

Users Guide to the 5-Step Park-and-Ride Demand Process

Described below is the regional methodology for estimating park-and-ride demand. This methodology must be used for estimating facility need for all proposals submitted to the Metropolitan Council for funding consideration. The following user guide is provided for ease of understanding and completing the 5-step process. For illustration purposes, a sample is included. [Sample materials are shown in blue text.](#)

Before beginning:

1. Begin an ArcGIS mapping project and load the relevant shapefiles, available at www.datafinder.org and from the solicitation website. In particular, download solicitation website shapefiles “CMAQ_PR_Locations.shp” and “TAZs_PR_Demand.shp” from the solicitation webpage. Additional useful files include roads, transit, city, county, and water features, from www.datafinder.org.
2. If you cannot use GIS to complete this portion of the application, contact Metropolitan Council staff for assistance.

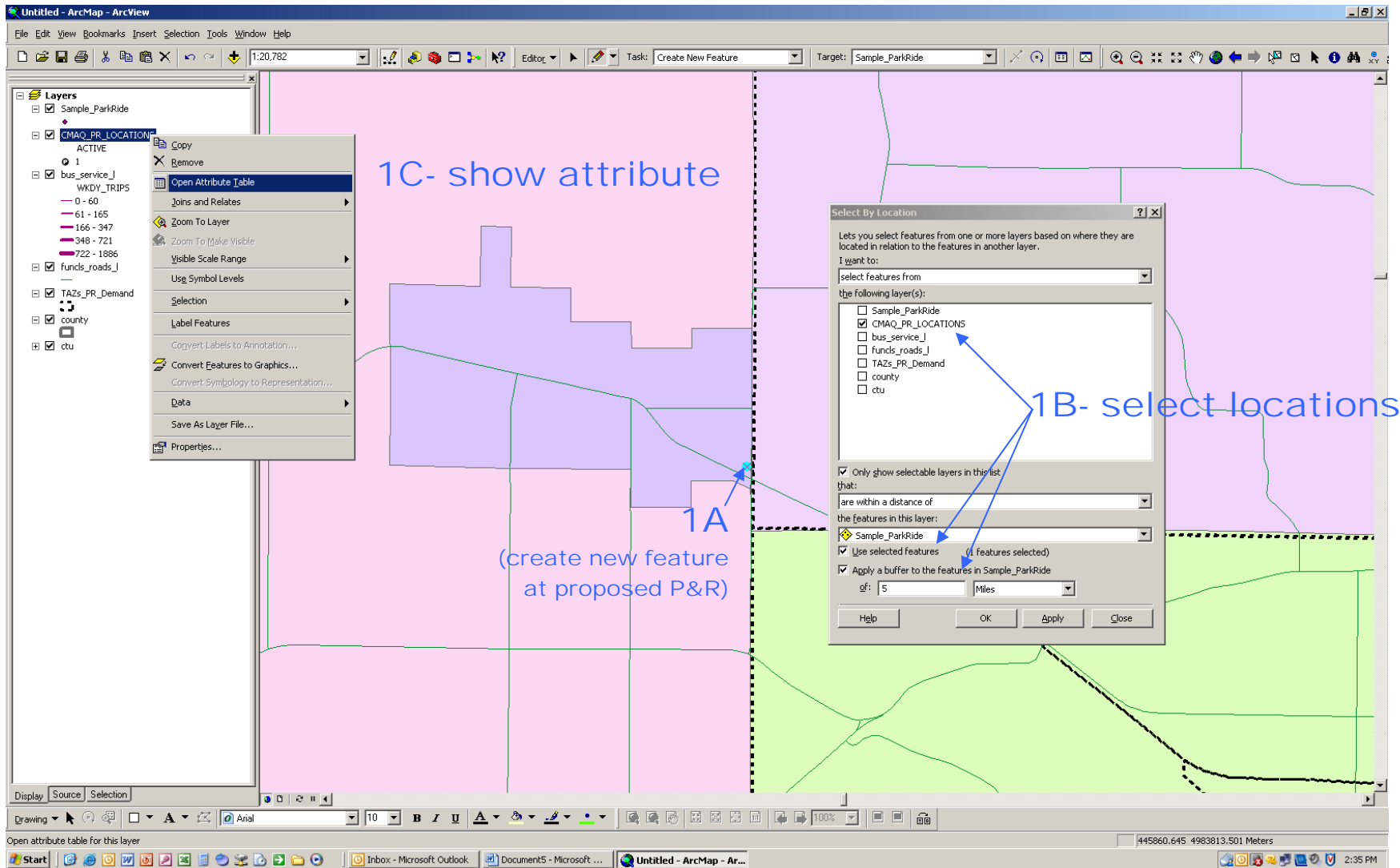
Five Step Process

1. Document the utilization of each existing park-and-ride facility within a 5-mile radius of the proposed site. Table G-3 includes recent utilization characteristics for park-and-rides in the region, as well as specifically funded, programmed increases in capacity for new or expanding facilities. If a corridor’s facilities have changed since fall 2008, such as the closure or