Transportation

January 2023
Multimodal Transportation Planning Overview

Multimodal transportation planning refers to the development of a transportation system that supports a variety of transportation options for residents and visitors of all ages and abilities to access employment, educational, and other opportunities safely and efficiently. Transportation options may include walking, biking, transit, and using a personal vehicle. Measures of safety may include crash statistics, such as crash severity, crash type, and whether vulnerable road users were involved in the crash. Measures of efficiency may include traffic volumes and vehicle/person throughput for an intersection or roadway segment.

“Transportation planning” (without “multimodal”) tends to prioritize personal motor vehicle travel and access to opportunities. Multimodal transportation planning does not aim to erase or replace all personal motor vehicle travel with walking, biking, and transit. Instead, multimodal transportation planning aims to offer people a variety of travel options. Multimodal transportation planning also aims to make all transportation options equally safe and efficient – because transit is not a true option for most people if it takes three times longer than driving, for example.

There are several reasons to provide a variety of transportation options, especially equity and climate action. With respect to equity, transportation systems connect people to opportunities such as employment, education, medical care, recreation, and social connections. Individuals of all ages, abilities, and income levels should have equal access to these opportunities through the publicly-funded transportation system. Multimodal transportation planning fosters equity by ensuring that being able to own and operate a personal vehicle are not prerequisites for full participation in our community.

Multimodal transportation planning should be cognizant of the negative impacts of transportation infrastructure, where transportation infrastructure is placed, and who is being most significantly impacted by that placement. Transportation infrastructure featuring high volumes of vehicles worsens air quality for adjacent communities and increases health risks, such as childhood asthma rates. Transportation infrastructure that allows for high speeds results in more fatal crashes for all road users.
Multimodal transportation planning is also critical for addressing climate change. In 2018, greenhouse gas emissions from transportation accounted for approximately 52% of Albemarle County’s calculated emissions total. Between 2015 and 2019, three quarters of County residents commuted to work by driving alone, while less than 6% walked, bicycled, or used public transit. These numbers illustrate the significant room for improvement in transportation infrastructure and behavior.

Albemarle County has clearly outlined goals for climate action through its Climate Action Plan. Goals related to transportation include reducing the use of single-occupancy vehicles and increasing the use of alternative modes such as walking, biking, and transit. These goals are strongly supported by multimodal transportation planning’s focus on making all travel options safe and efficient. Another Albemarle County climate goal is to shift to lower- and zero-emissions vehicles, such as hybrid and fully electric vehicles. Multimodal planning supports this goal by encouraging electric vehicle-charging at new developments and strategic locations around the County. Increasing the proportion of community members who can walk, bike, use transit, or adopt electric vehicles also benefits local air quality, reducing conventional air pollution that contributes to asthma and other respiratory diseases.

Multimodal transportation planning connects to other Comprehensive Plan topics, especially housing and land use. Household housing and transportation costs are often intertwined, such that homes further from the City of Charlottesville and the County’s Development Areas may be more affordable than similarly sized homes closer to many daily destinations. Household housing savings may be offset by increased transportation costs – which can fluctuate unpredictably based on gas prices and car maintenance needs. Land use (what types of uses are allowed where) influences the practicality of walking, biking, and transit. Land use in which many daily destinations are located close to residential development make walking and biking more practical than land use in which those same daily destinations are spread out from each other and located far from housing.
Identifying Transportation Challenges and Opportunities

Albemarle County transportation planning staff collaborate with state and regional planners, developers, and the public to identify future transportation projects. Through these collaborative efforts, staff uses transportation and land use data, regional and local planning studies and documents, and the personal experience of community members to determine where transportation challenges already exist and where transportation challenges are likely to arise in the future due to development or other changes.

The Virginia Department of Transportation (VDOT) tracks and shares a wide variety of transportation data, much of which can be found on easy-to-view web maps at virginiaroads.org. Data tracked and shared by VDOT includes road segment traffic volumes, measures of congestion (such as level of service), and measures of safety (such as crashes by mode, type, and severity). This data allows planners to better understand where there are existing transportation challenges and may suggest likely causes of those challenges – for instance, numerous rear-end collisions preceding an intersection might indicate the need for a dedicated right-turn lane, so that individuals traveling through an intersection are not surprised by vehicles slowing down to make a right-turn at the intersection.

