Land Use and Transportation

Goal

Establish development conditions which increase housing density and conserve undeveloped land, including maximizing transportation choices in order to reduce our greenhouse gas emissions and adapt to climate change impacts.

Introduction

Land Use and Transportation and Climate Change

Both land use and transportation have a substantial impact on our environment and climate. Around "three-quarters of the Earth's land surface has been altered by humans within the last millennium," whether it be for agriculture, residences, or large urban infrastructure.[1] The process of extracting resources and developing the land for human use contributes to a significant amount of emissions (Figure 5.1). It also removes necessary carbon sinks.[2] Carbon sinks, such as soil and vegetation, "take in" atmospheric CO_2, essentially decreasing the amount of greenhouse gases in our atmosphere. Conservation of carbon sinks play a large role in mitigating climate change, but land use change and development threaten them.

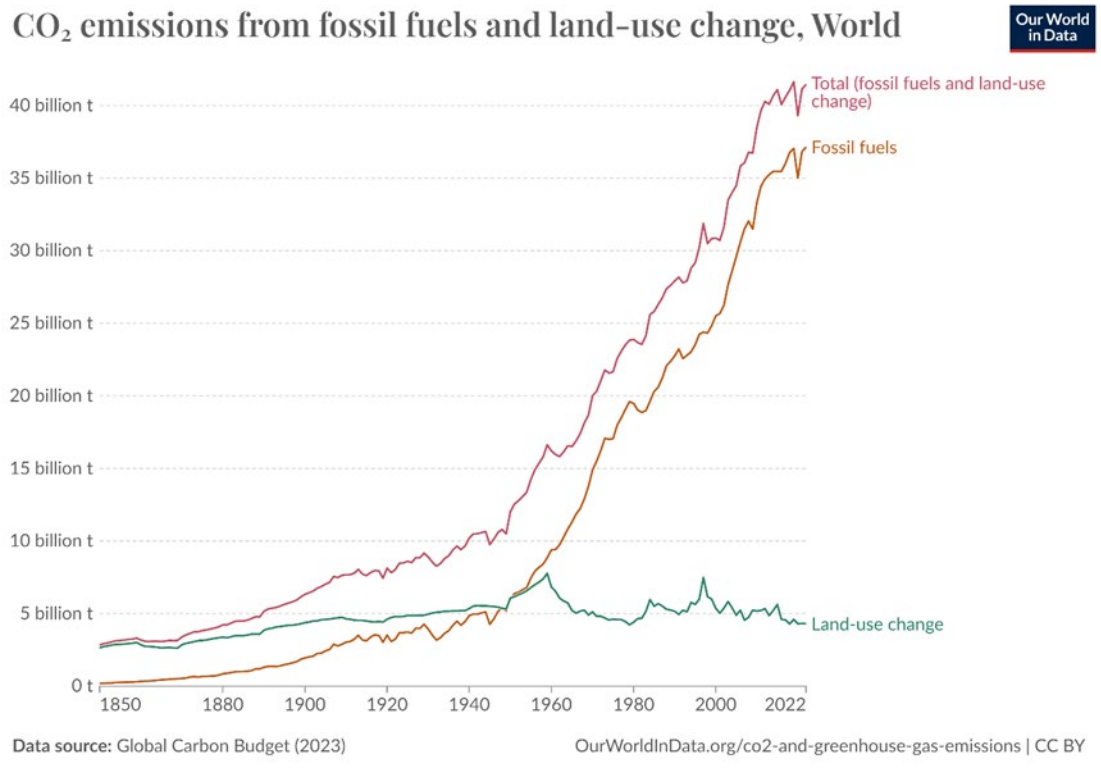

Figure 5.1: Global Carbon Budget for 2023 (Our World in Data)[3]

Transportation is particularly interconnected with land use. Historically, transportation provided access to trade goods, migration, and previously unsettled areas, increasing the demand in those areas for housing, services, commerce, etc. This, combined with other factors, helped create car-dependent societies and urban sprawl. Transportation policy decisions can also contribute to the climate crisis because vehicles emit greenhouse gases. For instance, in 2022, transportation made up the largest percentage of greenhouse gas emissions in the United States (28%).[4] 57% of transportation emissions came from light-duty vehicles, which everyday people drive.[5]

We must address the following dilemma: we must decrease our land use as well as use of our most common mode of transportation while also ensuring that individuals have access to services, jobs, and recreation. What makes this particularly difficult is the fact that many places are not built with transportation choices such as walking, cycling, or public transportation in mind, making car dependency a significant barrier to mobility. This provides few alternatives to people who want to lessen their reliance on single-use vehicles.

Land Use and Transportation in Alachua County

Alachua County has acknowledged the complex issue of balancing development and transportation with sustainability. This is evidenced by the County's efforts to implement transit-oriented development and mixed-use transportation facilities. However, both of these issues still stand out as primary concerns for the County.

Land use in Alachua County, while regulated, has had a notable impact on our environment and climate. The combination of an increasing population and more demand for housing and other services has made it difficult to minimize development. Most of the development is concentrated in central Alachua County (due largely to the University of Florida as a major employment center) and is expanding westward, in part because of the favorable conditions for land development including better stormwater drainage, a relative lack of water bodies and wetlands, and the presence of relatively new water, sewer and transportation infrastructure (Figure 5.2).

