Mobility Analytics: CUBE

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Advancing Infrastructure

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CUBE CONNECT Edition

(v6.5)

Out Now

HARNESS THE CLOUD

CUBE CONNECT Edition utilizes a new software licensing model that allows users to easily install, license and run CUBE directly on any connected Cloud solution…even when working from home.

SPREAD THE PEAKS

Scale your licenses to meet demand. CUBE CONNECT Edition allows users to add licenses of CUBE instantaneously to meet deadlines or to enable your high-volume scenario testing.

IMPROVED LAND-USE

CUBE Land, the market-leading land-use software, has a major update. Apply as standalone land-use planning or integrate it into your transport model for a true land-use and transport interaction (LUTI) model.

BUNDLED ADD-ONS

CUBE Cluster parallel processing and Analyst Drive statistical origin-destination matrix estimation software add-ons are now included. ArcGIS 10.8 support.

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CUBE

Next generation

BIG DATA & SPEED

High performance visualizations with support for huge datasets.
New formats to promote fast read/write speeds.

INTERFACE

New flowchart and JSON format project explorer (Catalog).

CUBE API & CUBEPY

A next generation alternative model scripting system based on Voyager technology.

SPATIAL EDITING & ANALYSIS

One network editing environment with native GIS functionalities

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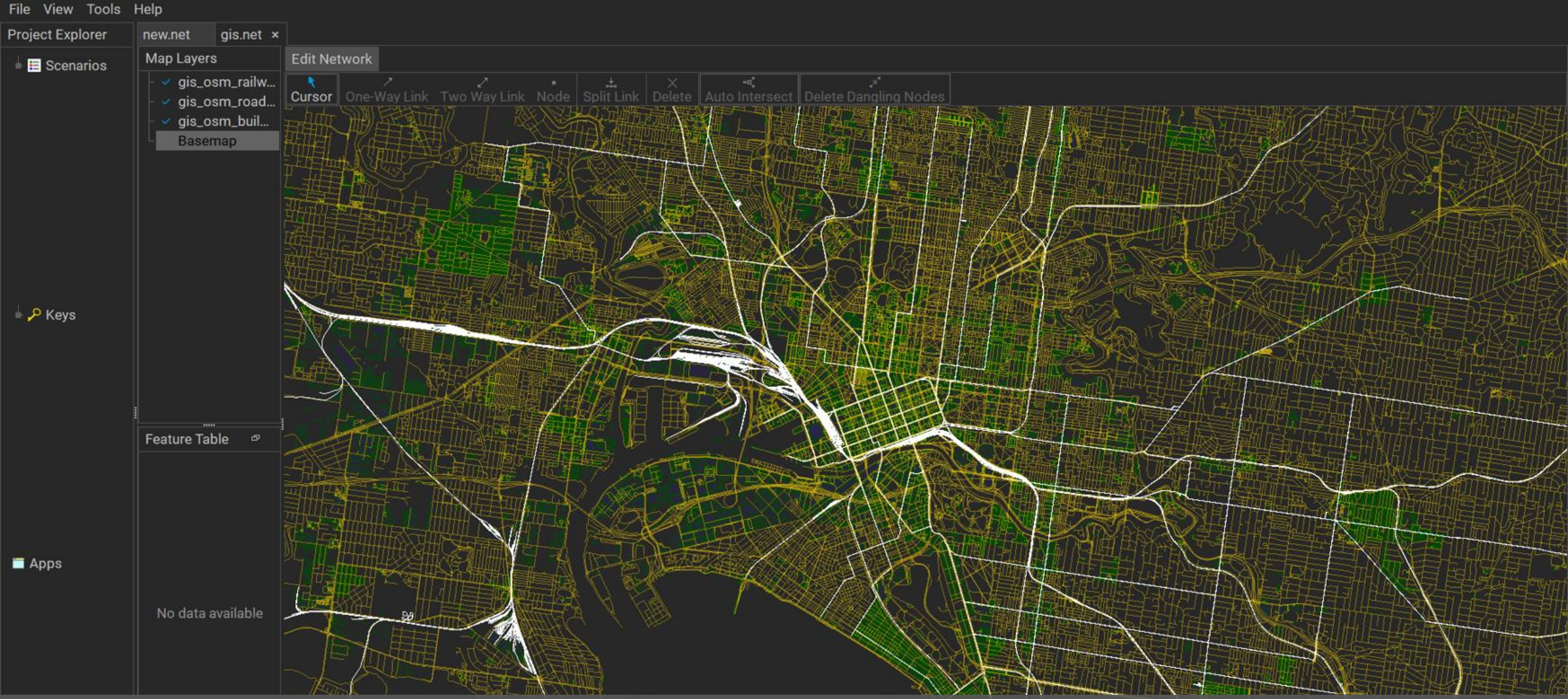

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NEXT GENERATION

MOBILITY SIMULATION & ANALYTICS

GIS, CUBEPY, GPU, JSON, FLOW CHART UPGRADE, FASTER I/O, MULTI-USER, …

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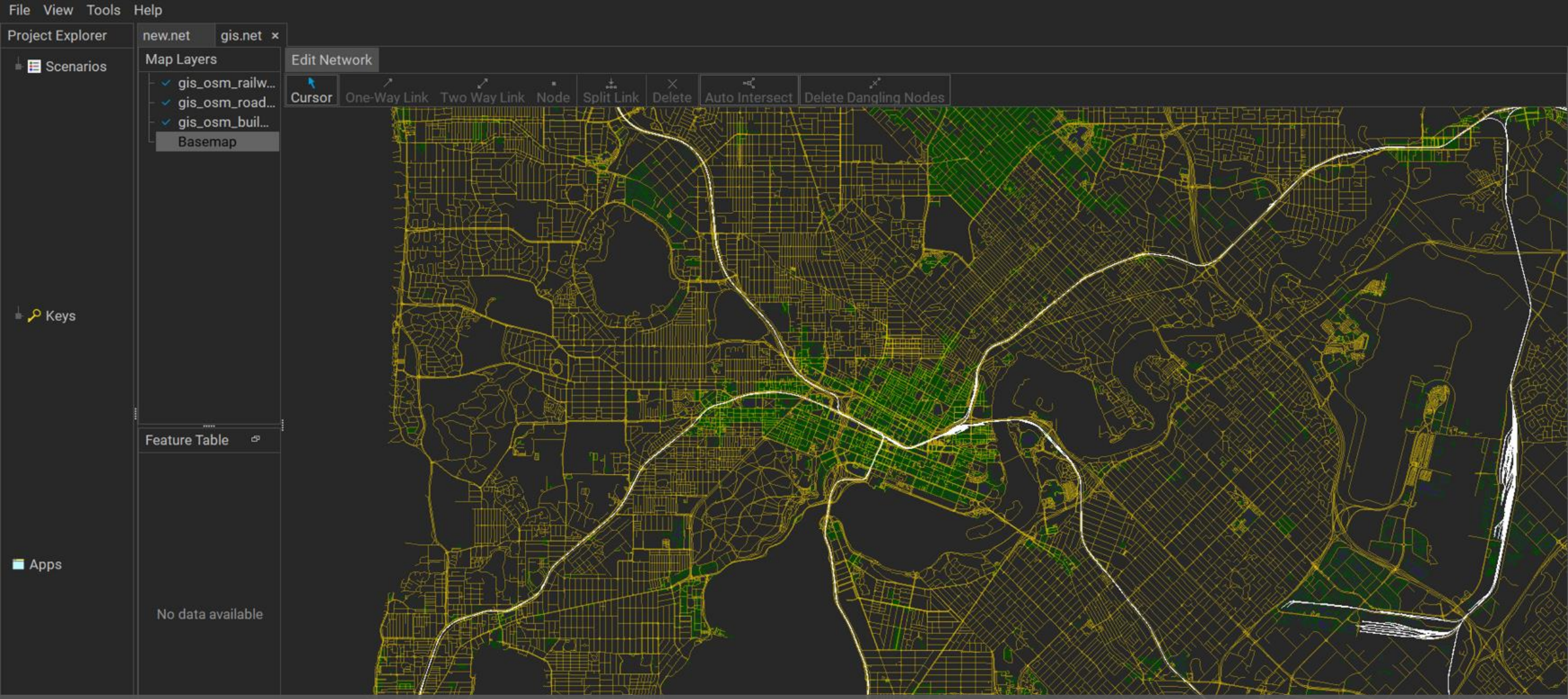

