Options for How We Stabilize and Grow

OAKLAND GENERAL PLAN
Creating Tomorrow, Together

Appendix B:

Transportation Modeling

July 2025

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Transportation Modeling Methodology

MULTI-MODAL ACCESS

The multi-modal accessibility metrics were calculated using GIS analysis of each Option. A one-quarter mile "buffer" area was identified on each side of each high-frequency transit service corridor. These buffer areas differed for Options such as Option B which included additional high-frequency transit service. The buffer areas were then overlaid with the Alameda Countywide model TAZs, and the population and jobs in the entire City and in the identified one-quarter mile buffer-area TAZs were summed to calculate the metrics.

HIGH-FREQUENCY TRANSIT

To evaluate access to high-frequency transit under each growth Option, the analysis defined Oakland's high-frequency transit network as including all BART stations and AC Transit routes with headways of 20 or more buses per hour. A quarter-mile buffer was applied to eligible transit routes, and a half-mile buffer was applied to BART stations to represent areas with convenient access to high-frequency transit.

Each Option assumes baseline transit network improvements identified by AC Transit, along with additional enhancements specific to that Option. For example, Option B includes high-frequency service upgrades along select north-south corridors, while Option C introduces new transit connections near the San Antonio BART station, including a potential shuttle service.

Existing housing units and building square footage were derived from 2020 Assessor's parcel data. Building square footage was converted to employment estimates using standardized job density assumptions. For each Option, new growth (in housing units and jobs) was modeled at the parcel level, and the portion of this new development falling within the defined high-frequency transit buffers was calculated to assess alignment with transit-accessible areas.

MODE SHARES

The Alameda Countywide travel model includes a mode choice step which estimates the percentages of travelers who will choose each mode (drive alone, rideshare, transit, bike, walk) between each origin and destination in the 10-county model study area. The mode choice is based on economic choice models which consider travel time, gas costs, parking costs, tolls, walking times to/from transit, average transit wait and transfer times, transit fares and resident demographics.

The mode choice metrics were calculated by summing up the daily person trips using each mode for the TAZs within the City of Oakland and each PDA. Increased amounts of land use within short distances of each other (higher density) will tend to increase walk trips, while increased transit frequencies will reduce average wait times and tend to increase transit trips.

VEHICLE-MILES OF TRAVEL

Vehicle-miles of travel (VMT) is calculated by multiplying the number of vehicle trips by the trip distance. For this metric, the daily VMT was calculated by multiplying the number of daily vehicle trips (after removing transit, bike and walk trips) from each origin TAZ to each destination TAZ in the 10-county model study area by the distance between each origin and destination TAZ. The VMT values were then summed for each TAZ within the City of Oakland and each PDA. The VMT per Capita is calculated as the VMT for a specific subarea, such as a PDA divided by the population of that subarea.