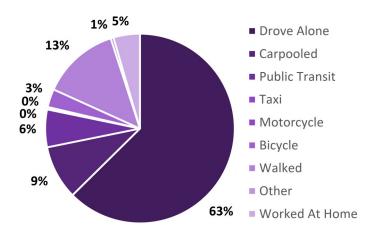# 🚌 Transportation and Land Use

Why Transportation and Land Use Is Important

The design of a city can limit or expand the mobility choices and opportunities available to its residents. Where and how we live, our mobility options to and from the places in our community we visit daily, and the related global impact of those decisions are all influenced by how our community is designed. The transportation systems we have access to and choose to use—including private and public vehicles, trains, and planes - can have significant impacts on the environment.

In Bloomington, the transportation sector accounts for 15.4% of citywide greenhouse gas emissions (2018 GHG Inventory). As shown in the commuter transportation pie chart to the right, the majority (63) of Bloomington residents drive to work alone. The remaining walk (13%), carpool (9%), use public transit (6%), telework (5%), or bicycle (3%).

Of the Bloomington workforce, the average commute-to-work time is 16.1 minutes compared to the State of Indiana average of 23 minutes while only 1.08% have "super commutes" in excess of 90 minutes compared to 1.82% for the State of Indiana. 91.1% of Bloomington households (26,626 households) live within ½ mile of transit routes and 24.1% (7,031 households) live near rush-hour high frequency transit routes.

Commuter Transportation in Bloomington

Legend:
- Drove Alone
- Carpooled
- Public Transit
- Taxi
- Motorcycle
- Bicycle
- Walked
- Other
- Worked At Home

Values shown: 1%, 5%, 13%, 3%, 0%, 0%, 6%, 9%, 63%

Continuing to improve the equity and sustainability of Bloomington's land use and transportation systems requires a focus on developing systems and networks that allow for greater choice in where residents live and work, as well as how they commute. Implementation of Complete Streets and a connected system of transit, bike and pedestrian infrastructure along with emphasis on neighborhood design that supports density and walkability. These strategies are lower cost solutions that will save households money while helping Bloomington reach its goal to reduce city-wide GHG emissions by 25% below 2018 levels by 2030.

Climate Change Considerations

⭐ Climate Impacts

This sector impacts climate change through the combustion of fossil fuels (gasoline, diesel, propane) for on-road cars and trucks and off-road vehicles and equipment.

⚠ Climate Hazards

Hazards to transportation and land use include increased damage to roads and transportation infrastructure due to increased freeze and thaw cycles, flooding, and extreme weather and temperatures.

🚌 Transportation and Land Use

Equity Considerations

- Increased opportunities for public transit and active transportation can help address health disparities for many at-risk populations.
- Affordable and reliable options for mobility for people with special transportation needs can significantly improve transportation equity. Populations with special transportation needs include older adults, youth, persons with disabilities, and persons with reduced incomes.
- Some neighborhoods in Bloomington have fewer housing and transportation options than others. This can limit people's choices in where they live and how they get to work or other activities. Households that rely on public transit service or who rent their home will be limited in where they can find housing that meets both needs.

Sector Goals

Sector goals are established to both support the City's Climate Action Plan in creating a climate resilient community and to reduce city-wide GHG emissions 25% below 2018 levels by 2030.

Sector goals related to GHG emissions reductions are designed to balance reduction across all sectors and achieve the overall emissions goals set forth for the community. The goals seek to strike a balance between achievability while also reaching -for improvement beyond business-as-usual.

As indicated in the introduction, the Climate Action Plan is intended to be a 10 year plan to be updated at the completion of that time. Consequently, the goals and strategies outlined in this section are intended to be achieved by 2030 unless otherwise noted.

Implementation of actions are anticipated to be initiated over 3 phases: phase 1 within 1-3 years, phase 2 within 2-5 years, and phase 3 within 4-8 years of CAP approval.
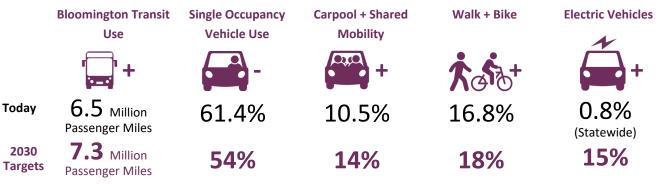
Goal TL 1
Decrease on-road vehicle miles traveled (VMT) by 8% of 2018 values.