opening of a nearby park-and-ride facility, or the reduction or addition of transit service to a nearby park-and-ride facility, then a follow-up survey of affected facilities should be conducted by the applicant in coordination with Council staff.
 - 1a. Create a new point shapefile (in ArcCatalog, or edit the park-and-ride layer) and create a new feature at the proposed location of your project.
 - 1b. To select park-and-ride facilities within a 5-mile radius, select the facility and choose “Select by location” from the “selection” menu. Select the park-and-rides within 5 miles of your proposed project using the “buffer” feature in the menu prompt.
 - 1c. Open the “attribute table” by right-clicking within the table of contents on the left side of your screen to see the list of facilities.
 - 1d. List the Facilities within five miles of the proposed project.

[Sample Response:](#)

Facility	City	Established	2008 Usage	Capacity (funded expansion)	Corridor
Mound Transit Center	Mound	2007	35	50 (0)	I-394/Hwy 12 West

[No facility changes since fall 2008, so no need for follow-up survey](#) (if facility changes exist, contact Council staff)



Selected Attributes of CMAQ_PR_LOCATIONS

PR_NUM	ACTIVE	NAME	DESCRIPT	CITY	YEAR_EST	YEAR_CLSD	EXPAID	PROVIDER	Survey08	SurvDate	Loc	usage08	capcty08
715	1	Mound Transit Center	Mound Transit Center	Mound	2007		0	Metro Transi	Metro Transit District Supervisors	3	7-County	35	50

