City and County of Denver	POLICY	Department of Transportation & Infrastructure (DOTI)
Subject: Sustainability & Resiliency Policy		
Approved by: Amy Ford **Signature:** 		**Title:** Executive Director
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Authority: Division of Public Works- Part 3, Article II, Charter of the City and County of Denver.		

POLICY OWNER

This policy is owned by the Executive Director of the Department of Transportation and Infrastructure.

POLICY CONTACT

The Chief Strategy and Innovation Officer for DOTI is the main point of contact for this policy.

SUPERSEDES PREVIOUS POLICY

N/A

GENERAL

This policy is intended to establish the Department of Transportation and Infrastructure's (DOTI) Sustainability and Resiliency Policy as a supplement to the Environmental and Financial Sustainability strategic objectives outlined in DOTI's SERVICE Policy.

PURPOSE

DOTI, through its employees, enhances the quality of life in Denver by safely and efficiently delivering effective, high quality, environmentally sustainable and equitable public infrastructure and services.

The purpose of this Sustainability and Resiliency Policy is to establish DOTI's role in addressing climate change through mitigation of greenhouse gas emissions and integrating climate adaptation, resiliency and sustainability practices into the department's operations, projects, and programs, while aligning with the SERVICE Policy, Strategic Transportation Plan (*Denver Moves Everyone*), *One Water*, the *Waste No More* Ordinance, the *Sustainable Resource Management Plan* and other strategic initiatives as it relates to climate and sustainability citywide. As of September 2024:

- Transportation represents approximately 31% of total GHG emissions, is making transportation the second largest source of GHG emissions in Denver. While total GHG emissions in Denver have decreased over the past 10 years, transportation-related emissions have increased, with additional emissions being released as part of the construction, maintenance, and repair of transportation infrastructure.
- Solid waste contributes directly to greenhouse gas emissions through the generation of methane and nitrous oxide from solid waste combustion facilities, of which both greenhouse gases have high global warming potential: methane has 21 times the warming potential of carbon dioxide and nitrous oxide has 310 times the warming potential.
- Waste and Stormwater Infrastructure is a significant source of methane (CH_4) emissions as part of infrastructure operations, maintenance and construction activities, but also present a significant opportunity for our waterways.

The effects of past/present emissions have a significant impact on the city and the communities it serves, including the increasing number and intensity of heat waves, which contribute to drought and urban heat island with significant human health consequences; and the increasing number and severity of storms, potentially resulting in flood level conditions more frequently.

- Buildings and related facilities represent approximately 64% of greenhouse gas emissions in Denver and are the places where we live, work, and spend 90% of our time. Working towards making all new and all existing buildings and homes net zero emissions, more sustainable, and more resilient are the key to sustainable, resilient, and vibrant future for Denver.

DOTI recognizes the department's work has significant influence on all these emissions sources through the way and type of infrastructure built, operational policies, and service program offerings.

Effects of climate change, including extreme weather events, urban heat, unpredictable water resources, and air pollution will continue to challenge Denver until significant actions are taken to encourage and enable the deployment of low-carbon fuels and power sources, reduce emissions, improving energy and resource efficiency, and decreasing waste. DOTI recognizes the department's work has significant influence on the City's resiliency to climate change impacts through its placement and design of critical infrastructure and key service program offerings that affect the community's overall adaptability.

SCOPE

This Policy is applicable to all DOTI employees, contract employees, contractors, and consultants, and shall guide department related procedures or processes and the resulting action programs are regularly reviewed and updated on an as needed basis to meet the evolving needs of DOTI and the City and County of Denver.

POLICY

This policy will focus on laying the foundation and providing the framework and lens by which we think, educate, and update practices of the DOTI Team relating to the challenges and solutions as it relates to addressing climate change, with the ultimate outcome that all DOTI's projects and programs be selected and prioritized considering and ensuring measurable contributions to climate mitigation and resilience. Specific climate and sustainability considerations will need to be integrated at every stage of DOTI's work, including project selection, cost development, procurement, planning, design, construction, operation, and maintenance. As such, the **GREENER** actions below represent a pragmatic approach for how we will progress towards integrating climate and sustainability considerations across all elements of DOTI. These **GREENER** actions include:

- **Greenhouse Gas Emissions Reductions Targets** – Develop a sustainability review process for determining and quantifying DOTI's current carbon footprint impact and subsequently establish a clear, achievable, and science-based GHG emissions reduction for all DOTI's work, including full-lifecycle carbon footprint reduction within our capital planning, procurement, planning, design, construction, operations, maintenance and other activities. DOTI's annual and six-year capital plans and budget asks shall reflect clear progress towards achieving these GHG emissions reductions targets.
- **Resiliency** – Develop a comprehensive approach to integrating climate adaptation and resiliency components into capital and program planning and delivery, first by evaluating data-driven risk and vulnerability assessments associated with best available climate data and subsequently incorporating elements that actively address heat impacts, extreme weather, water resource and quality changes, and any other known local climate impacts into all work portfolios. The resiliency implementation approach shall be designed to ensure holistic water planning, infrastructure investments focused on highest vulnerability communities first, and natured-based solutions and green infrastructure where feasible.

