

DRAFT

Carbon Reduction Strategy

December 2022



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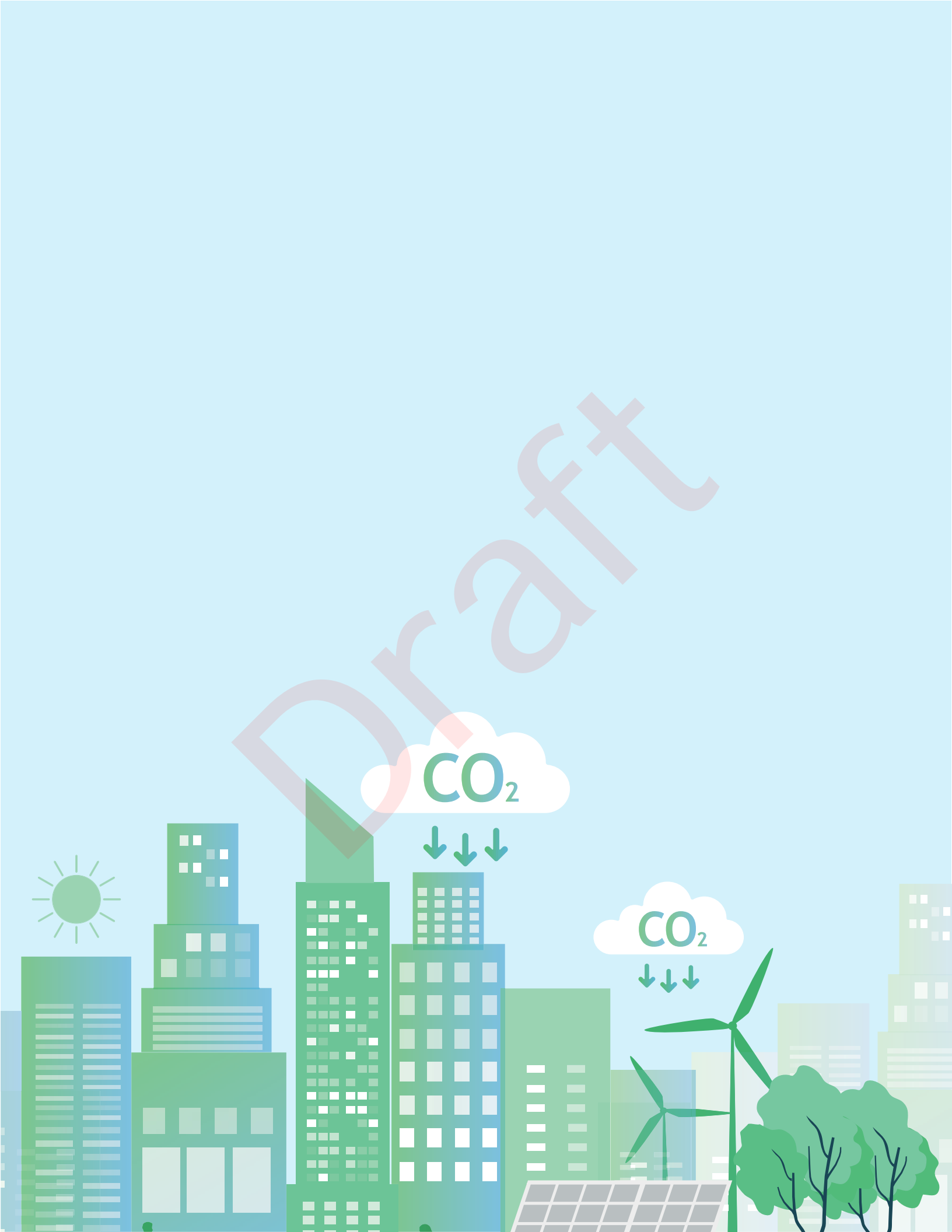
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CO₂



CO₂



Executive Summary

The Indiana Department of Transportation (INDOT) has developed this Carbon Reduction Strategy (CRS) to support efforts to reduce carbon dioxide (CO₂) emissions from the transportation sector in Indiana and in alignment with federal requirements and guidelines established in the Bipartisan Infrastructure Law (BIL) and other federal policies. This strategy was developed in consultation with Indiana's Metropolitan Partner Organization (MPO) partners.

Carbon dioxide (CO₂) is the primary greenhouse gas (GHG) emitted from the on-road vehicles. Three complementary pathways can help reduce emissions from on-road highway sources:



Reduce Total Fuel Consumption of on-road vehicles through fuel efficiency, congestion mitigation, and shifting to more fuel-efficient modes of transportation (like transit, walking or biking).



Switch to Low/Zero Emission Fuels for on-road vehicles such as using electric vehicles which have no tailpipe emissions.



