

Proposing “Transit Availability”

- Transit Availability is a measure of the amount of transit service that is available within a certain radius.
- It is a function of the headways of bus routes which have stops within the radius.
- Uses GIS density calculations to “sum” headways.
- Resulting values represent relative availability of transit.
- Does not factor in directionality.

The need for a new measure

- Simply mapping routes gives no indication of where the stops are.
- Stop density is high, such that showing individual stops results in unreadable maps.
- Overlapping stops and routes are difficult to portray on traditional maps.

Transit Availability Calculation

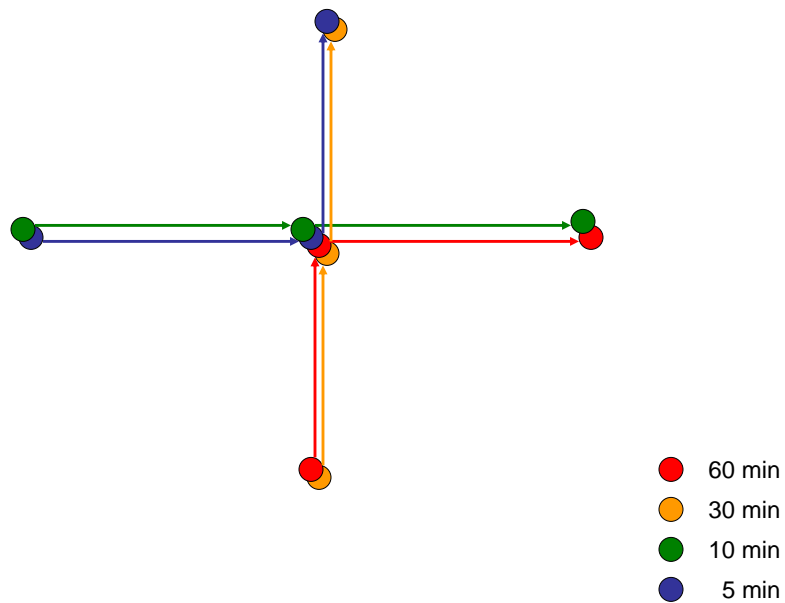
- An effective headway is calculated by summing the inverse of the headways:

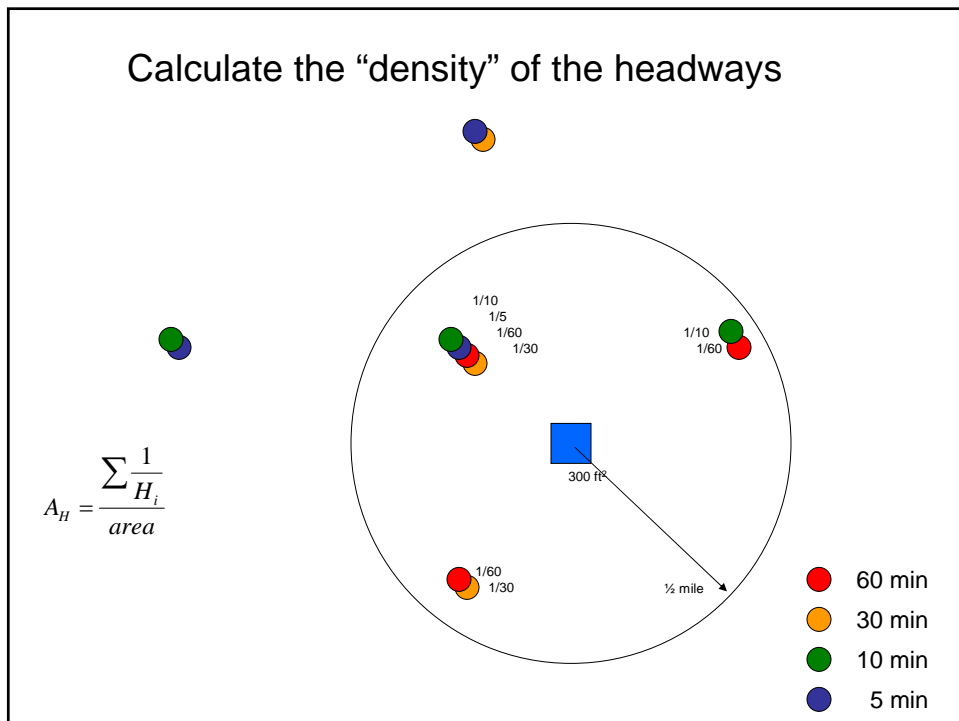
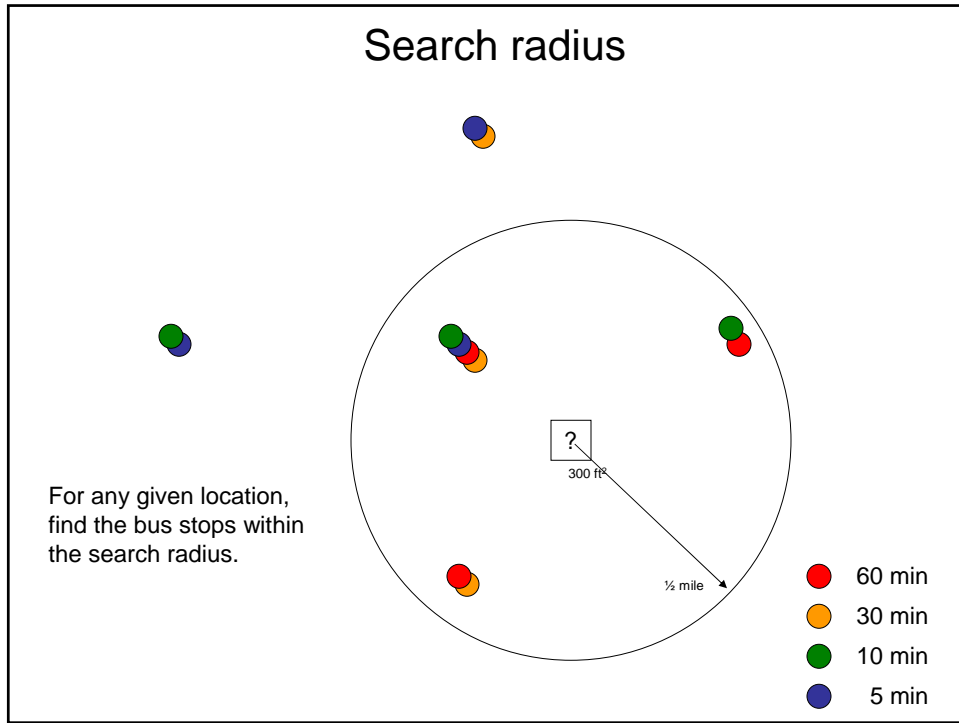
$$H_E = \frac{1}{\sum \frac{1}{H_i}}$$