Record: 1 of 165 Selected

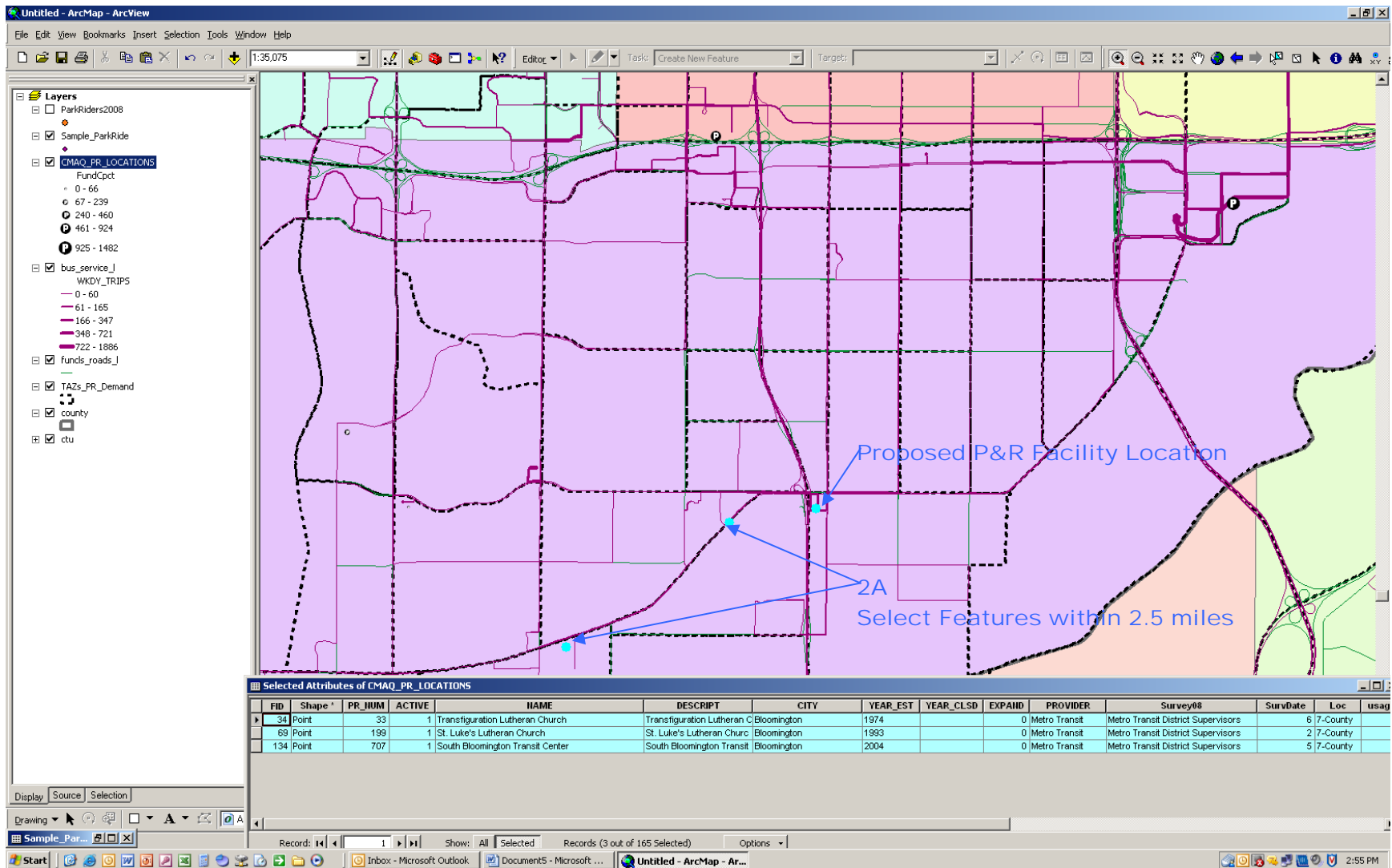
2. Map the market area of each of the existing park-and-ride facilities within a 2.5-mile radius of the proposed site. Contact Metropolitan Council staff for the most recent park-and-ride user license plate survey information. Council staff will either be able to provide the applicant with a map of the market areas of the facilities requested (non-governmental organizations) or the actual user home origin data files (governmental organizations only). If the survey was conducted prior to a significant recent change, such as the closure or opening of a nearby park-and-ride facility, or the reduction or addition of transit service to a nearby park-and-ride facility, then the applicant should conduct a follow-up survey of affected facilities in coordination with Council staff. The applicant will need to collect the license plates. Council staff will run the license plates and either provide a map (non-governmental organizations) or data files (governmental organizations).

2a. Identify the park-and-ride sites within 2.5 miles of the proposed facility, using “select by location” method from step 1b.

In the sample case, no park-and-ride facilities are within 2.5 miles. For illustration purposes, an additional sample is shown (South Bloomington Transit Center).

2b. Contact Metropolitan Council staff for park-and-ride user origin shapefiles for nearby park-and-ride facilities(public/governmental entities and consultants under contract to public/governmental agencies only)

2c. Load park-and-ride user shapefile(s). Under Layer Properties, Show “Categories” → Value “PR Name” → Add Values [choose facilities within 2.5 miles of proposed site *hint: hold control key to select multiple values*]. Select unique color dots for users to each facility, and show the park-and-ride facility location on the map in the same color as a larger dot with a “P”, or other symbol. Be sure to uncheck “all other values” for clarity.



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File Edit View Bookmarks Insert Selection Tools Window Help

1:35,075

Task: Create New Feature

Target:

Layers

- ✓ All_Users_Final_2008_1024
- ParkRiders2008
- ✓ Sample_ParkRide
- ✓ CMAQ_PR_LOCATIONS
 - FundCpct
 - 0 - 66
 - 67 - 239
 - 240 - 460
 - 461 - 924
 - 925 - 1482
- ✓ bus_service_]
 - WKDY_TRIPS
 - 0 - 60
 - 61 - 165
 - 166 - 347
 - 348 - 721
 - 722 - 1886
- ✓ funds_roads_]
- ✓ TAZs_PR_Demand
- ✓ county
- ✓ ctu

Layer Properties

General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates HTML Popup

Show:

Draw categories using unique values of one field. Import...