Every five years, the Charlottesville-Albemarle Metropolitan Planning Organization (CA-MPO) collaborates with Albemarle County and City of Charlottesville transportation planning staff to develop the Long Range Transportation Plan (LRTP). The LRTP process uses models of existing and expected future transportation patterns based on existing and expected development to identify where the most significant transportation challenges are likely to arise over the next twenty years. The LRTP serves as a guiding document for the metropolitan planning area’s long-term transportation planning priorities.
The CA-MPO is housed within the Thomas Jefferson Planning District Commission (TJPDC), which developed the Jefferson Area Bicycle and Pedestrian Plan in 2019 for all TJPDC member jurisdictions – Albemarle County, City of Charlottesville, Fluvanna County, Greene County, Louisa County, and Nelson County. This Bicycle and Pedestrian Plan uses data to identify high-priority bicycle- and pedestrian-focused projects for the region.

Albemarle County transportation staff work closely with Albemarle County long range planning staff on the Comprehensive Plan update, as well as on updates to Master Plans for each of the Development Areas. Transportation studies, which may be completed as part of a Master Plan process, as well as public feedback, help pinpoint existing transportation challenges and predict where challenges are likely to arise in the near future.

Albemarle County transportation staff also work closely with Community Development staff who review applications for development projects of all sizes and types. Together, they identify the ways in which new development might create or exacerbate transportation challenges. Very large projects that are expected to generate significant numbers of additional trips are required to complete additional studies, known as Transportation Impact Analyses (TIAs). TIAs pinpoint the intersections and/or roadway segments that are most likely to be impacted by the development project and quantify the development’s impact on delay and safety.

Review of development projects can also highlight opportunities to improve the transportation network. Depending on the results of Transportation Impact Analyses, staff may recommend that developers make improvements and/or contribute to the cost of improvements to road segments and intersections that will be impacted by the development; developers can also construct and/or contribute to the cost of construction of transit stops, shared use paths, and other transportation infrastructure. Also, County transportation planning staff can require developers to include pedestrian infrastructure for safe and comfortable connections within and to or from the developing property.

A map from the TJPDC Bicycle and Pedestrian Plan highlighting community input on desired bike and pedestrian connections
The “Big Picture” of Transportation Challenges and Opportunities

National data and public feedback provide additional context for the transportation challenges and opportunities identified through regional and local planning processes. Altogether, this creates a “big picture” understanding of how well our transportation infrastructure is working for our community.

Census and American Community Survey (ACS) data describe how people are traveling in Albemarle County. This data changes over time and can be compared to state and national numbers. The table below shows commute mode choice (how people chose to travel to work most often) using ACS 5-year data. The first data column shows Albemarle County data from 2012-2016, and the second data column shows the most recent Albemarle County data (2017-2021). Rows highlighted in red indicate that the travel mode became less popular over time, whereas rows highlighted in green indicate that the travel mode became more popular; bolder/darker colors indicate that the change was more significant than rows highlighted in lighter colors.

<table>
<thead>
<tr>
<th>Travel Mode</th>
<th>Albemarle County 2012-2016 ACS 5-yr Estimates</th>
<th>Albemarle County 2017-2021 ACS 5-yr Estimates</th>
<th>Virginia 2017-2021 ACS 5-yr Estimates</th>
<th>U.S. 2017-2021 ACS 5-yr Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove Alone</td>
<td>78.6 %</td>
<td>69.9 %</td>
<td>72.7 %</td>
<td>73.2 %</td>
</tr>
<tr>
<td>Carpool</td>
<td>8.2 %</td>
<td>8.7 %</td>
<td>8.5 %</td>
<td>8.6 %</td>
</tr>
<tr>
<td>Transit</td>
<td>2.2 %</td>
<td>1.9 %</td>
<td>3.4 %</td>
<td>4.2 %</td>
</tr>
<tr>
<td>Walk</td>
<td>2.6 %</td>
<td>2.6 %</td>
<td>2.2 %</td>
<td>2.5 %</td>
</tr>
<tr>
<td>Bike</td>
<td>0.4 %</td>
<td>0.5 %</td>
<td>0.3 %</td>
<td>0.5 %</td>
</tr>
<tr>
<td>Work from Home</td>
<td>7.3 %</td>
<td>15.5 %</td>
<td>11.4 %</td>
<td>9.7 %</td>
</tr>
<tr>
<td>Other</td>
<td>0.8 %</td>
<td>1.0 %</td>
<td>1.4 %</td>
<td>1.4 %</td>
</tr>
</tbody>
</table>

Mode of commuting for Albemarle County, Virginia, and the U.S.
Source: Census, ACS Table S0801