Goal TL 2
Support and encourage electric vehicle (EV) adoption, achieve 30% of vehicles sold and 15% of VMT community-wide by 2030.

Mode Shift Targets Supporting Sector Goals

	Bloomington Transit Use	Single Occupancy Vehicle Use	Carpool + Shared Mobility	Walk + Bike	Electric Vehicles
Today	6.5 Million Passenger Miles	61.4%	10.5%	16.8%	0.8% (Statewide)
2030 Targets	7.3 Million Passenger Miles	54%	14%	18%	15%

🚌 Transportation and Land Use

Goal TL 1 Decrease on-road vehicle miles traveled (VMT) by 8% of 2018 values.

Strategy TL 1-A:

Reduce single occupancy automobile use by 8% of 2018 values.

The local transportation system is planned, funded, built, and maintained by a combination of local, state, and federal organizations, including the Bloomington-Monroe County Metropolitan Planning Organization (BMCMPO). The BMCMPO is a partnership of local governments and transportation service providers to execute federally funded transportation priorities outlined in the 2045 Metropolitan Transportation Plan. MPO members include the City of Bloomington, Monroe County, the Town of Ellettsville, Indiana University, and the Bloomington Public Transportation Corporation (Bloomington Transit), and Area 10 Agency on Aging. Additionally transportation projects are also funded, planned, and executed by City of Bloomington.

How We'll Measure Progress:
Reported "drive alone" commuter transportation data (US Census),
Annual VMT data reported (INDOT)

Co-Benefits of Strategy:

Reduced Costs

Improved Air Quality

Reduced Traffic Congestion

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-A-1	Update the City's Transportation Plan and Metropolitan Transportation Plan to incorporate reductions in carbon emissions and vehicle miles traveled, improved bicycle, pedestrian and transit service standards, and a policy requiring project evaluation to include criteria on climate, equity, economic benefit, health, safety, and cost effectiveness.	1
TL1-A-2	Establish a City of Bloomington employee Parking Cash Out benefit program to promote alternative commute options. Invite other public agencies and private sector employees to establish similar benefit programs. (https://www.bestworkplaces.org/pdf/ParkingCashout_07.pdf https://www.boston.gov/transportation/parking-cash-out)	1
TL1-A-3	Conduct a road pricing strategy study to explore options appropriate for the City of Bloomington that accurately capture the cost of driving and auto-centric infrastructure on city roads. Include a study on parking fees, demand-based fees, fee discounts for carpools and EV's and fuel efficiency charge options. Study should include national and international case studies and identify pilot projects for implementation.	2
TL1-A-4	Identify locations and partners to facilitate parking buyback programs for municipal and other employers in the city. (https://www.bestworkplaces.org/pdf/ParkingCashout_07.pdf https://www.boston.gov/transportation/parking-cash-out)	2
TL1-A-5	Determine appropriate locations for car-free pedestrian zones in high-density areas. Establish implementation based on Kirkwood pilot project observations and recommendations. Evaluate feasibility of limiting vehicles on certain days of the week and implementing congestion parking pricing, where appropriate.	2
TL1-A-6	Identify locations and partners to facilitate bike/walk commute, carpooling, EV ride share, and telecommuting options for municipal and other employers in the city.	3

🚌 Transportation and Land Use

Strategy TL 1-B:

Increase bicycle/pedestrian commuting from 17% to 18% by creating infrastructure to better encourage alternatives to vehicles.

