



# TransCAD Objects

Only TransCAD provides completely integrated GIS and transportation analysis

TransCAD extends the traditional GIS data model to include transportation data objects such as:

- Transportation networks
- Matrices
- Routes and route systems
- Linear-referenced data

**TransCAD is the first and only package to provide complete integration of GIS and transportation analysis functions**

These extensions make TransCAD the best data management and analysis tool for working with transportation data. You can use the GIS functions to prepare, visualize, analyze, and present your work. You can use the application modules to solve routing, logistics, and other transportation problems with greater ease and efficiency than with any other product. Networks and matrices can be of virtually unlimited size.

**Transportation Networks** are specialized data structures that are used to model flows over a network. Networks are stored in a highly efficient way, enabling TransCAD to solve routing problems very quickly. Networks can include detailed characteristics such as:

- Turn delays or restrictions
- Overpasses, underpasses, and one-way links
- Intersection and junction attributes
- Intermodal or interline terminals, transfer points, and delay functions
- Zonal centroid connectors
- Link classifications and performance functions
- Transit access, egress, and walk transfer links

Matrix1	Distance Matrix	Miles (Driving)													
	Austin	Baltimore	Boston	Charlotte	Chicago	Columbus	Dallas	Denver	Detroit	El Paso	Fort Worth				
Austin	0	1584	1966	1215	1166	1242	195	1052	1395	621	188				
Baltimore	1584	0	466	463	728	429	1389	1680	553	2024	1423				
Boston	1966	466	0	863	984	760	1770	1971	809	2405	1805				
Charlotte	1215	463	863	0	785	477	1036	1576	675	1664	1068				
Chicago	1166	728	984	785	0	357	971	1006	282	1583	983				
Columbus	1242	429	760	477	357	0	1046	1255	271	1681	1081				
Dallas	195	1389	1770	1036	971	1046	0	874	1200	635	35				
Denver	1052	1680	1971	1576	1006	1255	874	0	1269	720	864				
Detroit	1395	553	809	675	282	271	1200	1269	0	1835	1234				
El Paso	621	2024	2405	1664	1583	1681	635	720	1835	0	603				
Fort Worth	188	1423	1805	1068	983	1081	35	864	1234	603	0				
Houston	262	1466	1847	1042	1181	1235	238	1110	1388	743	270				
Indianapolis	1099	601	932	603	182	176	904	1079	310	1537	937				
Jacksonville	1133	769	1218	383	1061	857	1053	1743	1055	1614	1084				
Los Angeles	1447	2691	3006	2455	2041	2266	1461	1044	2304	826	1429				
Memphis	659	932	1313	636	540	589	463	1124	743	1098	498				
Milwaukee	1254	821	1076	877	97	449	1063	1040	374	1667	1067				
Nashville	862	722	1104	427	469	381	666	1151	534	1301	701				
New York	1763	264	218	660	807	558	1568	1794	632	2203	1603				
Oklahoma City	385	1342	1673	1105	787	917	208	669	1046	798	198				
Philadelphia	1668	113	413	547	764	473	1472	1725	588	2107	1507				
Phoenix	1063	2339	2671	2103	1785	1914	1076	906	2043	442	1044				
Portland	2311	2837	3093	2823	2128	2446	2134	1259	2390	1788	2124				
San Antonio	82	1663	2044	1239	1248	1324	277	1134	1477	546	268				

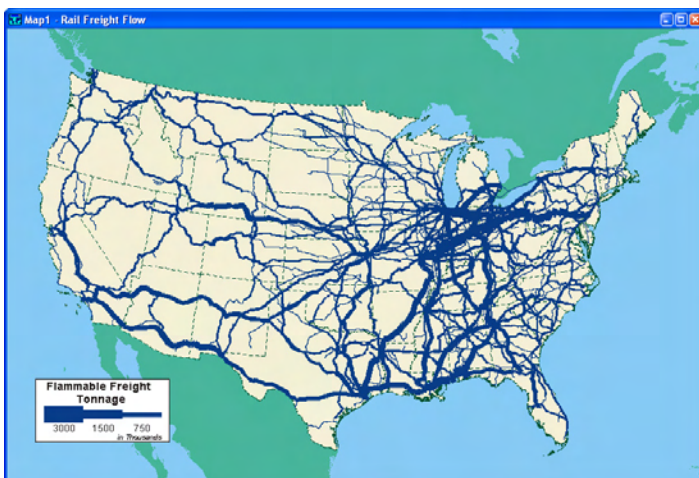
**Matrices** hold data such as distance, travel times, and origin-destination flows that are essential for many transportation applications. TransCAD provides functions for creating and manipulating matrices, and tools for spatial analysis and advanced visualization of matrix data. This combination lets you see and understand transportation flows and network characteristics in new and different ways.

**Routes and Route Systems** indicate paths taken by trucks, rail, cars, buses, or individuals traveling from place to place. TransCAD includes tools to create, display, edit, and manipulate routes, and unique display technology for mapping routes in a clear and compelling fashion. You can organize a set of related routes into a single route system layer, and include route attributes, stop locations, and vehicle schedules.

**Linear Referencing** identifies the location of transportation features as a distance from a fixed point along a route. TransCAD can display and analyze these data sets without conversion, and includes dynamic segmentation functions to merge and analyze multiple linear-referenced data sets. This makes TransCAD a natural choice for the following types of information:

- Facility infrastructure and operations data
- Accident locations
- Pavement or rail condition ratings
- Traffic flows and transit ridership data
- Facility alignments
- Capital project data

