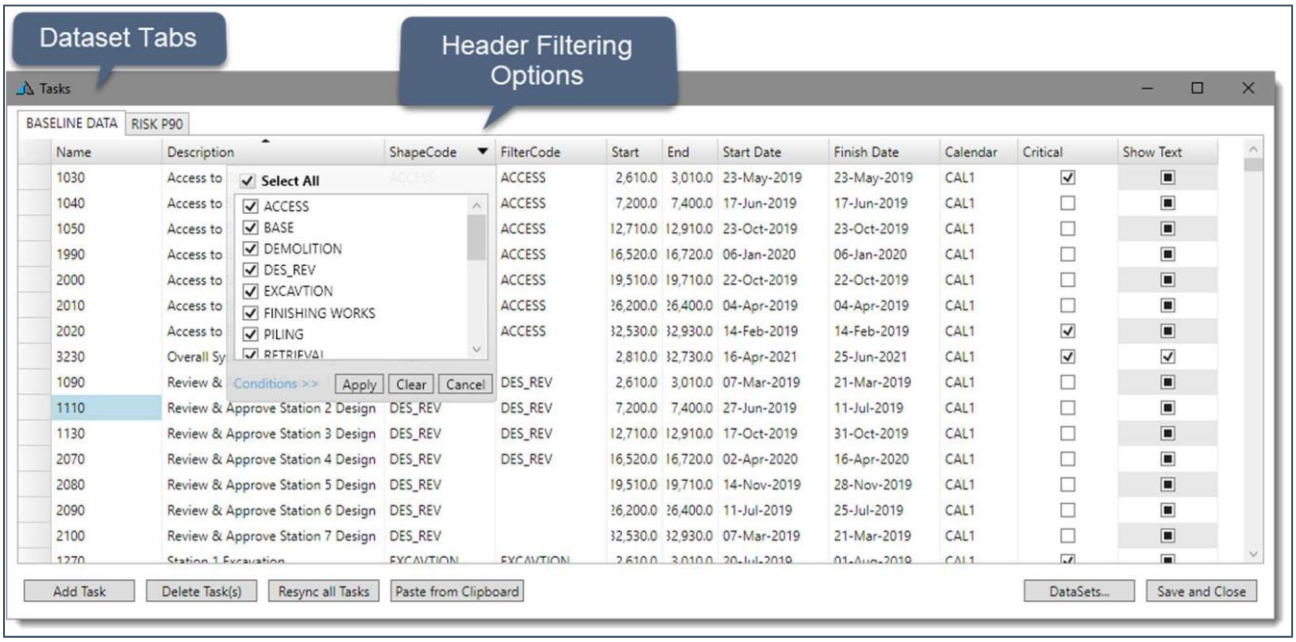
If the Chart Shape Library is not visible select **Window > Shapes Legend Window** from the menu
Selecting any Shape Library item from either the **Legend** or the **All** tabs of the Chart Shape Library Pane will display the selected ShapeCode Properties in the **Active Shape Pane**. From this screen, select the ShapeCode Details to apply to all charts, and the ShapeCode details that apply to only the selected chart on display.

7.1.3 METHOD THREE: TASK SELECTION

On the main chart area, selecting any task using the mouse will enable the task details in the **Active Task Pane** and the corresponding ShapeCode for that task in the **Chart Shape Library Pane** and **Active Shape Pane**



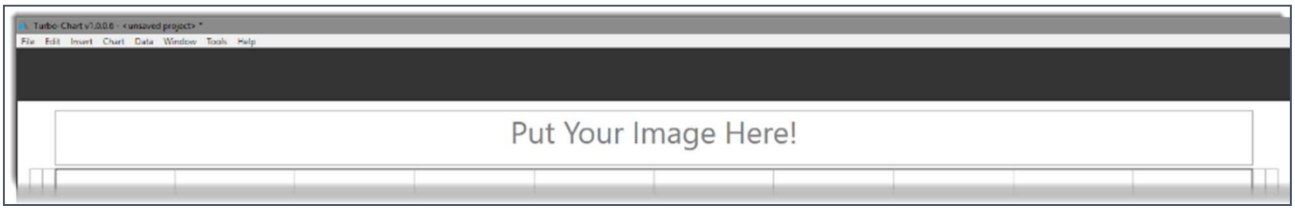
Specific tasks can also be selected by opening the Tasks listing be selecting **Data > Tasks**, choosing the required dataset tab and selecting the required task. Clicking the table headers also provides options for sorting and filtering.



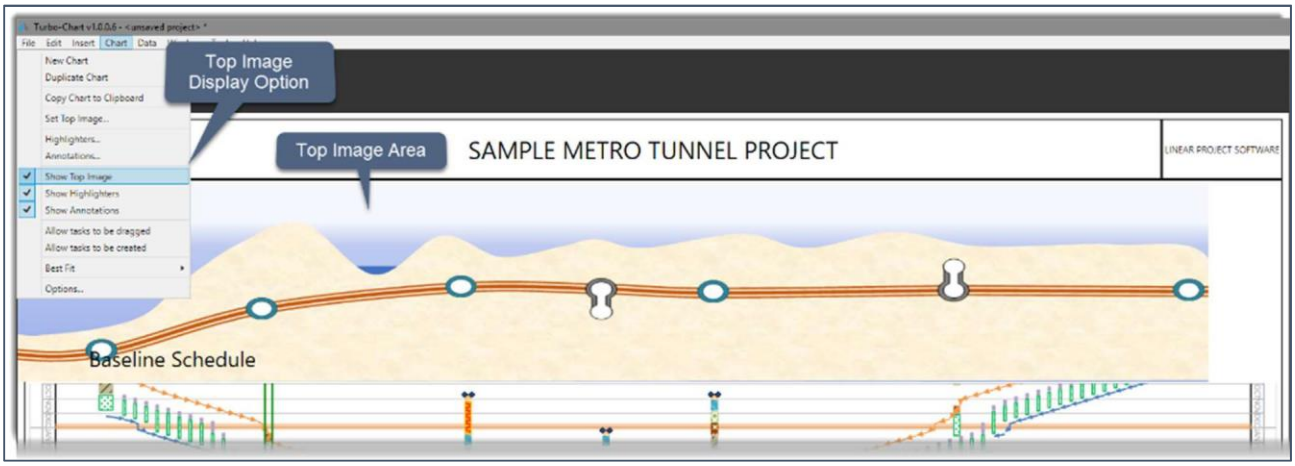
7.2 Top Image

The top image area of the chart allows a PNG or JPG graphic to be associated with the location axis of the main chart area. Graphics can used to assist in representing the linear alignment of the project using long sections, aerial photos or schematic representations.

