Transmittal for October 2010 Delivery of Provider-Related Information.

OVERVIEW

This document contains important metadata about the DSC team October delivery including the QA processes that were applied to the Provider deliverables sent to the State of Arizona team for delivery to the FCC by the October 8th deadline.

Summary and Comparison of June 2010 with October 2010 Deliverables

Criteria	June 2010	October 2010
Service by Census Blocks	12 Providers 225,997 polygons	34 Providers 239,488 polygons
Service by Road Segments	8 Providers 13,692 segments	16 Providers 14,887 segments
Service by Wireless	5 Providers 6 polygons	21 Providers 50 polygons

Because **our NDA's with Providers do not permit us to provide point location data (service by address, middle mile, or last mile)**, the DSC team is only submitting three FCC-standard feature classes. The following links will take you to the appropriate QA process table:

Service By Census Blocks – all census blocks reported are based on 2000 geometry, dissolved from the latest available Census 2009 geography downloaded from the US Census site in early 2010. Wireline services were provided to us in a variety of formats, including by customer addresses, by Census Block or by Census Tract (Form 477). We aggregated service addresses to Census blocks less than or equal to 2 square miles and to road segments in Census blocks that were larger. We used Form 477 Census Tracts to select all the blocks which fell within. **This approach likely overestimates the Providers' service areas and results in some census blocks greater than 2 square miles in this delivery. In this layer, there are 599 of a total 239,488 census block polygons that are greater than 2 square miles in area.** The small change in number of census polygons added between June and October reflects both re-submittals from Providers and the addition of a number of small area Providers.

Service By Road Segments – all road segments reported are based on the latest available 2009 Census TIGER file downloaded from the US Census site in early 2010. Wireline services were provided to us in a variety of formats, including by customer addresses and road segments (TIGER and others referenced by segment name and address range).

- When Providers submitted service by address, we aggregated addresses that fell in Census 2000 Blocks greater than or equal to 2 square miles to TIGER road segments.

- When Providers submitted road segments with address ranges and with no reference to TIGER, we geocoded all portions of their submitted road segment address range to TIGER, thereby obtaining a required GIS road segment for delivery to the FCC.
- For some of the first providers processed, we applied a spatial selection algorithm which resulted in some TIGER or local road segments being identified with no address attributes. For later submittals, we standardized our selection process on geocoding to TIGER and using the Reference ID from each geocoded point to identify the appropriate TIGER segments.

Service By Wireless (mobile and fixed) – wireless service areas were provided to us in a variety of formats, including shapefile polygons (presumably based on propagation studies), by customer addresses, or by census geography (including Form 477 Census Tracts). For all but the first category, we aggregated to Census blocks, and then dissolved those blocks to form continuous polygons of wireless services areas. This approach likely overestimates the Providers' service areas.

GENERAL

Below are some general processes that cross feature classes or are significant enough that we call attention to them here.

- Modified the FCC 09/08/10 version of the geodatabase to properly assign domains and subtypes and to expand domain ranges for speed in selected Technology subtypes.
- Moved all the fixed wireless providers out of Census Block and Road Segment feature classes and put in the Wireless feature class. For address/census block submittals, we dissolved internal boundaries to create a wireless service area polygon. The census block/road segment approximation for WISP's are not as accurate as provider-submitted KML files or reverse-mapped service area based on tower locations and service radius as determined by consultants.
- Get rid of any records where speeds are <= 1 or where "Other Copper Wireline" records are >= 10. Values of 1 or 0 are not broadband by NTIA definition and copper wireline records were discussed with DSC team and these speeds are not possible for that technology.

Quality Steps Applied, by Feature Class

BB_SERVICE_CENSUSBLOCK

- Repair Geometry.
- Check Provider Identification Fields.
- Check Census Block element and composite fields for valid values.
- Check Tract, Block, and BlockID (LocationID) for proper length.
- Check TechID field for valid domain values
- Move TechID 70 and 71 to new feature class for later dissolving and loading into wireless
- Check MAXADVDN field for valid domain values
- Check MAXADVUP field for valid domain values
- Check TYPDN field for valid domain values
- Check TYPUP field for valid domain values

- Check for MaxDn values < MaxUp Values
- Check for TypDn values < TypUp Values
- Check for null values in both max and typical speeds
- Check for Typical Values > than Maximum values
- Check for SqMi > 2
- Check topology rules

BB_SERVICE_ROADSEGMENT

- Repair Geometry.
- Move TechID 70 and 71 to new feature class for later dissolving and loading into wireless
- Check for segments completely in CB's <= 2 square miles
- Check Provider Identification Fields.
- Check for valid ADDMIN addresses
- Check for examples where ADDMIN or MAX is not NULL and the other is
- Check for valid ADDMAX addresses
- Check for Min Address > Max Address
- Check for valid CITY, STATE AND ZIP fields
- Check TechID field for valid domain values
- Check MAXADVDN field for valid domain values
- Check MAXADVUP field for valid domain values
- Check TYPDN field for valid domain values
- Check TYPUP field for valid domain values
- Check for MaxDn values < MaxUp Values
- Check for TypDn values < TypUp Values
- Check for null values in both max and typical speeds
- Check for Typical Values > than Maximum values
- Check topology rules

BB_SERVICE_WIRELESS

- Repair Geometry.
- Check Provider Identification Fields.
- Check TechID field for valid domain values
- Check Spectrum field for valid domain values
- Check MAXADVDN field for valid domain values
- Check MAXADVUP field for valid domain values
- Check TYPDN field for valid domain values
- Check TYPUP field for valid domain values
- Check for MaxDn values < MaxUp Values
- Check for TypDn values < TypUp Values

- Check for null values in both max and typical speeds
- Check for Typical Values > than Maximum values
- Check topology rules