How We'll Measure Progress:
Reported bike/walk commuter transportation data—US Census, Annual VMT data reported

The 237 miles of roadway within City limits is maintained by the City of Bloomington Public Works Street Division, with additional miles maintained by the Indiana Department of Transportation, Indiana University and the Monroe County Highway Department. For multimodal transportation, the the City of Bloomington Parks and Recreation Department manages over 15 miles of recreational and multi-use paths. The City Trails and Trees bond passed by City Council in 2018 is adding over seven miles of new trails to the transportation system, including the 7 line, RCA/ Powerline and a hiking loop at Griffy Lake. Additionally, several multi-use trails were constructed in 2020 in accordance with the BMCMPO's Complete Streets Policy which states that newly constructed roadways must be able to accommodate all types of roadway users. This strategy's goals for increased bicycle and walking utilization takes into account the city's current participation rates in commuters walking and biking is significantly higher than the national average of 3%.

Co-Benefits of Strategy:

Reduced Costs

Improved Air Quality

Improved Public Health

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-B-1	Increase funding adequate to maintain and improve the existing transportation system and to invest in transportation capital projects and programs that reduce carbon emissions and improve equity.	1
TL1-B-2	Implement the Multimodal Projects recommendations included in the 2019 City of Bloomington Transportation Plan and BMCMPO's Transportation Improvement Program.	1
TL1-B-3	Enhance bike and pedestrian travel options through creating protected bike lanes on key travel corridors and improved pedestrian efficiency through mobile route mapping. Conduct a study to identify and prioritize routes and establish an implementation plan and schedule.	2
TL1-B-4	Promote usage of the Sustainability Development Incentive: density bonuses or expedited review for development projects that have mixed-used zoning (residential, retail and office uses).	2
TL1-B-5	Provide additional earmarked funding and/or prioritization to projects with clear safety and VMT reduction goals. Accelerate 2019 City of Bloomington Transportation Plan, priority bicycle network (5-7 year), pedestrian network, balancing work load, and funding.	2
TL1-B-6	Encourage development of projects within mixed use districts that promote a combination of neighborhood-scale residential, commercial, and institutional uses with pedestrian-oriented design and multi-modal transportation options. Developments should maximize equity considerations and minimize community wide VMT by creating a more walkable, bikeable, and transit friendly community.	2
TL1-B-7	Conduct a Pavement Conversion study to identify underutilized paved areas and identify incentivization and implementation plan to convert identified areas to sustainable green space, and/or pedestrian and biking paths and support space.	3

🚌 Transportation and Land Use

Strategy TL 1-C:

Increase transit utilization by 10% over 2018 passenger miles by 2030 through infrastructure and frequency investments.

Bloomington Transit is the main local transit service in the City and operates 14 routes with a fleet of 49 buses (Transportation Plan, 2019). The Bloomington Transit Route Optimization Study indicated that increasing frequency, adding weekend service, and expanding service to the west side, to employment centers, housing complexes, and to Ivy Tech are top priorities for transit users. While existing services adequately meet rider's needs, some riders expressed dissatisfaction with service provision, especially that the transit schedules did not align with or satisfy travel needs. Given the current street network, improvements to bicycle, pedestrian, bus, and other supported modes of non-automobile travel along the major N-S and E-W corridors through the center of Bloomington were identified in the Transportation Plan as high-priority for investment.

How We'll Measure Progress:

Reported public transit commuter data—US Census, Annual VMT data reported

Co-Benefits of Strategy:

Enhanced Transit System

Reduced Traffic Congestion

Reduced Costs

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-C-1	Implement recommendations of the Bloomington Route Optimization Study.	1
TL1-C-2	Collaborate with Bloomington Transit and/or other providers to establish a Guaranteed Ride Home program. Guaranteed Ride Home is a free reimbursement program for registered commuters. Its purpose is to minimize the chance of being "stuck at work" due to limited transit schedules, like express routes that only travel in one direction at certain times during the day.	1
TL1-C-3	Identify and implement micro-transit options as appropriate to improve access to and accessibility of transit system for portions of the community not yet well served, particularly serving vulnerable populations.	1
TL1-C-4	Collaborate with Bloomington businesses to promote and expand on the Guaranteed Ride Home program, and expand participation in the Employer Sponsored Pass program for workplaces to purchase bus passes for employees, students, etc.	2
TL1-C-5	Improve efficiency, convenience, and reliability of bus service and infrastructure (dedicated lanes). Increase bus frequency, establish dedicated bus routes, and create high-frequency rapid transit in corridors to improve "time equity / parity" of the route transit time with what it would be to drive a car. Prioritization to be given on routes serving the city's many employment centers and areas with higher shares of vulnerable populations.	2
TL1-C-6	Prioritize transit-oriented development, as defined by the Bloomington Unified Development Ordinance, along existing and planned transit stops and along primary transit corridors.	3

🚌 Transportation and Land Use

Strategy TL 1-D:

Increase shared mobility (carpooling) utilization by 3% of work commute trips.