Looking at ACS 1-year data, driving alone was the most popular mode choice in both 2011 (77.5%) and 2021 (62.5%), although the percentage of individuals driving alone decreased significantly. This decline (14.5 percentage points) is mirrored by the increase (16.1 percentage points) in individuals who work from home. This shift was expected, given the significant increase in remote work due to the Covid-19 pandemic. Additionally, there was a small decline in carpooling to work and a significant decline in transit commutes; again, both shifts are likely explained by a desire to social distance during the pandemic. Whether or not this trend continues will depend on how many workers continue to work remotely and if commuters are able to increasingly shift to transportation options other than driving alone.
Current Albemarle County data (second data column) can be compared to current state and national data (third and final data columns). The proportion of Albemarle County residents driving alone to work is moderately lower than the proportion of Virginia or US residents driving alone. Also, the proportion of County residents working from home is slightly higher than the proportion of Virginia and US residents working from home, and the proportion of County residents walking to work is slightly higher than the proportion of Virginia or US residents walking to work.

Census and ACS data also quantifies the number of vehicles available to each household. Households may have no working vehicle available for a variety of reasons – lack of affordability, a disability that prevents driving, or personal choice. Regardless of the reason, the lack of a working vehicle limits opportunities for members of the household when transportation infrastructure doesn’t support other travel options. Having three or more vehicles available in a household may indicate that the household believes that there must be at least one vehicle for every driver in the household because the transportation infrastructure in their community does not support other travel options.

The table below shows the proportion of Albemarle County households that currently have no working vehicle available, as well as those households that currently have three or more vehicles available. This data can be compared to current state and national numbers. Local, state, and national data for 2011 are also included on the table below to allow for comparisons over time.

The proportion of Albemarle County households that do not have access to a working vehicle appears to have increased slightly over the previous decade, but it remains low relative to state and national proportions. Nonetheless, it should be noted that 5.5% translates to an estimated 1,984 households impacted by a lack of a working vehicle.

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<thead>
<tr>
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<tbody>
<tr>
<td>No vehicles available</td>
<td>5.1 %</td>
<td>6.2 %</td>
<td>8.9 %</td>
</tr>
<tr>
<td>Three or more vehicles available</td>
<td>22.5 %</td>
<td>25.1 %</td>
<td>19.8 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>No vehicles available</td>
<td>5.5 %</td>
<td>6.1 %</td>
<td>8 %</td>
</tr>
<tr>
<td>Three or more vehicles available</td>
<td>23 %</td>
<td>25.8 %</td>
<td>21.9 %</td>
</tr>
</tbody>
</table>

Number of vehicles available per household in Albemarle County, Virginia, and the U.S.
Source: Census, ACS Table B08201
The national **Housing and Transportation Affordability Index** considers the average combined cost of housing and transportation. In Albemarle County, combined housing and transportation costs account for 47% of a household’s annual income, on average. Transportation alone accounts for 20% of household income, or $14,756 on average annually.

Data from the Environmental Protection Agency states that 27% of national greenhouse gas emissions come from the transportation sector, whereas the transportation sector accounts for 52% of County greenhouse gas emissions according to the [Albemarle County Greenhouse Gas Emission Inventory Report (2018)](https://example.com). The difference between national and local sources of greenhouse gas emissions indicates that Albemarle County has an opportunity to significantly reduce overall greenhouse gas emissions by investing in transportation infrastructure that supports more climate-friendly transportation options, such as transit, biking, and walking.

![Average Housing + Transportation Costs % Income](image)

**Transportation Costs**

In dispersed areas, people need to own more vehicles and rely upon driving them farther distances which also drives up the cost of living.

- **$14,756**
  - Annual Transportation Costs
- **1.89**
  - Autos Per Household
- **19,820**
  - Average Household VMT

Average housing and transportation costs in Albemarle County as a percent of household income and average annual transportation costs for Albemarle County households.

*Source: Housing and Transportation Affordability Index*
How Community Input Provides Context to Data

The community input gathered through the Comprehensive and Master planning processes (as well as through other public meetings) provides essential context to statistics and analytical models. Community feedback can reinforce quantitative findings or offer new insights on challenges and opportunities otherwise missed by the data. For example, do 0.5% of Albemarle County commuters bike to work because 99.5% of commuters don’t like biking? Or do a significant portion of that 99.5% choose not to bike because there isn’t continuous, safe bike infrastructure between their home and work? Or do they choose not to bike because they couldn’t afford a home (mortgage or rent) within a reasonable biking distance from work? Public feedback illuminates answers to questions like these and contributes to the “big picture” of how well our transportation infrastructure is working for most people.