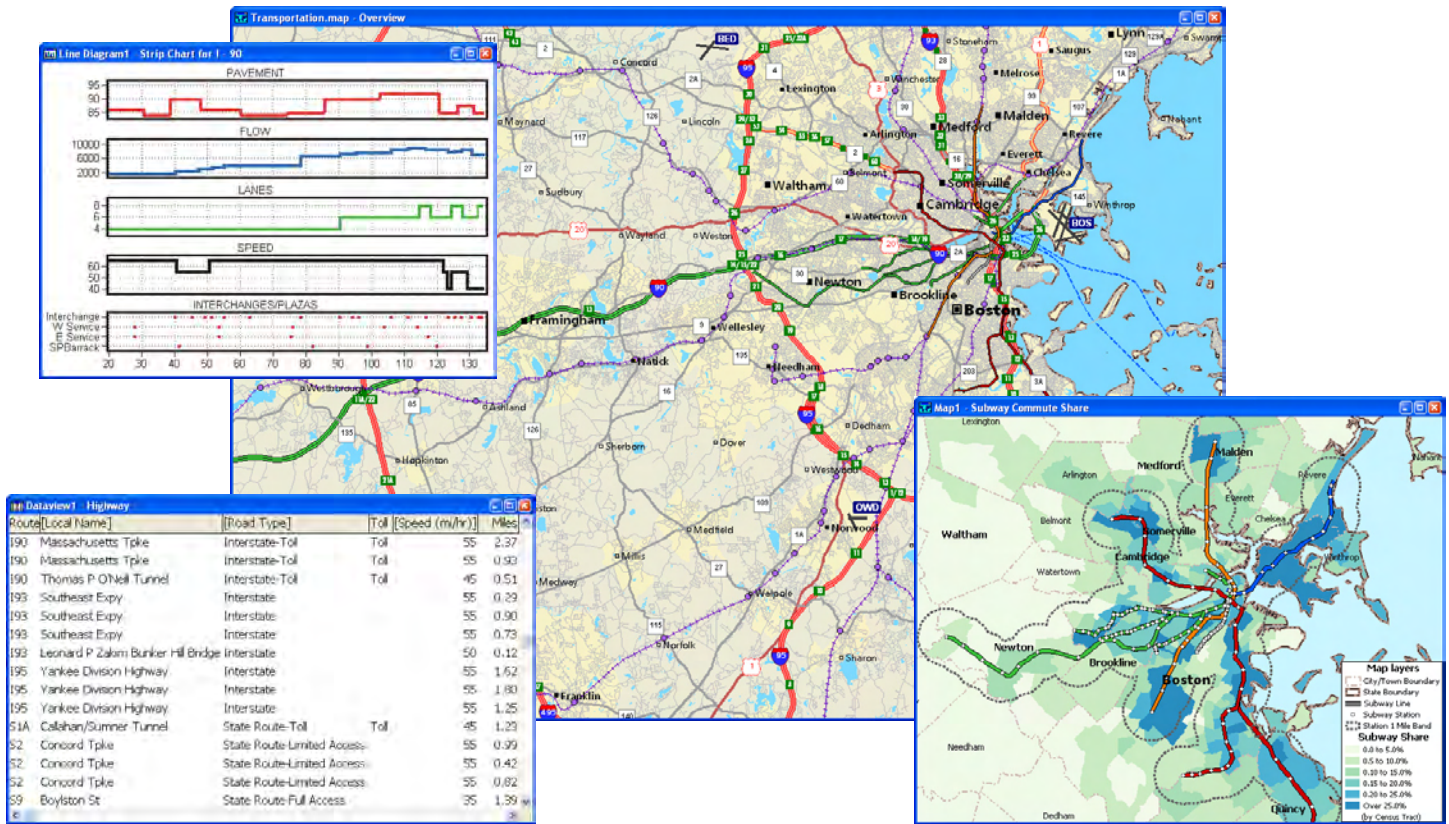
Since its initial release in 1988, leading organizations around the world have used TransCAD to create, maintain, and analyze transportation data. Prominent users include agencies of federal, state, and local governments, Fortune 1000 companies, and leading colleges and universities.





# Mapping and Visualization

Take a unified look at all of your data sources



With TransCAD, you can create high-quality map output using dozens of thematic mapping styles and options, unlimited colors, and fully-scalable line styles and TrueType map symbols. With a few clicks of the mouse, MapWizard® automatic mapping technology helps you create color and pattern coded maps, dot-density maps, scaled-symbol maps, and maps with integrated pie charts and bar charts. TransCAD also provides specialized mapping functions for transportation applications:

- Automatic display of one-way streets
- Dynamic map labeling that adjusts to the scale of the map
- Built-in highway shields that result in maps of publication quality
- Route system maps that show overlapping routes side-by-side for greater visibility
- Desire line maps that show region-to-region flows

Additional tools let you visualize data that cannot be displayed using a conventional GIS:

- Intersection diagrams that illustrate flows and turning movements
- Strip charts that depict facility characteristics and their variation along a route
- Interactive tools for editing geographic features and for defining turn restrictions and delays

**Tables:** You can see the data associated with map features in tabular form. See data for a single feature, or display data for an entire layer in a dataview. You can use dataviews to add and delete records, edit values, sort records, create formula fields, or compute statistics.

**Output:** Page layout tools help you design and create professional presentations that combine the results of your analyses into a single powerful display. You can print your maps and layouts on any printer or plotter, or save them to vector or raster formats. You can also save your work as JPEG or PNG files for use on a web page.



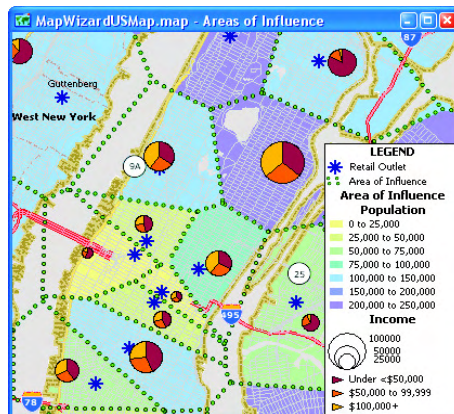
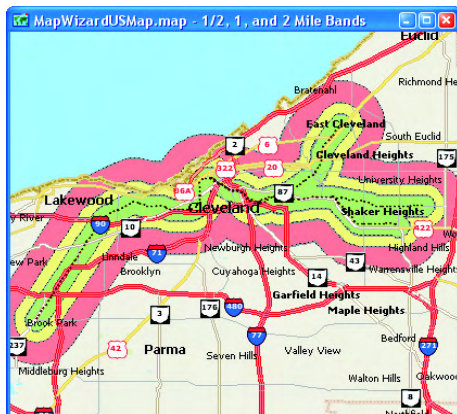
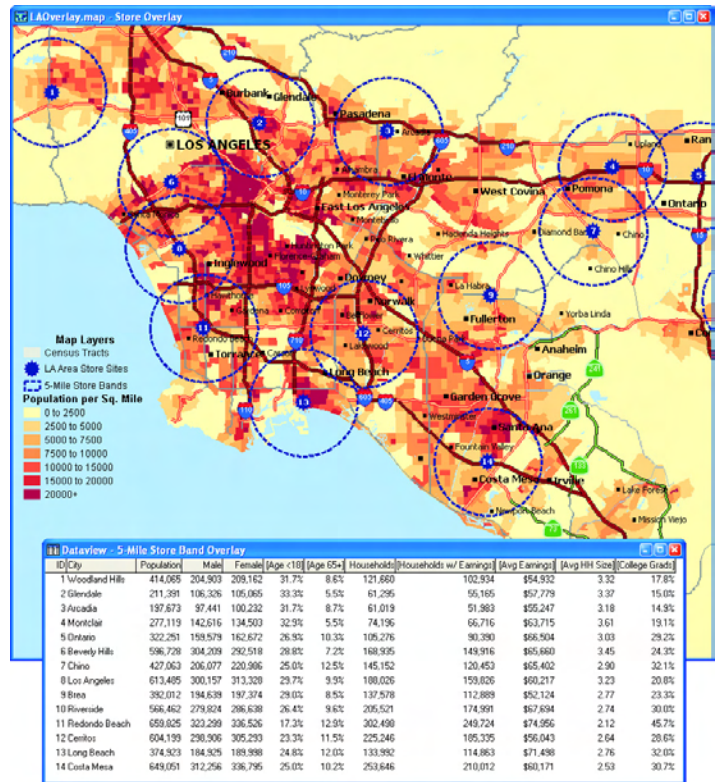