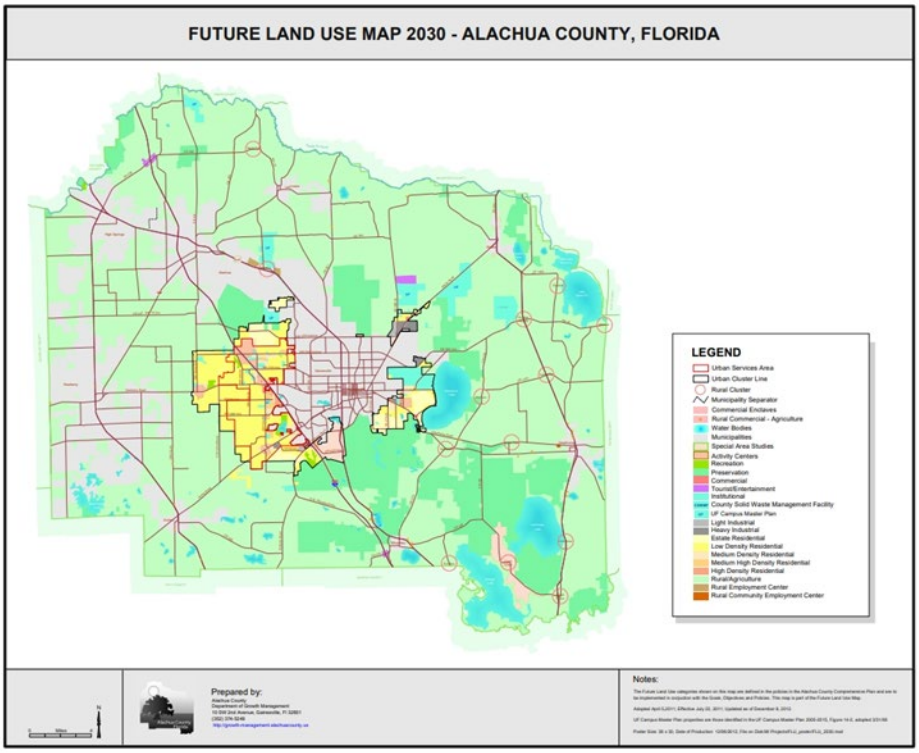

Figure 5.2: Alachua County Future Land Use Map 2030

Transportation in Alachua County is also of great concern. The Alachua County Greenhouse Gas Inventory Report found that 39% of total emissions within the County came from the transportation sector, making transportation our largest emitter. Most of these emissions came from private vehicles (cars and trucks), highlighting car dependency in Alachua County.

This data allows us to pinpoint where we can improve and what next steps we should take in regard to development and transportation.

Maximizing Land Use and Transportation Investments

Historically, development of land and infrastructure was not addressed equitably. Redlining, or "the historical practice of refusing home loans or insurance to whole neighborhoods based on a racially motivated perception of safety for investment," began during the 1930s as a way to segregate communities by race.[6] This resulted in communities with minority (primarily African American) populations receiving significantly less investments and services in their neighborhoods. These include water and wastewater systems, investments in a district's public schools, grocery stores, and accessible mobility.

In relation to land development and urbanization, many studies connect previously redlined communities with current infrastructure-related impacts. For example, studies have found that previously redlined communities are more likely to have less tree canopy coverage (to reduce urban heat island effects), lower construction foundation height (to reduce flooding), and lower ground surface permeability (also to reduce flooding).[7],[8] Many previously redlined communities are subsequently more at risk to extreme heat and flooding impacts, contributing to climate injustice.

Transportation investments and services aim to provide and improve access for all residents. Many previously redlined areas lack reliable, accessible public transportation systems and bikeable or walkable paths. Additionally, for those with disabilities or limited mobility, accessible transportation may be necessary to reach essential services.

Recognizing the inequalities embedded within our development and transportation practices allows us to actively and urgently address them. The future strategies and metrics contained within this document are designed to maximize land use and transportation services while combating climate change in a way that serves all residents of Alachua County.

Baseline & Targets

As of the publication of this Climate Action Plan, the latest Greenhouse Gas Inventory for Alachua County was published in 2022 based on 2019 data. Transportation made up the most of these emissions (39%), followed process and fugitive emissions (21%) and commercial energy (20%). This data presents a general baseline, however as seen below in Table 5.3, the data is not all encompassing and leaves out many transportation sectors due to data not being available:

Activity/Source	Data Source	Data Gaps/Assumptions/Notes
Communitywide		
Vehicle Miles Travelled	Google Environmental Insights Explorer	• VMT provided from Google EIE[13] represents all on-road private vehicles • Data does not include Gainesville Regional Transit System activity
Transit Ridership	Gainesville Regional Transit System	N/A
Aviation	Gainesville Regional Airport	GRA provided consumption but could not provide travel bounds
Off-Road	EPA National Emissions Inventory	The NEI does not provide N2O emissions for Off-Road
Freight Rail	Eastern Regional Technical Advisory Committee	N/A
Local Government Operations		
Government Vehicle And Equipment Fleet	Department of Public Works	• 21 vehicles had hours tracked, rather than mileage • Mileage for the 21 vehicles was estimated based on an average Miles Per Gallon
Employee Commute	382 Alachua County Employees	To collect Employee Commute data, Alachua County staff were surveyed to determine their commute mileage, vehicle type and fuel type. A 31.8% response rate was achieved for the survey and the mileage collected from the 31.8% of employees was extrapolated to estimate commute emissions for all 1,200 employees.

Table 5.3: Transportation Data Sources for 2019 GHG Inventory (ICLEI)

Without a more comprehensive baseline, specific goals are difficult to set on a more detailed level than general GHG reduction. The Comprehensive Plan has set goals for general reduction, the goal of a 40% reduction by 2020 from 2009 was not met, and there is an ultimate goal of 80% reduction by 2050.

While this plan's strategies and associated metrics are strides in the right direction, additional Climate Action Planning efforts should be undertaken to better understand and quantify the county's current baselines. Without such research, creating well defined implementation steps is not possible, and thus this plan should serve as an outline for future Climate Action Planning to

more clearly define specific study areas, including but not limited to estimated transportation-related Greenhouse Gas Emissions, Vehicle Miles Traveled, Mode Share, as well as specific Climate Action goals and timelines by which to achieve them.