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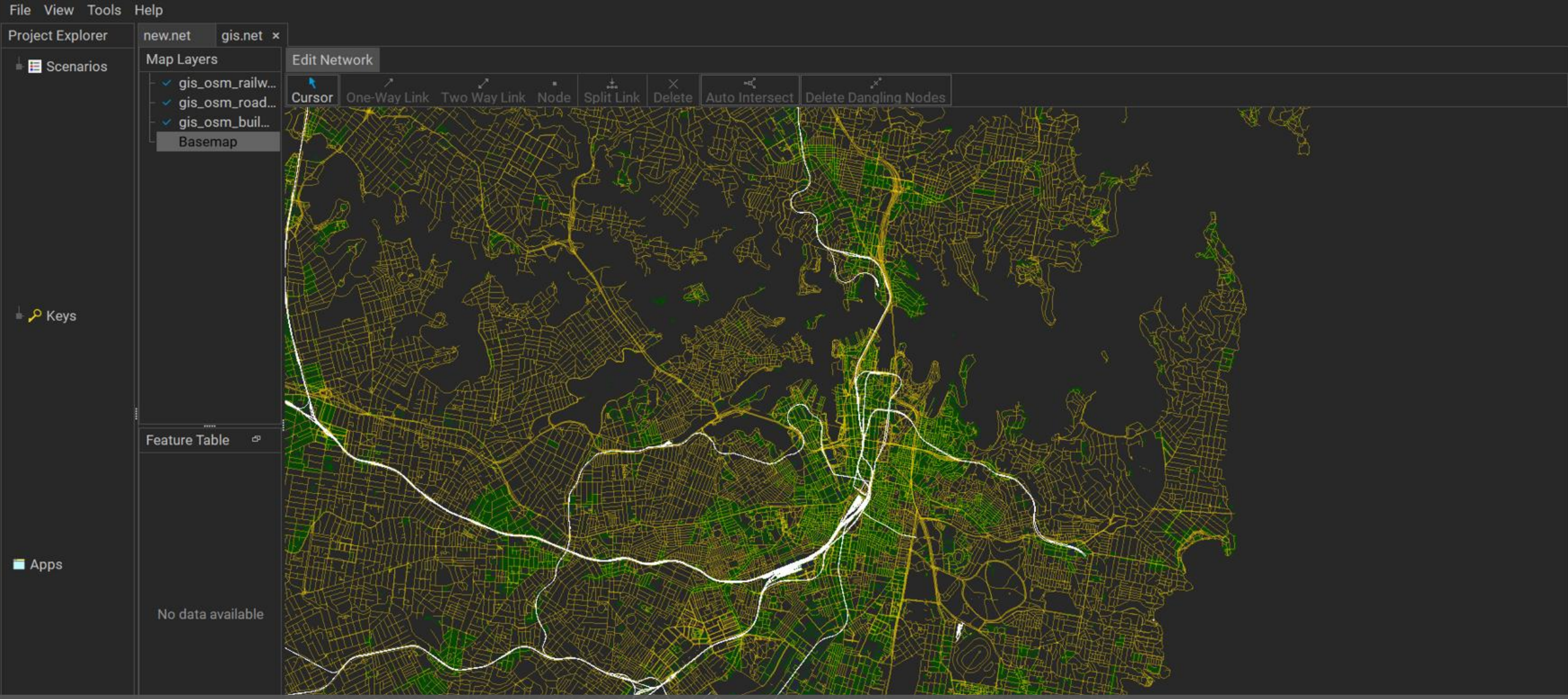

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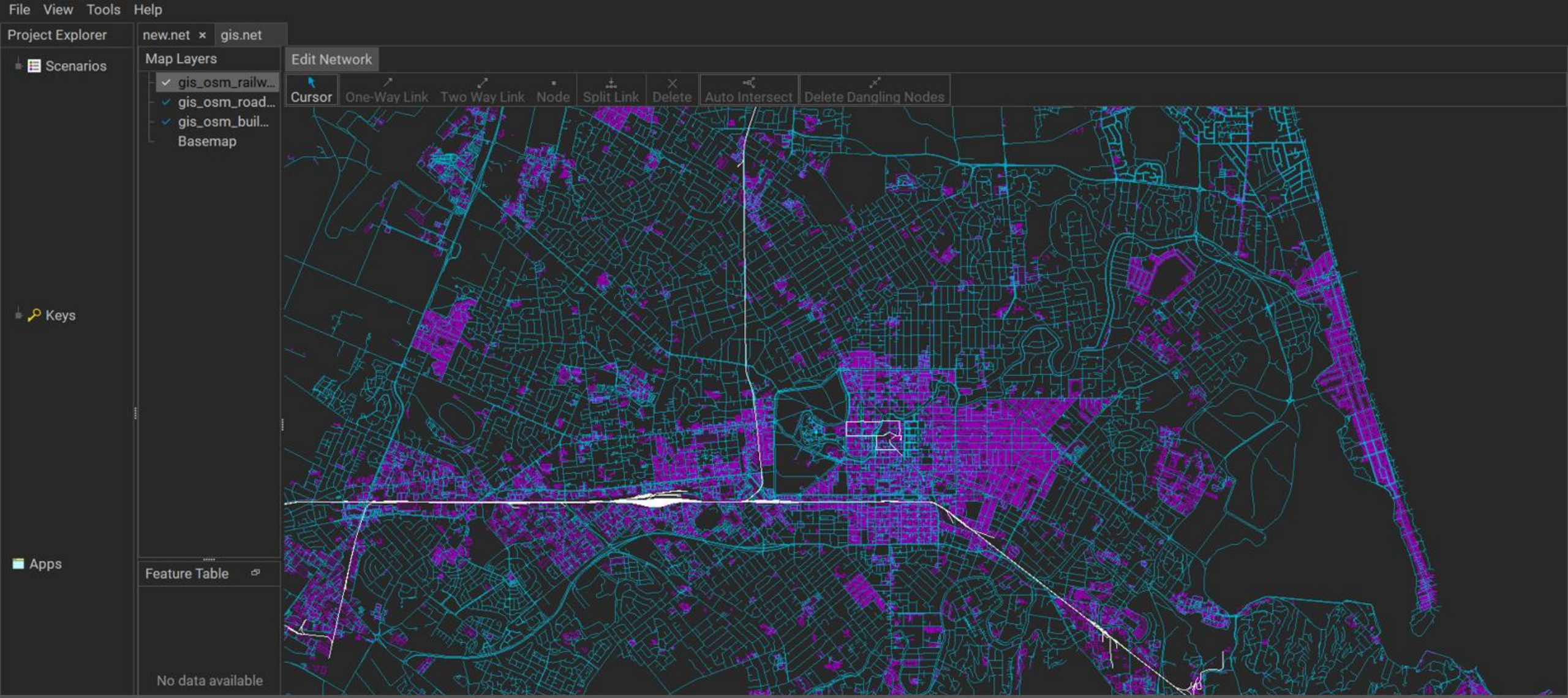