# Geographic Analysis Tools

Unearth the trends and information hidden in your data

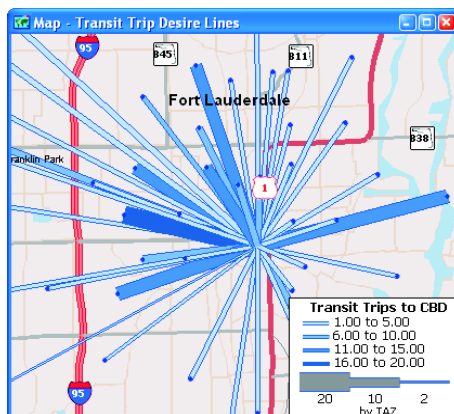
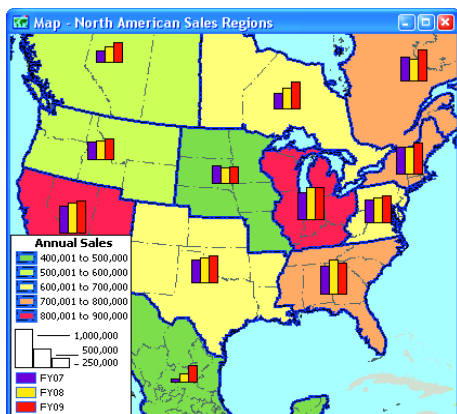
One of the best reasons to use a GIS is to unearth and analyze the geographic components of your data. You can create bands (buffers) around map features, create districts, define areas of influence, create density grids, illustrate flows with desire lines, and much more. TransCAD also makes it easy to overlay and aggregate data and calculate statistics.

**Ask and Answer Geographic Questions:** Where are areas with the highest population density? How many people live within one, two, and three miles of a transit stop? Where is the greatest concentration of vehicle emissions? Where do most trips originate? TransCAD answers these and many other types of questions. You can integrate census statistics with your own data to identify geographic characteristics that impact you and your operations. You will be amazed at how quickly you can enhance your decision making using this easy-to-use GIS tool.



**Bands:** You can automatically create bands around any number of map features and then analyze the characteristics of those areas. Find out how many people live within a certain distance of a train station, analyze the neighborhoods most affected by noise pollution from a highway, or determine accessibility to facilities.

**Districts:** TransCAD lets you join smaller areas into districts and compute the attributes for each one. For example, you can group ZIP Codes together to create sales territories or city blocks to create school districts or TAZs.



**Areas of Influence:** You can determine the areas closest to each of your facilities by building areas of influence, then estimate the attributes within each area to determine areas that are under- or over-served.

**Desire Lines:** You can illustrate the flow of people or goods from point to point based on values in a matrix, such as the trips into a central business district from surrounding traffic analysis zones.

**Density Grids:** TransCAD lets you visualize point data by transforming the points into a regular grid. This makes it easy to identify concentrations of transit riders or crime hot spots. In addition, the grid can be weighted based on a value you choose. For example, you could analyze the locations of retail stores and weight them by the number of jobs.

**Surface Analysis:** With TransCAD, you can analyze and display surfaces on a two-dimensional map or as a 3D map. You can create contour maps of elevations and then determine the viewshed for any location, either at ground level or at a particular height. For example, you can find areas of weak service from a transmission tower. You can also create surfaces that represent data values, such as measures of air pollution or levels of radon gas, over a geographic region.



## Transportation Application Modules

**A comprehensive solution for all types of transportation applications**

TransCAD is the only software package that fully integrates GIS with demand modeling and logistics functionality. There are many reasons why it is valuable to have a GIS as part of a planning or routing and logistics package.

First, GIS makes it possible for models to be much more accurate. Network distances and travel times are based on the actual shape of the road network and a correct representation of highway interchanges. Also, with networks you can specify complex road attributes such as truck exclusions, delays at intersections, one-way streets, and construction zones.

Second, the entire modeling process is more efficient. Data preparation is greatly facilitated and the database and visualization capabilities catch errors before they cause problems.

A third advantage is the GIS itself. In TransCAD, different modeling equations can easily be derived and applied for different geographic subareas.

Lastly, the GIS approach provides a graphical solution that is easily understood. Users can convey highly technical information to the non-practitioner in a very straightforward and understandable manner.

TransCAD can solve problems of virtually any size. Unlike other GIS products, application modules in TransCAD are fully integrated with GIS functions for improved performance and ease of use. This makes TransCAD ideal for many types of transportation applications including:

- Network Analysis
- Transportation Planning and Travel Demand Modeling
- Transit Analysis
- Vehicle Routing and Logistics
- Territory Management and Site Location Modeling

The following pages describe how you can use TransCAD for all of these applications.

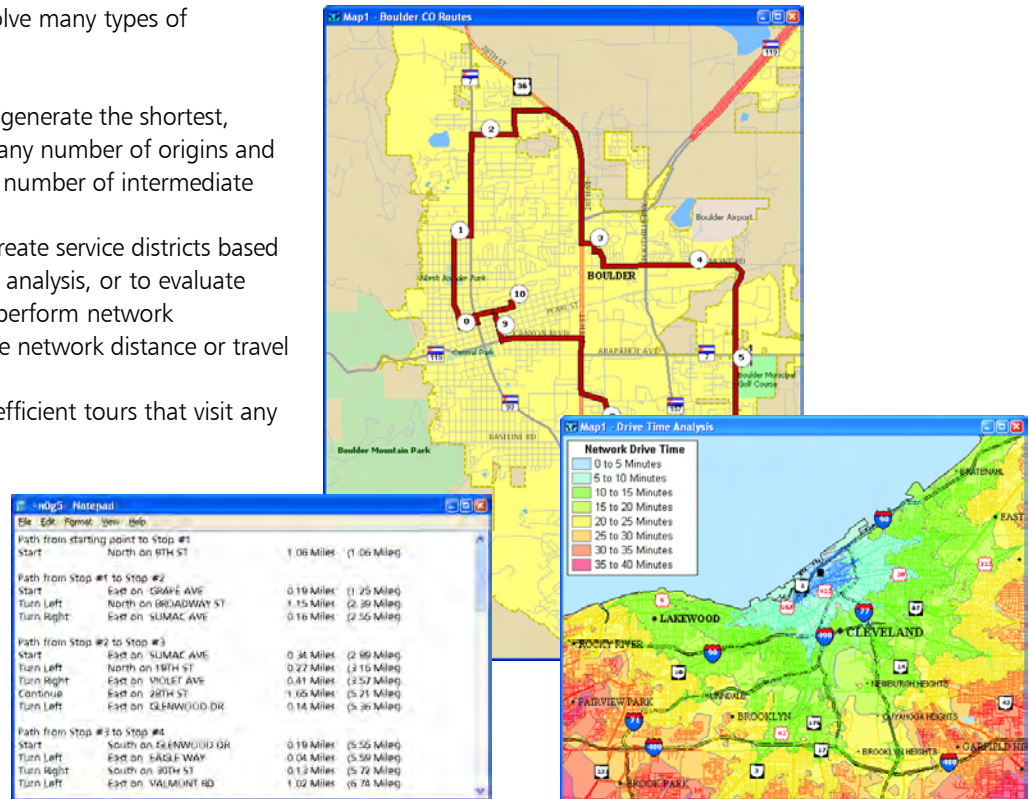
**TransCAD is the most significant analytic and decision support tool ever created for transportation**



# Network Analysis

Network analysis models are used to solve many types of transportation network problems:

- **Shortest path routines** can be used to generate the shortest, fastest, or least-costly route between any number of origins and any number of destinations, with any number of intermediate points.
- **Network partitioning** can be used to create service districts based on accessibility, to perform drive-time analysis, or to evaluate possible facility locations. When you perform network partitioning, you can also calculate the network distance or travel time from specific locations.
- **Traveling salesman models** construct efficient tours that visit any number of points on a network.