Reduce Vehicle Miles Traveled (VMT) of on-road vehicles by reducing the total number and length of vehicle trips.

INDOT can support carbon efficient choices made by users of the transportation system by planning, designing, and building safe and convenient infrastructure and services and through its policies and programs. INDOT can also lead by example, reducing carbon emissions from INDOT's fleet and other on-road activities.

INDOT will face some headwinds in reducing carbon, with population and employment in Indiana expected to increase by 19% and 30% respectively between 2015 and 2045 and vehicle miles traveled (VMT) expected to increase by 27%. Truck VMT is also expected to increase at an accelerated rate, growing by more than 39% between 2015 and 2045.

INDOT and its MPO partners have identified five categories of activities that can support carbon reduction and detailed projects and strategies within each category.



Alternative Fuels/Energy Efficiency: Strategies that support electric or alternative fuel vehicle adoption or improve overall energy efficiency and lower carbon fuel sources for the transportation network.



Active Modes: Strategies that encourage active transportation such as walking, biking, and transit.



Transportation Demand Management: Strategies that reduce demand for travel on roadways by incentivizing reduced trip making and higher occupancy modes of travel.



Technology Solutions: Strategies that deploy advanced technology solutions for roadway operations and communications and improve traffic flow.



Other: Projects or programs that can demonstrate a reduction of carbon emissions when implemented.

These projects and strategies can be implemented through INDOT's existing transportation vision, policy goals and objectives which already align with carbon reduction efforts. INDOT is also developing a carbon reduction performance measure to quantitatively assess carbon emissions from transportation investments and evaluate progress.

INDOT will implement the CRS through four specific actions:

1. Develop carbon reduction performance measure and targets.
2. Identify early opportunities for carbon reduction within the current statewide transportation improvement program.
3. Identify new opportunities for carbon reduction in each project and strategy category.
4. Integrate carbon reduction into the transportation planning process.

Introduction

INDOT has developed this Carbon Reduction Strategy (CRS) to support efforts to reduce carbon dioxide (CO₂) emissions and identify projects and strategies to reduce these emissions within the state of Indiana. This report is developed in accordance with federal requirements and guidance. Appendix A details each requirement and the section that addresses the requirement within this report.

Carbon Reduction Program Overview

The Indiana CRS follows federal guidelines delineated in the Carbon Reduction Program (CRP), established within the Bipartisan Infrastructure Law (BIL) of 2021 and codified in 23 U.S.C. 175. According to the federal legislation, the purpose of the CRP is to provide funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO₂) emissions from on-road highway sources.

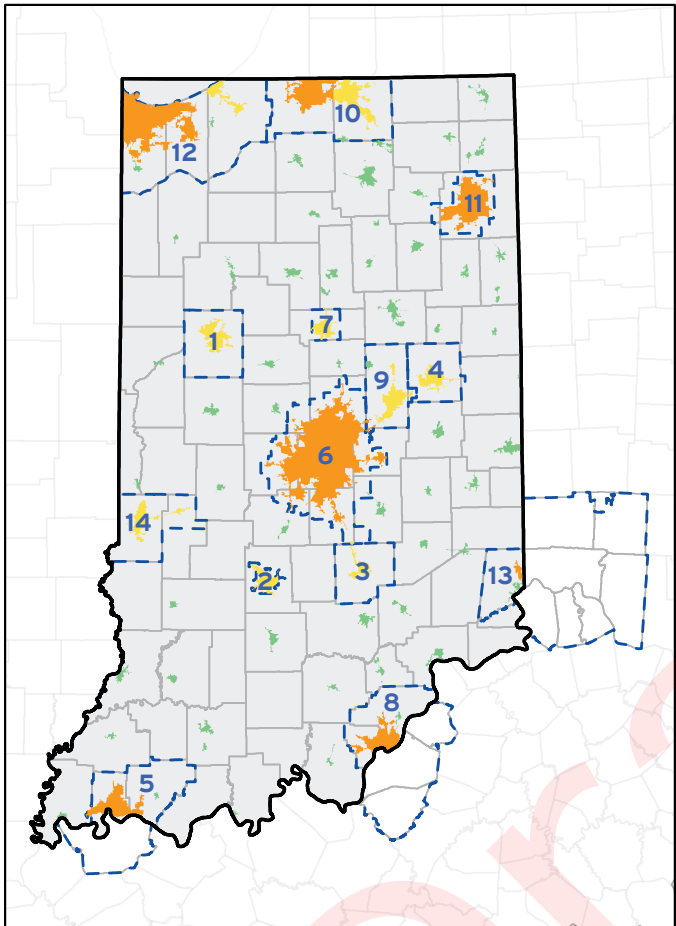
Indiana expects to receive \$156 million over five years under the CRP. INDOT is required to allocate 65% of these funds to urbanized areas in accordance with their relative share of the state population. INDOT has flexibility to allocate the remaining 35% at the state's discretion. Figure 1 illustrates the urbanized areas in the state of Indiana categorized by the CRP funding suballocation population tiers.