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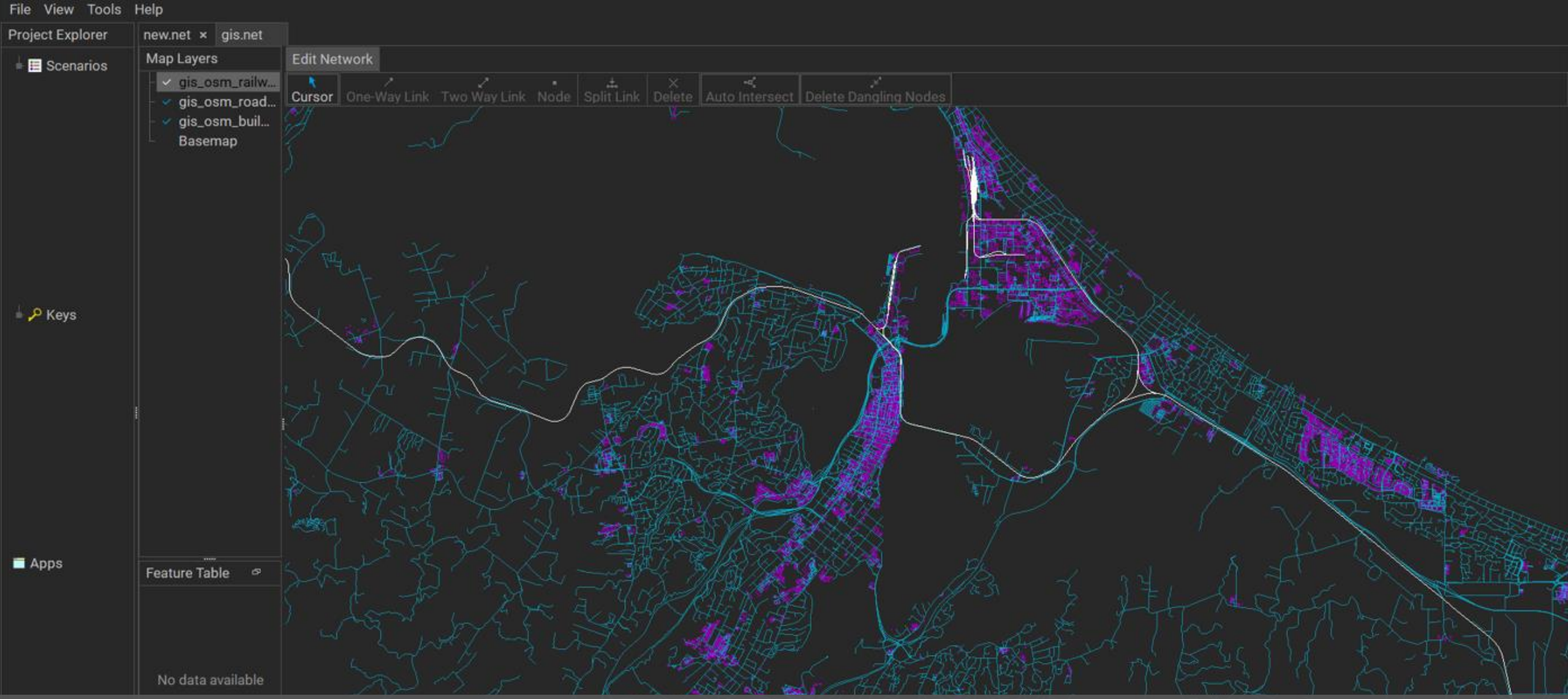

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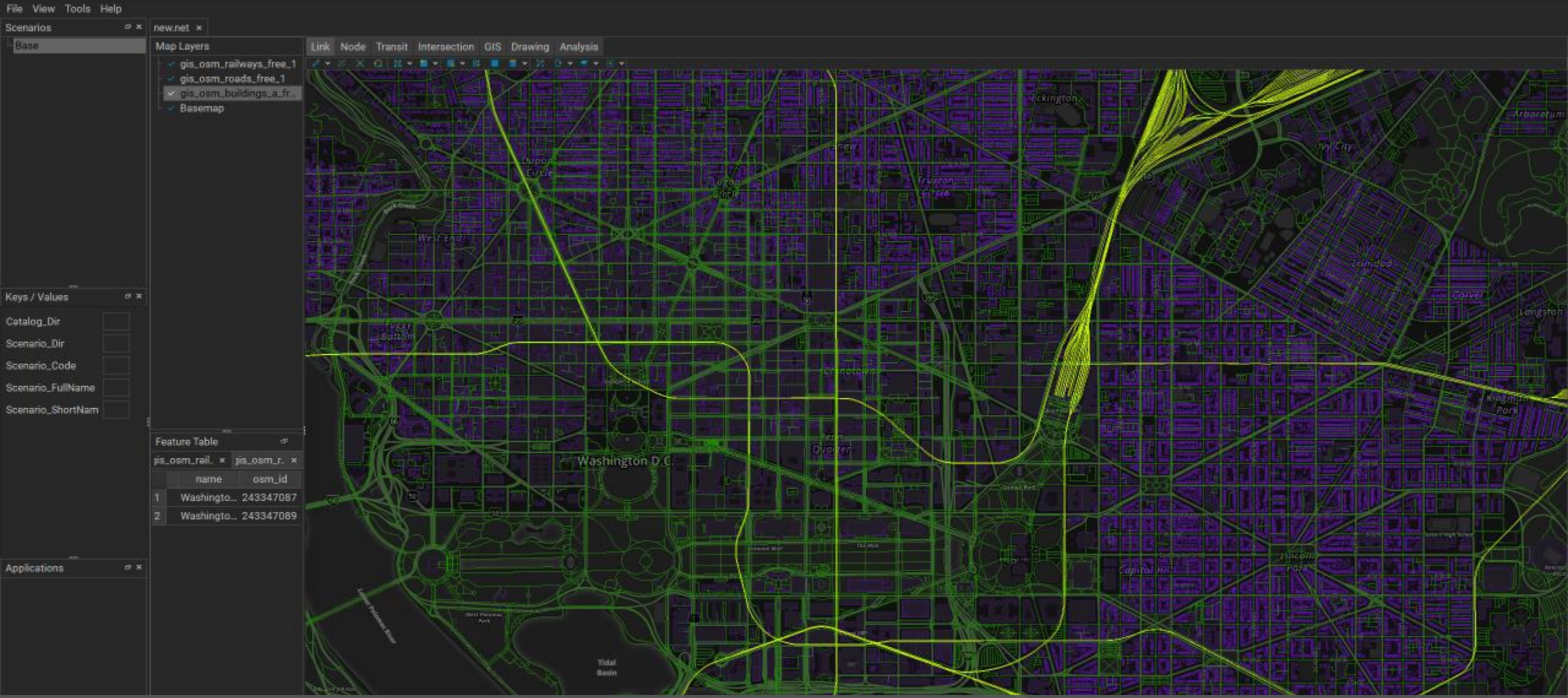