- **Education** - Educate employees on sustainability, climate mitigation and resiliency by providing relevant training and development opportunities that will help our employees understand the impact our project selection, procurement, planning, design, construction, operation, and maintenance activities have on the environment.
- **Engagement** - Engage the Office of Climate Action, Sustainability and Resiliency, along with other internal and external partners to expand the impact of our sustainability initiatives while advancing shared mayoral/citywide climate and sustainability goals.
- **Nexus** – Integrate DOTI's various sustainability and climate focused works, as well as other City climate objectives and ordinances, federal laws, state regulations and other statutory mandates under one governance structure to ensure alignment, consistency, and compliance; take aggressive steps to put DOTI in a position to be competitive for climate-focused funding and grant opportunities; and strive to make DOTI a nationally recognized leader and innovator in reducing actual climate impacts in public works, transportation infrastructure, and public services.
- **ENVISION Sustainability Framework** – Specific climate and sustainability components shall be identified through the Institute for Sustainable Infrastructure (ISI) ENVISION sustainability framework or a similar tool selected or created by DOTI that demonstrate climate mitigation and climate resiliency. Climate and sustainability focused clearance checks will be established for all phases of project delivery including project planning, procurement, design, construction, operation, and end of life management. as identified by this policy.
- **Resource Planning**– Develop an action plan focused on improving and streamlining our operations for efficient and optimal resource and material use, elimination of waste, asset performance, asset resiliency to climate-related disruptions, maintenance efficiency, asset longevity, construction and demolition material impact and recovery, building space utilization, and any other metrics deemed critical for carbon footprint management and capacity to adapt to climate changes where feasible and in alignment with DOTI's SERVICE Policy. The resource action plan will include a process for full lifecycle assessments of DOTI-owned assets that include: evaluation of embodied carbon and sustainability characteristics of construction activities, as well as subsequent development of steps to reduce embodied carbon and enhance sustainability performance in product selection, project designs, and construction equipment and procedure; and evaluation of construction and demolition waste, as well as subsequent development of steps to divert 80% of concrete, asphalt, clean wood, scrap metal and corrugated cardboard.

To advance the principles and actions in this policy, DOTI will develop a Charter with specific objectives and KPIs for achieving policy actions, and subsequently an Implementation Action Plan that:

- Creates permanent standards & processes within three years for ongoing implementation of all GREENER actions.
- Can provide equitable outcomes for all Denverites.
- Mitigates and manages relevant risks.
- Is financially responsible.
- Includes effective monitoring and due diligence protocols.

DOTI is committed to issuing a progress report on an annual basis in alignment with leading standards and frameworks. DOTI is committed to meeting its GHG emissions reductions goals and targets and enhancing the climate resiliency of Denver's infrastructure and services. By doing so, DOTI can help protect the environment now and for future generations by continuously improving our management systems and operating efficiency while developing and investing in technology to reduce DOTI's environmental footprint.

DEFINITIONS

Sustainability — Development and maintenance of transportation, wastewater, and solid waste systems that ensures long-term environmental, social, and economic well-being of the Denver community, with equity as a foundational theme guiding actions.

Emissions Forecast — A predictive assessment of future greenhouse gas emissions, projecting levels over a specified period based on current trends, policy scenarios, and anticipated socio-economic factors. A forecast should include

baseline emissions, assumptions regarding technology, policy actions, and other factors, and implications at specified future years.

Science-based Targets — A commitment to greenhouse gas emissions reductions that align with the latest climate science, generally considered to be in support of limiting global warming to well below 2 degrees Celsius above pre-industrial levels, as outlined in the Paris Agreement, with efforts to limit it to, and never exceed, 1.5 degrees Celsius.

Climate Mitigation — Reducing or preventing the emission of greenhouse gases (GHGs) into the atmosphere or enhancing their removal to mitigate the impacts of climate change. Transportation climate mitigation strategies should encompass all aspects of the transportation sector within Denver's influence, including emissions resulting from the construction and maintenance of infrastructure as well as operation of on-road and off-road vehicles.

Climate Resilience – The capacity of City infrastructure, operations, and systems to cope with a climate event in ways that maintain essential function, identity, structure, and building the capacity for adaptation, learning and transformation. Resilient systems are better able to recover quickly from climate-related disruptions and maintain quality of assets and services.

Climate Adaptation — is the process of finding ways to prepare Denver for and flexibly respond to changes in climate. This includes actions/measures that address the actual and expected effects of climate and environmental change such as higher temperatures and more frequent heat waves, more intense storms, and changes in precipitation that can lead to drought. Measures will moderate/reduce/limit potential damages, take advantage of opportunities or cope with the consequences.

Embodied Carbon -- The carbon emissions inherent to a product from the extraction of raw materials, modification of materials to create a final product, the transport of product to site, the energy supply to construction equipment and more.

Green infrastructure – Living infrastructure that uses vegetation, soils and natural processes to manage stormwater and create healthier urban environments. It ranges in scale from a single tree---site scale applications such as stormwater planters or rain gardens---to regional approaches including constructed wetlands, protection of floodplains and interconnected greenways.

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