The CRP requires each state to prepare a carbon reduction strategy that:

- Supports efforts to reduce transportation emissions
- Identifies projects and strategies that will reduce transportation emissions
- Is appropriate to the population and context of the state

INDOT has developed this Indiana CRS to meet federal requirements and guidelines, while reflecting Indiana's unique path to meeting carbon reduction goals and targets.

Figure 1: Indiana Metropolitan Planning Organizations (MPO)



- MPO Boundaries
 - Urbanized areas with population >200k
 - Urbanized areas with population 50k to 200k
 - Urbanized areas with population 5k to 50k
- | | |
|---|--|
| 1. Area Plan Commission of Tippecanoe County | 8. Kentuckiana Regional Planning & Development Agency |
| 2. Bloomington-Monroe County MPO | 9. Madison County Council of Governments (COG) |
| 3. Columbus Area MPO | 10. Michiana Area COG |
| 4. Delaware-Muncie Metropolitan Plan Commission | 11. Northeastern Indiana Regional Coordinating Council |
| 5. Evansville MPO | 12. Northwestern Indiana Regional Planning Commission |
| 6. Indianapolis MPO | 13. Ohio-Kentucky-Indiana Regional COG |
| 7. Kokomo & Howard County Governmental Coordinating Council | 14. Terre Haute Area MPO |

Carbon Reduction Strategy Development

INDOT developed this Carbon Reduction Strategy by exploring the policy goals and objectives in Indiana’s Statewide Long-Range Transportation Plan (LRTP) to identify where current efforts already support the reduction of transportation emissions. INDOT also consulted with MPOs throughout the development of this strategy to better understand local planning contexts and priorities.

Alignment with Indiana’s Transportation Planning Process

Federal requirements state the CRS must be updated at least once every four years. INDOT’s intent is to integrate future updates of the CRS into Indiana’s LRTP. INDOT developed this strategy considering current policy goals and objectives, performance measures, and expected transportation trends identified in Indiana’s most recent LRTP which was completed in 2019. The next LRTP update process, which is expected to begin in 2023, will integrate the information in this strategy. Details on how this Carbon Reduction Strategy aligns with Indiana’s LRTP goals and objectives can be found below in the section titled *Alignment with LRTP Goals and Objectives*.

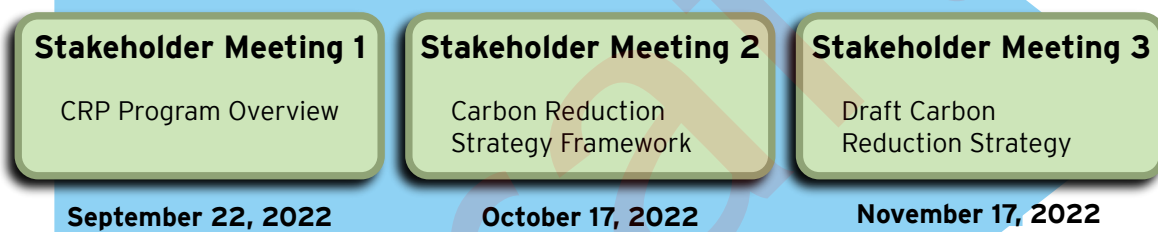
Consultation with MPOs

INDOT developed this strategy in consultation with the metropolitan planning organizations (MPOs) in the state (See Figure 1).

INDOT invited all fourteen MPOs to three stakeholder meetings held between September and November of 2022 as detailed in Figure 2. Meeting summaries are included in Appendix B. All meetings were recorded and made available to the MPOs.

INDOT requested input on policy goals and objectives and potential projects and strategies at stakeholder meeting #2 and through a survey implemented at the end of October 2022. A draft carbon reduction strategy was provided to MPOs for review and comments received will be incorporated into the final report.