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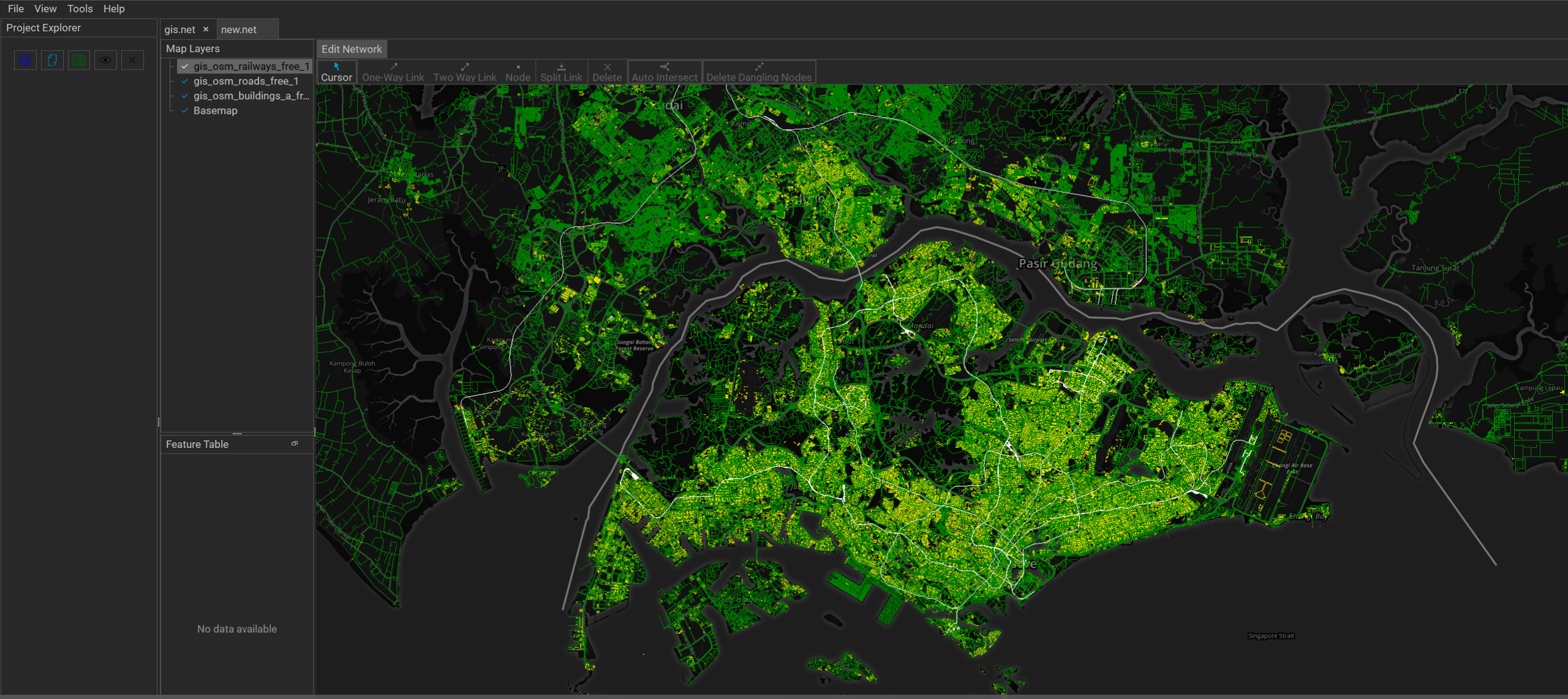

