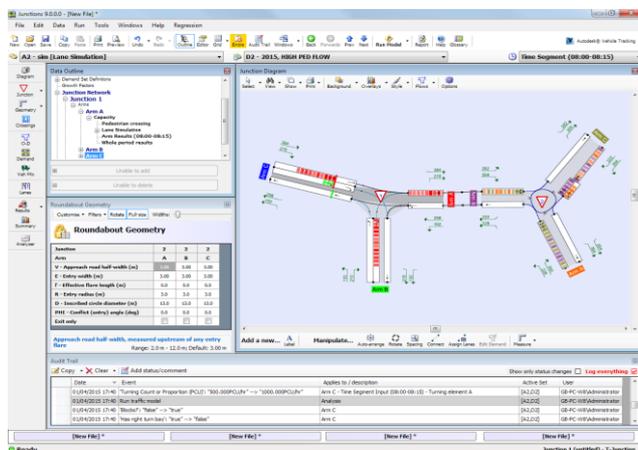# Junctions 9

## Modular software package for modelling and analysing roundabouts and priority junctions

Junctions 9 is the latest version of TRL Software's modular package for modelling roundabouts and priority intersections.

The package consists of ARCADY 9 (the Roundabout Module) and PICADY 9 (the Priority Intersection Module). ARCADY 9 and PICADY 9 are sold and licensed separately.

## Core modelling features

- UK empirical models for roundabouts and priority intersections
- Accident Prediction
- Geometric Delay
- HCM 2010 models for roundabouts, Two-Way Stop Controlled and All-Way Stop Controlled



## Roundabout geometry measurement tools

The junction diagram includes tools to help with the measurement of standard and mini-roundabout geometries, such as entry width, flare length, entry radius. These work by providing a set of control points and construction lines which can be dragged to coincide with the appropriate points on a scaled background image or drawing of the junction. Junctions 9 uses these control points to calculate the ARCADY geometries which can then be automatically saved in the file.

Separately, the link between ARCADY and Autodesk® Vehicle Tracking is still available and can be used to provide more accurate measurements.
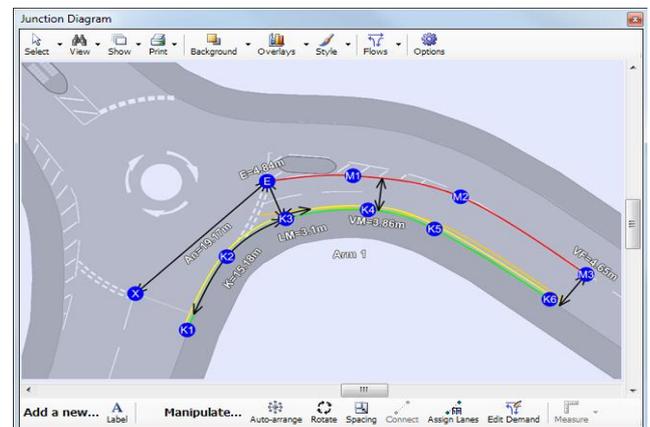


## Revised mini-roundabout model

Data from the original mini-roundabout model (first introduced in ARCADY 5) has been re-analysed and as a result a revised model is now available. In typical cases, this tends to predict slightly higher capacity. Data input is identical to previous versions.

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## Audit Trail

The Audit Trail system provides a way of tracking the version history of the file, which is especially useful for complex files or when a file is worked on by several people.

Junctions 9 can optionally record each change made to the file, forming a log of all changes. The same system also allows you to manually enter the overall status of the file.
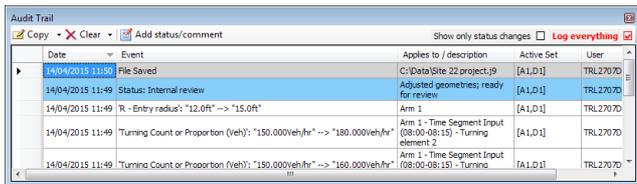


## TEMPRO Growth Factors

If you have TEMPRO datasets installed you can use J9 to calculate traffic growth factors.