Once baselines are achieved, targets for specific strategy actions can be defined to quantify the specific metrics to refine the listed strategies. Baselines can also assist in determining priority areas for actions to be taken, highlighting areas of highest and least concern based on established goals. From here, implementation steps can be taken towards the quantified goals.

Past and Current Efforts

Alachua County Comprehensive Plan

Recognizing the importance of the issues described above, the Alachua County Comprehensive Plan directly addresses both land use and transportation management in depth. The following are several principles and objectives of the plan which serve to guide land use and transportation decisions:

Future Land Use

PRINCIPLE 1 Promote sustainable land development that provides for a balance of economic opportunity, equity, environmental justice, and protection of the natural environment.

PRINCIPLE 2 Base new development upon the provision of necessary services and infrastructure. Focus urban development in a clearly defined area and strengthen the separation of rural and urban uses.

Transportation

PRINCIPLE 1 To establish and maintain a safe, convenient, and efficient transportation system for all users that is capable of moving people and goods throughout the county.

PRINCIPLE 2 To reduce vehicle miles of travel and per capita green house gas emissions through the provision of mobility within compact, mixed-use, interconnected developments that promote walking and bicycling, allow for the internal capture of vehicular trips and provide the densities and intensities needed to support transit.

PRINCIPLE 3 Discourage sprawl and encourage the efficient use of the urban cluster by directing new development and infrastructure to areas where mobility can be provided via multiple modes of transportation.

The Comprehensive Plan further defines its Principles through Objectives and Policies. Objectives and Policies supporting current Climate Action Plan efforts or "strategies" are provided below.

Future Land Use Objectives

OBJECTIVE 1.1- General

Encourage development of residential land in a manner which promotes social and economic diversity, provides for phased and orderly growth consistent with available public facilities, and provides for access to existing or planned public services such as schools, parks, and cultural facilities.

Comprehensive Plan, FLUE, Policy 1.1.3: Urban Residential development shall be consistent with the Conservation policies of Alachua County.

Comprehensive Plan, FLUE, Policy 1.1.4: Higher urban densities than designated on the Future Land Use Map may be allowed for housing as established by policies in the Housing Element of the Comprehensive Plan.

OBJECTIVE 1.2- Location, Mix of Uses, and Implementation Consistent with Market Demand: Provide for adequate future urban residential development that includes a full range of housing types and densities to serve different segments of the housing market, designed to be integrated and connected with surrounding neighborhoods and the community, with opportunities for recreation and other mixed uses within walking or bicycling distance.

> **Comprehensive Plan, FLUE, Policy 1.2.1.2:** Landscapes, buffers, natural areas or transitional development practices shall be utilized in site planning to lessen impacts and integrate development along the edges of different land use categories, screen undesirable views, preserve tree canopy and vegetation in accordance with the Conservation and Open Space Element, and facilitate the safe movement of traffic and pedestrians in vehicle use areas.

OBJECTIVE 1.3 - Density

Gross residential densities shall be established to serve as a guideline for evaluating development in Alachua County.

> **Comprehensive Plan, FLUE, Policy 1.3.3:** A range in urban residential densities should be provided with the highest densities located in or near urban activity centers and transit oriented developments, and lower densities located in outlying areas or areas of the County which have physical limitations to development.

OBJECTIVE 1.4 - Neighborhood Design and Site Standards

Encourage the use of innovative concepts for residential development to allow for appropriate mixes of housing types and mixed-use development within Traditional Neighborhood and Transit Oriented Development, adequately served by necessary supporting facilities, in an efficient, environmentally sensitive, and attractive manner.

Comprehensive Plan, FLUE, Policy 1.4.1: The use of proven, innovative concepts for residential development such as TND and TOD are strongly encouraged.

OBJECTIVE 1.6 – Traditional Neighborhood Developments

To provide for interconnected, mixed-use development through specific site and design standards that create pedestrian and bicycle friendly communities, reduce per capita greenhouse gas emissions and vehicular trips on external roadways and provide development patterns that are transit supportive.

OBJECTIVE 1.7 - Transit Oriented Development

To provide for compact, mixed-use, pedestrian and bicycle friendly communities designed with the densities and intensities needed to support transit service, reduced per capita greenhouse gas emissions and enable an individual to live, work, play and shop in a community without the need to rely on a motor vehicle for mobility.

OBJECTIVE 9.1 - Transfer of Development Right Program

To create a tool that, in addition to other County policies and regulations, will protect the County's environmental resources and promote viable agriculture and the rural landscape while encouraging efficient use of services and infrastructure by concentrating development in more suitable areas of the County.

Transportation Objectives

OBJECTIVE 1.1 - Urban Transportation Mobility Districts: Urban Transportation Mobility Districts encourage future land use and transportation patterns that emphasize mixed-use, interconnected developments, promote walking and biking, reduce vehicle miles of travel and per capita greenhouse gas emissions, and provide the densities and intensities needed to support transit.

Comprehensive Plan, TME, Policy 1.1.8 (d): Stub-outs of the street network to adjacent parcels with development or redevelopment potential shall be provided. Provisions for future connections should be made in all directions whether streets are public or private, except where abutting land is undevelopable due to environmental or topographical constraints.

Comprehensive Plan, TME, Policy 1.1.6: Implement the Multi-Modal Infrastructure Projects in the Capital Improvements Element to meet the adopted level of service guidelines and proactively address projected transportation needs from new development and redevelopment within the Urban Cluster by 2040.

Comprehensive Plan, TME Policy 1.1.6.3: With the exception of Interstate 75, roadways shall be limited to no more than a total of four (4) through motor vehicle lanes. All new

bridges over Interstate 75 shall contain provisions for transit, bicycle lanes, sidewalks and/or multi-use paths.