<table>
<thead>
<tr>
<th></th>
<th>Average Annual Household VMT</th>
<th>Average Transportation Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albemarle County</td>
<td>19,820</td>
<td>20% of household income</td>
</tr>
<tr>
<td>Charlottesville</td>
<td>13,572</td>
<td>17% of household income</td>
</tr>
<tr>
<td>Fluvanna County</td>
<td>24,904</td>
<td>24% of household income</td>
</tr>
<tr>
<td>Louisa County</td>
<td>25,249</td>
<td>27% of household income</td>
</tr>
<tr>
<td>Greene County</td>
<td>24,468</td>
<td>23% of household income</td>
</tr>
</tbody>
</table>

Average annual household vehicle miles traveled (VMT) and average annual household transportation costs for Albemarle County and surrounding localities. Source: Housing and Transportation Affordability Index
In Phase 1 of the Comprehensive Plan update, public feedback related to transportation centered around several themes. The tables below are not comprehensive; rather they are intended to be examples of how public feedback can complement and offer nuance to other data sources. They also show the connections between Transportation and other Comp Plan topics, such as housing, land use, and parks.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Example Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire for more options to bike and walk, with a need to increase safety and accessibility</td>
<td>“Plan for recreational opportunities easily accessed by people living in high density areas. Bike, hike, swim, float, walk, stroll, wheel-chair, etc. are all critical to keeping humans healthy.”</td>
</tr>
<tr>
<td></td>
<td>“Alb. Co. does not have safe streets, sidewalks, bike paths, etc., so everyone drives and then they complain there is too much traffic.”</td>
</tr>
<tr>
<td></td>
<td>“Bike lanes next to parallel parking are NOT SAFE for bikers and should not be considered as ‘encouraging multimodal transportation’.”</td>
</tr>
<tr>
<td>Desire for improved transit and other transportation options that improve overall affordability and equity</td>
<td>“I live in an area of high development. As of now, there is NO public transportation available. Bus services go only as far north as Wal-Mart. What are the plans for expanding transportation services to Brookhill, Hollymead Town Center, CHO, and other developed areas?”</td>
</tr>
<tr>
<td></td>
<td>“Good access to public transit and bicycle and pedestrian infrastructure is a critical component of housing affordability and expanding access to opportunity given the high costs of driving and car ownership—costs which increase for residents as development spreads over a larger area.”</td>
</tr>
<tr>
<td></td>
<td>“I’m interested in quality-of-life options that allow people to live without a car. I think this could meet the needs of the young, the elderly, and those who don’t have the means to maintain a car or more than one car.”</td>
</tr>
<tr>
<td>Concern that existing transportation infrastructure is not meeting demand</td>
<td>“A key issue is traffic. Any increase in destiny MUST provide roads, infrastructure, well-planned and efficient public transportation options.”</td>
</tr>
<tr>
<td></td>
<td>“Many housing units being built near my house with very little infrastructure...no widening of roads. Little thought about the increase in traffic. No bike routes or alternative modes of transportation being developed.”</td>
</tr>
<tr>
<td>Desire for more walkable and bikeable communities through mixed-use development</td>
<td>“Explore mixed use development which combines services, shops, residences and employment co-located in development areas allowing more members of the community to shift from daily driving to daily walking or biking.”</td>
</tr>
<tr>
<td></td>
<td>“If you’re not planning to build in conjunction with commensurate non-vehicular (bike/ped/transit) infrastructure, you’re doing it wrong. We need to reimagine growth and development, and how we interact with each other, and how commercial and residential interact, and how neighborhoods connect - without forcing people into cars.”</td>
</tr>
</tbody>
</table>
Prioritizing Transportation Projects

Once transportation challenges and opportunities have been identified, transportation planning staff must prioritize potential projects based on their expected benefit to the community. Limited financial and administrative resources mean that Albemarle County cannot immediately and simultaneously address every transportation challenge and pursue every opportunity.

A complete list of potential transportation projects was last prioritized in 2019 (the full list can be found at the following link: https://www.albemarle.org/home/showpublisheddocument/1116/637213655955070000), when transportation planning staff scored every potential project on the following metrics: safety, congestion, economic development, accessibility, and land use. Scores were summed for each project and projects were ranked such that projects with the highest score were recommended to be completed first. The ranked list of projects was presented to and approved by the Board of Supervisors that same year. Transportation planning staff and County Supervisors rely on this list – known as the “2019 Transportation Priorities” – to determine which projects to pursue.