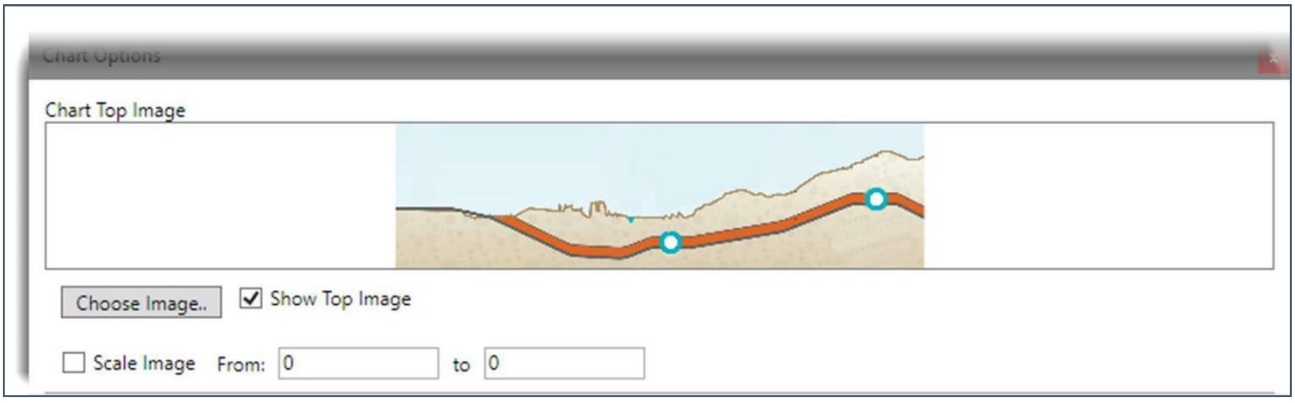
To add a top image, double click mouse in the area labelled "Put Your Image here" and select the graphic file to be added. For best results, the graphic should have a width to height ratio of 6:1 or greater.



To view or turn off the top image select **Chart > Show Top Image**



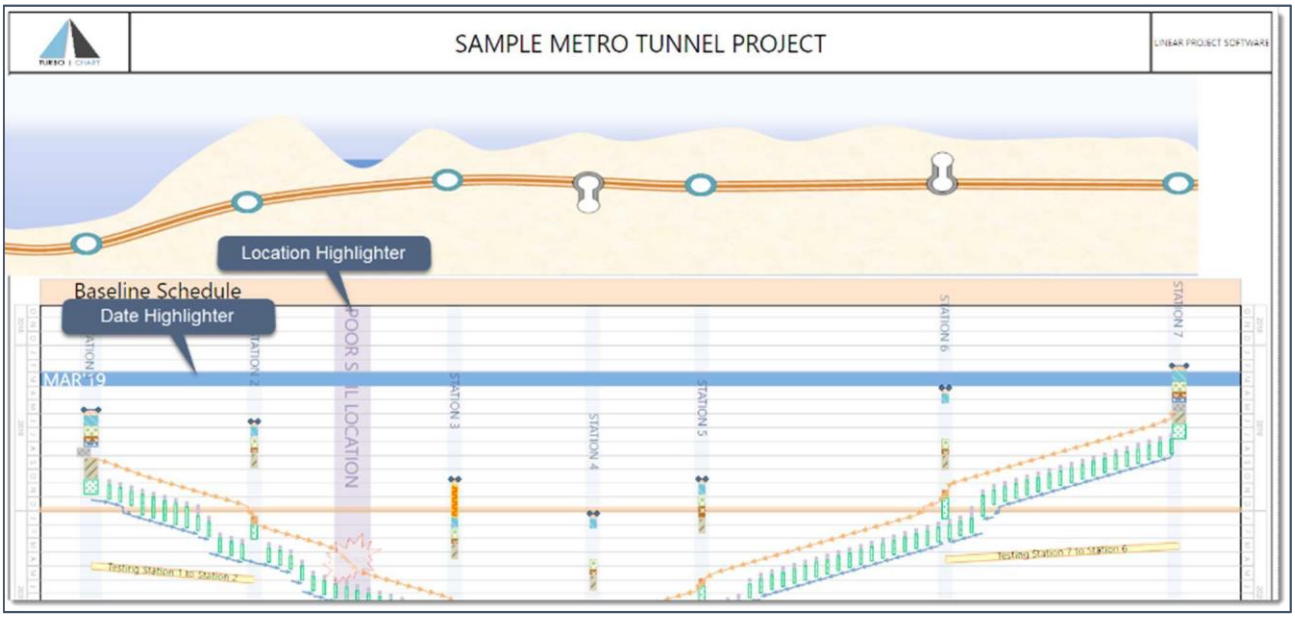
The top image can also be scaled and set to specific location values and remain fixed to those values if the location ranges are adjusted by selecting **Chart > Options** from the menu and setting options in the Chart Top Image area of the Chart Options



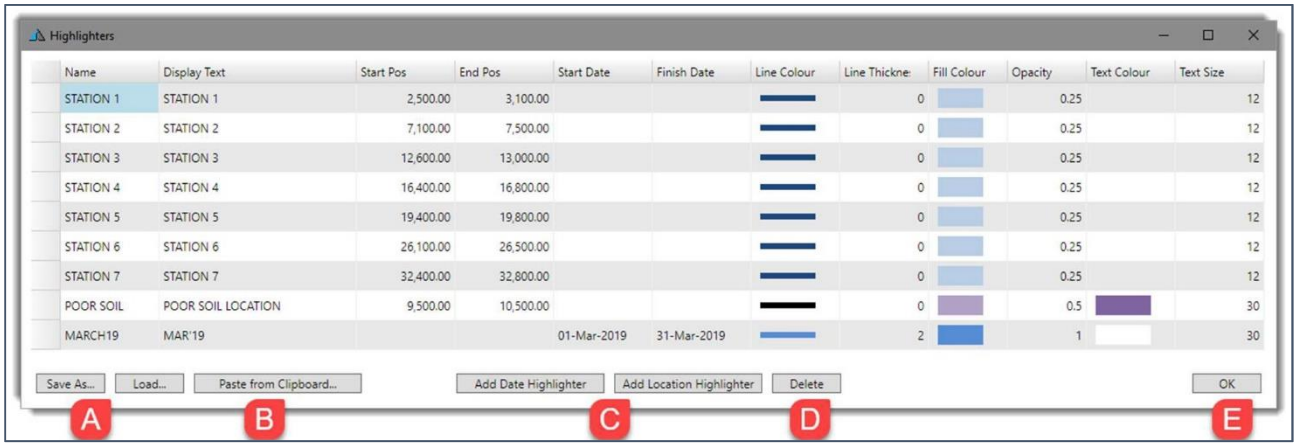
NOTE Top Image and Top Image options are specific to each chart.

7.3 Highlighters

Highlighters are used to add custom lines or shaded areas to the chart, and can be used to represent specific locations, dates or ranges of either. **NOTE** Highlighters displayed are specific to each chart in the Turbo-Chart file.