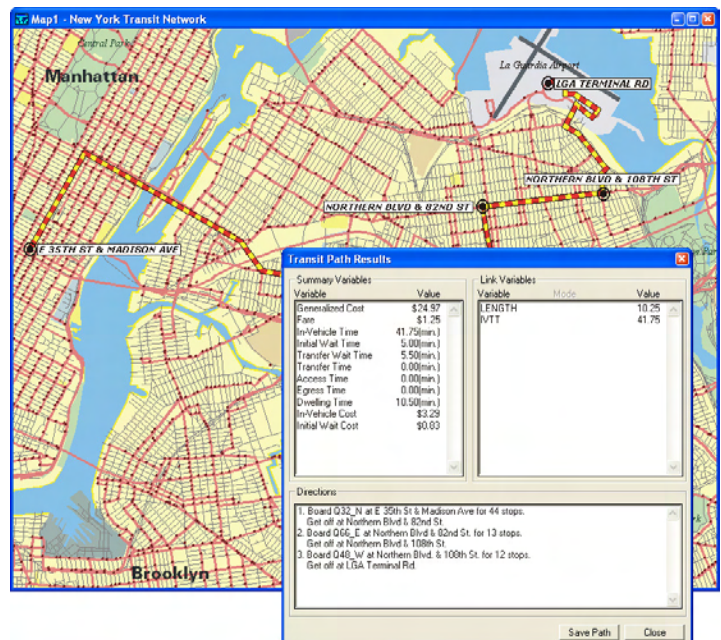


# Transit Analysis

TransCAD also has special tools and procedures for creating and working with transit networks. Transit fares can be specified as either flat or zonal. Using transit networks and fare structures, you can solve shortest path problems and calculate transit path attributes (i.e. skims). You can also have separate and fully integrated networks for non-motorized travel modes. For example, you can include pedestrian links when doing transit network analysis.

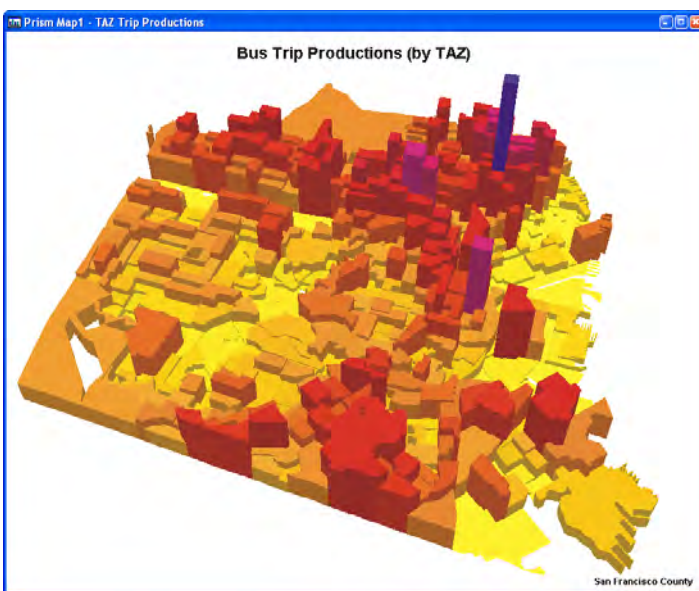
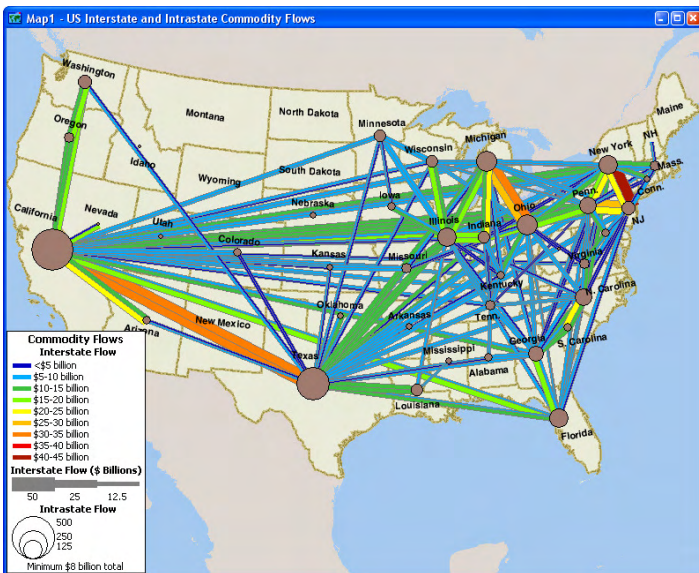
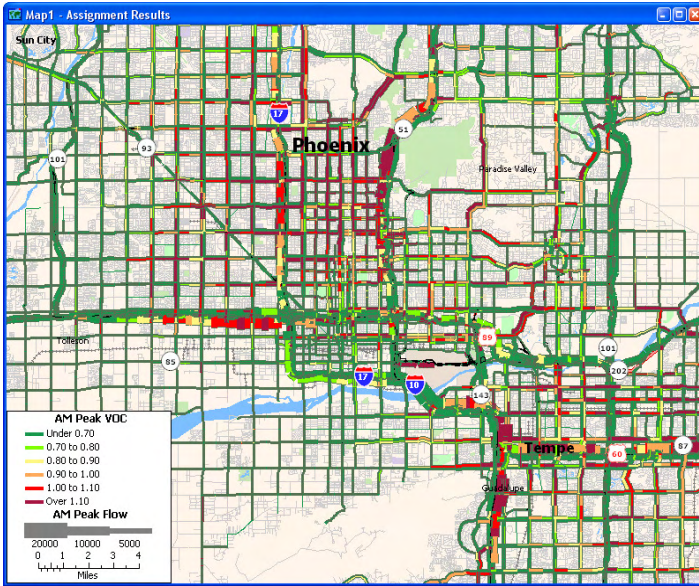
Transit networks can also be used for performing transit assignment. You can estimate the number of passengers that utilize links in a transit network as a function of transit level of service. These models produce link level and aggregate ridership statistics. TransCAD includes an array of sophisticated transit network assignment procedures.