Comprehensive Plan, TME, Policy 1.1.6.2: Roadway capacity projects shall focus on the development of an interconnected network that provides alternatives to the State Road system, including the provision of additional lanes over Interstate 75.

Comprehensive Plan, TME, Policy 1.1.7: A mobility fee shall be adopted to ensure that a development funds mobility and fully mitigates its impact to the transportation system through an increase in internal capture of trips and increase in pedestrian, bicycle and transit mode share from Transit Oriented Developments and Traditional Neighborhood Developments, including redevelopment of existing areas consistent with design requirements for such types of development.

Comprehensive Plan, TME, Policy 1.1.9: Roadways, dedicated transit lanes and trails identified in the Capital Improvements Element shall be constructed by the development where the facilities either run through or are contiguous with the development.

OBJECTIVE 1.3: To coordinate land use decisions and access locations and configurations in order to maintain and improve the efficiency and safety of the transportation system.

Comprehensive Plan, TME, Policy 1.3.1: Proposed development shall be reviewed during the Development Review process for the provision of adequate and safe on-site circulation, including pedestrian and bicycle facilities, public transit facilities, access modifications, loading facilities, and parking facilities. In addition to Comprehensive Plan policies, such review shall include FDOT access management standards. Design criteria, standards, and requirements to implement this policy shall be included in the update of the land development regulations.

OBJECTIVE 1.5 - Integrate Natural, Historic, and Scenic Resources: Avoid, minimize**,** and *mitigate adverse impacts* upon natural and historic resources and scenic quality during the siting, design, construction, operation, and maintenance of the transportation system. Use the transportation system to enhance natural and historic resources and scenic quality *where possible.*

Comprehensive Plan, TME, Policy 1.5.1: Transportation facilities shall be located, designed, constructed, and maintained to avoid, minimize and mitigate adverse impacts Conservation and Preservation areas consistent with Objective 3.6 of the Conservation and Open Space Element.

Comprehensive Plan, TME, Policy 1.5.2: Appropriate conservation, arboricultural, and horticultural standards shall be used in the design, construction, and maintenance of transportation facilities in order to promote energy conservation, enhance habitat connectivity, provide for the safe passage of wildlife, and improve scenic quality, consistent with Objectives 5.3 and 5.4 of the Conservation and Open Space Element.

Comprehensive Plan, TME, Policy 1.5.3: The county determines through the adoption of this Comprehensive Plan that there is no need for, or public purpose for any new turnpikes, expressways or toll roads in Alachua County that are significantly outside of the rights of way of existing highways. This policy constitutes a finding of fact that the construction of any new expressways, turnpikes or toll roads significantly outside of existing highway rights of way by any agency of government or other entity does not serve a public purpose, and would be inconsistent with this adopted Comprehensive Plan.

OBJECTIVE 1.6: Provide a system of safe, pleasant, convenient, and continuous bicycle and pedestrian network throughout the community.

Comprehensive Plan, TME, Policy 1.6.3: Alachua County will promote the development of a multi-modal transportation system consistent with the Capital Improvements Element.

Comprehensive Plan, TME, Policy 1.6.4: New development proposals shall be reviewed as part of the Development Review process for the provision of adequate and safe bicycle and pedestrian facilities consistent with policies in the Future Land Use Element. Standards and requirements for bicycle and pedestrian facilities (such as sidewalks, pedestrian paths, bicycle lanes, and bicycle parking) shall be detailed in the land development regulations and include elements such as amount, design, and location.

OBJECTIVE 2.1 – Transit: To assist the providers of mass transit in Alachua County in their planning efforts through coordination, informational support and participation in planning efforts.

Comprehensive Plan, TME, Policy 2.1.1: Alachua County will provide pertinent data to the City of Gainesville to enhance planning for the Regional Transit System (RTS) service area in the unincorporated portion of the County.

Comprehensive Plan, TME, Policy 2.1.2: Alachua County shall continue to promote the enhancement of transit through the Long Range Transportation Plan.

Comprehensive Plan, TME, Policy 2.1.3: Alachua County shall coordinate with the Regional Transit System (RTS) on all future transit service, express transit service, rapid transit service, and the location and design of park and ride facilities, transit stations and dedicated transit lanes.

Comprehensive Plan, TME, Policy 2.1.4: Alachua County shall continue to coordinate transit issues with its municipalities, the Regional Transit System and other transportation providers, transportation disadvantaged programs, Florida Department of Transportation and Metropolitan Transportation Planning Organization.

OBJECTIVE 2.2 – Transportation Disadvantaged: To coordinate and assist the agencies planning and providing service delivery for the transportation disadvantaged.

Alachua County Mobility Plan

The Mobility Plan is a series of amendments to the Comprehensive Plan that aim to reduce vehicle miles travelled and greenhouse gas emissions per capita by providing for enhanced transportation mobility options in conjunction with land use changes that bring services closer to residents and provide for development densities and intensities that are transit supportive.

Some key features of the plan include:

- Traditional neighborhood developments (TND) - Allows residents to walk and bike to a village center containing a mixture of commercial, residential, office and civic uses.
- Transit-oriented developments (TOD) - These developments contain a mix of uses and provide a higher density focal point for transit. They also will be the location of park and ride lots to serve residents in outlying areas.
- Bicycle and pedestrian connectivity - Includes a connected bicycle and pedestrian network with new on-road bicycle lanes and off-road multi-use paths (Figure 5.4). These facilities will connect existing and future residential development to TODs, TNDs and Activity Centers.

For more information, please see the Alachua County website.