To modify Highlighters, select **Chart > Highlighters** to view the Highlighters options window



A. The Highlighters option window also allows saving and loading of Highlighter files, for exchanging with other Turbo-Chart files and users
B. Highlighter values can also be copied and pasted into a spreadsheet for bulk data entry, either single rows of the Highlighter by selecting the left most cell, or selecting all highlighters in the top left cell. Column headers must be included when copying from Spreadsheet and using the Paste from clipboard option
C. Use the **Add Date Highlighter** or **Add Location Highlighter** to add new rows for highlighters
   i. Date Highlighters contain no location values and will span over all locations on the chart

ii. Location Highlighters contain no date values and will span over all dates on the chart
iii. A Date highlighter line can be drawn by keeping the Finish Date cell value blank
iv. A Location Highlighter line can be drawn by keeping the End Position cell value blank

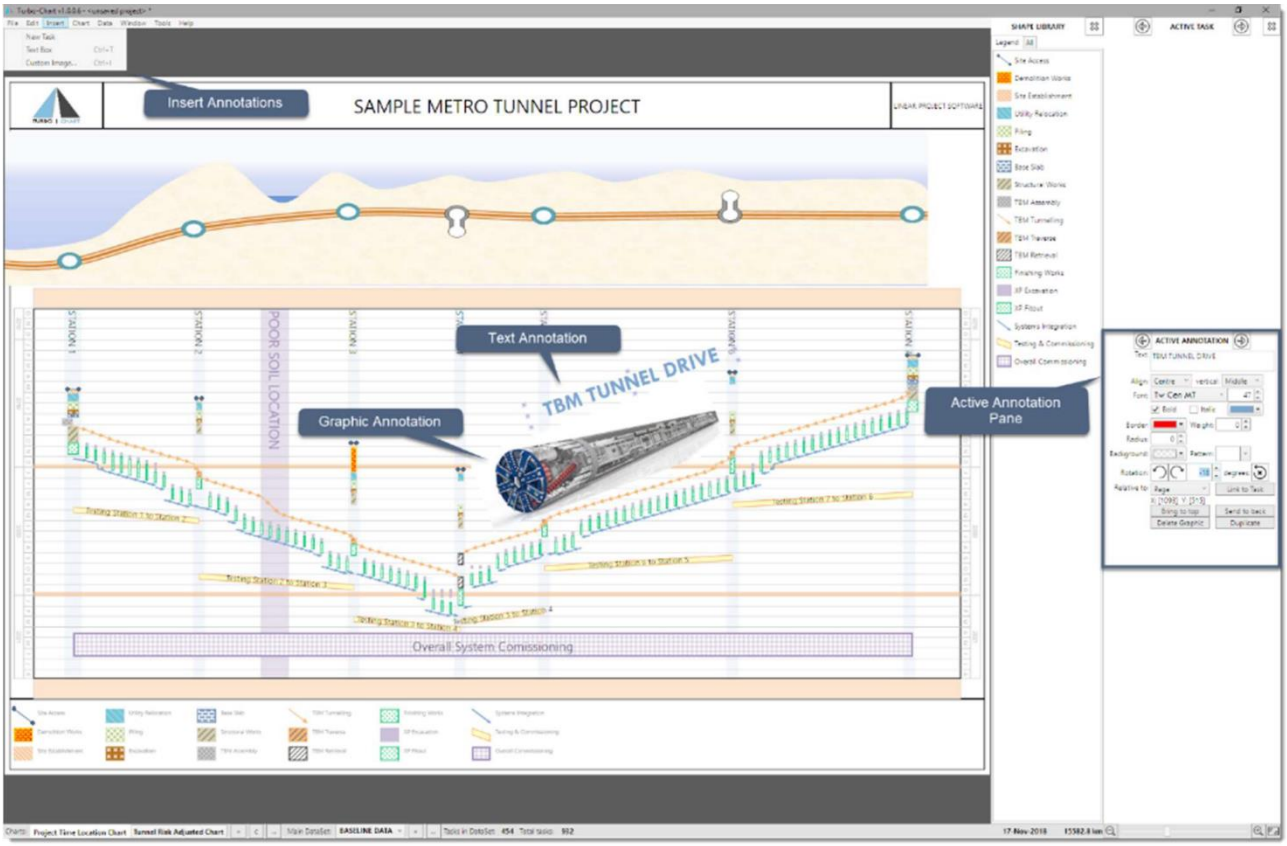
D. Select **Delete** to delete a highlighter row
E. Press ok to close the highlighter options window

7.4 Annotations

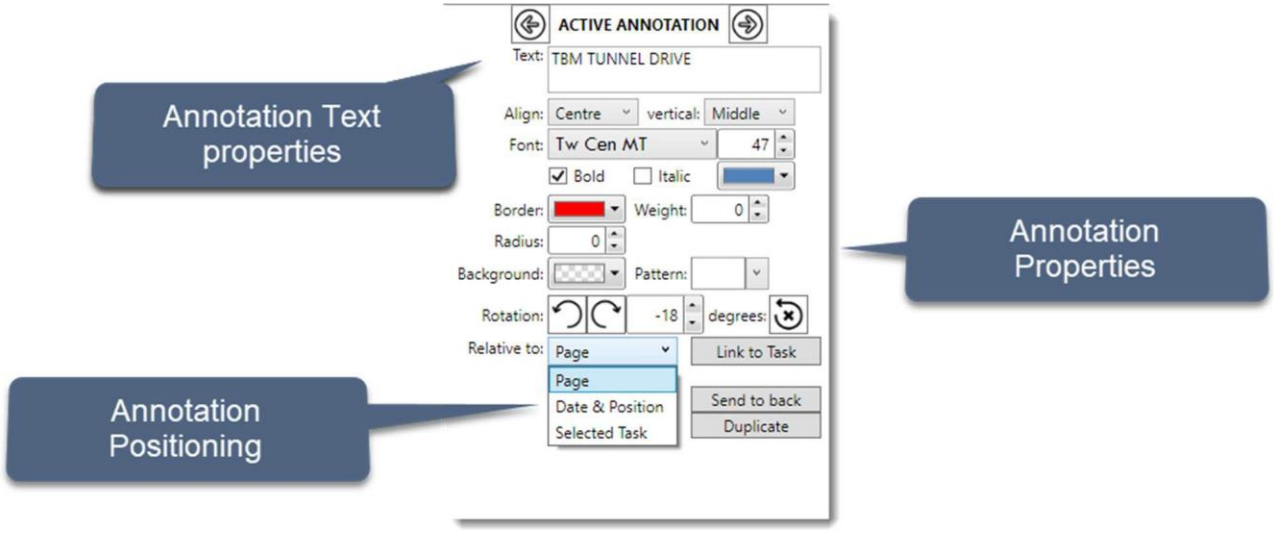
Annotations are used to add text or graphical elements to the chart, that can be positioned relative to:

- A position on the chart (i.e. does not move with date or location range changes)
- A position by date and location (i.e. moves with date or location range changes)
- A position relative to a specified task (i.e., moves as tasks dates or position changes)