Value Field: PRName Color Ramp: [Color Ramp]

Categories: Unique values, many! Match to symbols in a

Quantities

Symbol Value Label Count

✓ <all other values> <all other values>

Charts

Multiple Attributes

Add All Values

Add Values

Select the value(s) to add:

- Shepherd of the Grove Ch...
- Shoreview Community Cen...
- Skating Center
- South Bloomington Transi...
- Southbridge Crossing
- Southdale Transit Center
- SouthWest Station
- SouthWest Village
- St Andrew Lutheran Church

OK Cancel

Complete List

New Value: Lets you add a value to the list above. Add to List

Advanced

Cancel Apply

2C
Add features
based on PR
Name

Selected Attributes of CMAQ_PR_LOCATIONS

FID	Shape	PR_NUM	ACTIVE	NAME	DESCRIPT	CITY	YEAR_EST	YEAR_CLSD	EXPAND	PROVIDER	Survey08	SurvDate	Loc	usag

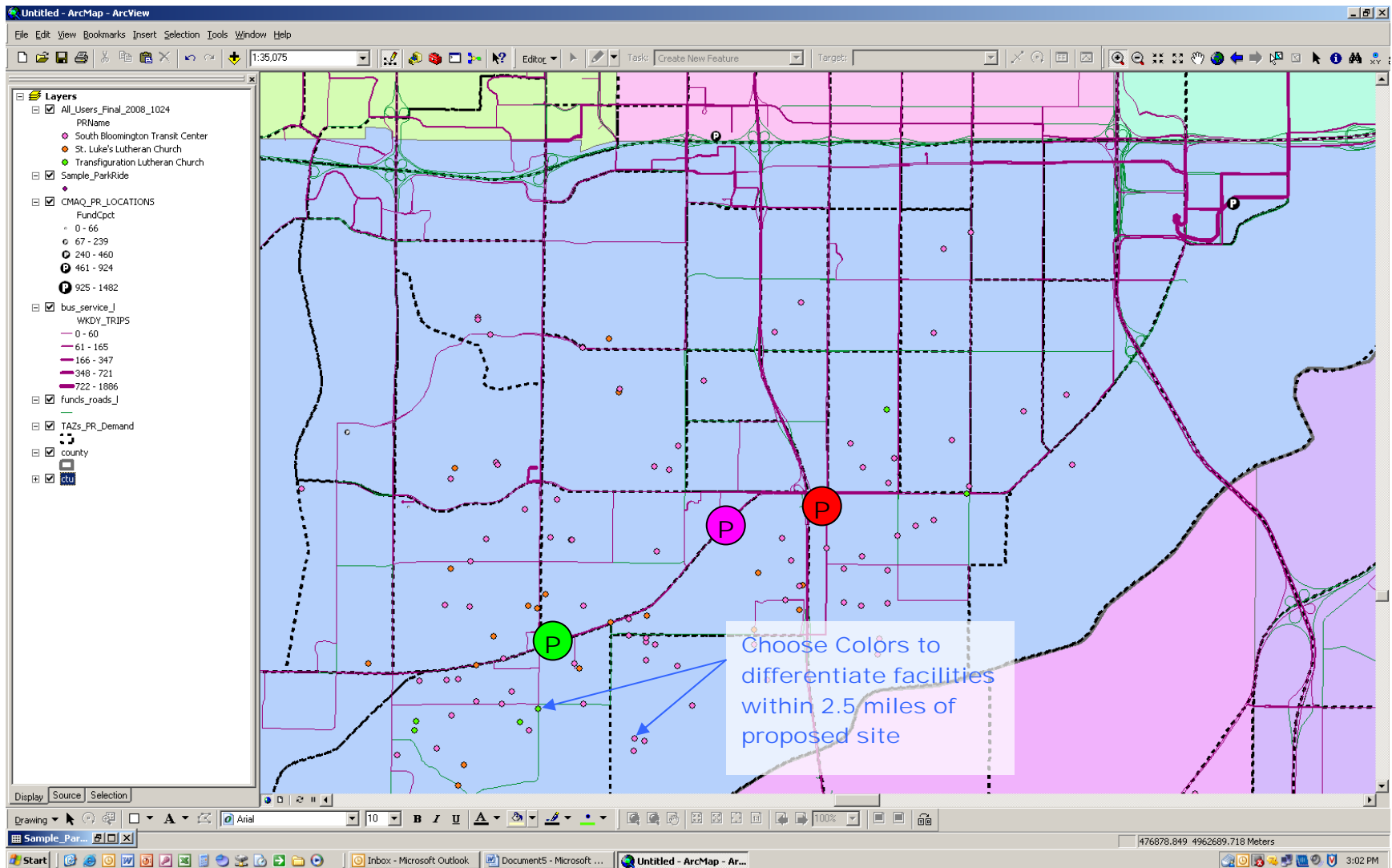
Display Source Selection

Drawing [Tools]