TransCAD is the only GIS with specific extensions for public transit. TransCAD can perform data management for complex transit systems and has applications in customer information systems, scheduling, and marketing.





# Transportation Planning and Demand Modeling



Transportation planning and travel demand models are used to predict changes in travel patterns and the utilization of the transportation system in response to changes in regional development, demographics, and transportation supply. TransCAD is America's most popular and capable travel demand modeling software. TransCAD is the only planning package that is GIS-based and fully integrates GIS and planning tools for trip generation, trip distribution, mode split modeling, and traffic assignment. TransCAD includes all of the traditional UTPS models, quick response models with reduced data requirements, and advanced disaggregate demand models.

- **Trip Generation/Production** models included with TransCAD estimate the number of trips, by purpose, that are produced or originate in each zone of a study area.
- **Trip Attraction** models predict the number of trips attracted to each zone or to a particular land use.
- **Trip Balancing** methods are provided so that the number of attractions equals the number of productions.
- **Trip Distribution** models are used to predict the spatial pattern of trips or other flows between origins and destinations.
- **Mode Split** models are used to analyze and predict the choices that individuals or groups of individuals make in selecting the transportation modes that are used for particular types of trips.
- **P-A to O-D and Time of Day** tools enable you to convert productions and attractions to origins and destinations, decompose a 24-hour trip table matrix into hourly trip tables, convert person trips to vehicle trips, and apply peak hour factors.
- **Assignment** models estimate the flow of traffic on a network and allow you to establish the traffic flow patterns and analyze congestion points. TransCAD provides a full complement of traffic assignment procedures that are used for modeling national, regional, and urban traffic. These procedures include numerous variants that are tailored for modeling transit, as well as intercity passenger and freight traffic.
- **Advanced Highway Assignment** procedures included with TransCAD incorporate several breakthroughs in traffic assignment methodology that facilitate more accurate analyses of road traffic and the impacts of transportation improvements. All of the user equilibrium methods can achieve very high levels of convergence and do so with unprecedented fast computing times. Also, most of the methods take advantage of multi-threading to run much faster on multi-core and multi-CPU computers. These methods include multi-modal toll road assignment, origin user equilibrium, path-based assignment, multi-point equilibrium assignment, combined distribution-assignment, assignment with HCM intersection delay, and dynamic equilibrium traffic assignment.

The TransCAD Dynamic Traffic Assignment model assigns O-D trips by time period, and effectively manages the interaction of trips introduced to the network at differing time periods. The flow and congestion results are often more realistic and capture the temporal distribution of congestion on the network more effectively.



# Vehicle Routing and Logistics

TransCAD includes a comprehensive library of logistics procedures that apply to all modes of transportation and can be used to solve a variety of logistics problems.

## Vehicle Routing/Dispatching

TransCAD provides a rich set of tools that solve various types of pickup and delivery routing problems. These tools are used to prepare input data, solve the routing problem, and provide tabular and graphical output of the resulting routes and vehicle schedules. The TransCAD procedures can solve many variations on the classic vehicle routing problem, including restrictions on the time when stops can be made, the dispatching of vehicles from multiple depots, and the use of non-homogeneous vehicle fleets. The vehicle routing procedure in TransCAD is also capable of solving problems involving mixed pickup and delivery. Once a solution is found and the results displayed graphically, users can edit the routes interactively by adding or removing stops. Once stops have been added or removed, users can perform a re-optimization of the route so as to minimize time window violations.

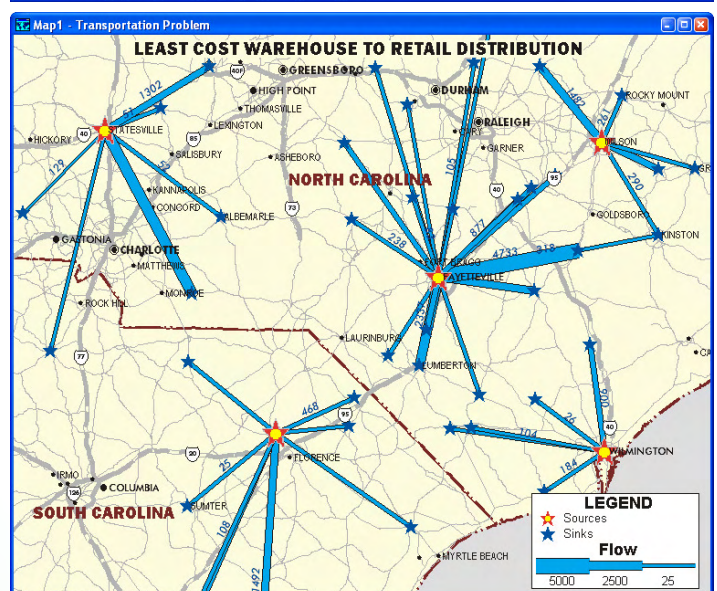
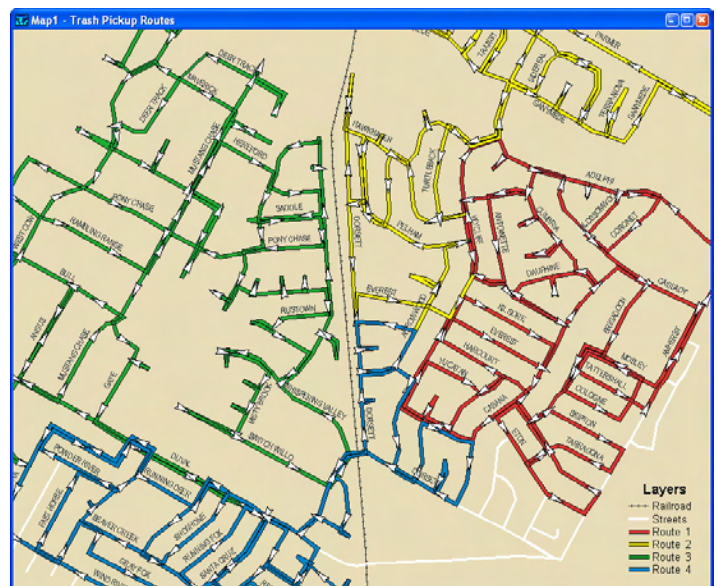
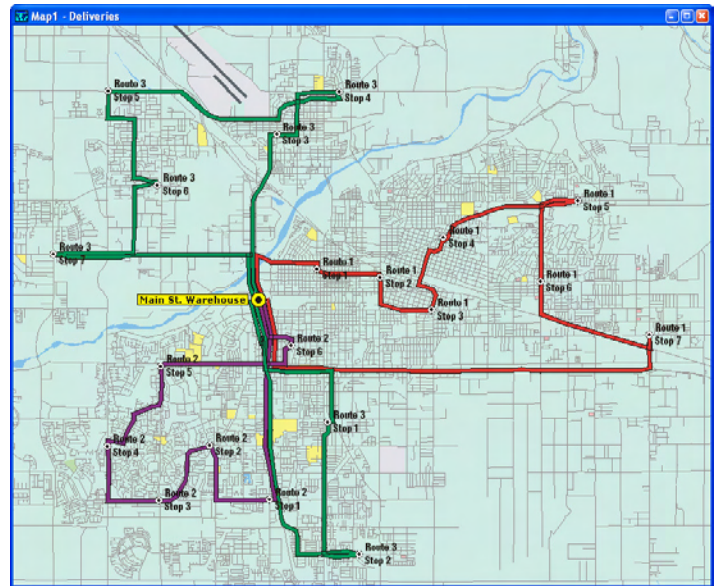
## Arc Routing

