

Built Environment

TRANSPORTATION

Focus Area Definition

[draft] The form and function of transportation systems: private vehicles, public transportation, and walking and biking infrastructure. Greenhouse gas emissions reduction through design of clean and efficient transportation systems.

Vision

- Commuter bike trips-11%
- Combined bike/ped-35%
- Transit trips-35%

<https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/PublicTransportationsRoleInRespondingToClimateChange2010.pdf>)

Goals and Strategies

1. **GOAL: Promote multi-modal transit:** Increase bike trips to 11%, bike-ped trips to 35% and transit trips by to 35%
 - a. Strategy: Improve public transit
 - i. Ensure connectivity of system between residential, business, retail, jobs, and other urban centers
 1. Develop city facilities that are teleconference sites and provide these (for a fee) to the public
 2. Charge for parking at the airport
 - ii. Partner transit with CPS, housing providers, etc. to increase ridership/efficiency
 - iii. Work to improve public perception and knowledge of public transit
 - iv. Promote Colt rail line use for short transits
 - b. Strategy: Increase bikeability/walkability of city/attractiveness of biking walking
 - i. Incentivize increased density of downtown and other areas
 1. Increase family housing options by ____
 2. Increase public transit connectivity of residential areas
 3. Increase infill by __%
 4. Mix zoning up between residences and workplaces
 5. Encourage smaller structures
 6. Maximize benefit of Green Spaces
 - a. More tree canopy
 - b. Less mowed areas
 - ii. Improve safety of bikers
 1. Discourage texting/talking on phone while driving-
 2. Paint the bike lanes white
 3. More bike lanes with protective dividers
 4. Education for car drivers to teach them bike rules of the road
 - iii. More connectivity between trails/roads/lanes
 - iv. Reduce surface parking options

1. End parking minimum laws (<https://www.strongtowns.org/parking/>)
- v. Restrict trucks and suvs from diagonal parking on Broadway
- vi. Increase locations prioritized for TOD(?)
- 2. GOAL: Reduce GHG emissions from vehicle trips X% by YYYY**
 - a. Strategy: Improve efficiency of transportation system:
 - i. Establish a Transportation Efficiency Manager position
 - ii. Require carbon assessment of any new road project over \$5 Million
 - iii. Replace traffic lights with roundabouts where feasible.
 - iv. Smaller- more efficient buses
 - v. Increase efficiency of trash collection
 - b. Strategy: Promote low to zero emissions vehicles
 - i. All electric vehicle fleet for city/CPS
 - ii. Increase number of electric refueling stations
 - c. Strategy: Improve resilience and reduce emissions impact of transportation infrastructure
 - i. Use recycled and local materials in road construction
 - ii. Solar roads/heat exchanger technologies for snow/ice mgmt
 - iii. Reduce mowed area
 - d. Support/develop alternative funding mechanism/approach. Current system (fuel tax) does not match CAAP/Sustainability/GHG reduction goals

From the Columbia Strategic Plan:

Improve transit ridership through focus of resources on key geographic areas

HOUSING, BUILDINGS, DEVELOPMENT

Focus Area Definition

[draft] The structures in which we live, work, play and learn. Housing and buildings can be designed to maximize energy efficiency and reduce the consumption of electricity and natural gas. The role of how developments are planned, built, and maintained in emissions reduction and resilience.

Vision

Our Communities/built environment will be connected (through sustainable means of transportation), equitable, diverse and supportive of a robust economy. Climate change will be addressed with publicly supported mitigation resilience and adaptation efforts.

We are more mindful and thoughtful about how and where we build.