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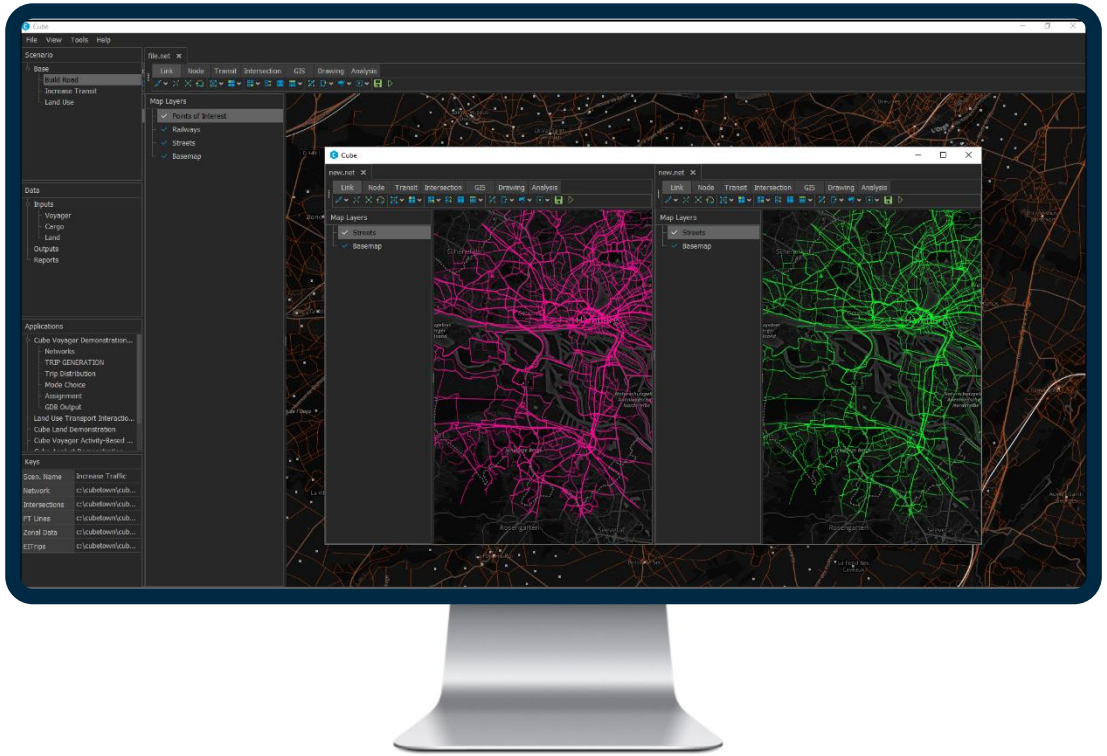
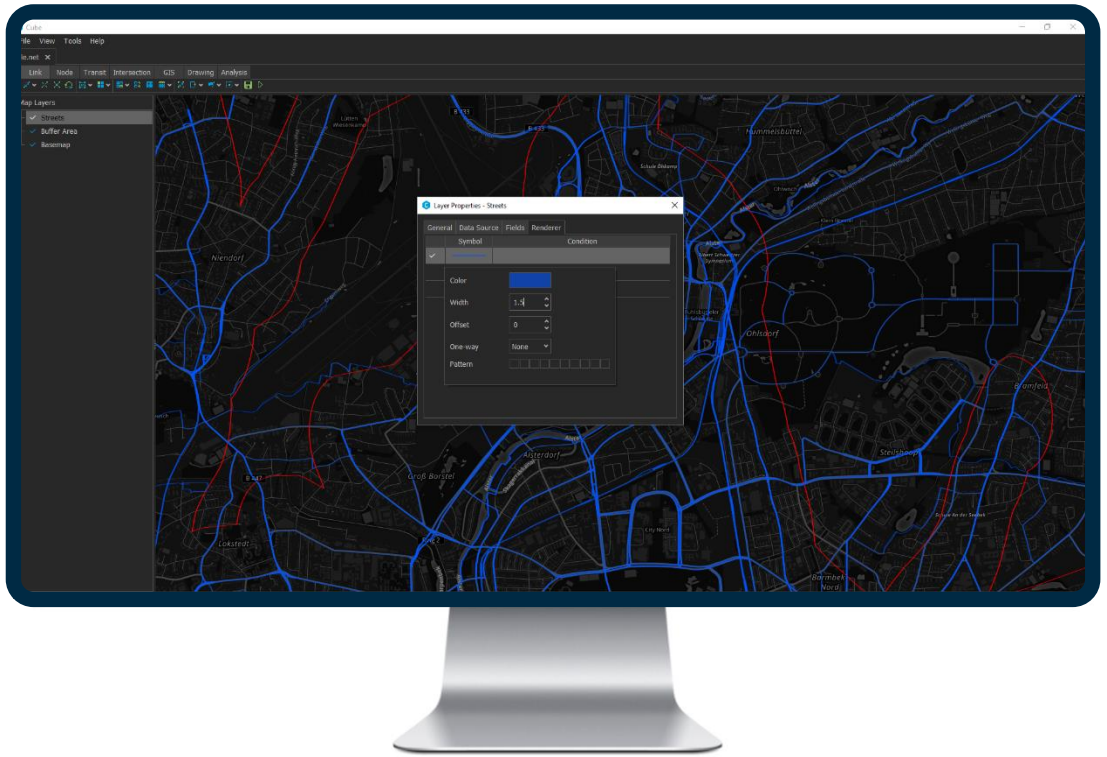
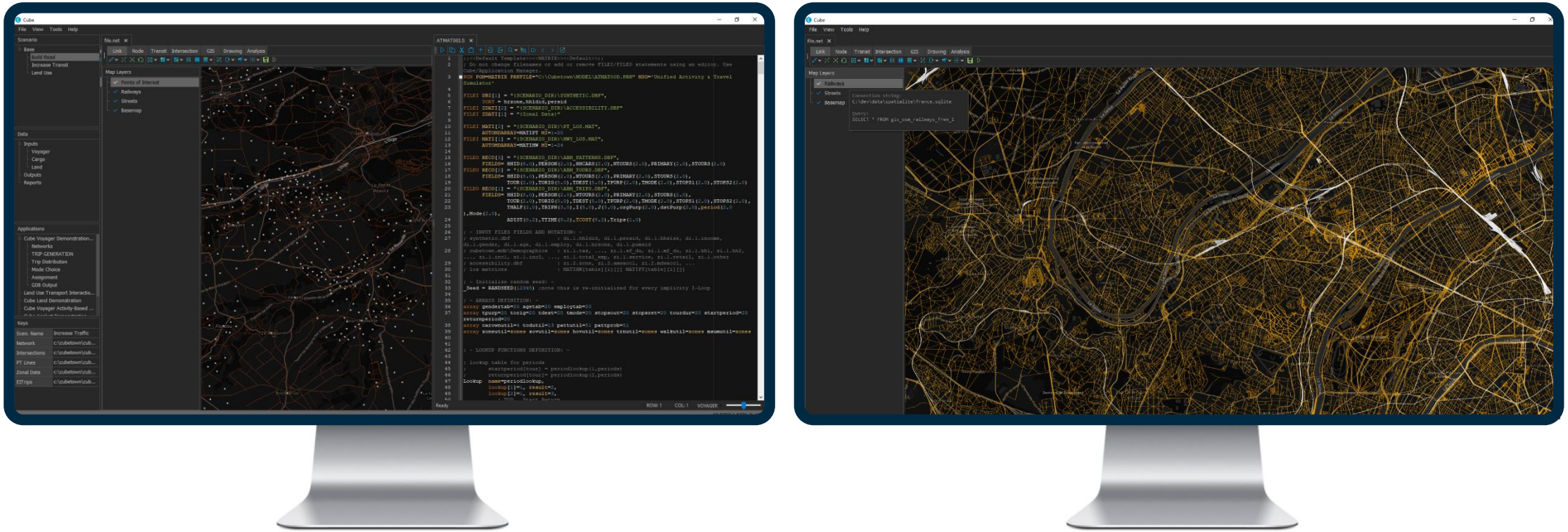




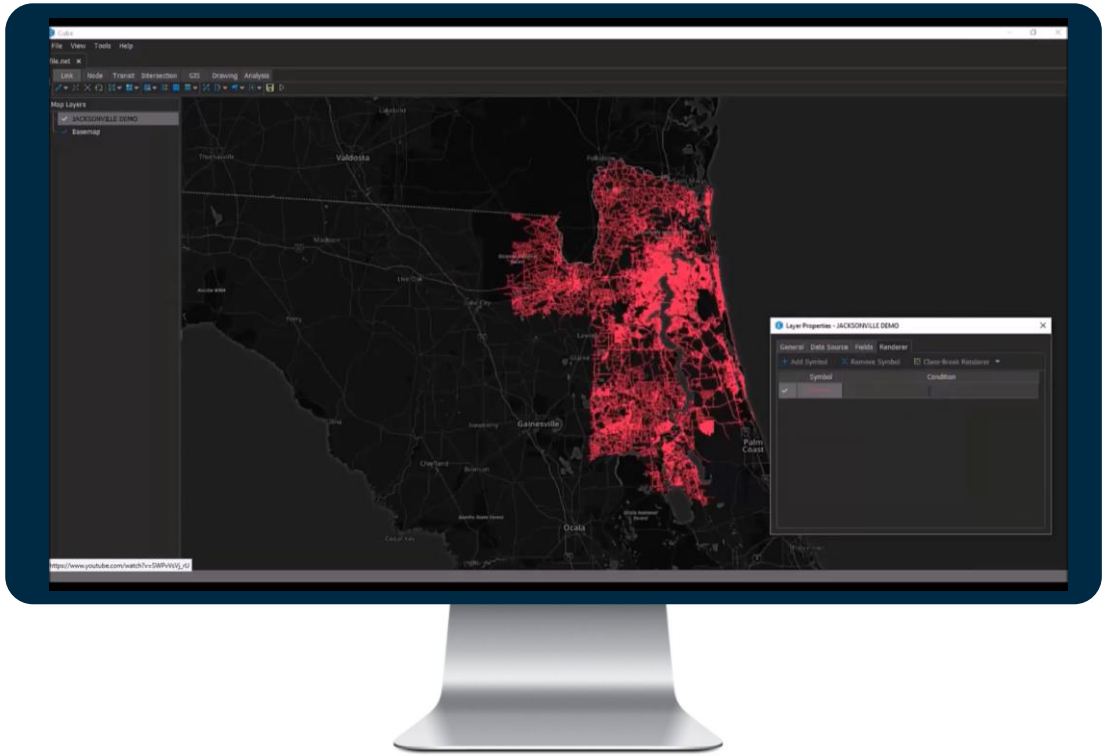
One GIS for Transportation Networks

CUBE 7



Multi-screen, Multi-user, CUBE Script, CUBEPy

CUBE 7



Supports WMS, multiple base map sources, Native modern GIS data sources (Spatialite, PostGIS, Oracle, …)