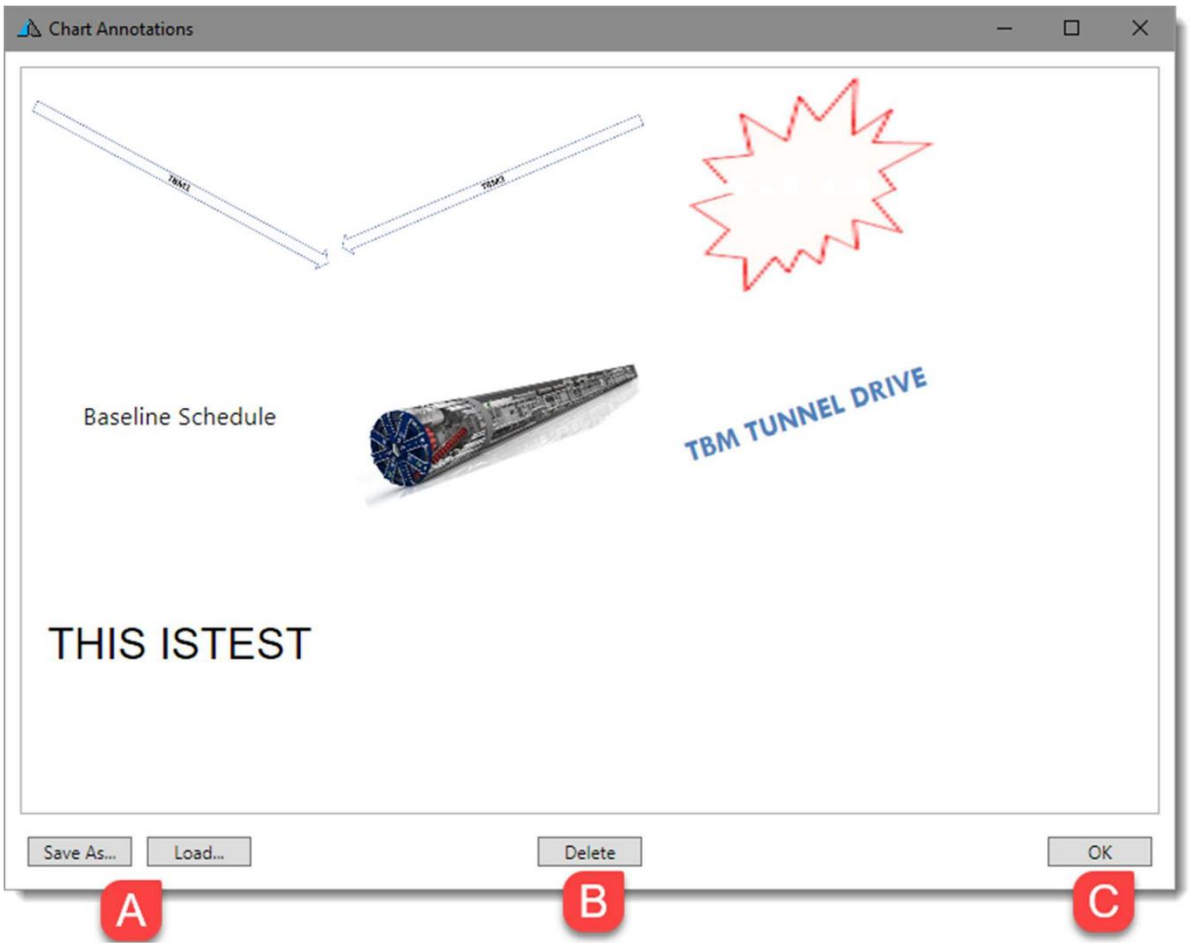
NOTE Annotations displayed are specific to each chart in the Turbo-Chart file.
To view or switch off chart annotations select **Chart > Show Annotations** from the menu.
To add a new annotation, select **Insert** from the menu and select to insert a **text box** or a **Custom Image** (and then select the image file to be annotated). Alternatively, copy text or graphical elements from other applications and paste onto the chart using CTRL+V.



Select any annotation and modify its properties in the Active Annotations Pane



To adjust positioning, select the required **Relative to** option and then position the annotation onto the required position on the chart. If **Relative to Page** is selected, then select **Link to Task** and click on the required task.
All annotations displayed on a chart are also viewable by selecting **CHART > ANNOTATIONS**



A. Save and load sets of annotations, for exchanging with other Turbo-Chart files and users
B. Delete an annotation by selecting it from the annotations window and selecting **Delete**
C. Press ok to close the annotations window and return to the main chart

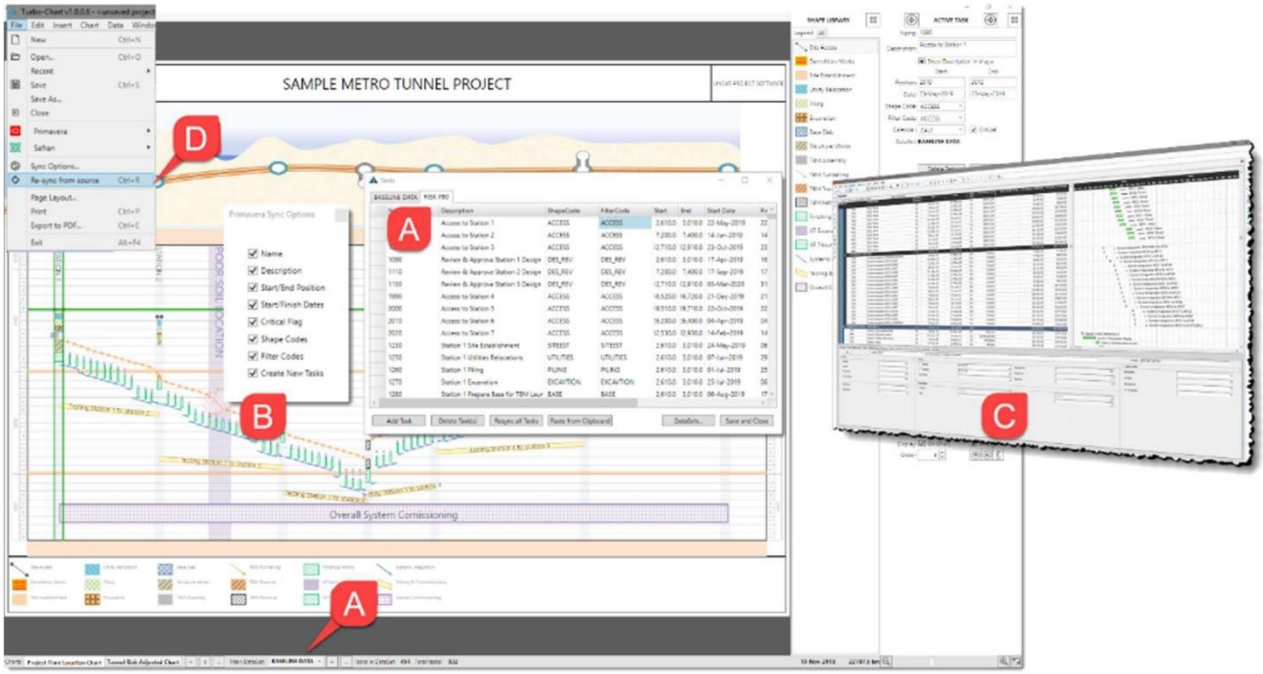
8 Time Location Chart Reporting with Turbo-Chart

Once Data has been imported and a chart has been customized. Turbo-Chart includes a number of Time Location chart reporting features.