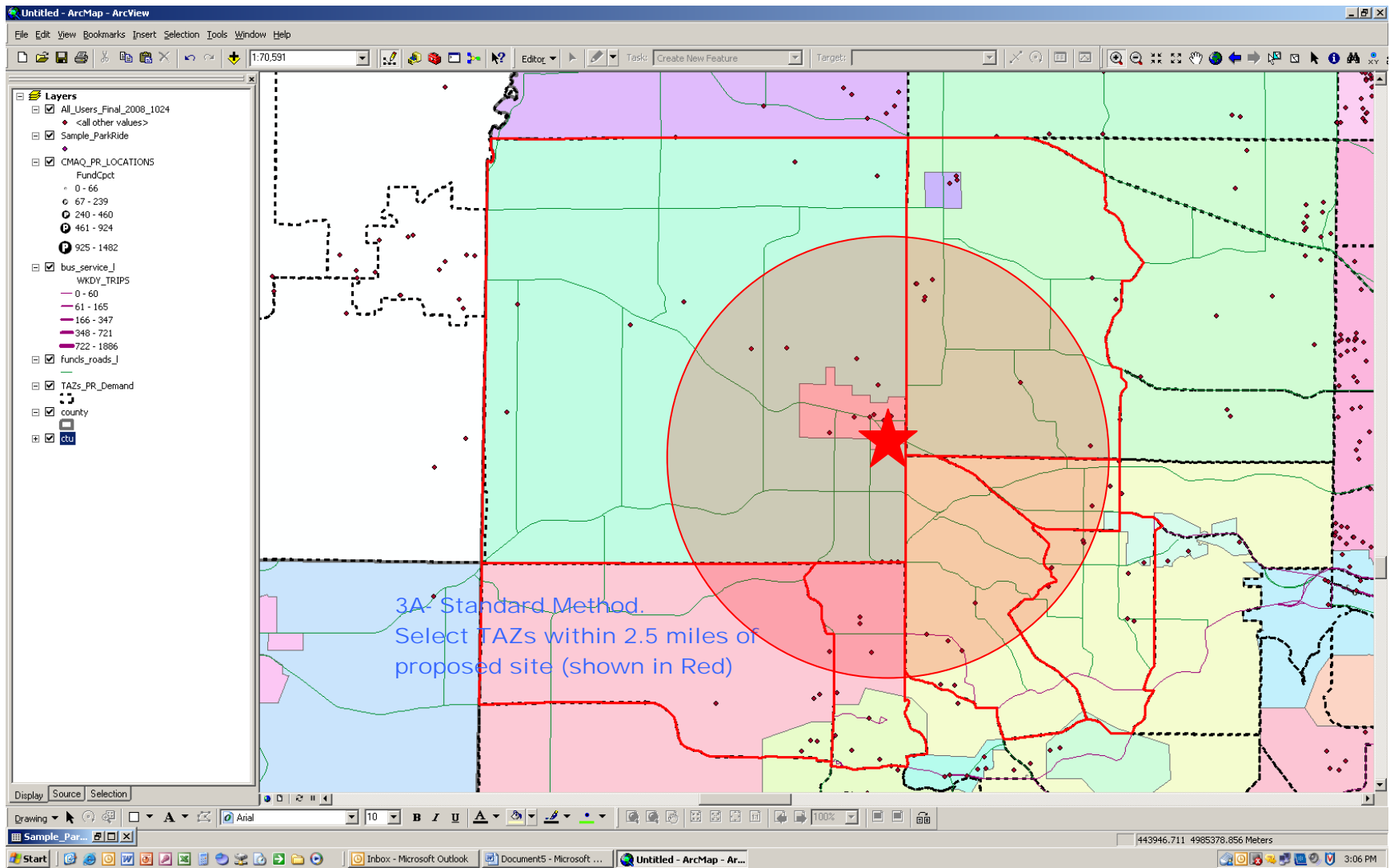
Sample_Par...