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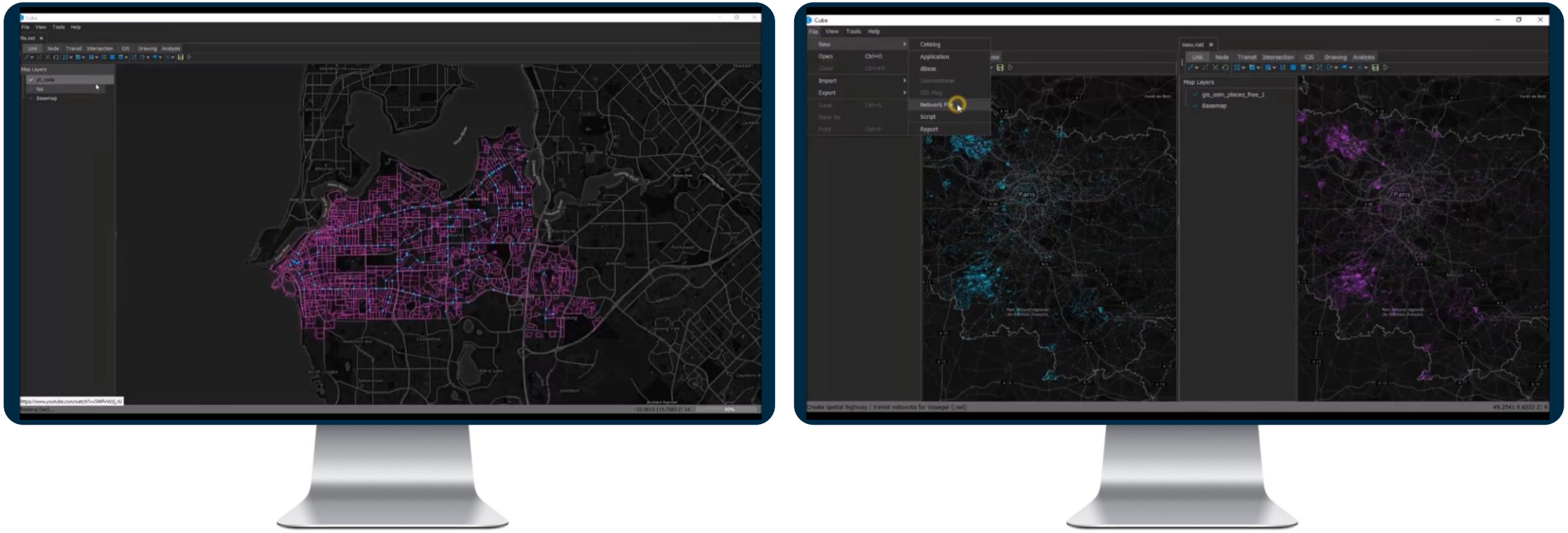
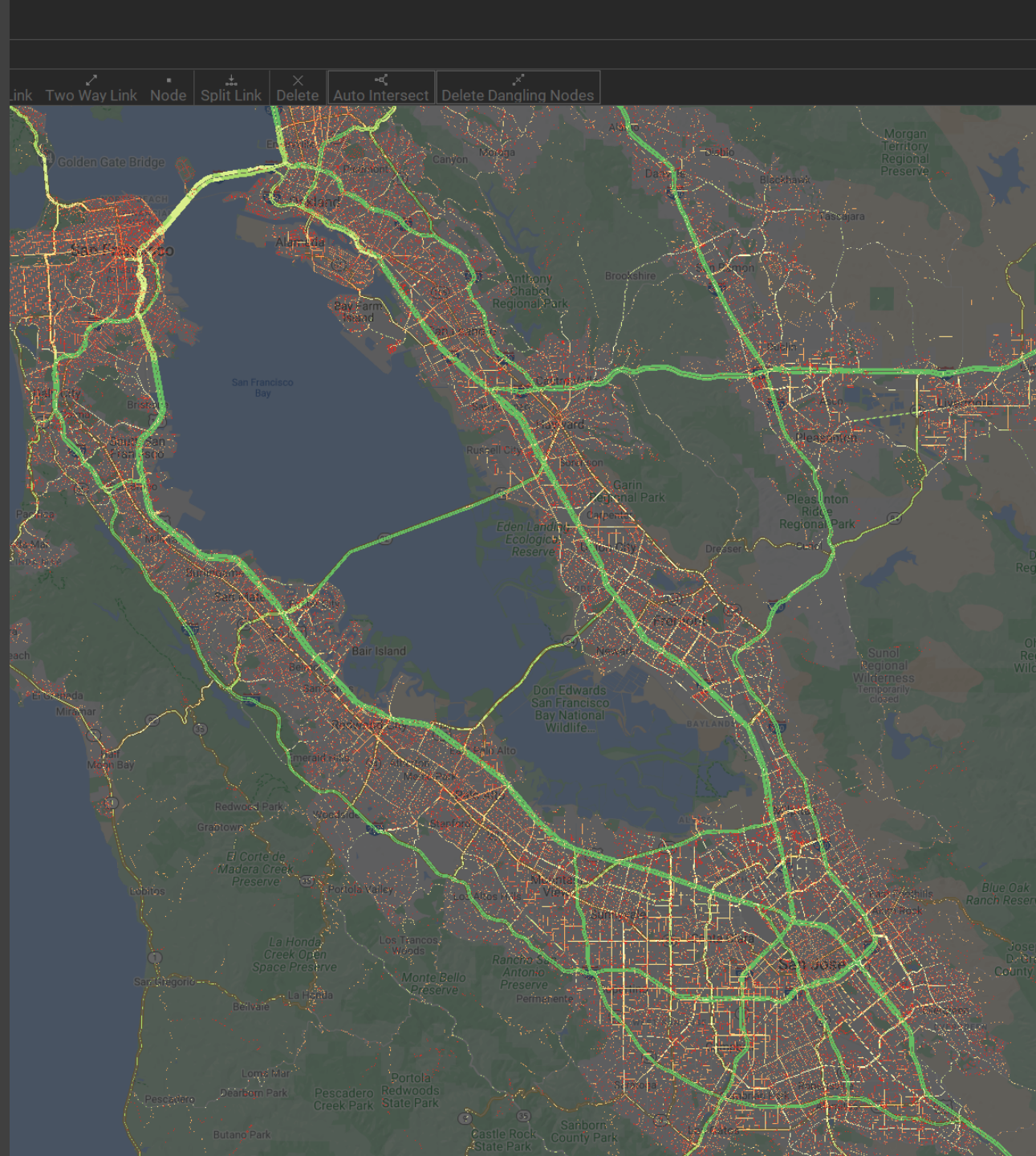


SQL Queries | Relational Database Management | High Performance Fast Loading Visualizations