Enter the base/future years, geographical area and other properties and J9 will read data directly from the TEMPRO datasets and produce a local growth factor. This can then be automatically applied to Demand Set relationships. You can also manually enter growth factors.
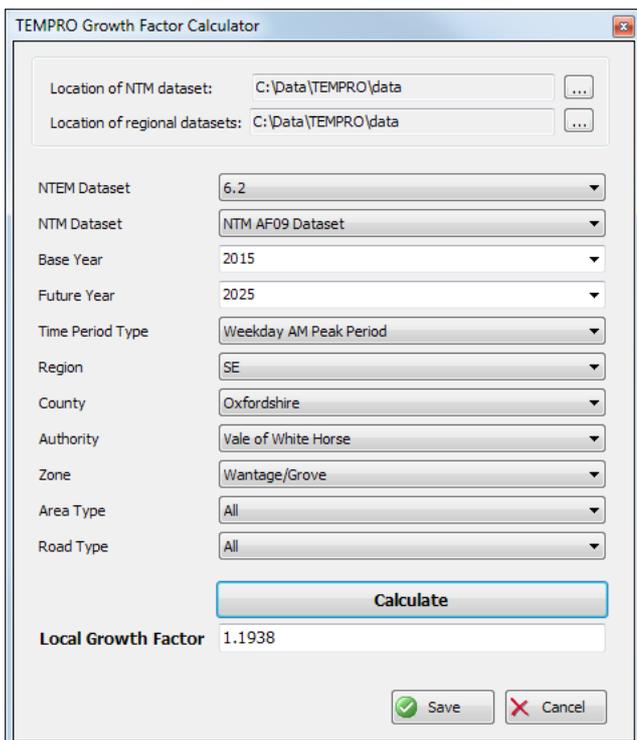


## Read traffic flows from Excel spreadsheets

If you have traffic survey information in the form of Excel spreadsheets, Junctions 9 can be set up to read data directly from the spreadsheets.

This works across demand sets and time segments, and can apply to turning counts and HV% information. Once set up, this provides a quick way to transfer demand data from Excel into J9 and can significantly reduce the amount of data entry required.

Separately, you can now also copy and paste data for all time segments and/or demand sets (in previous versions this only worked for the currently selected set).
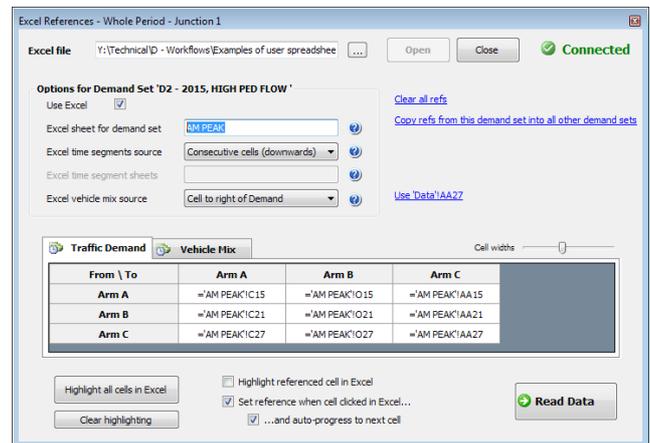


## Improvements to Reports

- Faster report generation

- X-Y and Time Graphs, set up in the Analyser, can now be included in reports.

- The content of reports for basic files has been simplified.

## UI enhancements

- All results are clearly colour-coded to indicate whether they are up to date.

- Multiple Data Editors can be used at the same time

- A new padlock state can be used to freeze the contents of data editing screens

- View and edit origin-destination data for more than one junction at a time. Optionally, a single set of origin-destination can be used for multiple junctions

- Many other enhancements



## Analysis and Demand Set management

- Sets can now be renumbered and sorted by either name or ID

- More control over which data fields should be the same in all sets and which data fields differ. This makes it easier to avoid problems due to accidentally setting different values in each set.

- Results for all sets are now stored

- Analysis and demand sets within a single file can be compared and a report produced of the differences.



## Junction Diagram improvements

- New Stick Diagram mode provides clean, simple diagrams that focus on the overall shape of the junction and traffic volumes. This mode complements the normal mode that shows detailed junction structure.
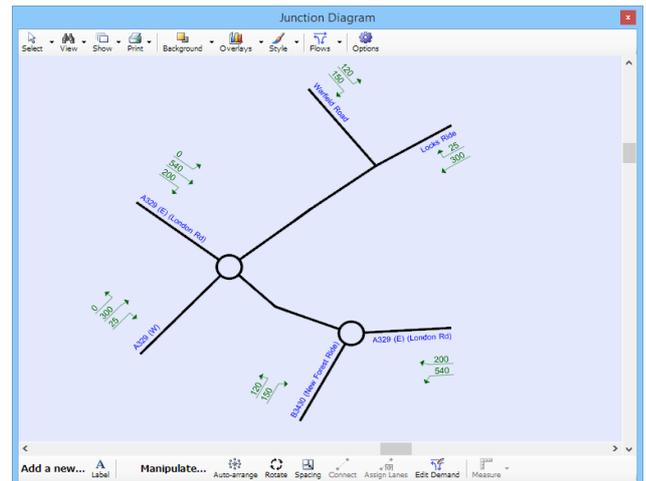


- As an alternative to entering origin-destination demand data in matrices, you can now also enter it directly on the diagram.