Goals and Strategies

- 1. GOAL: Reduce emissions associated with building energy use**
 - a. Strategy: Maximize use of Renewable Energy
 - i. Explore micro-grids and resilience hubs
 - ii. Ensure equitable implementations of grid resilience
 1. Partner vulnerable neighborhoods with NGOs to develop Community center resilience hubs.
 - iii. Mandate renewable energy generation on-site for all new buildings

- iv. Maximize solar orientation of new construction
- v. Remove fossil fuels from residential buildings
- vi. Promote electrification of energy use
- b. Strategy: Encourage increased Energy efficiency in new and existing buildings
 - i. All new City buildings be net-zero by 2025
 - 1. Adopt municipal procurement policies that allow for consideration of life-cycle costing
 - ii. All new residential building (including rentals) be net zero after 2035
 - iii. Increase power of renters (**protecting vulnerable populations**)
 - iv. All new Commercial Industrial buildings be net zero by 2025
 - v. Develop, implement and enforce existing building (residential, commercial, industrial) climate impact standard.
 - 1. Support and expand existing Commercial and Residential programs
 - a. Water & Light
 - b. Stormwater
 - c. Como Wild Yards
 - d. CDBG/HOME
 - 2. Require and provide incentives for rating/Scoring of Properties
 - a. Categories: Efficiency, Energy use, Local materials, Resiliency, Consumption radius: how much of critical materials/energy/labor come from within a certain distance, Local economic impact.
- c. Strategy: Implement programs, codes and design standards that promote efficiency, renewable energy and account for anticipated future conditions
 - 1. Use projected conditions for heat, rainfall, snowfall, etc. in related building/site design standards (e.g. insulation, gutter/downspout/swale size, roadway design, roof loading) (Shane Creech/Jack McManus)
 - a. ?What is the potential impact on flood insurance availability and cost if we fail to control runoff?
 - 2. Make sure programs, codes and design standards available to all types of community members
 - a. Age
 - b. Race
 - c. Business
 - d. Residential
 - e. Income status
 - 3. Fee reduction for 'stretch codes' in efficiency
 - 4. Energy efficiency requirements for landlords
 - 5. Encourage District heating and cooling (more efficient)
 - 6. Work with developers to reduce their waste
 - a. Mandatory recycling of lumber, nails, etc.
 - 7. Improve refrigeration training and certification
 - 8. Require all roofs to be white or have minimum specified reflectance light colored roofs

9. Stormwater/Rain Garden requirements for multi-family construction
2. **GOAL: Prepare infrastructure and services for changing climate based on new and current technology**
 - a. Strategy: Reduce peak time fossil fuel/energy use
 - i. Smart meters
 - ii. Advanced metering Infrastructure
 - iii. On demand hot water heater use
 - iv. Rate structures
 - b. Strategy: Identify X# of technologies that are most probable or relevant for use in Columbia
 - i. Prepare streets and other infrastructure for autonomous vehicles
 - c. Strategy: Construct more cooling centers and improve effectiveness of existing heat related services
 - i. Extended hours of operation
 - ii. Resilient transportation connection to cooling centers
 - iii. Increased education on their locations
 - iv. Increased availability of A/C units in low-income housing/rental units
<http://www.columbiapowerpartners.com/residential/residentialprograms/window-air-conditioner-exchange-2/>
 - d. Strategy: Increase/improve stormwater infrastructure (to decrease runoff and pollution) in new and existing developments
 - i. Promote regional collaboration for Centralized stormwater/areal flooding management approaches
 - ii. Address new and existing stormwater management issues
 - iii. BMP's (and how to enforce them)
 - iv. Decrease impervious surfaces
 - v. Construct permeable parking lots
 - vi. Permit gravel driveways and passages with minimal daily vehicular traffic
 - e. Strategy: Explore the possibility of "Best Practices" Incentive Programs that help homeowners implement improvements to private property (i.e. permeable driveways, rain gardens, and others—related to adaptation). (Barbara)
3. **GOAL: Consider changes to zoning, regulation and incentivizing best practices in relation to flooding, flood plains, stormwater, impervious surfaces and urban agriculture to mitigate and adapt to the predicted increase in droughts, severe storms, increased precipitation and flooding.** (Leah Christian)
 - i. Put off-limits some areas that in the past been considered for development to address increase in heavy downpours, or consider limiting development to the 200-year flood zone (rather than the 100-year flood zone). Consider increasing the environmental easements around streams and creeks. (C. Amparan)
 - ii. Also consider potential increased investment in community land trusts. (Leah Christian)
 - iii. multi-family housing, improved public transit, and a more robust multi-modal transportation system may be needed to contain urban sprawl to approximately an 5.5-mile radius around the city [2].