8.1 Syncing data to a P6 database when connected

When connected directly to data from a P6 database, updates to the source project can be synchronized with the data contained in Turbo-Chart. Note importing data creates a new dataset, whereas synchronizing updates an existing dataset.
Steps to synchronize data:

A. Select the dataset to synchronize by selecting the required dataset tab from the **Data > Tasks** window or by selecting the Dataset from the status bar
B. Select the data synchronization options from the **File > Sync Options**. **Note**: selecting the option to "Create new tasks" will import any new tasks in the source project.
C. After making schedule updates in P6, perform actions to commit data (e.g. "F9" Scheduling) or press F10 to commit data to the P6 database
D. In Turbo-Chart, select **File > Re-Sync from Source** or press **Ctrl + R**



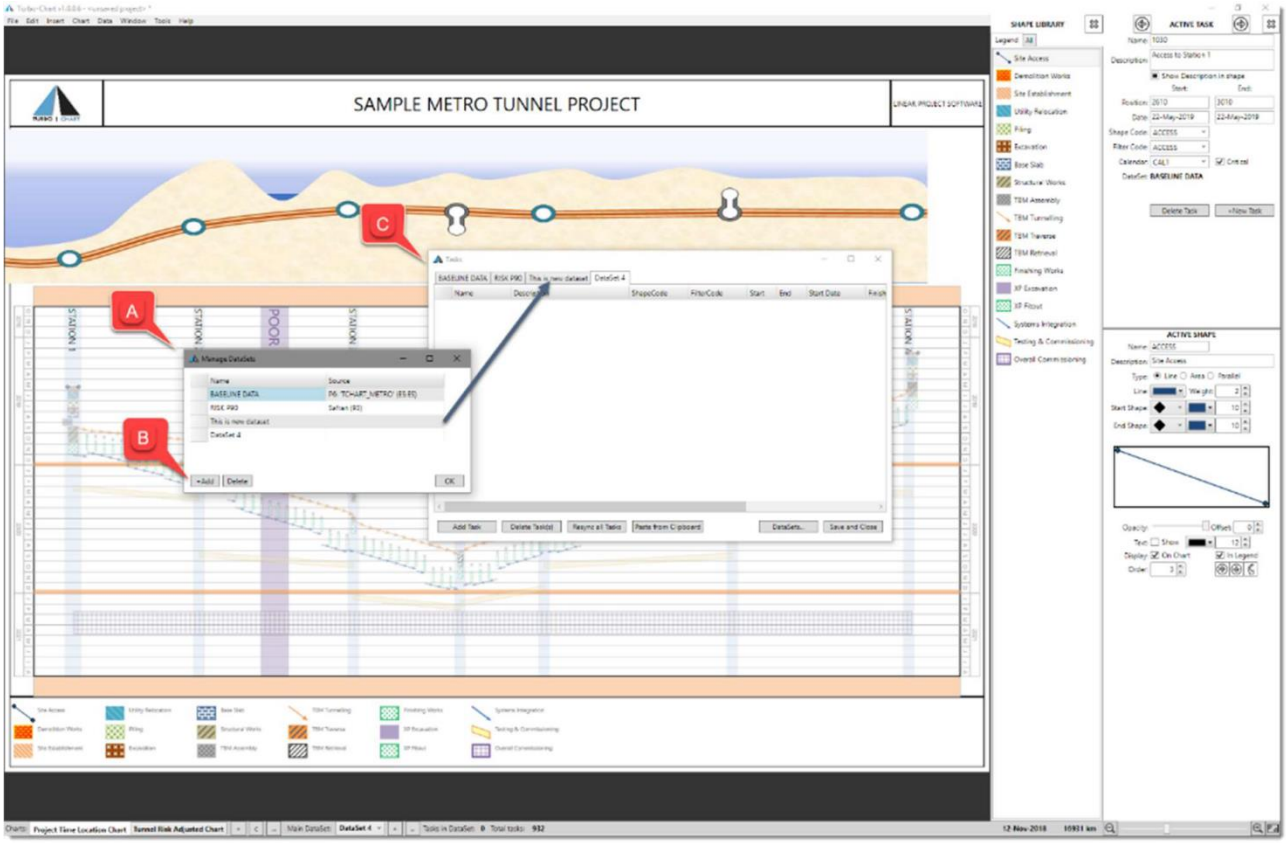
8.2 Adding datasets from updated spreadsheet/XER files

If synchronizing is not an option available for the data to be used, new data from schedules can be imported as additional datasets. Turbo-Chart can contain as many

datasets for displaying on Time Location charts as required by the user. Steps to create and populate additional datasets:

A. Open the dataset options from **Data > Datasets**
B. Select **+Add** to create a new dataset, rename this dataset to something easily identifiable
C. Open the Tasks window from the menu by selecting **Data > Tasks**. Select the tab for the new dataset
D. Import from source data as per usual into the newly created dataset

Note: If pasting data, pasted data updates where names match, or a new task will be added.

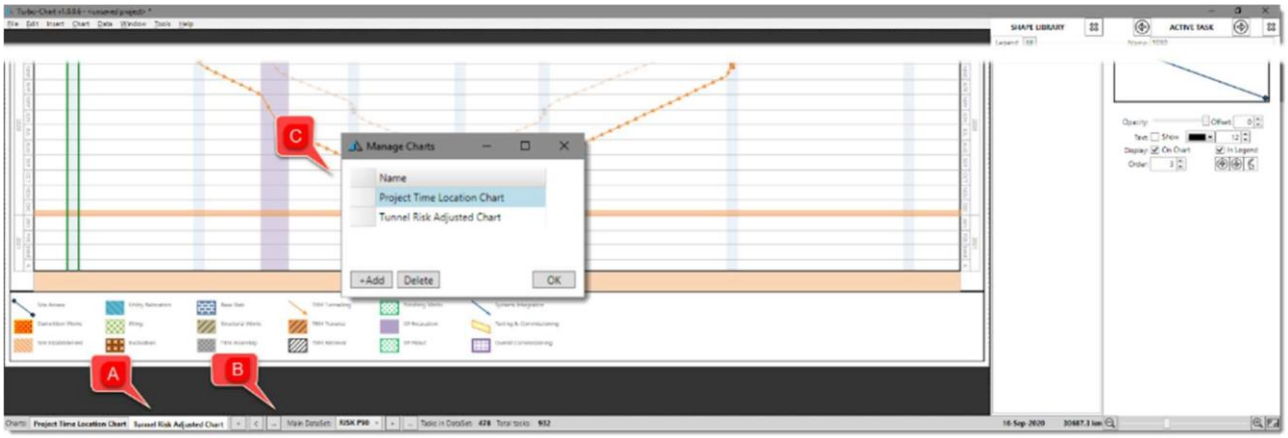


8.3 Duplicating Charts

An existing chart can be duplicated and customized to present alternative ShapeCodes from the shape library, different date and time ranges, different sets of highlighters and annotations or different datasets.
Steps to duplicate charts are:

A. Select the chart to duplicate by clicking on the chart tab in the status bar,
B. Select **Chart > Duplicate Chart** from the menu or click on "**C**" on the status bar.
   Note A new chart without any customization can be selected by clicking on the "**+**" symbol.