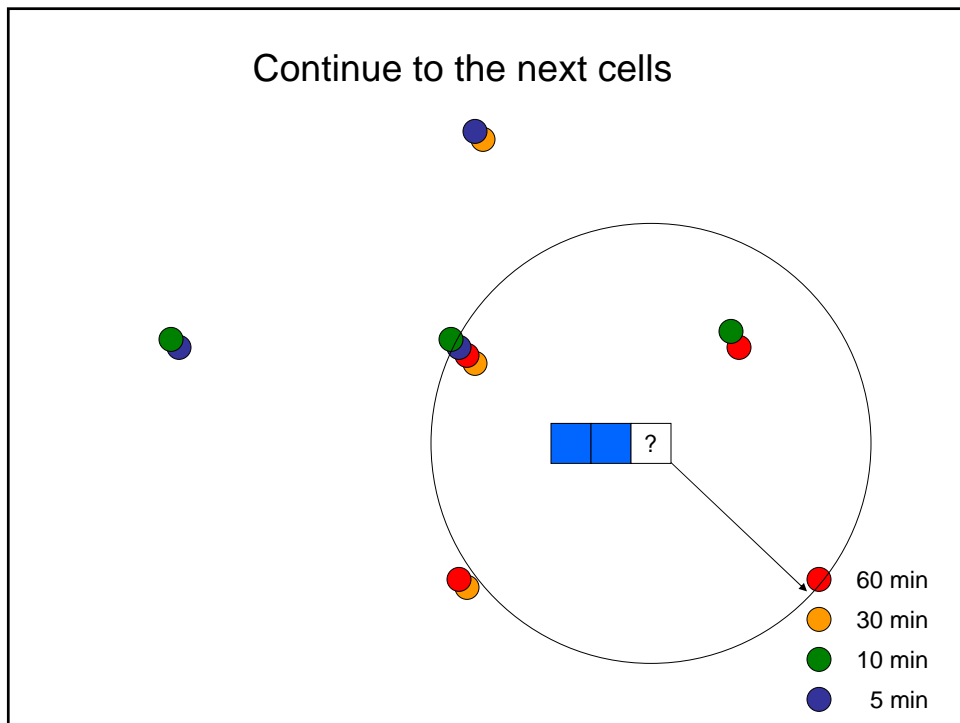
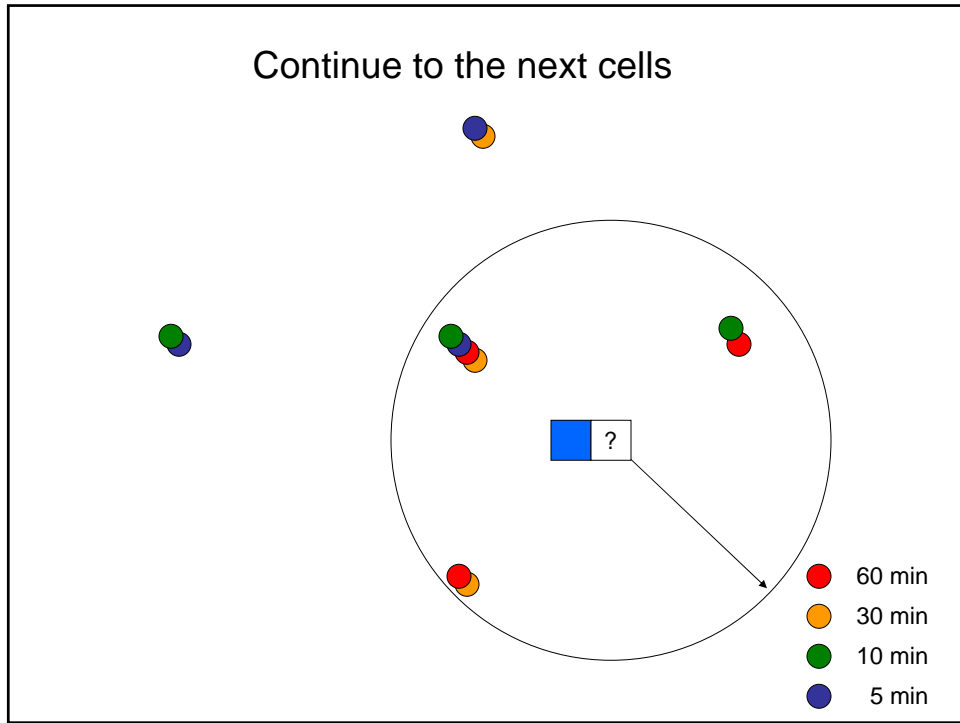
- Transit Availability is calculated in a similar fashion:

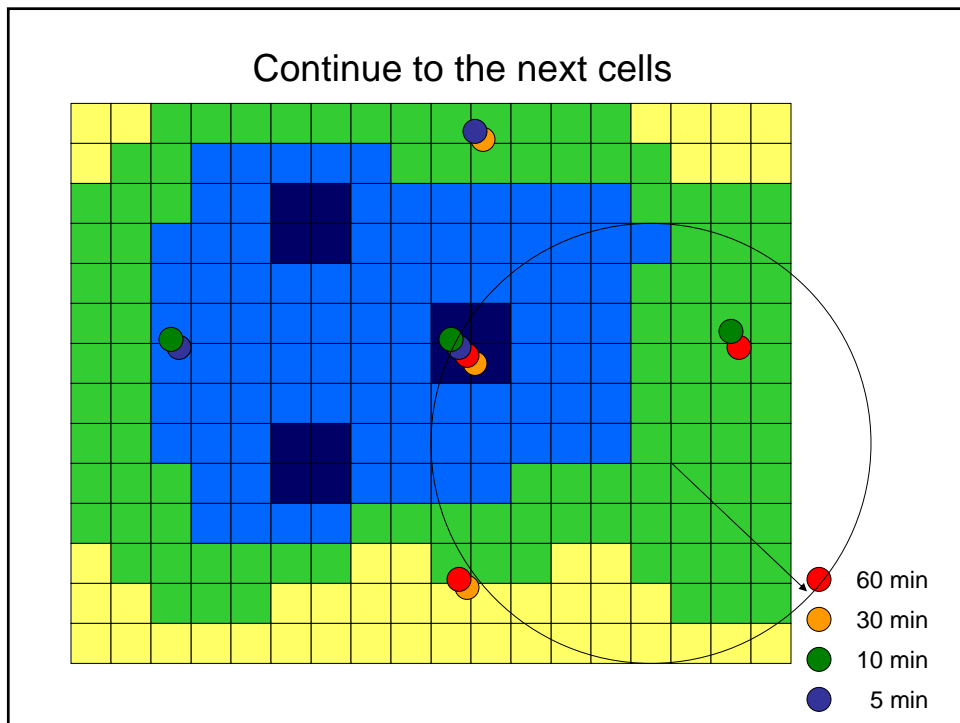
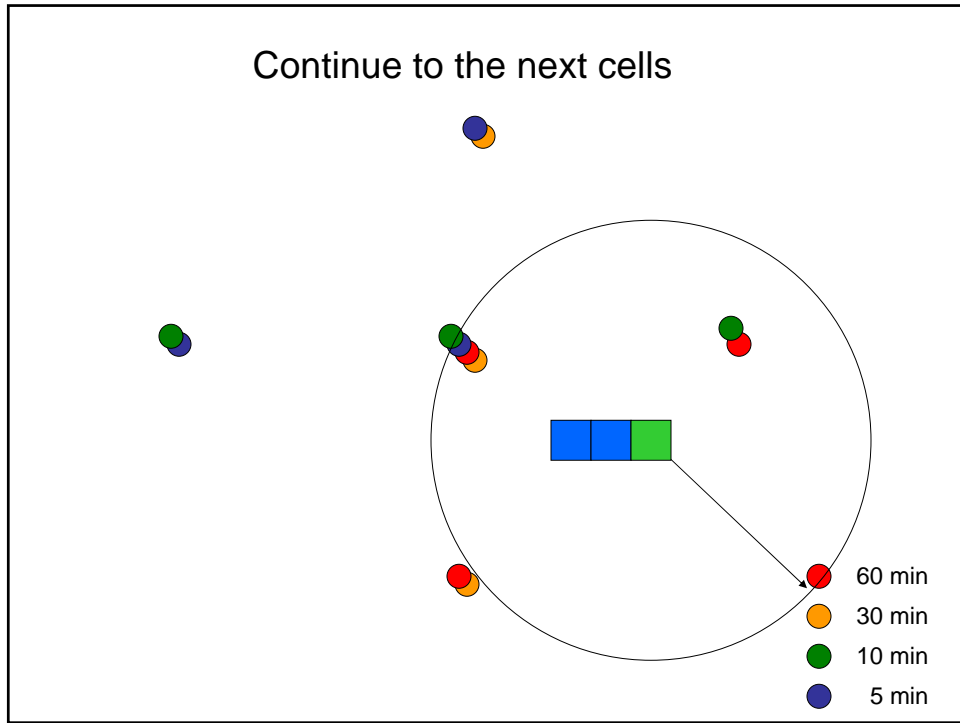
$$A_H = \frac{\sum \frac{1}{H_i}}{area}$$