Arc routing problems are a class of problems that involve finding efficient ways to travel over a set of links in a transportation network. Arc routing has a large number of public and private sector applications, including street sweeping, solid waste collection, snow plowing, mail delivery, and other door-to-door operations. In a typical arc routing problem, people or vehicles are dispatched from one or more depots to traverse a set of service links. The result of an arc routing problem is a set of one or more routes that cover all the service links with the minimal amount of deadheading.

## Network Flow and Distribution Analysis

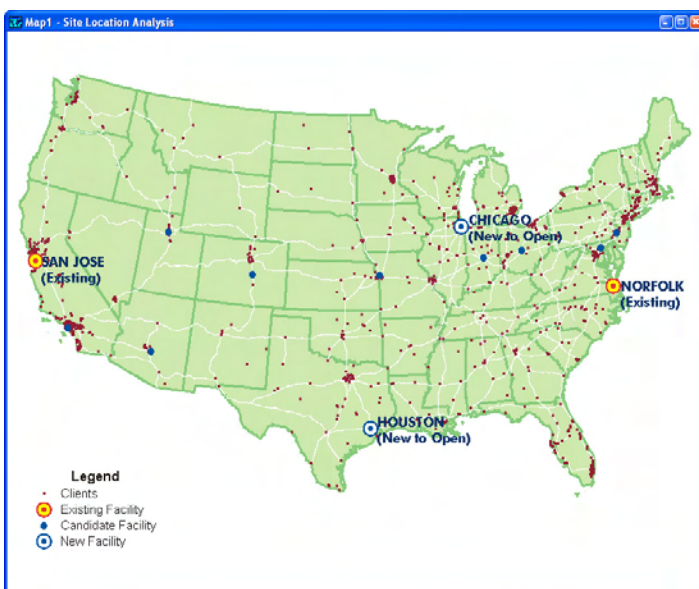
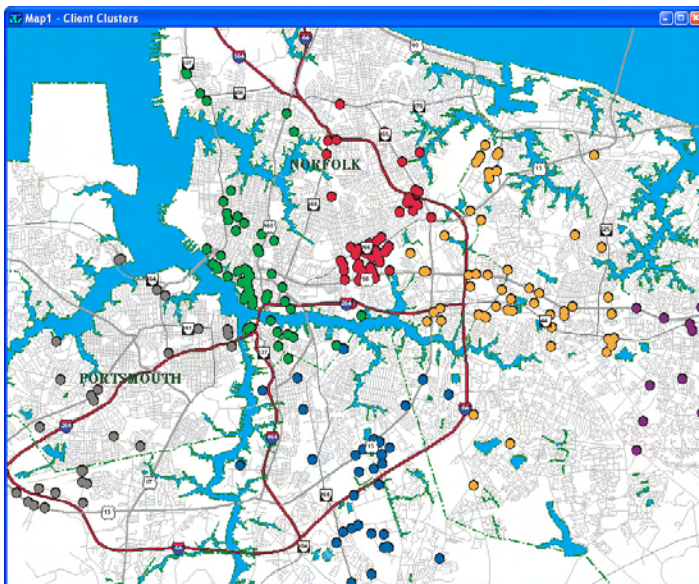
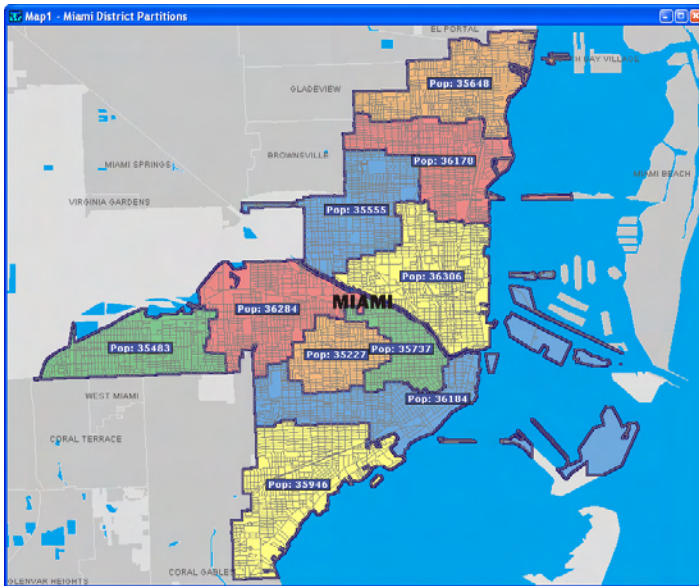
TransCAD includes a set of procedures for solving network flow problems. These problems involve efficient delivery of goods or services, and arise in transportation and many other contexts.

- **The transportation problem** involves identifying the most efficient way to service a set of destinations from a set of origins. For example, a company may be interested in finding the least-cost solution for shipping commodities from its warehouses to its vendor locations.
- **The minimum cost flow problem** is a more general version of the transportation problem that takes link capacities into account. For example, the procedure can be used to find multiple paths when capacity constraints make it impossible to utilize the shortest path for an entire shipment.
- **Matching problems** try to find the best one-to-one matching between two groups of objects where there is some quantitative measure to be minimized or maximized. For example, you can efficiently assign work to service centers.





# Territory Management and Site Location Modeling



TransCAD procedures for regional partitioning, clustering, and facility location have broad applications in transportation and marketing. Clustering routines assemble customers, facilities, or areas into groups that are compact and can be serviced efficiently. Districting models group Census tracts, ZIP Codes, counties, or other regions into territories that are compact and balanced. Location models evaluate the costs and benefits of any number of proposed facility locations.