Since 2019, some of the most highly prioritized projects have been funded and are on their way to completion. Other potential projects have been reimagined and new potential projects have been identified given updated transportation data, information about new development projects, and public feedback. As such, staff are updating the transportation priorities for 2023.
The updated prioritization process will score every potential project on the same metrics as the 2019 process but will add consideration of environmental impact and reimagine the accessibility metric to include specific considerations for equity.

To give each project an environmental impact score, transportation planning staff will review the project for the features listed below. Features #3 and #4 are referenced against County data and maps.

1. Does the project enhance pedestrian, bicycle, and/or transit opportunities?
2. Does the project help reach Albemarle County’s Climate Action Plan goals? (For example, does it include electric vehicle charging?)
3. Does the project avoid sensitive environmental areas, particularly areas that are currently undeveloped?
4. Does the project avoid floodplains and critical slopes?

To give each project an accessibility/equity score, transportation planning staff will review the project for the features listed below. For features #2 and #3, underserved was defined using the Environmental Protection Agency’s Environmental Justice Screening and Mapping Tool, known as EJScreen.

1. Does the project enhance pedestrian, bicycle, and/or transit infrastructure?
2. Is this project located in (and positively serves) an area identified as underserved?
3. Does this project improve access for underserved population to employment areas?

Example of a transportation project that is in progress. Information on capital projects in Albemarle County are included in Facilities and Environmental Services (FES) Quarterly Reports: https://www.albemarle.org/government/facilities-environmental-services
Implementing Transportation Projects

After prioritization, potential transportation projects typically go through three phases before they are complete. The first phase is preliminary engineering, where the design work for a project is completed. Some design work may be done with small amounts of local funding before a project is fully funded; this early design work (often referred to as “conceptual planning”) helps transportation planners and engineers gain a thorough understanding of the technical challenges of a potential project so that they may develop a more realistic project cost estimate and timeline before proceeding.

The second phase is right-of-way acquisition, in which private property owners are compensated for the impact a transportation project will have on their property. Not all projects have a right-of-way acquisition phase.

The third and final phase is construction, in which construction on the project begins and ends. This is the phase in which the traveling public is most impacted.

Recently constructed sidewalks along Río Road. When building new sidewalks, steps include erosion and sediment controls, identifying utilities, grading, setting stormwater management structures, and forming and pouring sidewalks.
Albemarle County transportation planning staff aim to proceed through the list of prioritized projects by addressing the most highly ranked projects first, but there are additional factors to consider. At times, projects that are (locationally) close to each other may be grouped together, as hiring a single consultant to complete the preliminary engineering or construction can result in significant overall cost savings. This may mean that projects ranked #1, #5, and #17 are grouped together and completed before projects #2-4 and #6-16.

Additionally, each funding mechanism is not appropriate for every potential project. This means that a lower ranked project that fits the parameters of a funding opportunity may be pursued before a higher ranked project that does not fit those parameters. The table below shows some of the more common funding opportunities for Albemarle County transportation projects. It should be noted that some of these funding opportunities have long gaps between the date funding is awarded and the date when that funding becomes available for use.

### Transportation Project Funding Opportunities

<table>
<thead>
<tr>
<th>Funding Opportunity Name</th>
<th>Fund Source</th>
<th>Maximum Funding</th>
<th>Opportunity Frequency</th>
<th>Delay Between Award and Funding Availability</th>
<th>Competitive?</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAISE</td>
<td>Federal</td>
<td>$25 million; no local match required</td>
<td>Annual</td>
<td>~ 1.5 years</td>
<td>Extremely Competitive</td>
</tr>
<tr>
<td>Smart Scale</td>
<td>State</td>
<td>Varies depending on availability; no local match required</td>
<td>Every 2 years (even years)</td>
<td>~ 6 years</td>
<td>Highly Competitive</td>
</tr>
<tr>
<td>Revenue Sharing</td>
<td>State</td>
<td>$10 million/project; 50% local match required</td>
<td>Every 2 years (odd years)</td>
<td>~ 6 years</td>
<td>Moderately Competitive</td>
</tr>
<tr>
<td>Capital Improvement Program</td>
<td>Local</td>
<td>N/A</td>
<td>Annual</td>
<td>Following fiscal year</td>
<td>Requires Board of Supervisors support</td>
</tr>
</tbody>
</table>

Examples of transportation project funding opportunities
What challenges and opportunities should we plan for?

