Transit and Geographic Information Systems – Case Studies

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Example: Belle Urban System

- Base Map (Vector and raster data)
- Base Map (Census data including population-households, income, employment-workers per HH, auto ownership, etc.)
- Layers
  - Bus routes,
  - Stops, and
  - Time schedules
  - Census information
  - Land use
  - Trip generators
GIS Spatial Analysis

- Overlaying-Layers, Intersects & Unions
- Extracting-Queries, Attribute Selects & Clips
- Proximity-Buffers & Multiple Buffers
- Patterns/Hot Spots/Choropleth Mapping
- Clusters/Outliers
- Linear Referencing
- Networks
- Areas/Events
- Geodistributions/Statistics
Air buffers vs. walk buffers

- Normal buffers give the direct airline distance from a point and do not take into account the street pattern and actual walking paths.
- Air buffers can substantially overestimate the service area of a route, especially if the access paths are complex and indirect.
- Typical maximum walk distance to a transit stop is ¼ mile or 1300 feet.
- The following examples show the differences in Tallahassee, Florida using TLOS software.
Air buffers

Walk buffers
More examples

- The following were used in the Northwest Minneapolis transit restructuring plan.

Sources:

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Route 5 weekday boardings

![Route 5 weekday boardings map](image)
Service frequency

Bus stop density (stops per mile)
Ridership, population and employment density

Households in poverty
Resources and References

- **Internet Sites**
  - [http://www.autodesk.com](http://www.autodesk.com)
  - [http://www.caliper.com](http://www.caliper.com)
  - [http://www.e-transit.org](http://www.e-transit.org)
  - [http://www.esri.com](http://www.esri.com)
  - [http://grass.itc.it](http://grass.itc.it)
  - [http://www.intergraph.com](http://www.intergraph.com)
  - [http://www.mapinfo.com](http://www.mapinfo.com)

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Resources and References

- **Guidebooks and Manuals**
Resources and References

- Books and Papers

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