## Territory Definition

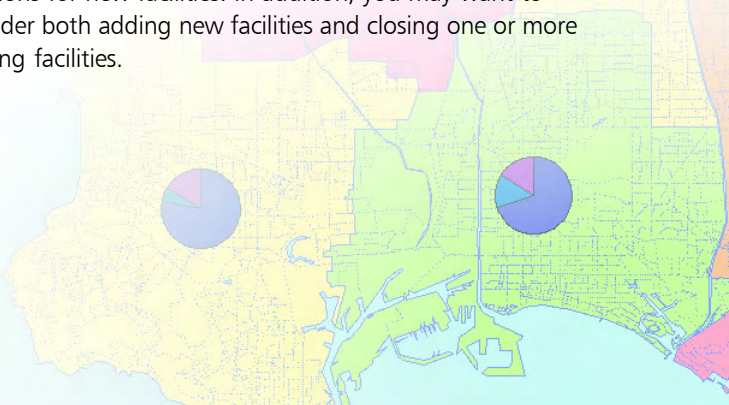
TransCAD provides powerful automated procedures for defining territories:

- **Partitioning** involves creating groups of features in a layer based on proximity or measures of similarity. The partitioning procedures in TransCAD support applications in service territory alignment, sales and marketing, political redistricting, and many other disciplines. The partitioning model attempts to produce districts that are contiguous, compact, and balanced.
- **Clustering** is the grouping of features into compact clusters where there may also be limits on the size of each cluster. You can specify a maximum cluster size or capacity, which limits the number of features assigned to each cluster. The clustering procedure in TransCAD is very flexible and can be used to solve problems in many disciplines such as sales force deployment and vehicle fleet management.

## Site Location Analysis

Site location problems involve choosing the best location for one or more facilities from a set of possible locations. TransCAD can address virtually all types of location problems. For example:

- You want to determine the number of facilities that are required to guarantee a prescribed level of service. You may also need to account for financial or operational constraints, such as an upper limit on the number of facilities you are able to add, or a fixed budget for adding facilities.
- Revenues and profits depend on the choice of facility locations. In these cases, you need to trade off the cost of adding a facility with the potential revenue benefit.
- You want to maximize the distance between facilities and the population they serve. Landfills and power plants, for example, are often located relatively far from major population centers.
- You want to consider the presence of existing facilities. The locations of these facilities obviously affect the choice of locations for new facilities. In addition, you may want to consider both adding new facilities and closing one or more existing facilities.





# Map Your Own Data

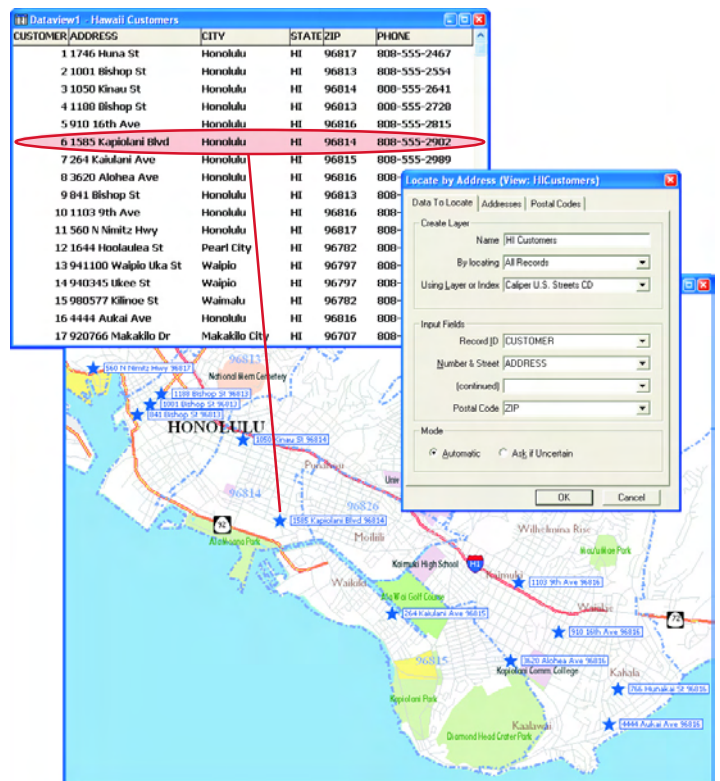
**TransCAD is compatible with other database, GIS, and CAD systems**

TransCAD lets you create maps using your own data. Map data from Access, dBASE, Excel 2007, and text files directly, or access data from any ODBC compliant data source such as Oracle, SAS, or SQL Server. Create-a-Map Wizard™ gives you start-to-finish assistance for locating (geocoding), geographically analyzing, and mapping your data.

TransCAD also supports many common GIS and CAD files. Map ESRI Shapefiles, MapInfo TAB files, and Oracle Spatial tables directly, or use the built-in translators to import geographic data from a variety of other software packages and public sources.

You can also use raster images such as satellite or aerial photographs directly in your maps. TransCAD includes toolboxes for quickly accessing on-line images from TerraServer-USA and Google Earth. These images can be used as a means of reference or in conjunction with the map editing tools to create or edit geographic files.

A built-in interface to Global Positioning System devices lets you track and record your location and build geographic databases as you work. With a GPS device and a laptop, users in the field can create accurate files of public utilities, corporate facilities, and more.



**Direct Data Access for:**

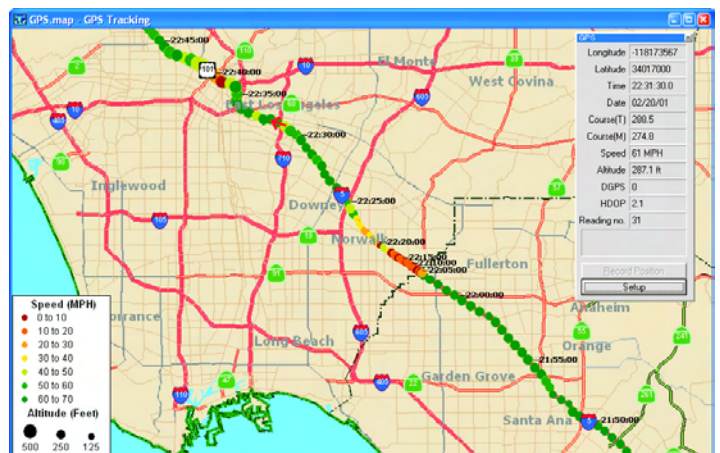
- Access Table
- ArcView Project and Legend files
- dBASE/FoxPro/X-base
- ESRI Shapefiles
- Excel 2007
- MapInfo TAB files
- All ODBC sources (such as Access, DB2, INFORMIX, INGRES, InterBase, NetWare SQL, Oracle, Paradox, PROGRESS, SQLBase, SQL Server, Sybase)
- Oracle Spatial tables
- Text and binary data files
- Image files including: ECW, GeoTIFF, JPEG, 2000, JPEG/World, MrSID, Orthophoto, SPOTView, and TIFF

**Import/Export Support for:**

- Defense Mapping VPF
- Digital Line Graph
- ETAK MapBase
- Google Earth KML/KMZ
- Intergraph DGN
- MapInfo MIF/MID
- Ordnance Survey NTF
- TIGER/Line

**Additional Export Support for:**

- dBASE
- Enhanced Metafile
- HTML
- JPEG
- PNG
- Text and binary data files
- Windows Bitmap