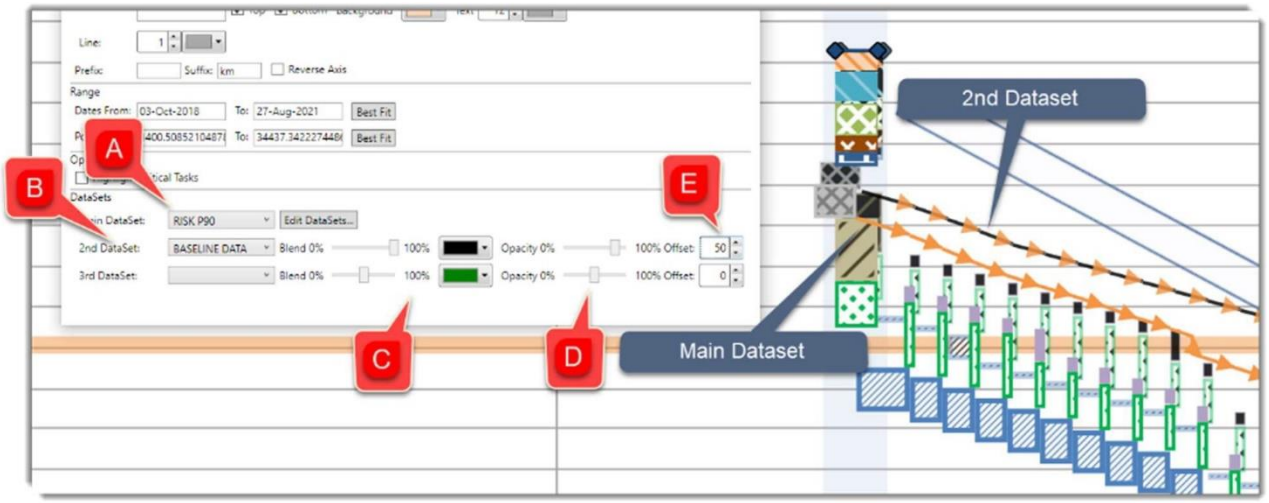
C. To modify the name or to delete an existing chart, select the **Chart Windows** button



8.4 Displaying Multiple Datasets

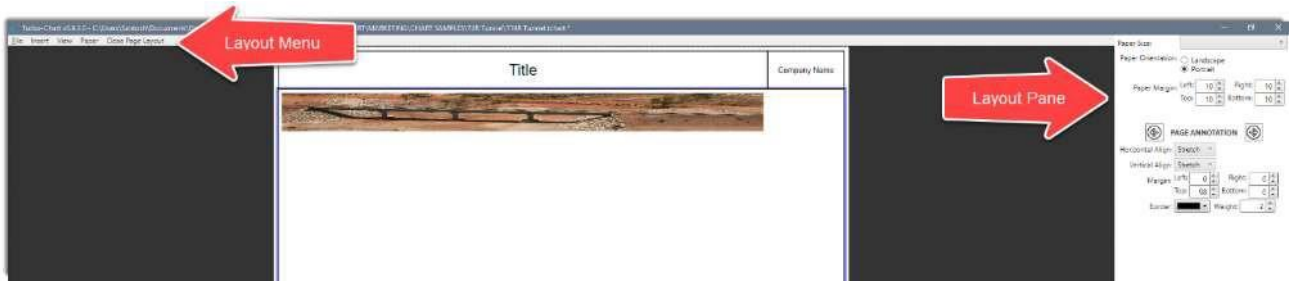
Turbo-Chart can display multiple datasets on a single chart. This feature can be used to compare up to two additional datasets (e.g., Baseline vs forecast). All datasets use the common shape library coding and use a common set of location values.
To display multiple datasets on a chart, select **Chart > Options** from the menu and select the options in the
Datasets section of the chart options window:

A. Select the Main dataset to display (use the Edit datasets option to rename if required)
B. Select the 2nd and if required 3rd dataset to display.
C. Select a color and a percentage of blending to that color for additional dataset
D. Select the percentage of opacity (transparency) to apply to additional datasets
E. If required select a value to offset/shift the additional datasets on the location axis. Displaying additional datasets with offsets, transposes the selected dataset by a set location value (positive or Negative). This enables comparisons between datasets to occur where task sets are closely aligned by dates or locations but not to be completely overlapped.



8.5 Page Layouts and Print Previews

Page Layouts allow the addition of text boxes, images etc. around the main chart area. The printing layout can be viewed be enabling Print Preview by selecting **Window > Print Preview Mode**.
Note that legends for charts are only printed when using Print Preview Mode, and the page Layout being used is applied to all charts in the Turbo-Chart file.
To modify the Page Layout, select **File > Page Layout** from the menu.

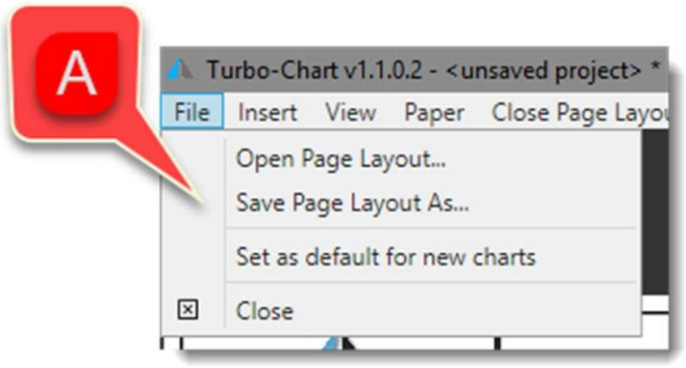


8.5.1 SET PAGE SIZE AND ORIENTATION

From the page layout menu select **Paper > Paper Size** or from the Layout Pane Select **Paper Size**
From the page layout menu select **Paper > Orientation** or from the Layout Pane Select Paper Orientation All Margins and Positions of annotations for page layouts are based on values set from the Left/Right and
Top/Bottom margins of the page, to ensure the page layout remains acceptable if page size or orientation is modified.

8.5.2 SAVING AND OPENINING PAGE LAYOUTS

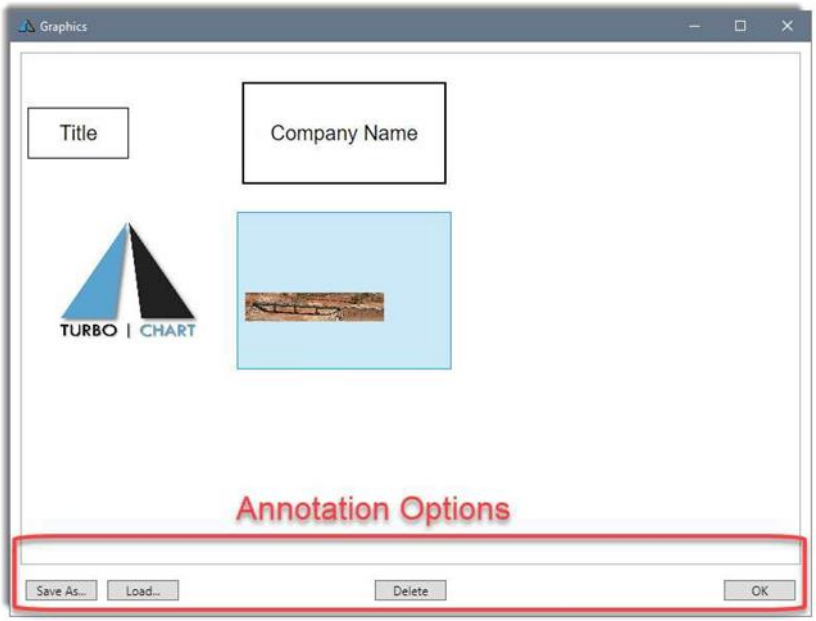
From the File menu, page layouts may be saved by selecting "**Save Page Layout**" sand saving the resulting
*.tcpagelayout file onto an accessible directory



Similarly select "**Open Page Layout**" to use a previously saved page layout file.

