

Active Transportation Study – Geospatial Analytical Framework

Specific Sub Task = Geospatial Catchment Area Designation

Methodology Discussion:

This exercise analyzed the City by defined areas which correspond to the most intuitive and likely-to-be-used bike routes. This allowed each catchment area to be analyzed as a whole, as well as comparative and cumulative analysis of segments of ConnectSF Corridors located within any given catchment area. We will perform a zonal analysis to capture the different potential demands for active transportation infrastructure expressed by different neighborhoods and areas of the city.

The SFMTA Active Transportation Team utilized the district maps developed by the ConnectSF team to analyze the City by defined geospatial catchment areas. We focused primarily on topography since steep slope greatly informs people's route choice and gaps in the bike network. We also considered the existing bike network as well as the Active Transportation corridors map developed by Mike Sallaberry because these define the major bike corridors in the city; Major transit entrances, as a way to assess the specific improvements (e.g. bike storage) or metrics (e.g. short trips) that better serve these areas; Transit Corridors Study corridors, so that there would be some overlap in analysis; and Traffic Analysis Zones (TAZs), which are the units of analysis in SFCHAMP, the travel model which will inform this study.

With all of these factors in mind, the Active Transportation team used the iterative process described below in (3) and (4) to modify the ConnectSF districts into Active Transportation zones.

Methodology Documentation:

1. Mapped out existing conditions considering the following GIS layers:
 - a. Topography / Grade
 - b. Existing bike network
 - c. Active Transportation corridors map developed by Mike Sallaberry
 - d. Major transit station entrances
 - e. Neighborhood commercial corridors
 - f. Transit Corridors Study corridors
 - g. Streets with speed limits >30 mph
 - h. TAZs
2. Overlay existing ConnectSF districts
 - a. Explore where these districts interact with the existing conditions and where they might fail to describe potential active transportation zones
3. Drafted Active Transportation Zones along TAZ lines, informed by our discussion of the ConnectSF districts, to create 10-15 zones. Conducted qualitative analysis considering:
 - a. Hills and other physical barriers (e.g. freeways)

ConnectSF

- i. Drew boundaries of zones around hills, on top of peaks, and along other physical barriers like freeways.
 - ii. Where possible, contained existing major corridors like Market Street in one zone.
 - b. TCS corridors
 - i. To analyze overlap with the Transit Corridors Study, identified spatial gaps in TCS corridors network for potential active transportation zones.
 - c. Active transportation character
 - i. How might people prefer to get around this area? E.g. a very hilly area will probably have different needs than a flat area.
 - d. Destinations/origins and major transit stations
 - i. For transit stations, along a freeway, placed transit stations at intersection of multiple zones to account for multiple means of access.
4. Iterated the process by marking up maps, re-drawing zones, and analyzing again multiple times until we were satisfied with the zones.

*In this exercise, we primarily considered physical characteristics. We did not consider demographics, which will be included in later analyses.