# Application Development Platform

Leverage the power of TransCAD in your own applications

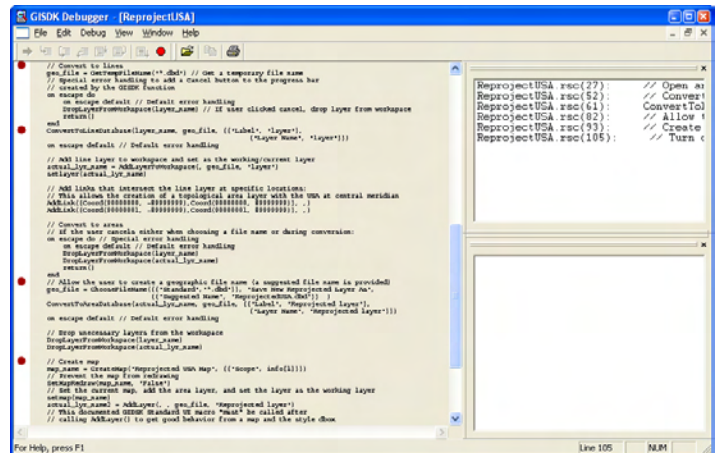
TransCAD includes the Geographic Information System Developer's Kit (GISDK™). GISDK gives you the tools that you need to create a wide variety of products for delivering mapping and geographic analysis capabilities to your customers. Over 850 functions can be called from Caliper Script, a complete programming language for designing menus and dialog boxes (including toolbars and toolboxes) and for writing macros. The Caliper Script code is stored in resource files that you can edit with your favorite text editor. With GISDK you can:

- Create add-ins that extend the standard interface to provide new capabilities or that automate repeated operations
- Build custom applications that focus the user on the capabilities needed for a particular purpose by extending or replacing the standard TransCAD interface
- Access TransCAD from .NET to integrate it into a .NET desktop application
- Access TransCAD from a Python program
- Access TransCAD as a COM Object to add maps or analysis functions to your own programs

GISDK is a simple object-oriented scripting language with hundreds of spatial data structures and functions. GISDK contains both a debugger and a compiler.

**Add-Ins:** Add-ins are macros or dialog boxes that are launched within TransCAD. You can create add-ins to provide end-users with easier access to existing software functions; to add new capabilities to the GIS engine; or to create hooks to your own applications. Add-ins can be freely distributed to any TransCAD user without restriction.

The simplest add-ins are macros that run when they are selected by the user. A sophisticated add-in can display dialog boxes that let the user choose the settings or options to use when the macro is executed. The most flexible and powerful add-ins are custom toolboxes that provide users with push-button access to tools that you have programmed. These toolboxes look like the standard toolboxes used in all Windows applications.



**Custom Applications:** GISDK lets you create a mapping application program with a custom user interface to appeal to a particular audience. You design the menus, toolbars, toolboxes and dialog boxes, and program the application to respond to user actions in any way you want. You can even create applications that are dynamic and that adapt to the capabilities and authorization level of the user.

Custom applications are executed like other Windows programs. Add your own program icon to any program group and double-click to launch your application.

**Accessing TransCAD from .NET, Python, or COM:** GISDK allows you to call mapping functions and macros from another application, written in another programming language. The .NET classes included with TransCAD allow you to access the GISDK environment from a Windows desktop application (Windows Forms) written in any .NET language. GISDK also allows you to call GISDK functions and macros from another application using COM. TransCAD can provide map, data, and geographic analysis services when accessed as a COM Object. You write your application in a programming language that can make COM calls, and when you need map services you call the TransCAD object to supply those services. You can also access all of the GISDK spatial data structures and spatial functions directly in Python. If, instead, what you need is a web server application, you should use TransCAD for the Web. Contact Caliper or visit our web site for more information.



## TransCAD User Services

Caliper Corporation provides a comprehensive program of technical support, training, and consulting services to ensure the success of your TransCAD applications. Each TransCAD license includes technical support via phone, fax, or e-mail, free maintenance releases for a period of one full year, attendance at scheduled seminars and user group meetings, and access to the TransCAD technical support section of our site on the World-Wide Web.

TransCAD includes an extensive documentation set containing background information, step-by-step instructions, and a series of hands-on tutorials that let you try out what you've learned. On-line help with tooltips and other on-screen visual cues make TransCAD easy to learn and use. Caliper also offers hands-on training for TransCAD in a classroom setting, or on-site at your location. Our training classes can be customized for your specific needs and user group.

Caliper also offers a full range of GIS and transportation software development and implementation services. Our transportation and GIS professionals provide assistance in assessing data requirements, database strategy and design, database development, and transportation modeling. Caliper also provides custom application and turnkey system development services.

## Software Requirements

TransCAD will perform well on any computer that runs Windows 2000, XP Professional, or Vista. Recommended hardware includes an Intel P4 or AMD Athlon CPU, at least 512MB of RAM, at least 1GB of hard disk space, a DVD drive, and an available USB port.

## TransCAD Versions

TransCAD comes in two versions. Standard TransCAD contains all of the GIS, planning, network analysis, routing, logistics, and location modeling capabilities described in this brochure. Base TransCAD has most of the GIS capabilities but excludes most of the procedures for transportation planning, routing, and the planning utilities that permit importing transportation and transit networks.

SUPPORTED DATA STRUCTURES:	Base	Standard
Points, Lines, and Areas	✓	✓
Matrices & Desire Lines	✓	✓
Route Systems	✓	✓
Networks	✓	✓
Transit Networks		✓
TRANSPORTATION PROCEDURES:	Base	Standard
Shortest Path	✓	✓
Shortest Path with Turn or Transfer Penalties	✓	✓
Address to Address Shortest Path	✓	✓
Multiple Shortest Path	✓	✓
Network Creation	✓	✓
Network Partitioning	✓	✓
Network Bands	✓	✓
Traveling Salesman	✓	✓
Travel Demand Forecasting		✓
Trip Generation, Trip Attraction, & Trip Balancing Procedures		✓
Trip Distribution Procedures		✓
Mode Choice Analysis		✓
Traffic Assignment Procedures		✓
Traffic Assignment Utilities (Screenline Analysis, Subarea Focusing, etc.)		✓
Transit Paths		✓
Transit Assignment		✓
O-D Matrix Estimation		✓
Vehicle Routing		✓
Arc/Street Routing		✓
Logistics		✓
CTPP, PUMS Import		✓
TranPlan, Cube/Voyager, MINUTP, Emme/2, TRIPS, TP+ Import		✓
GIS FEATURES	Base	Standard
Geographic Analysis Tools	✓	✓
Surface Analysis Tools	✓	✓
Geocoding	✓	✓
Linear Referencing & Strip Charts	✓	✓
Basic Geographic Editing	✓	✓
Spatial Statistics	✓	✓
MapWizard® Thematic Mapping	✓	✓
Conflation Tools		✓
Interchange Editor		✓

### Also Available from Caliper:

**TransModeler®** is a powerful and versatile traffic simulation software package applicable to a wide array of traffic planning and modeling tasks. You can model the behavior of complex traffic systems in a 2- or 3-dimensional GIS environment to illustrate traffic flow, signal operation, and overall network performance.

**TransCAD for the Web™** is a specialized version of TransCAD that includes capabilities for designing and running interactive map applications and location-based services on the World Wide Web.