CUBE 7

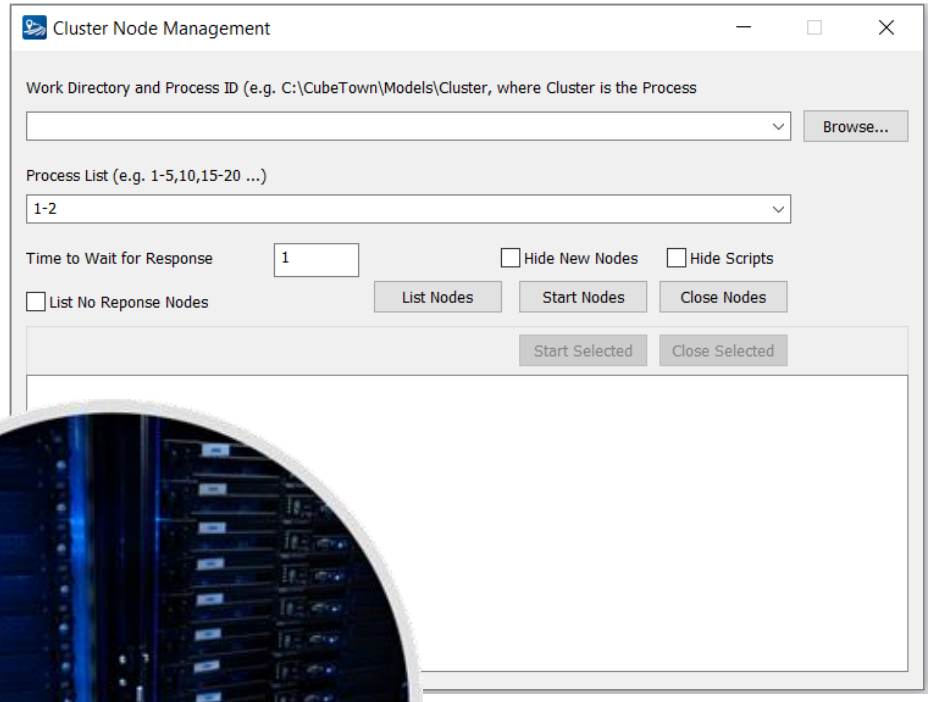
CUBE 7: Voyager

- Native use of GIS formats and relational databases throughout the system (great for tour-based and activity-based modelling) – no conversion to CUBE binary first!
- 32K zone limit increased to "virtually unlimited"
- Improved data formats and I/O performance and speed
- Full Unicode support throughout CUBE 7; this will allow for seamless uses of international character sets for purposes of filenames, strings, comments, etc
- Further Speed Enhancements for Highway, PT and other Voyager modules



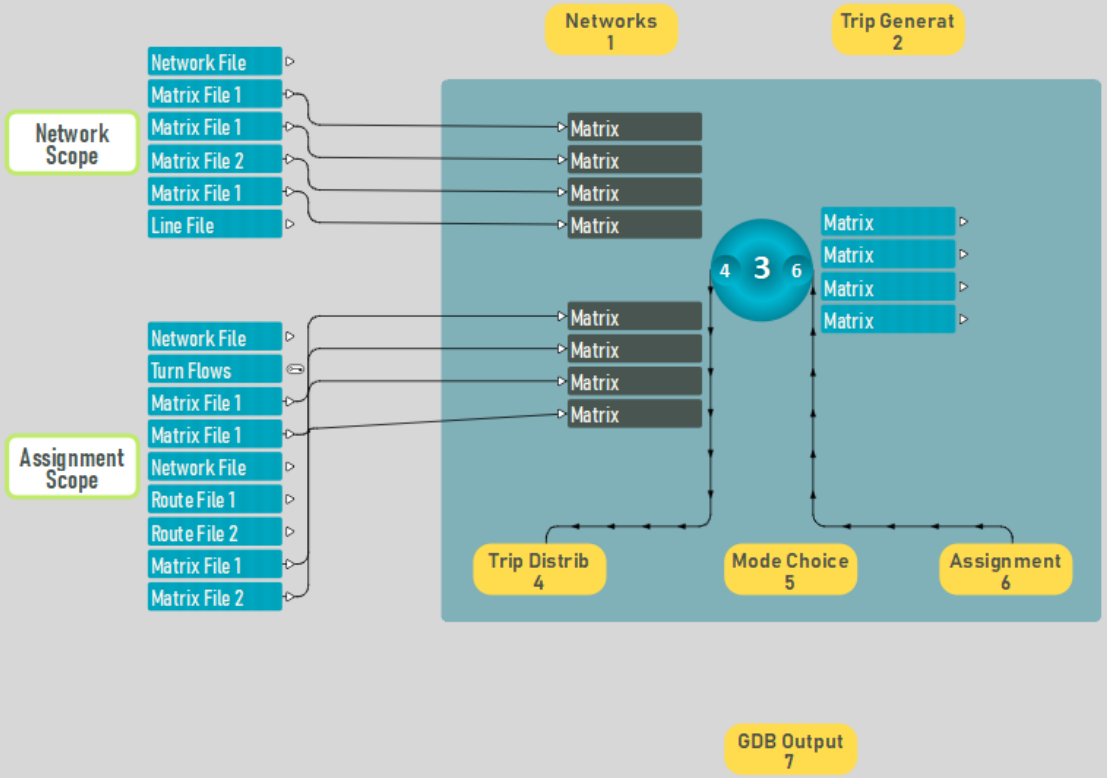
CUBE 7: Cluster

- Much greater usability and manageability
- Based on a robust client-server protocol system rather than file based inter-process communication
- Consolidated and centralized cluster node management
  - Compute resources (individual computers) registered into the system initially
  - Cluster runs able to be started from one central machine and managed within one interface (no longer will you have dozens of cluster voyager windows)
- Automatic determination of nodes to assign for a particular Multistep or Intrastep
- Ability to manage multiple CUBE Cluster compute pools from one interface / client (i.e., multiple model runs could be started and monitored from one user interface even if each run is occurring on a different set of computers)



CUBE 7: Application Manager

- Application Manager will have a new look and have more powerful visual capabilities such as:
  - Zooming / scaling,
  - Application navigation view
  - Hover over group displays preview of that group's flowchart
  - Ability to view the entire application group tree hierarchy and navigation
  - Edit history and undo / redo
- Users will have more control over model design e.g. how far up a group hierarchy that an input file may be "public"
- Model run mode; AM will allow running of an application and all of its subgroups in a read-only view that highlights the currently running program and various statistics about the current run (similar to Task Monitor but more detailed)