Bicycle/Pedestrian and Future Roadway Network

In line with the Comprehensive and Mobility Plan, the County is expanding bicycle and pedestrian roadways (Figure 5.4). This includes paved multi-use trails, and methods of providing bicycling facilities in combination with roadway maintenance or improvement projects.

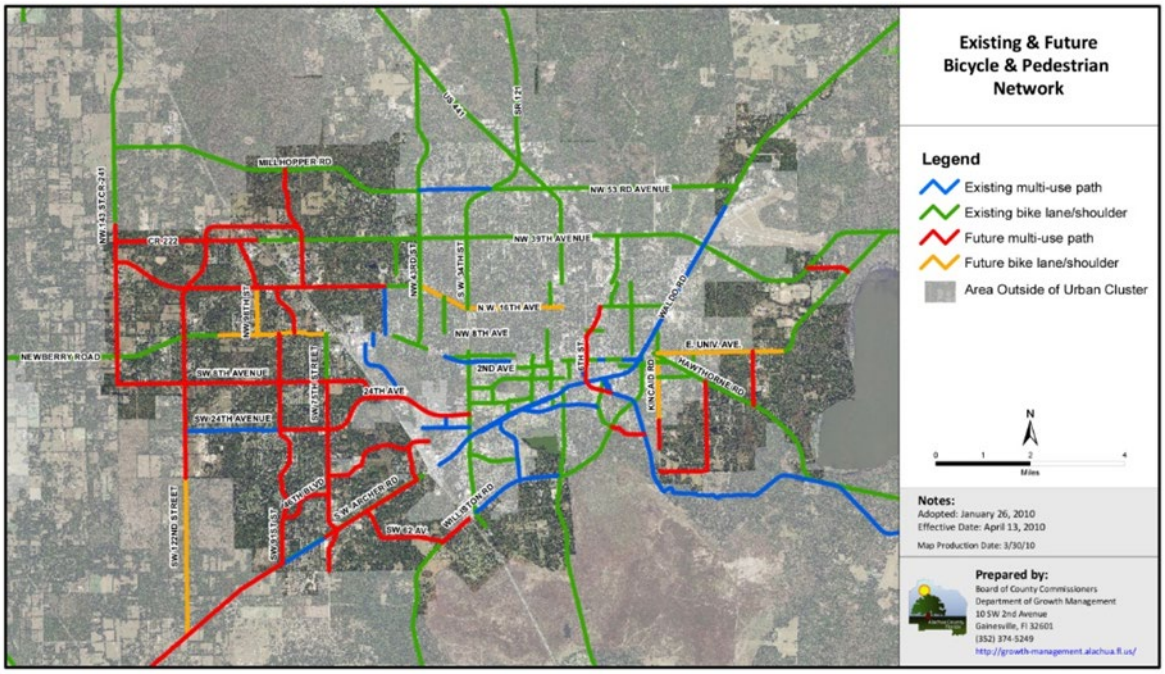

Figure 5. 4 Alachua County Bike/Pedestrian Existing and Future Network

Greenways, Blueways, and Strategic Ecosystems

Greenways typically refer to undeveloped land used for recreation and/or conservation with a trail system and are near an urban area, and blueways, which are paddling routes or trails within lakes, rivers, and streams Alachua County's greenways and blueways are shown in Figure 5.5. Both of these systems were adopted as part of the 2019 update of the Comprehensive Plan, with the goal of identifying key corridors for investment. Some may be funded with State or Federal dollars. They are also included in Mobility Fee Update (included in CIP this fall).