Record: 0 Show: All Selected Records (0 out of 165 Selected) Options

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3. Using pre-calculated tables (see below), develop existing (2008), mid-term (2020) and long-term (2030) park-and-ride demand estimates by identifying and selecting TAZs within a 2.5-mile radius of the proposed site (primary market area). Nationally accepted research indicates that within a 2.5-mile radius of a given site, 50 percent of the total demand for the site can be found. (Note: The demand within this defined area is not equally distributed and is heavily oriented upstream from the site with typically single digit percentages backtracking from downstream to the site.) Because there is no standard shape for the 100 percent market area of a site, for purposes of estimating total demand, the demand estimates for the 2.5-mile radius should be doubled to get a total demand estimate for the proposed site. In addition to this approach, applicants can attempt to define and make a case for a custom market area for a proposed site.
- 3a. Use “Select by location” again to identify TAZs from the “TAZ_PR_Demand” file, within 2.5 miles of the proposed site.

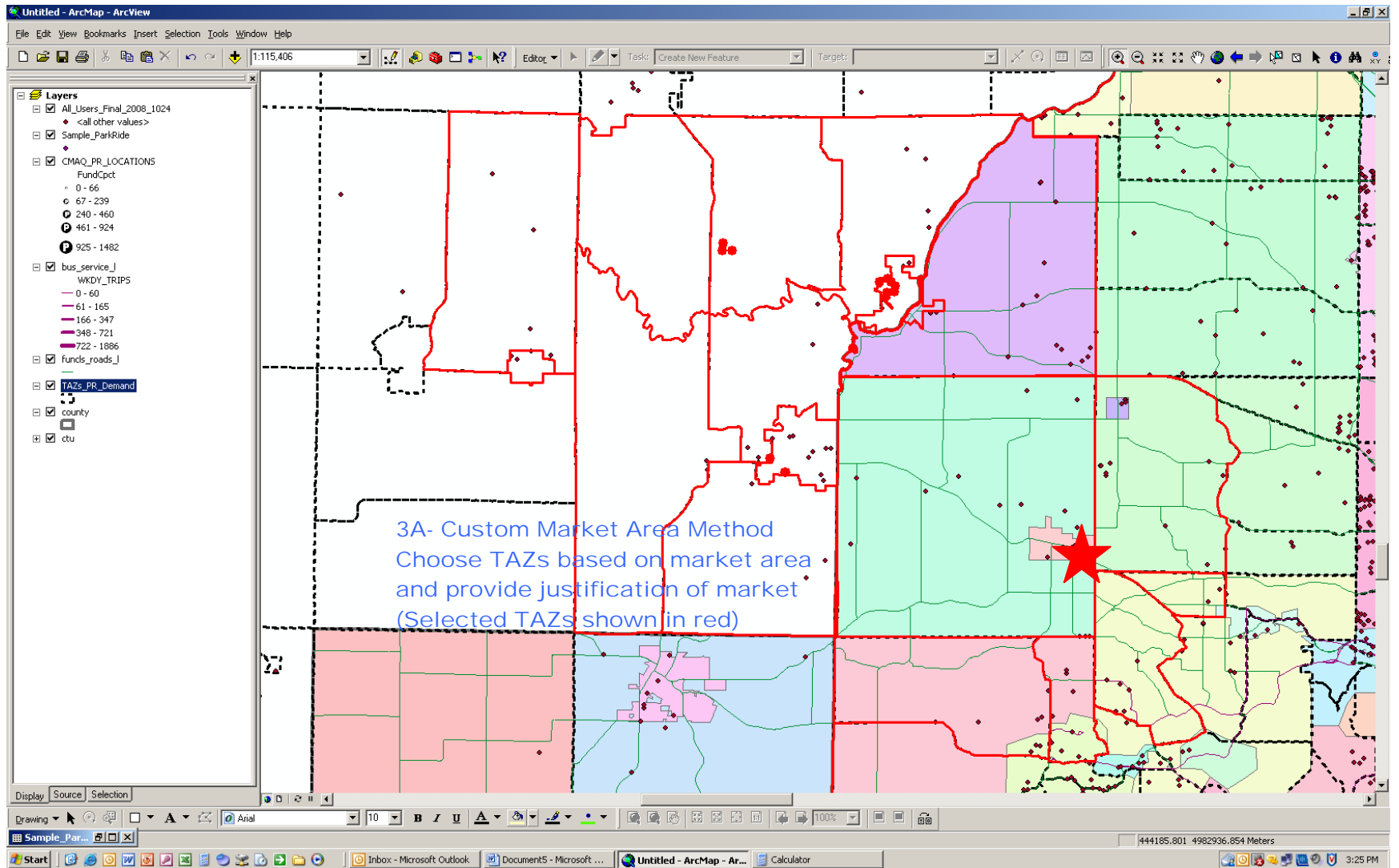


Step 3b. Open the attribute table for the selected records, show “selected” (choose from the bottom of the table) and copy relevant fields for existing, midterm, and long-term park-and-ride demand to the intended market. **Be sure to differentiate between TAZ number and GIS FID number (often 1 less than TAZ number).** For markets serving both downtowns, combine the total demand to Minneapolis and St. Paul.

Step 3b- Standard Approach

TAZ	2008 P&R	2020 P&R	2030 P&R
635	9	13	23
636	7	15	27
638	22	34	50
639	14	27	70
644	6	11	15
646	10	15	21
647	3	8	10
2.5 Mile Demand	71	123	216
Total Demand (2.5 mile demand *2)	142	246	432

Step 3A- Custom Market Area



3b- Custom Method.

In this case, the park-and-ride is likely the “end of line” park-and-ride for the foreseeable future. A custom-defined market area makes sense, starting with 2.5-mile radius TAZs. Here, TAZ 646 is removed and additional TAZs are added. TAZs are selected by corridor-of use of existing park-and-ride users, and connecting roadway geography to the proposed facility. Because a specific market area is drawn, demand is not doubled for the market shape.

TAZ	2008 P&R	2020 P&R	2030 P&R
635	9	13	23
636	7	15	27