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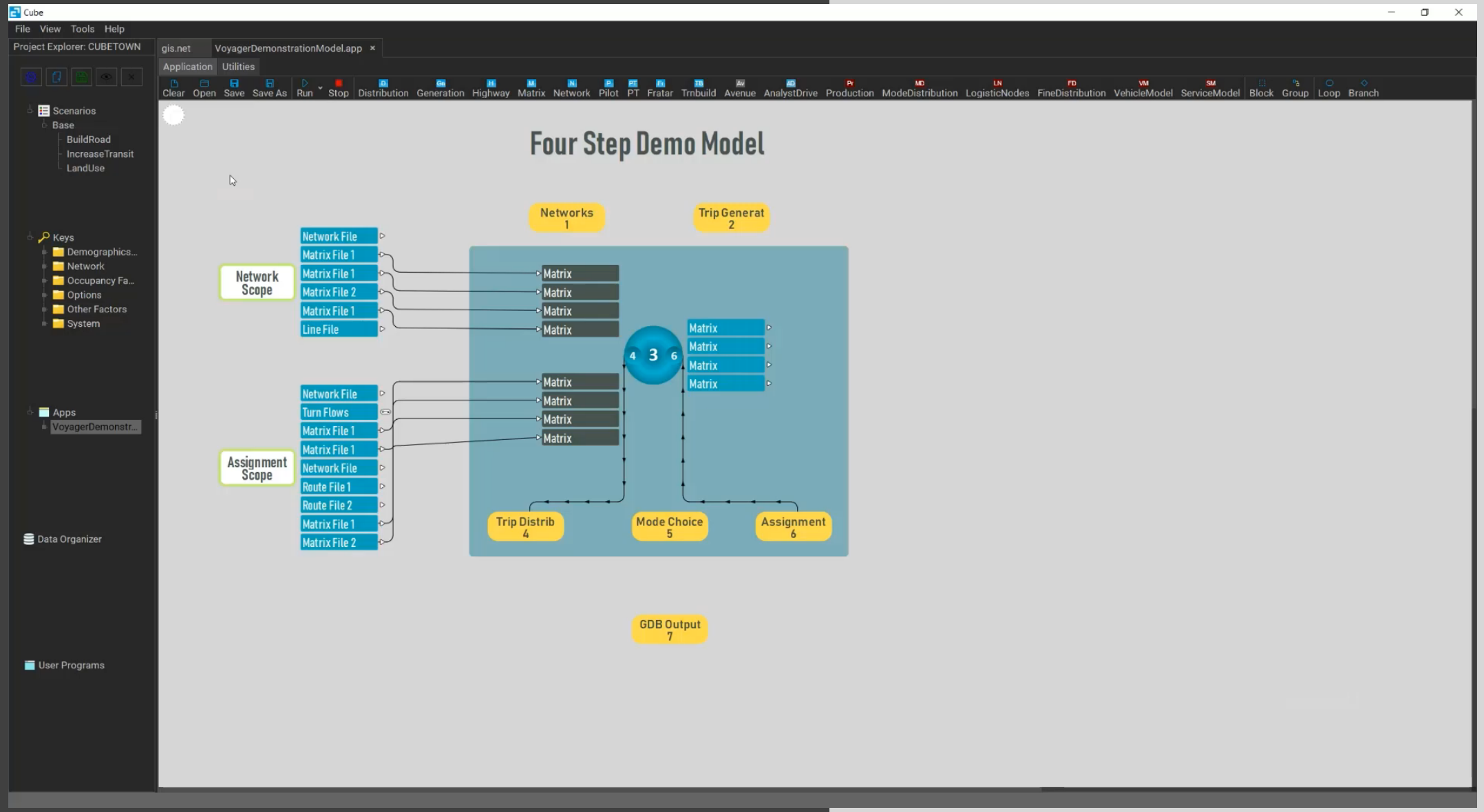
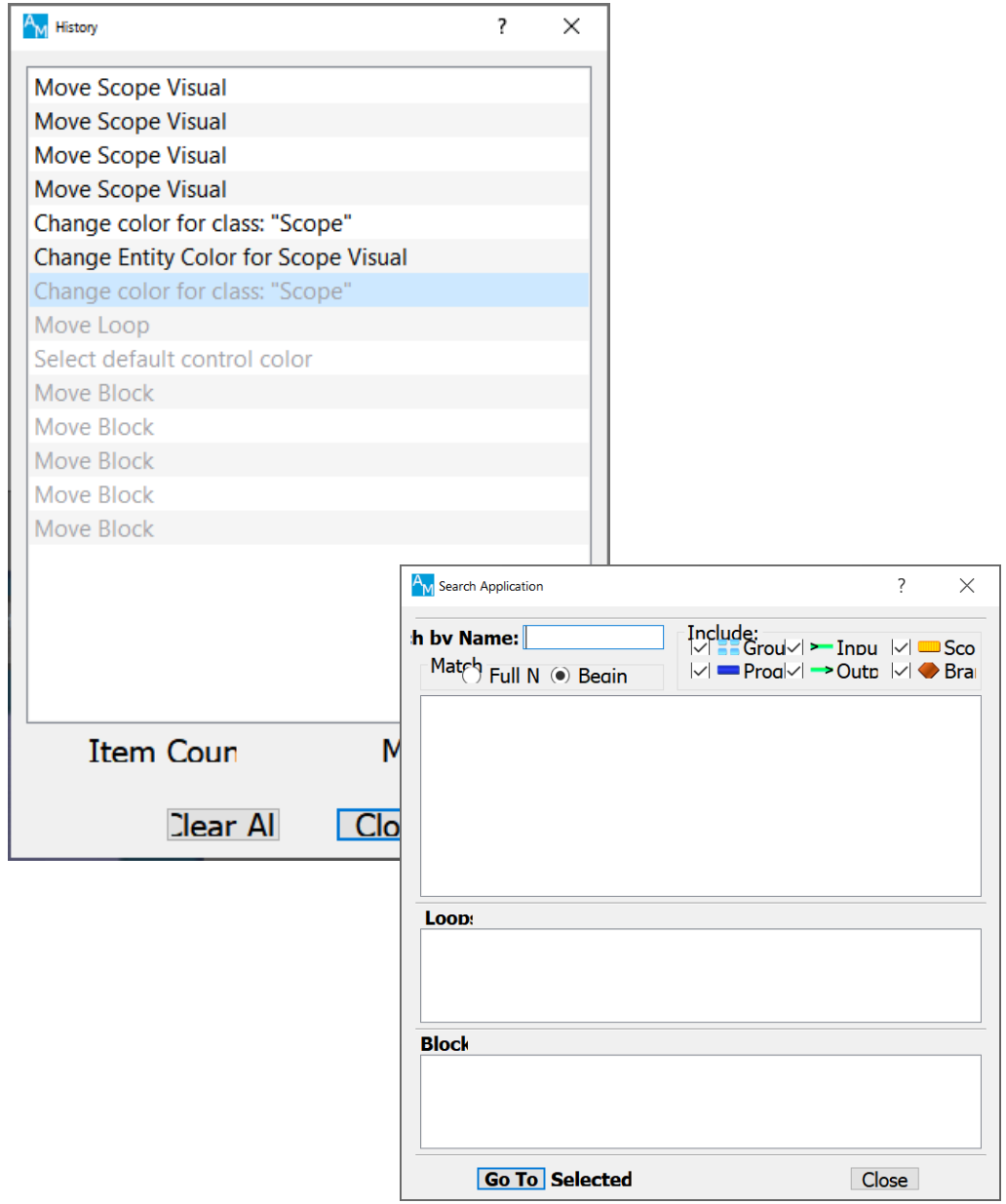
CUBE 7: Application Manager



CUBE 7: Version Control

- In CUBE 7, we are committed to creating an experience that works very well with industry standard version control systems
- Full support for relative paths throughout CUBE (Scenario Manager, Application Manager, Voyager, etc) and relative paths will be the default behaviour for file paths when possible, which will mean that no updates are needed when the root directory of a model is moved
- Updated configuration file formats, such as the catalog file, so that version control systems may easily track modifications to scenarios and keys
- Guidance on how to best use CUBE with version control systems



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CUBE 7: CubePy

- A next generation alternative model scripting system based on Voyager technology
- Utilizes Python, for an easy to learn and integrate experience
- Greatly enhanced flexibility in the assignment algorithm processes with more control over individual phases
- Powerful capabilities for manipulating matrices and networks
- Able to perform GIS analyses directly within CubePy
- Interoperate between popular Python libraries such as SciPy and NumPy , as well as other libraries callable from Python

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Questions?

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