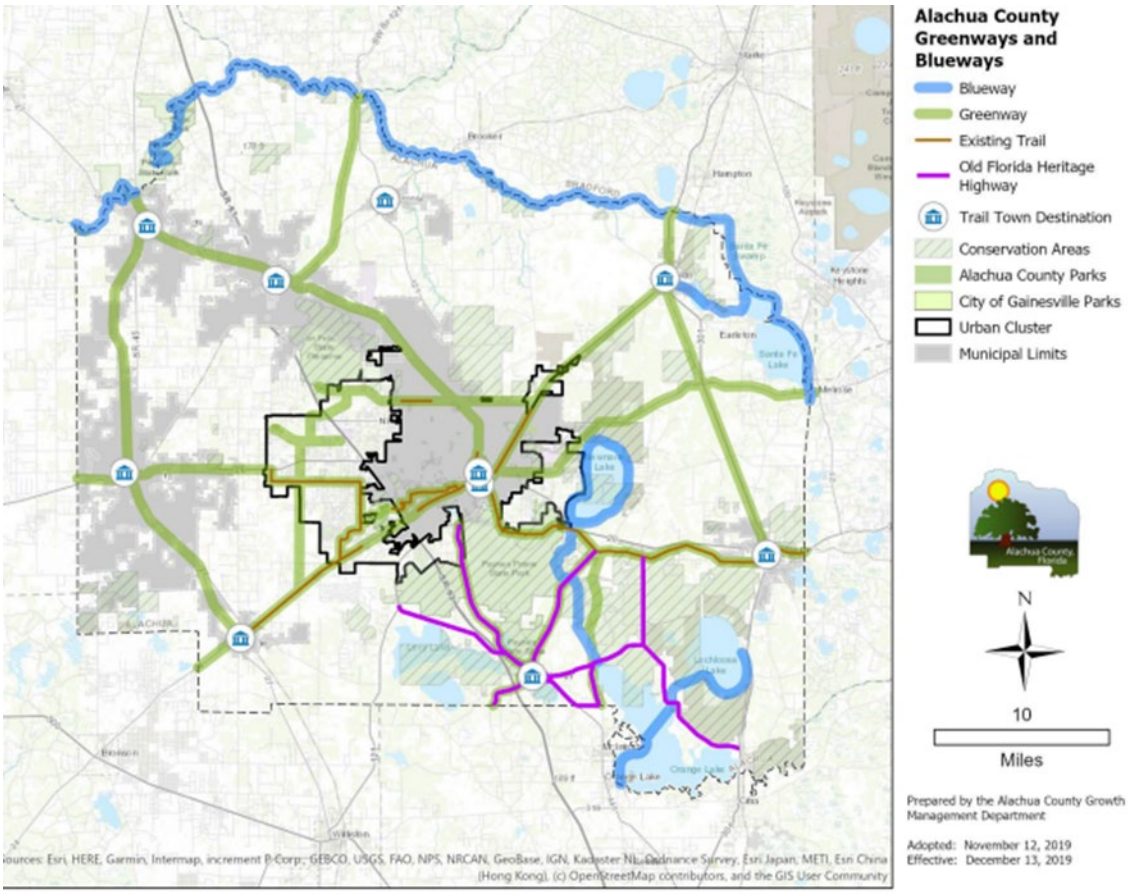

Figure 5.5. Alachua County Greenways and Blueways

Future Strategies and Action Items

The Comprehensive Plan further defines its Principles through Objectives and Policies. Objectives and Policies most relevant to this Climate Action Plan are included below and are operationalized through proposed Strategies and related Action Items.

Note: Due to the lack of available baseline data, specific metrics cannot be developed at this time. It is highly recommended that a subsequent Climate Action Planning effort be undertaken to determine existing/baseline conditions for Alachua County, including but not limited to estimated transportation-related Greenhouse Gas Emissions, Vehicle Miles Traveled, Mode Share, as well as specific Climate Action goals and timelines by which to achieve them.

> *For this reason, the Transportation Strategies component of this section will not contain a Future Strategies and Action Items table as seen in other chapters.*

Future Land Use

Table 1 Maximize efficient use of land and infrastructure			
Action Plan Components	**Jurisdiction**	**Pros**	**Cons**
Maintain urban cluster boundary	Alachua County	Increase density, reduce travel distances	Market pressure to expand urban cluster
Incentivize higher residential densities	Alachua County	Efficient use of land & infrastructure, increased revenue	Market objections
Allow transfer of development rights	Alachua County	Protection of sensitive ecosystems, increase density	Lack of market demand, land cost, lack of landowner interest
Acquire conservation lands and preserve ecosystems	Alachua County	Maintain or increase public open space and ecosystems/species diversity	Landowner may have to choose to forego additional revenue
Ensure development approval timed to supporting urban services (water, sewer, roads, transit, schools, etc.)	Alachua County, GRU, ACPS,	Higher density, efficient provision of infrastructure, public health and safety	Market pressure
Encourage infill development and mixed-use redevelopment	Alachua County	Community revitalization, increased revenue, serve community needs	Greater development expense for demolition, infrastructure upgrades

Table 2 Establish urban design standards that promote well organized neighborhoods, districts, and corridors			
Action Plan Components	**Jurisdiction**	**Pros**	**Cons**
Create compact, connected neighborhoods with limited mixed uses at centers, and have interconnected, mixed modal streets with pedestrian, bicycle, and transit friendly areas	Alachua County	Increase density, increase mobility choices, reduce travel distances, increase access to goods and services,	Higher design and construction costs, environmental protection may affect design and density
Integrate civic, institutional, and commercial activity in neighborhoods and districts	Alachua County	Efficient use of land & infrastructure, reduce travel distance, increase access to goods and services	Higher design and construction costs, limited demand
Diversify mix of land uses, housing types and densities	Alachua County	Increase density, greater choice in housing types, location, and design, greater mobility options	Higher design and construction costs for new and redevelopment sites

OBJECTIVE 1.1 – Urban Transportation Mobility Districts

Urban Transportation Mobility Districts encourage future land use and transportation patterns that emphasize mixed-use, interconnected developments, promote walking and biking, reduce vehicle miles of travel and per capita greenhouse gas emissions, and provide the densities and intensities needed to support transit.

Strategy 1.1.1: A connectivity index standard shall be developed to ensure adequate internal connections as well as connections to adjacent and nearby uses. The connectivity standards shall address connectivity for bicycles, pedestrians, and motor vehicles (See also, Comprehensive Plan, TME, Policy 1.1.6.1(c)). This standard shall take into account

established ‘equity focus areas’ and ensure that the determined connectivity standards are achieved for all County residents.

Metric 1.1.1.1: Within the Urban Mobility Districts, connectivity standards for bicycles, pedestrians, and motor vehicles shall be within XX% of target by 20XX.

Metric 1.1.1.2: Within the Urban Mobility Districts, connectivity standards for bicycles, pedestrians, and motor vehicles shall meet target by 20XX.

Strategy 1.1.2: Re-evaluate density standards to better suit transit-supportive density and intensity to expand transit-supportive availability and incentivize providing density within XX distance of BRT and Express Transit corridors.

Metric 1.1.2.1: Within the Urban Cluster, all new development must meet XXX density/intensity standards target by 20XX.

Metric 1.1.2.2: Achieve XX density within XX distance of BRT and Express Transit corridors by 20XX.

Strategy 1.1.3: Re-evaluate adopted parking requirements with goals of reducing minimums and, where appropriate, eliminating off-street parking lots.

Metric 1.1.3.1: Within the Urban Cluster, reduce acreage devoted to surface parking lots by XX % by the year 20XX.

Metric 1.1.3.2: Within the Urban Cluster, reduce per capita parking spaces by X.X by the year 20XX.

Strategy 1.1.4: Reduce congestion within the Urban Cluster by capturing trips from surrounding rural areas, municipalities and adjacent counties through provision of park and ride facilities located within transit supportive developments in the Urban Cluster served by transit service that connects to regional employment and educational destinations (See also, Comprehensive Plan, TME, Policy 1.1.3(g)).