Shared mobility can broadly be as transportation services and resources that are shared among users, either concurrently or one after another. This broader definition includes micro mobility (bike sharing, scooter sharing); automobile-based modes (carsharing, rides on demand, and micro transit); and commute-based modes or ridesharing (carpooling and vanpooling). According to the US Census, workers commuting via carpooling has remained consistently near the 9% level since 2013. Increased carpooling for individuals requiring similar commute routes directly reduces annual VMT and GHG emissions.

How We'll Measure Progress:
Reported public transit commuter data—US Census, Annual VMT data reported

Co-Benefits of Strategy:

Improved Quality of Life

Improved Social Connectivity

Reduced Costs

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-D-1	Outline clear policies for electric bikes, skateboards and scooters on city bike lanes, paths and trails. Establish a communication campaign to effectively reach users.	1
TL1-D-2	Establish a subsidy / incentive for EV car sharing services with the goal of increasing car share coverage, particularly among vulnerable populations and those without current vehicle access. Qualifying programs must use plug in EV's or other law and no-carbon vehicle alternatives only.	1
TL1-D-3	Establish a communication campaign to effectively reach users to promote electric bicycle, skateboard, and scooter policies and promote use.	2
TL1-D-4	Establish a minimum of 2 EV car sharing locations in the City by 2023.	2

🚌 Transportation and Land Use

Strategy TL 1-E:

Encourage density and increase housing options and affordability with the goal of increasing gross density by 3% of 2018 values.

Residential density in the City of Bloomington ranges from 700 people per square mile to over 19,300, with an average of approximately 3,600 people per square mile. When well-planned, increased density means shorter commutes, better "walkability" between home and a range of destinations, reinforced public transit corridor utilization, increased housing near jobs and community resources, and overall increased quality of life for residents.

How We'll Measure Progress:
Reported population per square mile of developed land

Co-Benefits of Strategy:

Reduced Traffic Congestion

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-E-1	Encourage development of accessory dwelling units ("ADU") to create additional legal ADUs compatible with residential neighborhoods. This will add additional housing options for the City's workforce, seniors, families with changing needs, and others for whom ADUs present an affordable housing option.	1
TL1-E-2	Reevaluate minimum parking requirements in the Unified Development Ordinance as listed in Table 04-9: Minimum Vehicle Parking Requirements. Require parking for all modes of travel in project design, as appropriate.	1
TL1-E-3	Continue assessment and review of Unified Development Ordinance for identification of zoning modifications to encourage appropriate increased density, increased community "walkability," and decreased reliance on automobile use.	1
TL1-E-4	Conduct a Development Study to identify and prioritize available sites for redevelopment and in-fill development to advance City's walkability, bikeability, and transit utilization. Study should include a review of under utilized surface parking infrastructure capable of being redeveloped.	2
TL1-E-5	Issue competitive redevelopment Request for Proposals based on findings and recommendations of Development Study to encouraging high quality mixed use redevelopment on redevelopment, infill properties and existing surface parking lots within downtown district. RFP's should focus on equity, affordability, livability, and compliance/support of Climate Action Plan goals.	2
TL1-E-6	Implement form-based code along transportation corridors with goal of improved pedestrian experience (frequent access points, greenspace).	2
TL1-E-7	Establish an ordinance to require developers and landlords to "unbundle" parking from rent structures. Policy should focus on maintaining transit and transportation equity. Resource: https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/preliminary-investigations/final-pricing-parking-management-to-reduce-vehicles-miles-traveled-pi-a11y.pdf	2
TL1-E-8	Improve the city's average Walkscore from 43 to 60 by 2030. Collaborate with WalkScore for data analysis and identification of high-impact actions to increase score. (https://www.walkscore.com/professional/research.php)	3

Bloomington Climate Action Plan

🚌 Transportation and Land Use

Strategy TL 1-F:
Build Complete Streets; goal 10% increase in Complete Street coverage by 2030.

