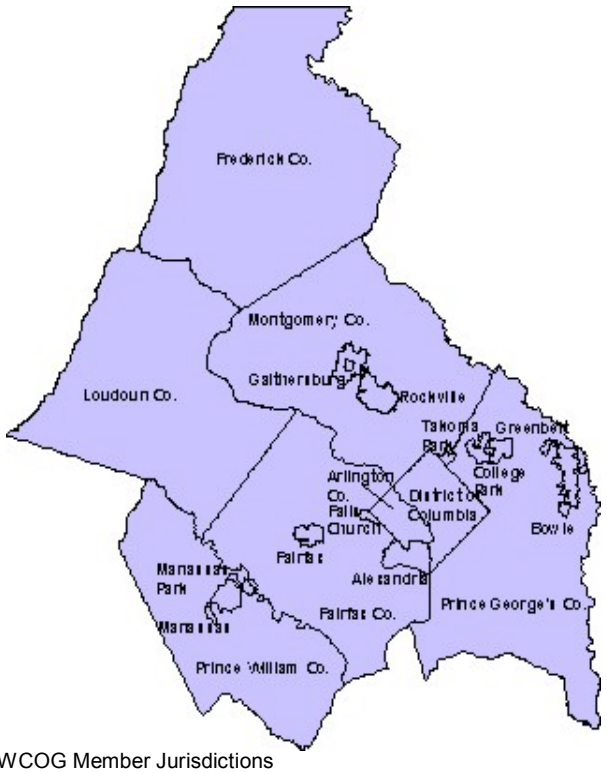
Three C's for Creating Regional Datasets: Cooperation, Collaboration, & Cajoling

Charlene Howard

Introduction and Background

Regional organizations, such as councils of government and metropolitan planning organizations, occupy a curious place in the hierarchy of bureaucracy. Neither a state nor local governmental agency, these types of organizations are often consumers and manipulators, rather than producers and custodians, of data. Like many regional associations, the Metropolitan Washington Council of Governments (MWCOG) relies on its member jurisdictions to provide data to support regional planning activities. This paper addresses the often-challenging task of identifying, collecting, and assembling regional datasets. The paper uses a recent example to illustrate how MWCOG has successfully worked with its member jurisdictions to produce an updated dataset of regional bicycle facilities.



MWCOG Member Jurisdictions

The task of creating an updated dataset of regional bicycle facilities was a joint venture between two branches of MWCOG's Department of Transportation Planning (DTP)—the GIS team (under Technical Services) and Commuter Connections. Commuter Connections, a collection of regional transportation agencies coordinated by MWCOG, provides commuting information and options to employers and the general public free of charge. Commuter Connections already had most of the available alternative transportation data included on their ArcIMS site of commuting options, but the bicycle mode was noticeably missing. However, the then-current dataset of 'BIKEWAYS' was so out-of date and generally inaccurate that the GIS team advised not including it on the initial ArcIMS site. All involved staff agreed on the plan--to scrap the old data and set out to create a new bicycle dataset from scratch. Only, where would this data come from?

Smiles and handshakes…

As mentioned earlier, MWCOG, like many other similar organizations, function more like a data consumer than producer, mainly due to the nature of work for a regional association. For us, it was simply not feasible to collect the data ourselves. Fortunately, during the time were set out to update our bicycle layer, several MWCOG member jurisdictions had their own bicycle data collection efforts underway. The plan then became to gather the existing works in progress, assemble into a regional bicycle facilities layer, and then distribute back to member jurisdictions when complete.

The Bicycle and Pedestrian Subcommittee at MWCOG acted as a liaison between the GIS staff and member jurisdictions. Initially, the subcommittee facilitated dialogue between MWCOG staff and the member jurisdictions to begin the data collection, as often the subcommittee representative and bicycle data custodian worked in separate departments and had little interaction. Later, the subcommittee members provided feedback during, and at the project's completion.