638	22	34	50
639	14	27	70
644	6	11	15
647	3	8	10
808	17	33	50
1361	3	4	7
1365	4	6	9
1366	7	11	17
1362	3	5	7
1368	14	20	31
1369	5	8	12
1363	0	0	0
1364	3	5	7
1370	1	1	2
1367	5	7	11
Total (custom area- not doubled)	123	208	348

4. If the proposal does not include the closure of nearby competing facilities, then develop existing, mid-term and long-term demand estimates for demand that would be attracted from those facilities' primary market areas (2.5-mile radius) which overlap with the proposed facility's primary market area (2.5-mile radius) using the pre-calculated tables described above. For evaluation purposes, funded, planned facilities should be included as well.
 - If the new facility will be relatively more attractive (better access, better service, more capacity) than the nearby competing facilities, then assume that the new facility will attract 100 percent of the potential park-and-ride users from the overlap area(s).
 - If the new facility will be relatively as attractive (comparable access, comparable service, comparable capacity) as the nearby competing facilities, then assume that the new facility will attract 50 percent of the potential park-and-ride users from the overlap area(s).

Sample:

There are no competing facilities within 2.5 miles of the proposed park-and-ride. No nearby facilities will be impacted by the addition of service to this facility.

5. Subtract the corresponding existing, mid-term and long-term competing facilities' demand estimates that would be attracted to the proposed facility from the proposed facility's corresponding existing, mid-term and long-term total demand estimates to get the proposed facility's corresponding existing, mid-term and long-term net demand estimates.

Sample Response:

Year	Net Park-and-Ride Demand for Facility
2008	123
2013 (linear interpolation from forecast)	158
2014 (linear interpolation from forecast)	166
2015 (linear interpolation from forecast)	173
2020	208
2030	348

2013, 2014, and 2015 are necessary because the application is for facilities and **service** (3rd/final year of ridership).

Linear Interpolation formula: $\text{Demand}_{(\text{year } x)} = \text{Demand}_{(2008)} + (\text{YearX} - 2008) / (2020 - 2008) * (\text{Demand}_{2020} - \text{Demand}_{2008})$

$$\begin{array}{rclclcl} \text{Year 2013 demand } 158 & = & 123 & + & (2013-2008)/(2020-2008) * (208-123) \\ & & 123 & + & 5/12 * 85 \end{array}$$