How We'll Measure Progress:
Reported Complete Street status

Complete Streets are streets designed and operated to enable safe use and support mobility for all users of all ages and abilities and all modes of travel including pedestrians, bicyclists, scooter riders, public transportation riders, and drivers of other motorized vehicles. Complete Street strategies address a wide range of elements, such as sidewalks, bicycle lanes, bus lanes, public transportation stops, crossing opportunities, median islands, accessible pedestrian signals, curb extensions, modified vehicle travel lanes, streetscape, and landscape treatments.

Co-Benefits of Strategy:

Improved Quality of Life

Improved Social Connectivity

Reduced Costs

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-F-1	Review, modify, and adopt a revised BMCMPO Complete Streets Policy to add criteria and review procedures for City funded projects. Include in the review and modification an assessment of national best practices in support of achieving the goals of the Climate Action Plan. Resource: 2018 MPO Complete Streets Policy	1
TL1-F-2	Conduct a Sidewalk and Bike Path Quality Assessment and Master Plan to identify needs to accelerate bike paths, building sidewalks, crosswalks, and other walking infrastructure, particularly in high-need areas and areas serving vulnerable populations. Create an implementation plan establishing annual increases in the total miles of sidewalks, on-road bicycle lanes and multi-use paths. Resources: 2020 City Council Sidewalk Reports, 2018 City Sidewalk, Curbs, and Accessible Curb Ramps Condition Report	1
TL1-F-3	Establish a method for projecting the lifecycle carbon emissions of land use and transportation investments associated with the City's Transportation Plan and Transportation Improvement Program including consideration of embodied energy, operations and maintenance (see City of Eau Claire WI Land Use Carbon Calculator).	2
TL1-F-4	Adopt project review criteria for City transportation projects that align with and complement the MPO Complete Streets policy and prioritize low carbon modes of transportation, including, but not limited to pedestrians, bicyclists, and public transit infrastructure.	2
TL1-F-5	Align City's Transportation Plan and Transportation Improvement Program regional mode share targets with carbon reduction targets and encourage the development of mode share goals specific to the varying community needs and transit infrastructure around the region.	2
TL1-F-6	Explore establishing a tiered bike infrastructure improvement approach which include adding trees and green stormwater infrastructure whenever possible/ prioritized.	3

🚌 Transportation and Land Use

Strategy TL 1-G:

Increase pedestrian access and safety.

Walking is a basic and common mode of transport in all societies around the world. Virtually every trip begins and ends with walking. Beyond the environmental and GHG emission reduction benefits, increased walking has well established health benefits such as increasing physical activity that may lead to reduced cardiovascular and obesity-related diseases. According to the World Health Organization "Pedestrian safety measures improve walking environments and contribute to urban renewal, local economic growth, social cohesion, improved air quality and reduction in the harmful effects of traffic noise."

How We'll Measure Progress:
Reported walking and biking commuter data, reported pedestrian and bike accidents

Co-Benefits of Strategy:

Safer Streets

Improved Mobility

	Actions	Implementation Phase
TL1-G-1	Implement improvement recommendations of the 2019 Transit Stop Safety and Accessibility Assessment.	1
TL1-G-2	Create and implement a 5 year transportation funding plan that matches the MPO Metropolitan Transportation Plan and 2019 Transportation Plan.	1
TL1-G-3	Establish an implementation plan for the redesign of roads to be safer for people including road width reductions on all four-lane city streets as well as on multi-lane on-way streets, installing curb extensions, and refuge medians.	2
TL1-G-4	Develop a Safe Routes To Schools Implementation Plan (SRTS) for all schools within the City. Plan implementation should focus on infrastructure and policy changes as well as education and encouragement.	2
TL1-G-5	Prioritize transportation funding for Vision Zero engineering improvement projects paired with VMT reduction strategies to create safe streets for people walking, biking and riding transit.	2

🚌 Transportation and Land Use

Strategy TL 1-H:
Reduce commercial/industrial vehicle use by 8% of 2018 values

Commercial and Industrial vehicle use makes up an estimated 10% of city-wide VMT according to the City of Bloomington 2018 Greenhouse Gas Inventory. Utilization of low-carbon goods movement alternatives and fleet utilization optimization can support the reduction of commercial vehicle miles traveled and increase commercial/industrial profitability.