8.5.3 ANNOTATIONS | GENERAL

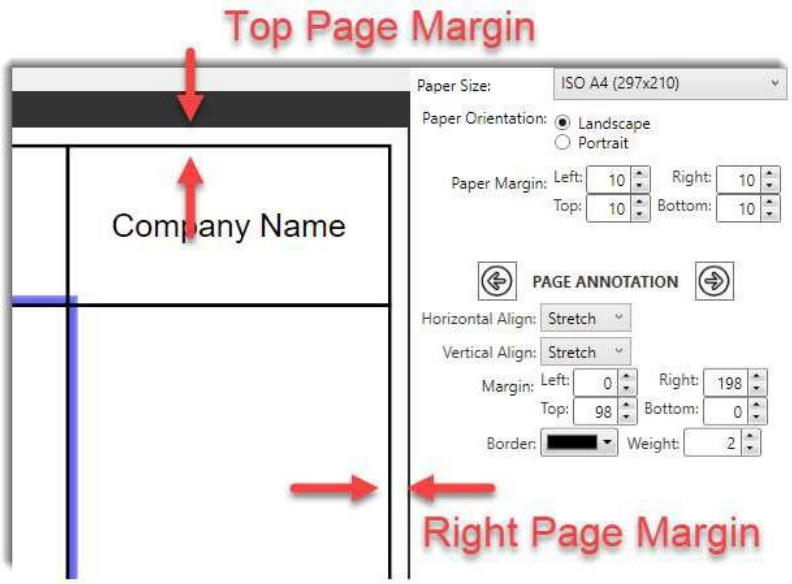
Annotations are text blocks or graphics added to a page layout in addition to the chart and legend. All Annotations saved with the current layout can be viewed by selecting **View > Annotations**



Any annotation (except the Legend and Main Chart) can be deleted by selecting the text block or graphic and then clicking on **Delete**. Press **OK** to close.

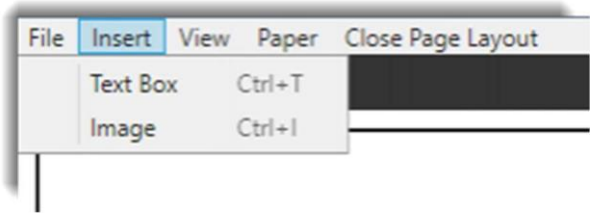
8.5.4 ANNOTATIONS | DEFINE PAGE MARGINS

All annotation size and positions are defined relative to the page size in pixel values. Page margins set the boundaries within the page size from which all other annotation objects are offset.



8.5.5 ANNOTATIONS | ADDING NEW TEXT BLOCK OR GRAPHICS

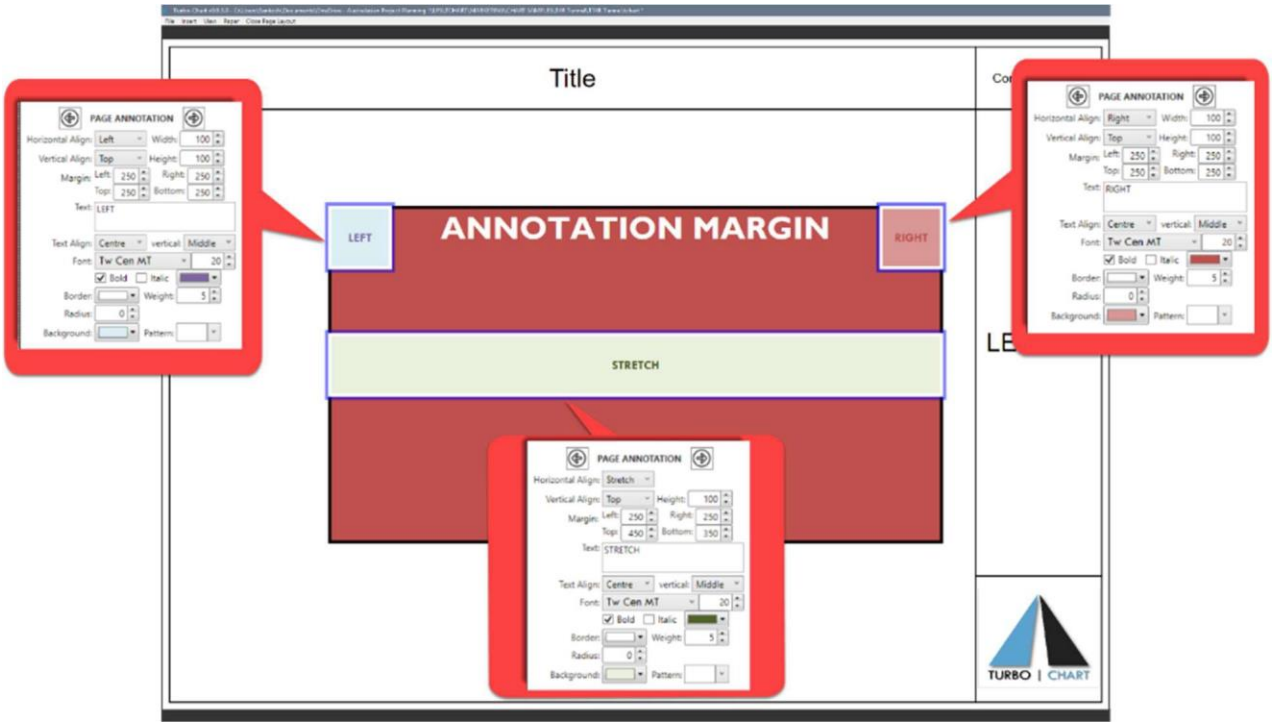
1) From the menu select INSERT then click on textbox or Image Records



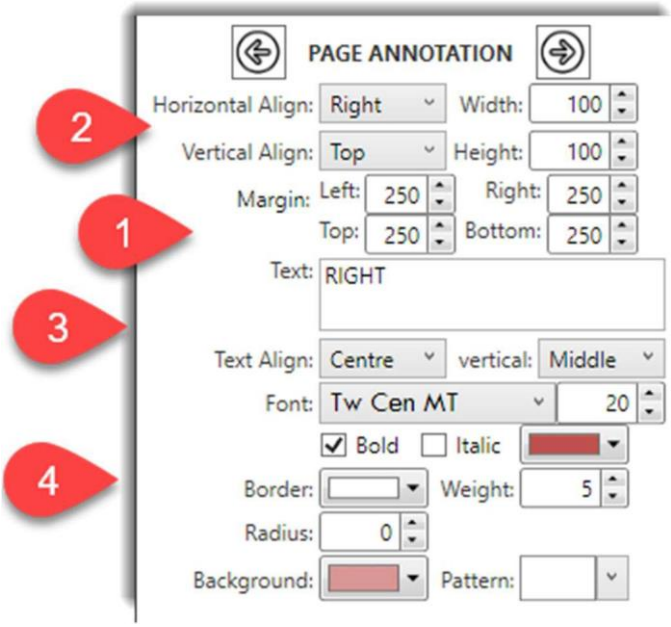
2) If Image is selected, select the image file from the file explorer window
3) Select the text block or image by clicking on it inside the layout screen, the annotation details will be displayed on the layout pane

8.5.6 ANNOTATIONS | POSITION AND SIZE

Text blocks and Graphics are positioned be specifying their own margins (within the page margin).