On the whole, the level of cooperation between MWCOG and its member jurisdictions with regard to bicycle data was significant and also positive. Several bicycle planners and program managers in their respective jurisdictions spent considerable time assembling data and answering questions about the data. The resulting collaboration provided useful guidelines as far as identifying key issues related to the dataset creation, such as attributes, geographic extent and accuracy. Fortunately, little discrepancy existed, and these items were decided upon early in the project history. The key guidelines include the following:

- Data will be classified into three types of facilities: bike lane, shared use path, shared roadway (on-street bicycle route)
- No sidewalk paths will be included (exception: small stretch in District of Columbia)
- Dataset will only include existing features; no proposed facilities
- Features must explicitly be considered a bicycle facility by the jurisdiction in which they reside
- Dataset will include whole MWCOG region, where applicable
- Dataset will include, at minimum, attributes common to all jurisdictional data received
- Resulting layer of bicycle facilities will be aligned to the MWCOG street centerline (where practical)

Since we were working with such a diverse base of jurisdictions—counties with great investment in GIS and spatial data and others with no such investment—a difference in quality and quantity existed. Using the standards decided upon between the GIS team and the Bicycle and Pedestrian Subcommittee, data quality issues were kept to a minimum. The attributes preserved in the final MWCOG dataset represent the minimum number of attributes that were common in all datasets. One exception can be found in the FROM and TO fields which describe the start and end point of the facility. While not all datasets contained this information, we decided to keep these attributes anyway because of their value.

…and a few headaches

When data collection involves acquiring data several independent entities, conflicts and lack of cooperation are bound to arise, and this project was no exception. Fortunately, the dedication of the Bicycle and Pedestrian Subcommittee and the flexibility of the other entities involved kept disruption to a minimum. Examples of problems we did encounter include discrepancy between data within and across departments and the typical non-response to a data request.

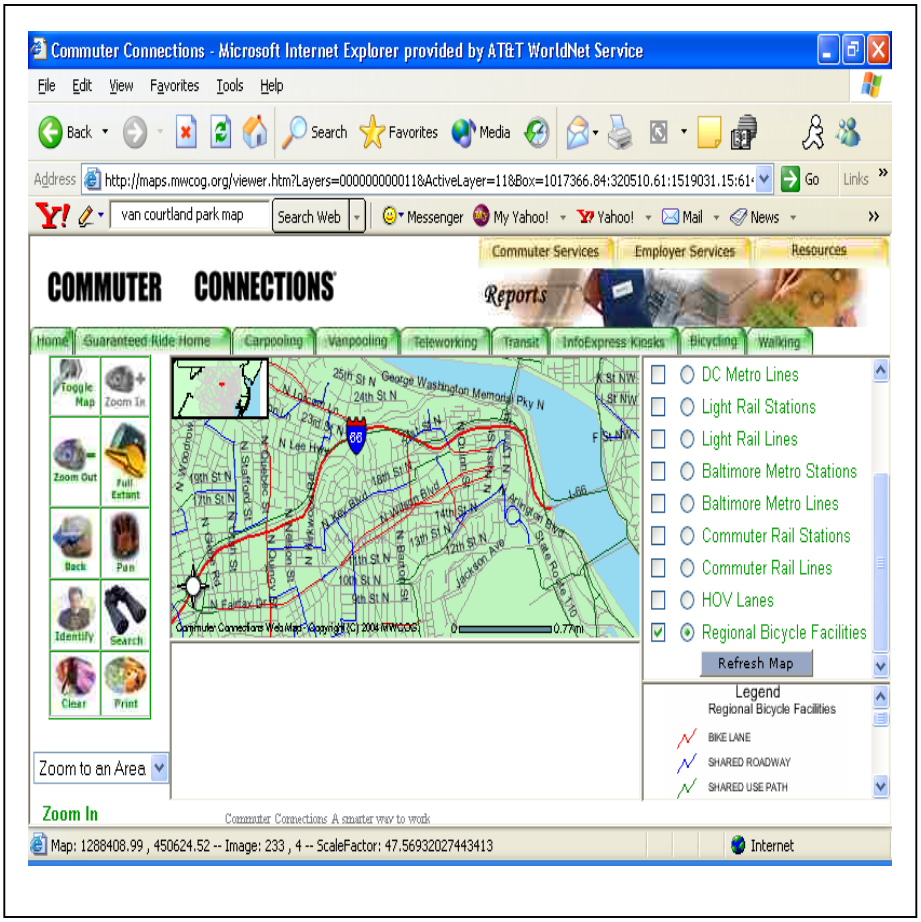
On a few occasions, we had a situation of having multiple sources of the seemingly same bicycle facilities. One suburban Virginia county provided us with several GIS data layers of trails, some of which were considered bicycle facilities. The data received had several problems, the most notable being a lack of decisiveness as to what features were truly bicycle facilities and what were merely sidewalks. One look at the shapefile and it looked like the whole county road system had bike lanes! This is of course was not the case, but if the file were used as-is, it could have been very misleading. In this particular instance, there was also discrepancy between departments as to what data files actually represented the most current inventory of bicycle facilities.