How We'll Measure Progress:
Reported commercial and industrial VMT

Co-Benefits of Strategy:

Improved Air Quality

Reduced GHG Emissions

	Actions	Implementation Phase
TL1-H-1	Establish an Electric Vehicle Suitability and Fleet Optimization Study utilizing fleet monitoring technology to assess fleets for alternative fuel suitability as well as identify fleet optimization management options for reduced VMT. (https://www.geotab.com/fleet-management-solutions/evsa/) Include City's fleet in program efforts. Goal: Achieve 6 fleet assessments annually.	1
TL1-H-2	Collaborate with the Bloomington Chamber of Commerce, Downtown Bloomington, community businesses, and Indiana University to conduct a study identifying the advantages/disadvantages, and lessons learned by businesses in the community related to use of video/remote meetings in lieu of business travel for meetings and events. Based on findings of the study, establish, distribute, and promote a "best practices" guide outlining the opportunities for operational savings and reduced vehicle use and encouraging effective, long-term increased remote meeting technologies. Establish a freight committee as part of an existing MPO committee as noted in the Metropolitan Transportation Plan.	2
TL1-H-3	Collaborate with partners including Indiana Railroad, Monroe County, and Bloomington Chamber of Commerce, and Indiana University to assess railroad infrastructure and Bloomington business community transportation needs, identify rail freight system and service improvements to increase utilization and encourage rail system owners to make improvements.	2
TL1-H-4	Establish a freight committee as part of an existing MPO committee as noted in the Metropolitan Transportation Plan.	2

🚌 Transportation and Land Use

Strategy TL 1-I:

Reduce citywide off-road and lawn equipment annual emissions to below 35,000 metric tons. (equipment includes gas and diesel powered construction equipment, recreational equipment, and lawn equipment)

Emissions from off-road equipment like construction and lawn equipment comprise a significant portion of fossil fuel consumption in Bloomington. Reduction of fossil fuel off-road equipment use is associated with improved emissions as well as improved air quality, particularly for the users of the equipment. https://www.edmunds.com/car-reviews/features/emissions-test-car-vs-truck-vs-leaf-blower.html

How We'll Measure Progress:
City electric off-road equipment adoption rate, policy adoption status

Co-Benefits of Strategy:
Improved Air Quality
Reduced GHG Emissions

	Actions	Implementation Phase
TL1-I-1	Introduce a policy to replace City off-road and lawn equipment with electric and low-carbon fuel alternative options at the time of replacement with traditional internal combustion engine (ICE) as optional requiring proof of need. Establish emissions standards, testing and biofuel preference for any combustion vehicles remaining in the equipment fleet. Encourage County, School District, and Indiana University to develop and implement their own policies.	1
TL1-I-2	Develop an incentive program to convert fuel-burning lawn equipment such as gas-powered lawn mowers and blowers to electric. Coordinate with Duke Energy for support and identification of additional rebate programs to promote electric yard equipment.	2
TL1-I-3	Establish a gas powered lawn equipment phase-out ordinance transitioning to lawn equipment powered by electricity or alternative clean fuels and decreased noise pollution levels.	2
TL1-I-4	Develop an incentive program to convert fuel-burning lawn equipment such as gas-powered lawn mowers and blowers to electric. Coordinate with Duke Energy for support and identification of additional rebate programs to promote electric yard equipment.	2

Goal TL 2 Support and encourage electric vehicle adoption, achieve 30% of vehicles sold and 15% of VMT community-wide by 2030.
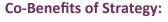
Strategy TL 2-A:

Transition City fleet to electric vehicle and alternative fuels (hybrid/ hybrid electric, plug in hybrid electric).

Adoption of electric and other alternative no-fossil-fuel vehicles is a core requirement of reducing GHG emissions associated with City operations. Beyond reduced emissions, electrification of municipal fleets have a number of benefits, including improved air quality, decreased fuel costs, decreased maintenance requirements, and even improved driver safety.