Metric 1.1.4.1: Build XX Park and Ride spaces by 20XX

OBJECTIVE 1.2 – Rural Transportation Mobility Districts

To protect and support agricultural activities, preserve the character of rural communities and encourage development in areas where infrastructure can be provided in a financially feasible manner, the unincorporated area outside the Urban Cluster as identified in the Comprehensive Plan shall be established as Rural Transportation Mobility Districts. Developments within Rural Transportation Mobility Districts are required to mitigate impacts to roadways within the Rural and Urban Transportation Mobility Districts as established in the adopted Mobility Fee.

OBJECTIVE 1.4 – Electric Vehicles

To provide for support for the continued electrification of the vehicle fleet.

Strategy 1.4.1: Develop a fleet electrification plan for Alachua County, including ultimate goal for fleet composition (100% EV), interim goals, and potential funding mechanisms (grants, public/private partnerships).

Metric 1.4.1.1: 25% EV by 20XX.

Metric 1.4.1.2: 50% EV by 20XX.

Metric 1.4.1.3: 75% EV by 20XX.

Metric 1.4.1.4: 100% EV by 20XX.

Strategy 1.4.2: Develop an electric vehicle charging infrastructure plan for Alachua County, including ultimate goal for charging infrastructure (e.g., # of Level 2 and 3 chargers; level of service/area metrics, countywide coverage, and coverage by 'equity focus areas'), interim goals, and potential funding mechanisms (grants, public/private partnerships).

Metric 1.4.2.1: 25% of Charging Infrastructure Goal by 20XX; XX% in Equity Focus Areas.

Metric 1.4.2.2: 50% of Charging Infrastructure Goal by 20XX; XX% in Equity Focus Areas.

Metric 1.4.2.3: 75% of Charging Infrastructure Goal by 20XX; XX% in Equity Focus Areas.

Metric 1.4.2.4: 100% of Charging Infrastructure Goal by 20XX; XX% in Equity Focus Areas.

Related Strategy: Fuel Efficiency for Portions of Fleet not Suitable for Electrification.

Strategy 1.4.3: Implement ordinance requiring new and leased municipal vehicles to meet minimum efficiency standards.

Metric 1.4.3.1: Achieve XX% reduction from baseline by 20XX.

OBJECTIVE 1.5 - Integrate Natural, Historic, and Scenic Resources

Avoid, minimize**,** *and mitigate* adverse impacts upon natural and historic resources and scenic quality during the siting, design, construction, operation, and maintenance of the transportation system. Use the transportation system to enhance natural and historic resources and scenic quality *where possible.*

Strategy 1.5.1: Within the Urban Cluster, integrate Safe Routes to Recreation and Conservation Area projects to support more sustainable transportation modes: walking, biking, transit.

Metric 1.5.1.1: XX% of Urban Cluster Conservation Lands for which Safe Routes to Recreation are provided (accessible via the AAA network).

Metric 1.5.1.2: XX Lane miles of bicycle and pedestrian infrastructure to be constructed in 'equity focus areas' annually to establish Safe Routes to Recreation within these areas.

Strategy 1.5.2: Outside the Urban Cluster, integrate Safe Routes to Recreation and Conservation Area projects where existing or planned multi-use paths are within one mile of an AAA facility (i.e., provide last mile AAA connectivity).

Metric 1.5.2.1: XX% of Conservation Lands outside the urban cluster for which Safe Routes to Recreation are provided (accessible via the AAA network).

OBJECTIVE 1.6 - Promote Bicycle and Pedestrian Transportation

Provide a system of safe, pleasant, convenient, and continuous bicycle and pedestrian network throughout the community.

Strategy T1.6.1: Develop, Implement, and Maintain a Countywide Bicycle-Pedestrian Master Plan.

Metric T1.6.1.1: Implement XX miles of AAA network per year.

Metric T1.6.1.2: X% of residents within the Urban Cluster live within .25 miles the County's AAA Network.

Metric T1.6.1.3: Achieve mode shares for walking and biking of X% and X%, respectively, within the Urban Cluster.

Metric T1.6.1.4: Achieve mode shares for walking and biking of X% and X%, respectively, outside of the Urban Cluster.

Strategy T1.6.3: Create a Countywide Safe Routes to School Program.

Metric T1.6.3.1: Coordinate with Alachua County Public Schools and/or the MTPO to hire and fund a Full-time Safe Routes to School Coordinator to plan, implement, and monitor a Countywide Safe Routes to School program.

Metric T1.6.3.2: Achieve mode shares for walking, biking, and bussing to school of X%, X%, and X%, respectively.

OBJECTIVE 1.8 - Network Safety

To provide a safe transportation network that supports the needs of all system users.

Strategy 1.8.1: Develop, Implement, and Maintain an Alachua County Safe Streets and Roads for All Action Plan.

> **Metric 1.8.1.1**: Achieve a XX% reduction in fatal and serious injury crashes by 2035 on the High Injury Network, as well as fatal and serious injuries involving pedestrians and bicyclists.
>
> **Metric 1.8.1.2:** Achieve a goal of zero fatal and serious injury crashes by 20XX.

OBJECTIVE 2.1 - Transit

To assist the providers of mass transit in Alachua County in their planning efforts through coordination, informational support and participation in planning efforts.