Example: Bus transit routes



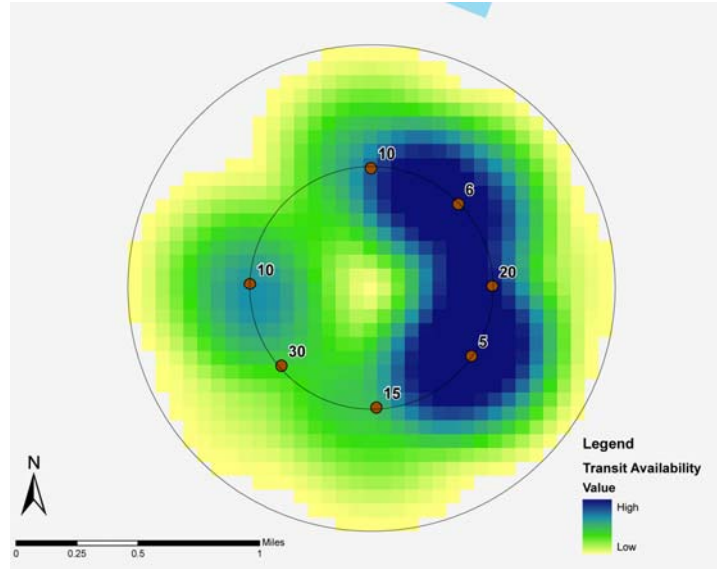






Actual density calculation uses a smarter algorithm

--Factors in distance from bus stop as well as headway.



Many factors to map

- 2010 vs. 2030 vs. Difference
- Peak vs. Off Peak
- Local vs. Express
- Activity Clusters vs. Household Density vs. Change in Households

Maps in this round

- Express AM 2010*
- Express AM 2030*
- Express AM
 - Change from 2010 to 2030
- Local Off-Peak 2010
- Local Off-Peak 2030
- Express Off-Peak 2010
- Express Off-Peak 2030

*Updated with ½ mile radius.

What is the Goal?

What is the goal of this mapping exercise?

- Produce visual representations of regional bus service for:
 - Verification of inputs
 - Long-range planning
 - Assessing LOS goals
- Collection of maps published on a regular basis:
 - Annually? Only after major updates?
- Which combinations of layers are most useful?