- Text is clearer

- Automatically curved connectors, leading to higher quality diagrams.

- Various other cosmetic and usability improvements
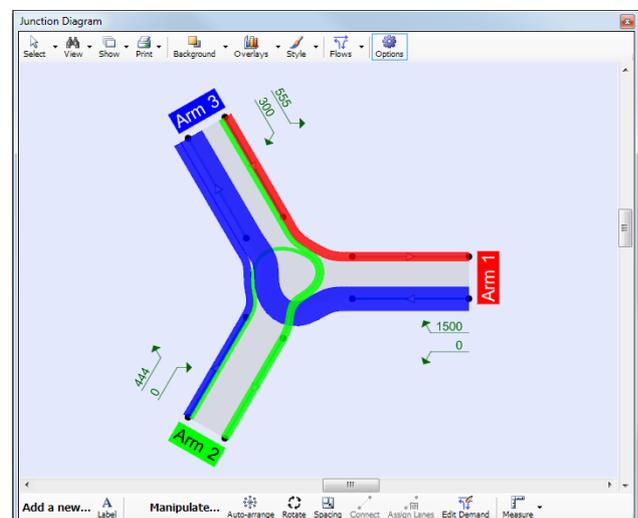
## ARCADY Lane Simulation

- Lane Simulation for roundabouts, first introduced in Junctions 8, now runs faster for typical files.

- Zebra and pelican crossings can now be included in simulation runs.

- Blocking back on the exit side from both zebra and pelican crossings can be modelled.

- Exit lanes carrying traffic away from junctions are now shown, and any blocking back from downstream junctions is explicitly shown here as well as on upstream entries.
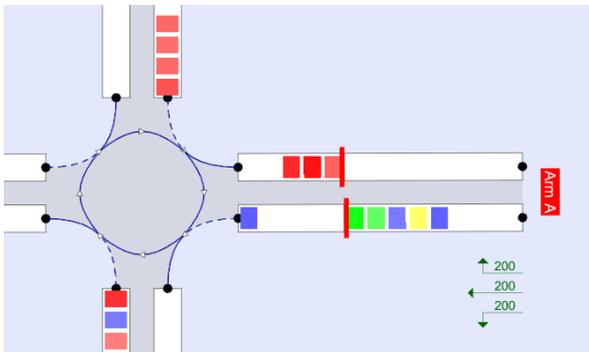


## PICADY Lane Simulation

It is now possible to use Lane Simulation to model PICADY T-junctions.

The lane structure is set automatically, based on the normal PICADY junction properties.

Zebra and pelican crossings can be modelled on any arm, for all arm types.  For example, you can now model crossings at the same time as blocking, and other combinations which were previously not possible.

The visualisation and animation tools first introduced in J8 can now also be used at T-junctions.
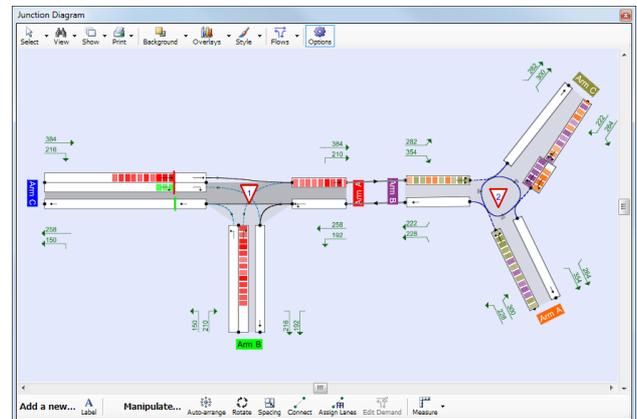
## Linking ARCADY and PICADY

In lane simulation mode, PICADY T-junctions can be connected to other T-junctions or to ARCADY roundabouts.

Blocking back and basic interaction between junctions is handled.   This capability can be used to model junction layouts that were previously difficult to model, or to model small networks of ARCADY and PICADY components.

Queues, delays and other results are calculated for each lane individually, and combined to give arm results.

Explicitly modelling with lanes means that it is often intuitively easier to see where or why problems occur.