To avoid any unnecessary confusion and work, we decided to utilize an alternative data source. Fortunately for us, the Northern Virginia office of the Virginia Department of Transportation was developing a plan for a regional bicycle and trail network. This plan included a bicycle facility inventory; these facilities were used as the existing facilities present in a part of the Northern Virginia section of the MWCOG regional dataset.

When all other methods failed to acquire data, the GIS team relied on the final “C” in our back pocket- cajoling. Although it may sound somewhat humorous, the simple fact remains that sometimes, one must sweet-talk, or gently ‘pressure’ another into sharing data. Thankfully for this project, our light-hearted cajoling worked. The initial request for data put forth yielded a positive response (read: receiving data) from most required jurisdictions but not all. During the course of

this project, we presented a brief status report at the bi-monthly subcommittee meetings. Any jurisdiction not yet participating in the data collection effort was politely yet prominently acknowledge as still being needed. Midway through the project, when we had results to show, we highlighted the areas where no bicycle facilities seemed to exist. These simple tactics helped us secure the remaining pieces of the puzzle so our regional bicycle layer would contain data for each jurisdiction in which bicycle facilities existed.

Wrap-up



A draft version of the dataset was distributed to the Bicycle and Pedestrian Subcommittee at its November 2003 meeting, with a deadline for comments and corrections to be made by the next subcommittee meeting in January 2004. After the comment period passed and the modifications made, the dataset became an official part of the MWCOG spatial data library. The final and current version of the dataset is an ArcGIS shapefile of the existing bicycle facilities in the MWCOG region. Attributes in the dataset include facility name, from-street, to-street, facility type, length (in miles), presence of signage, and jurisdiction. The final version was officially released to MWCOG's member jurisdictions and other key players by way of the Bicycle and Pedestrian Subcommittee.

Recently, Commuter Connections has added the regional bicycle facilities dataset to its ArcIMS site showing commuting options. The main Commuter Connections ArcIMS webpage can be found at http://maps.mwcog.org. Commuter Connections also has created a separate custom page view for bicycle facilities, showing the bicycle layer as visible and active. Users arriving at the IMS site from the 'Bicycling' link off the main Commuter Connections page

will get this version of the ArcIMS site. A screenshot of the website appears above.

Commuter Connections, the GIS team, and the Bicycle and Pedestrian Subcommittee plan to continue their successful working relationship in the future. Plans include yearly updates to the regional bicycle facilities dataset, and exploring the possibility of producing an online bicycle routing application on the MWCOG website.

For more information:

Charlene Howard
Metropolitan Washington Council of Governments
Department of Transportation Planning
777 North Capitol Street NE, Suite 300
Washington, DC 20002
(202) 962.3384
charlene@mwcog.org