Each annotation is then aligned horizontally or vertically. If **STRETCH** option is selected, the annotation size will be automatically expanded to fit within the margins specified. If the alignment is set to a value other than stretch i.e. Vertically **TOP/BOTTOM** or horizontally **LEFT/RIGHT**, then the option to set the annotation width or height is available

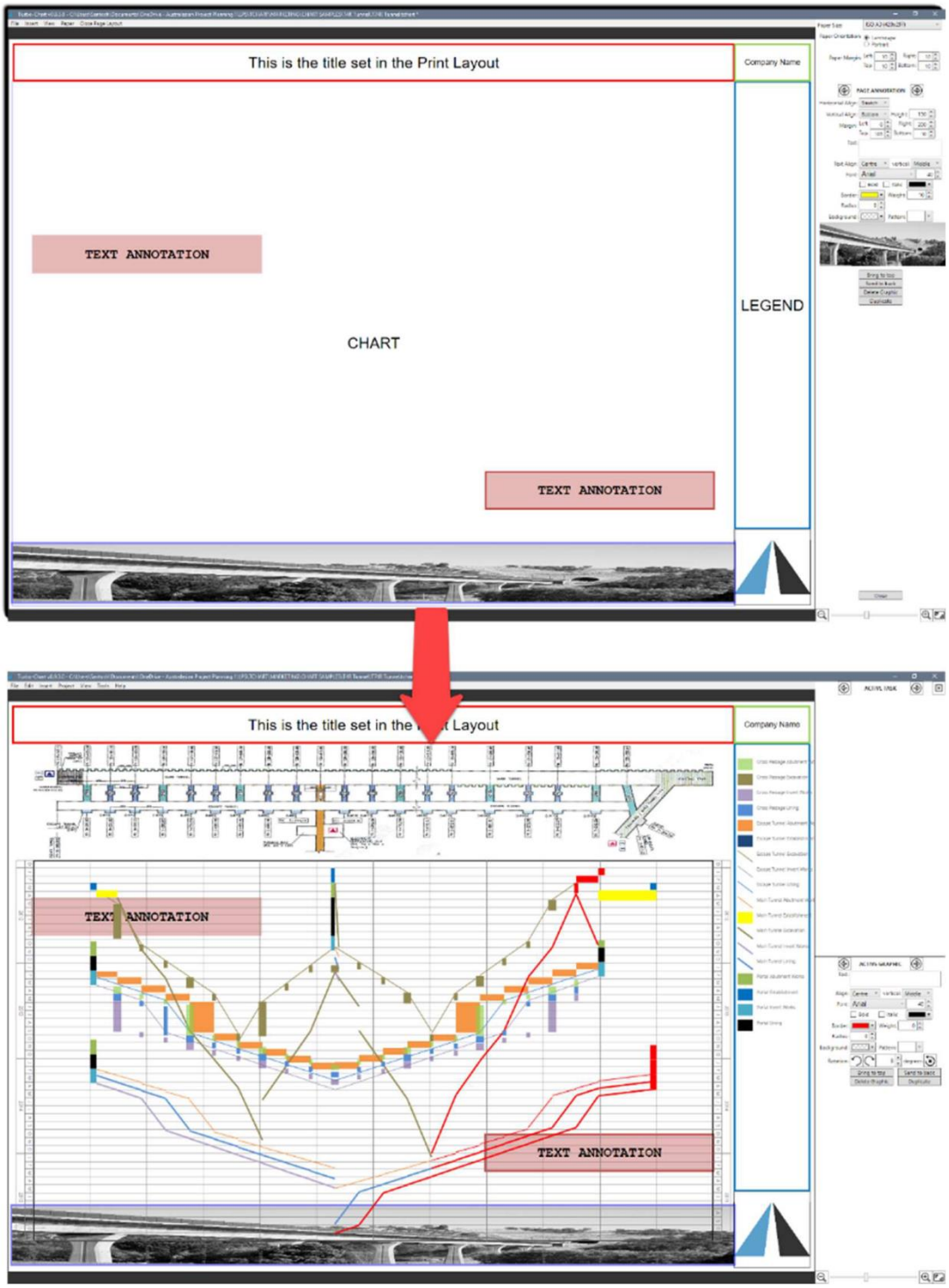


1) Define the annotation margin, this sets the area within which the text block or image will be positioned
2) Select how the annotation will be positioned within the margin area:
    a. Stretch will fill the horizontal/vertical area within the margin
    b. Right/Left will align correspondingly, and allow setting the annotation width
    c. Top/Bottom will align correspondingly, and allow setting the annotation height
3) Define text and text properties, image annotations can include text placed over the image
4) Set other properties for the annotation including border and background colors etc.
5) Click on **CLOSE** to return to the chart view, or select **CLOSE PRINT PREVIEW** from the menu

8.5.7 LAYOUTS | PREVIEWING

The chart view does not by default display annotations from the chart layout. To view the layout select
VIEW>PRINT PREVIEW.
Note that:

- Chart Text and Graphics may be modified in Chart View, Layout annotations (text and images) cannot be modified from the print preview.
- In Print Preview the legend is displayed as per the print preview (the VIEW>LEGEND setting does not apply in print preview)



8.5.8 PRINTING

Turbo Chart offer two options for exporting Chart or Layout

- As an image file by selecting **EDIT>COPY VIEW TO CLIPBOARD** and pasting into other applications
- Export as a PDF file by selecting **FILE>EXPORT to PDF**.

8.6 Saving/Exchanging Turbo-Chart files

Turbo-Chart files are saved as *.tchart files and contain all the information to produce Charts from Turbo- Chart, including:

- Task (Activity) data
- Shape Libraries
- Top Images
- Highlighters
- Annotations
- Datasets
- Multi-Chart Definitions

In addition to the whole Turbo-Chart file, individual elements of Turbo-Chart can also be exchanged via files:

- *.tchart Turbo-Chart Data file
- *.tclib Turbo-Chart Shape Library file
- *.tchiliter Turbo-Chart Highlighter file
- *.tcgraphics Turbo-Chart Annotations File
- *.tcpagelayout Turbo-Chart Page Layout File

9 FURTHER HELP

Should you need further help regarding Turbo-Chart, we are here to support you!
Just send an email to support@pmerasupport.com