How We'll Measure Progress:
Reported number of electric vehicles within fleet

Co-Benefits of Strategy:

Reduced Costs

Reduced Pollution

Improved Air Quality

Reduced GHG Emissions

	Actions	Implementation Phase
TL2-A-1	Introduce a policy to replace City fleet vehicles and buses with electric and hybrid options at the time of replacement, and require emissions standards, testing and biofuel preference for any combustion vehicles remaining in the fleet.	1
TL2-A-2	Conduct a municipal fleet inventory and EV Implementation plan. Effort to identify opportunities for electrifying, right-sizing, and improving overall efficiency of vehicles to meet CAP Goals. Include implementation recommendations to incorporate EV's through right-timing purchases with a planned vehicle-replacement schedule.	2

🚌 Transportation and Land Use

Strategy TL 2-B:

Support and encourage electric vehicle and alternative fuel (hybrid/ hybrid electric, plug in hybrid electric) vehicle adoption citywide.

Electric vehicles (EVs) are a critical component of meeting Bloomington's long-range emission reduction goals, in fact, meeting those goals will not be possible without a transition to alternative fuel vehicles. While no greenhouse gas emissions directly come from the "tailpipes" of EV, short-term transition to EVs in Bloomington will have limited overall emissions decrease due to the relatively high emissions factor associated with Bloomington area electrical generation which is still significantly produced from fossil fuels. However, the GHG reduction benefits of EVs will continue to rapidly increase in the Bloomington area as electric grid goals are achieved. Additionally, other co-benefits of EV transition such as lowered vehicle operation costs and improved local air quality will be leveraged even in early transitions.

How We'll Measure Progress:
Registered EV vehicles citywide

Co-Benefits of Strategy:

Reduced Costs

Reduced Pollution

Improved Air Quality

Reduced GHG Emissions

	Actions	Implementation Phase
TL2-B-1	Coordinate with Monroe County and State of Indiana to establish an annual auto registration reporting process to monitor the adoption rate of electric vehicles in the City.	1
TL2-B-2	Create an Electric Vehicle (EV) Action Plan to guide access to chargers on City property and citywide, explore alternative technologies like smart cable technology and streetlight/EV charger integration, address barriers to charging for garage-free homes and rental properties, increase use of EVs in car sharing programs, assess options to lower EV and EV charger implementation costs, and recommend EV charging station requirement amendments to the Unified Development Ordinance to support EV plan. Coordinate with ERI or Purdue to establish tracking of EV registration within the community.	1
TL2-B-3	Support electric car charging station infrastructure in new commercial and multifamily housing during the initial construction phase by providing information on appropriate conduit and electrical panel considerations as a part of permit application process. Collaborate with electric utility to develop and provide information on utility, local, State, and Federal incentives supporting EV infrastructure.	1
TL2-B-4	Incentivize the purchase of electric vehicles through rebates on vehicles and/or residential chargers. Work with utility company on this program. Explore expansion of current Duke program: https://www.duke-energy.com/energy-education/energy-savings-and-efficiency/electric-vehicles/ev-initiatives	2
TL2-B-5	Incentivize electric vehicle sales by providing low/no cost charging at city owned parking lots and working with employers to provide workplace charging and multi-family property owners to provide rental housing charging.	2
TL2-B-6	Explore incentive opportunities to advance installation of EV infrastructure at workplace and multi-family locations.	2

🚌 Transportation and Land Use

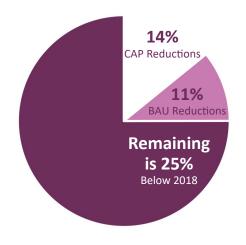## Planned Transportation and Land Use GHG Emission Reductions

Planned Sector Emission Reductions Through 2030

The strategies and actions included in this section of the Climate Action Plan are projected to reduce the city's annual GHG emissions by 28,037 metric tons (MT) by 2030 - a 14% reduction over 2018 levels. Changes in business-as-usual impacts are anticipated to reduce an additional 21,437 metric tons for a total community wide transportation sector reduction of 25% over 2018 levels.