> **Strategy 2.1.1:** Design and construct dedicated transit lane(s) in conjunction with any new roadway projects consistent with the Rapid Transit Corridors map as well as expanding on existing projects to increase range of network. Dedicated Transit Lane(s) shall connect transit supportive development with regional employment, educational and entertainment centers (See also Comprehensive Plan, TEM, Policies 1.1.6.7 and 1.1.6.8).
>
> > **Metric 2.1.1.1:** XX miles of dedicated and/or express transit lanes – connecting transit-supportive development with regional employment, educational and entertainment centers – constructed/year.
>
> **Strategy 2.1.2:** Transition from providing new capital infrastructure for a multi-modal transportation network to providing frequent transit service along rapid transit corridors. The Twenty (20) year Multi-Modal Transportation Capital Improvements Program provides a schedule of the transition from development of the interconnected network to provision of transportation services. (See also Comprehensive Plan, TEM, Policies 1.1.5).
>
> > **Metric 2.1.2.1:** XX% residents within the Urban Cluster within 0.25, 0.5 and 1 mile of dedicated and/or express transit network – connecting transit-supportive development with regional employment, educational and entertainment centers – constructed.

Metric 2.1.2.2: XX% residents within the Urban Cluster served by Level of Service "B" transit (Based on Peak Hour Frequency of 15 minutes or less).

Metric 2.1.2.3: Achieve Level of Service "B" transit (Based on Peak Hour Frequency of 15 minutes or less) for 'equity focus areas' within the County by 20XX.

Strategy 2.1.3. Identify and implement 'first and last mile' improvements via the Countywide Bicycle/Pedestrian Master Plan.

Metric 2.1.3.1: XX% high ridership transit stops with connecting pedestrian and bicycle infrastructure, as well as appropriate crossing opportunities.

Metric 2.1.3.2: XX% transit stops with connecting pedestrian and bicycle infrastructure, as well as appropriate crossing opportunities.

Strategy 2.1.4: The County shall coordinate the provision of park and ride facilities with transit supportive developments located along Rapid Transit Corridors consistent with the Capital Improvements Element and associated maps. (See also Comprehensive Plan, TEM, Policy 1.1.6.9).

Metric 2.1.4.1: XX% Implementation of park and ride facilities adequate to support transit network identified in the Rapid Corridors Transit map, Comprehensive Plan by 20XX.

OBJECTIVE 2.3 – Rail Transportation

To promote an appropriate rail transportation system.

Strategy 2.3.1: The County shall coordinate with the Metropolitan Transportation Planning Organization, FDOT, and other applicable entities to conduct a feasibility study for a regional light rail system.

Metric 2.3.1.1: Complete light rail feasibility study by 20XX.

Strategy 2.3.2: Increase utilization of existing rail infrastructure and promote expansion of network for freight transit within the county to decrease reliance on truck freight transportation.

Metric 2.3.2.1: Increase tons of freight transported by rail by XX% annually.

Strategy 2.3.3: Assess feasibility and initiate passenger rail service within the County.

Metric 2.3.3.1: Conduct a planning study for rail passenger service, inclusive of intercity high-speed rail, assessing the equitability of existing infrastructure, and in collaboration with current rail facility owner, by 20XX to determine extent of rail transit network.

Metric 2.3.3.2: Public passenger rail service availability within the County by 20XX.

OBJECTIVE 3.0 - Other Topics

Telecommuting and Remote Work

Telecommuting may reduce congestion, parking demand, and VMT by decreasing the number of people commuting to work during peak hours.

Strategy 3.0.1: The County shall allow for appropriate staff to participate in remote work and telecommuting to decrease the necessity for daily commute.

Metric 3.0.1.1: XX Reduction in VMT among County Staff.

Implementation and Monitoring

While the above establishes a framework of general actions and goals in support of reducing GHG emissions through effective transportation and land use policies, an impactful plan provides baselines and goals for GHG reduction, ridership, and other metrics, allowing for more pointed goals and actions to be implemented.

Without detailed baselines established, monitoring the impact of policies and actions is difficult to achieve as is quantifying goals. Measuring progress can only be accomplished if sufficient data is collected and archived. The currently available baselines can show general progress as an overall inventory, however as previously discussed, more information from the transportation sector is

necessary to establish a complete overview of the County's current standing in regard to GHG emissions from this sector.

Defining a scale for the goals and actions will better allow for plan implementation and for a path forward to be defined to meet quantified objectives.

As a follow-up to this Climate Action Plan, it is recommended that further studies be undertaken to establish baselines, define metrics, and create a monitoring program for accountability.

What Can You Do?

Climate-Conscious Development

Developers and individuals who are developing their own land should keep environmental and climate consequences in mind before starting any project. [mention resources they can use for more information]

Use Public Transportation, Bike, or Walk

One of the most effective ways to lower your carbon footprint and the amount of greenhouse gasses emitted from transportation is by changing the way you move. A great option is to make use of Gainesville Regional Transit System's fleet of buses. To see the closest bus stops to you and track buses in real time, download the GNV RideRTS app.

Another option is to bike, walk, or even skate when traveling short distances. Electric bikes and scooters are a less physically demanding (and faster) option. Many of our multi-use trails and bike lanes connect to urban clusters for easier access to stores, restaurants and jobs.

We acknowledge that many places in Alachua County are not pedestrian or bike-friendly, giving people limited options to travel without a private vehicle. We are currently working towards more interconnected multi-use roadways to facilitate easier and more equitable access to modes of transportation other than private vehicles.

References

[1] (Winkler, Fuchs, Rounsevell, & Martin, 2021)

[2] (Land Use, Land-Use Change and Forestry)

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[6] Hoffman, J., Shandas, V., & Pendleton, N. "The Effects of Historical Housing Policies on Resident Exposure to Intra-Urban Heat: A Study of 108 US Urban Areas." *Climate* 8, no. 12 (2020). https://www.mdpi.com/2225-1154/8/1/12.

[7] Salazar-Miranda, A., Conzlemann, C., & Hoffman, J. "Long-Term Effects of Redlining on Climate Risk Exposure." *Nature Cities* (2024): 436-444. https://www.nature.com/articles/s44284-024-00076-y.

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