During Phase 1 of AC44, we heard significant feedback from community members on the topic of transportation, as referenced in the Community Input section of this report. Some of the transportation challenges and opportunities we heard include:

- The combined cost of housing and transportation is a significant part of household budgets, and transportation affordability overlaps with housing affordability. There are higher commuting costs associated with living further from work, school, and daily needs, even though the cost of housing may be lower.
- There is a need for walking and biking options that are both safe and accessible. It is not enough to have connections for walking and biking; those connections also need to be safe and separated from cars as much as possible. This supports climate action goals, reduces greenhouse gas emissions, and reduces car-dependence.
- Infrastructure needs to keep up with growth. There is especially a concern with traffic congestion.
- Public transit needs to be more frequent, reliable, and have more routes. Access to transit needs to be equitable and affordable. Some comments noted that higher density housing makes providing transit more feasible.
- The County should continue to engage in regional transportation planning and coordination, and enhance opportunities for coordination where possible.
- There should be reduced parking requirements and more EV charging stations in more parking areas.
- More walkability can be provided by allowing more mixed use development and connecting existing neighborhoods to parks, schools, employment areas, retail, and other destinations.

Other challenges and opportunities we can consider as we update the Comprehensive Plan goals and objectives are:

- Enhanced coordination between trails and greenways planning with Albemarle County Parks and Recreation (ACPR) and improving multimodal transportation options.
- Making stronger connections between land use, transportation, and housing—and their combined impact on climate change—in the updated Plan.
How is Transportation guided by the Framework?

The Framework for an Equitable and Resilient Community was developed during Phase 1 of AC44. The Framework presents a snapshot of what the County aspires to be in the year 2044, which is a community that has centered equity and resilience in its policies, plans, and actions. The Framework was developed based on input from community members, the AC44 working group, the Planning Commission and the Board of Supervisors, and by incorporating equity and climate action considerations, reviewing goals in the current Comprehensive Plan, and researching best practices. Moving forward, the Framework will be used to guide updating Plan recommendations, including Plan Goals, Objectives, and Strategies.

Multimodal transportation planning corresponds with all four areas of the Framework. Multimodal transportation planning connects residents and visitors to employment, education, medical care, recreation, and social opportunities; in doing so, multimodal transportation planning ensures that our community is thriving and prosperous.

Multimodal transportation planning ensures that all opportunities are accessible to individuals of all ages, abilities, and income levels by developing a transportation system that allows those individuals to choose which transportation option works best for them. No matter which transportation option an individual chooses, multimodal transportation planning aims to ensure that the individual arrives at their destination safely and efficiently, thereby fostering equity of opportunity.

Transportation options include walking, biking, transit, and driving personal vehicles (which can be further divided into traditional fuel, hybrid, and all-electric vehicles). By providing these choices, multimodal transportation planning fosters a green and resilient community.
Conclusion

Transportation systems connect community members to recreation, schools, jobs, shopping, healthcare, and social visits. By improving transportation choice through multimodal transportation planning, community members have more options to access these services and amenities. Transportation is also strongly connected to land use; in order for walking and biking to be feasible, different types of goods and services need to be located near housing. Higher density housing also tends to make public transit more feasible.

Given that an estimated 52 percent of the county’s greenhouse gas emissions are from the transportation sector, multimodal transportation planning will be key toward reaching the County’s goal of reducing greenhouse gas emissions by 45 percent from 2008 levels by 2030 and achieving net zero emissions by 2050. Between the county’s 2008 and 2018 greenhouse gas emissions inventories, emissions per capita decreased by about 19 percent, even though the population increased by about 12 percent. Transportation emissions also decreased by 7 percent, even though vehicle miles traveled increased by 7 percent. These contrasts are likely due to transportation becoming more energy efficient, including a higher average fuel economy for vehicles and more electric vehicles. Even though per capita emissions are decreasing, we will need to decrease emissions at a faster rate to meet the 2030 goal. While increasing energy efficiency will help, other changes, including supporting more options to safely and affordably walk, bike, and take transit, will be needed to meet this goal.
Sources and References


Housing and Transportation Affordability Index (H+T Index), H+T Fact Sheets, https://htaindex.cnt.org/

U.S. Census, 2012-2016 ACS 5-year: Table S0801: Commute Mode

U.S. Census, 2017-2021 ACS 5-year: Table S0801: Commute Mode

U.S. Census, 2011-2015 ACS 5-year: Table B08201: Vehicles Available per Household

U.S. Census, 2021 ACS 1-year: Table B08201: Vehicles Available per Household