This is equivalent to eliminating **970 million** cubic feet of man-made greenhouse gas atmosphere annually by 2030.

Sector Emissions Reduction below 2018 Achieved by 2030

The total change to sector emissions include CAP Plan reductions as well as BAU emission changes as follows:

14%
CAP Reductions

11%
BAU Reductions

Remaining is 25%
Below 2018

Individual Strategy Annual Emission Reductions by 2030

Below are the CAP Plan reductions by strategy for this sector:

Strategy	Annual GHG Reductions by 2030
Strategy TL 1-A: Reduce single occupancy automobile use by 8% of 2018 values.	**4,666 MT**
Strategy TL 1-B: Increase bicycle/pedestrian commuting from 17% to 18% by creating infrastructure to better encourage alternatives to vehicles.	**149 MT**
Strategy TL 1-C: Increase transit passenger mile utilization from 6.7 million to 7.3 million through infrastructure and frequency investments.	**151 MT**
Strategy TL 1-D: Increase shared mobility (carpooling) utilization from 9% to 12% of commuters.	**372 MT**
Strategy TL 1-E: Encourage density and increase housing options and affordability; target: increase gross density by 3% of 2018 values.	**170 MT**
Strategy TL 1-F: Build Complete Streets; target 10% increase in complete street coverage by 2030.	(included)
Strategy TL 1-G: Increase pedestrian access and safety.	(included)
Strategy TL 1-H: Reduce commercial/industrial vehicle use by 8% of 2018 values.	**1,439 MT**
Strategy TL 1-I: Reduce citywide off-road and lawn equipment annual emissions to below 35,000 metric tons. (equipment includes gas and diesel powered construction equipment, recreational equipment, and lawn equipment)	**15,202 MT***
Strategy TL 2-A: Transition City fleet to electric vehicle and alternative fuels (hybrid/ hybrid electric, plug in hybrid electric).	**133 MT**
Strategy TL 2-B: Support and encourage electric vehicle and alternative fuel (hybrid/ hybrid electric, plug in hybrid electric) vehicle adoption citywide.	**5,756 MT**

* Transportation and Land Use Reduction totals under Planned Sector Emission Reductions Through 2030 exclude emissions and savings from offroad transportation. Offroad transportation emissions were modeled at 50,202 MTCO2e in the 2018 inventory, but further study is needed to verify these emissions for Bloomington. The offroad transportation climate strategy aims to reduce these to 35,000 MTCOe2 or less by 2030.

🚌 Transportation and Land Use

Estimated Cumulative Economic Savings

Implementing many of the measures in this plan, such as reduction of single-occupancy auto use, can save money for the community. The estimated community savings of the goals for this section include:

Goal TL1 Decrease VMT by 8%:

$81,512,30
$958
per capita

+

Goal TL2 Increase EV utilization to 15% of VMT

$20,424,533
$661
per household

=

Estimated Cumulative Savings Potential*

$101,936,832
$1,198
per capita

* Savings for Goal TL1 are based on multiplying the estimated vehicle miles saved by AAA calculated auto use cost per mile and 2020 Bloomington Transit pass costs.   Savings for Goal TL2 are calculated based on multiplying the estimated vehicle miles switching from gas/diesel fuel vehicle by the sum of the AAA calculated gas/diesel auto use cost per mile subtracting the EPA estimated EV auto use cost per mile. See Appendix for Cumulative Potential Cost Savings Assumptions and data sources.

🚌 Transportation and Land Use

What You Can Do

- Merge 2 or more errands into a single driving trip.

- Join a carpool or use ridesharing to get to work, a group activity or event.

- Walk to work, an appointment, a group activity or event.

- Ride a bike, electric bike or scooter to work, an appointment, a group activity or event.

- Take public transit to work, an appointment, a group activity or event. Plan your trip here: https://bloomingtontransit.com/maps-and-schedules/

- With a family member or friend, take public transit to a group activity or event.

- Buy or tune up a used bike.

- Sell or donate a bike (in good condition) you aren't using.

- Buy or lease a hybrid or electric vehicle, or a gas-powered one that averages more than 35 mpg.

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