Figure 2: Stakeholder Meeting Timeline



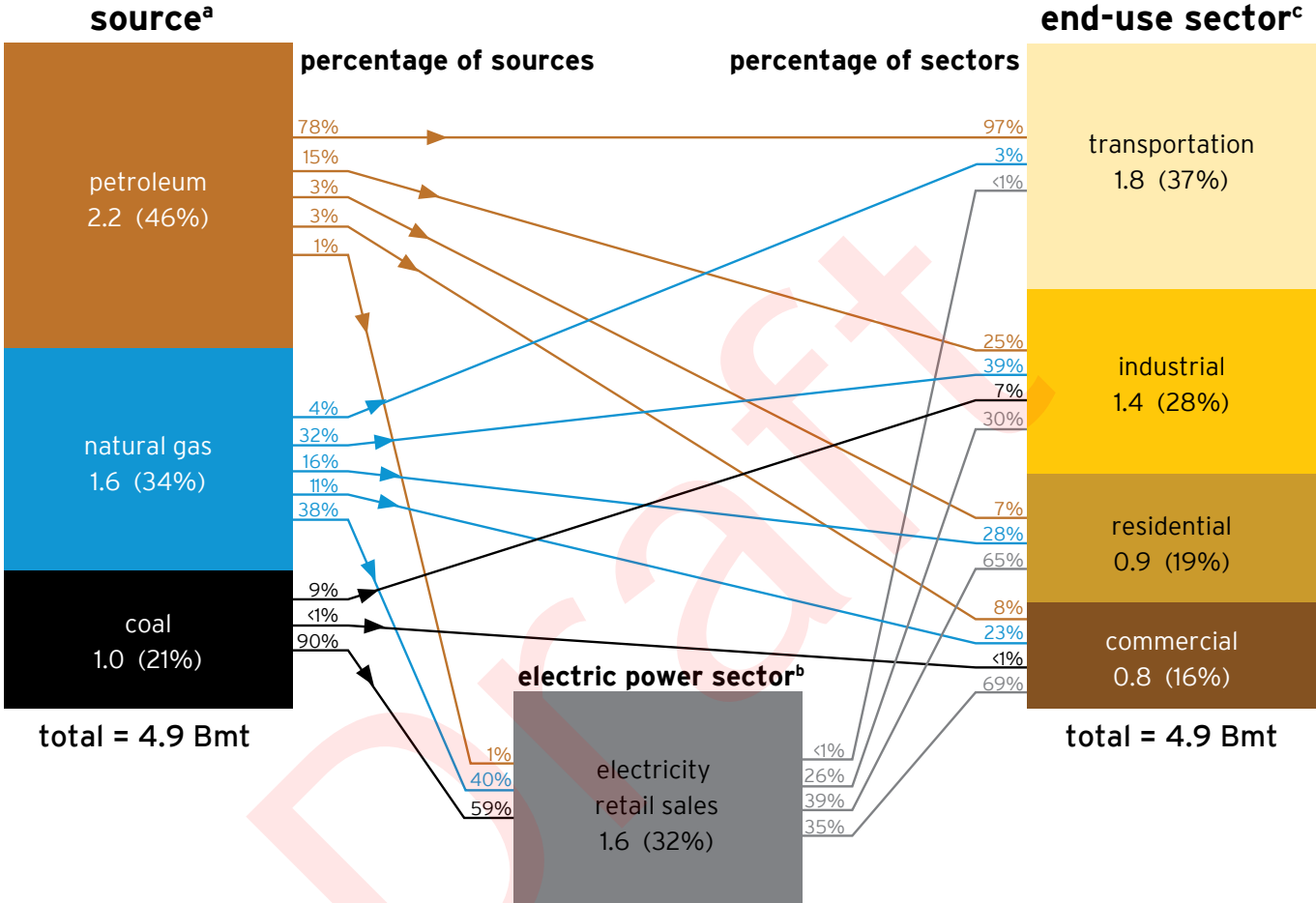
Public Engagement

The Draft Carbon Reduction Strategy is being released for a 30-day public comment period in December 2022 through the INDOT website. Hard copies will be available at INDOT District Offices and can be mailed upon request. Notification of the comment period will be made through social media, email distributions lists and newspaper ads. In addition, INDOT is requesting that MPO partners share the public comment period with their stakeholders, directing them to the website for review and comment. A public comment summary will be included as an appendix of the final plan. Additional public engagement related to carbon reduction will continue through the public engagement part of the Long Range Transportation Plan update process set to start in 2023.

Carbon Reduction, Indiana Context

Carbon dioxide (CO₂) is the primary greenhouse gas (GHG) emitted from the transportation sector through two major source categories: tailpipe emissions and lifecycle emissions. Tailpipe emissions result from the combustion of carbon rich fossil fuels (coal, natural gas, and oil in the form of gasoline and diesel motor fuels). Lifecycle transportation sector emissions can come

Figure 3: U.S. CO2 Emissions from Energy Consumption by Source and Sector, 2021 Billion Metric Tons (Bmt) of Carbon Dioxide (CO2)



Note: The sum of components may not equal the total due to independent rounding. Includes the relatively small amount of carbon dioxide (CO₂) emissions from geothermal and nonbiomass waste for electric power sector use not shown elsewhere, See EIA's *Monthly Energy Review*, Section 11. See "Extended Chart Notes" on next page.

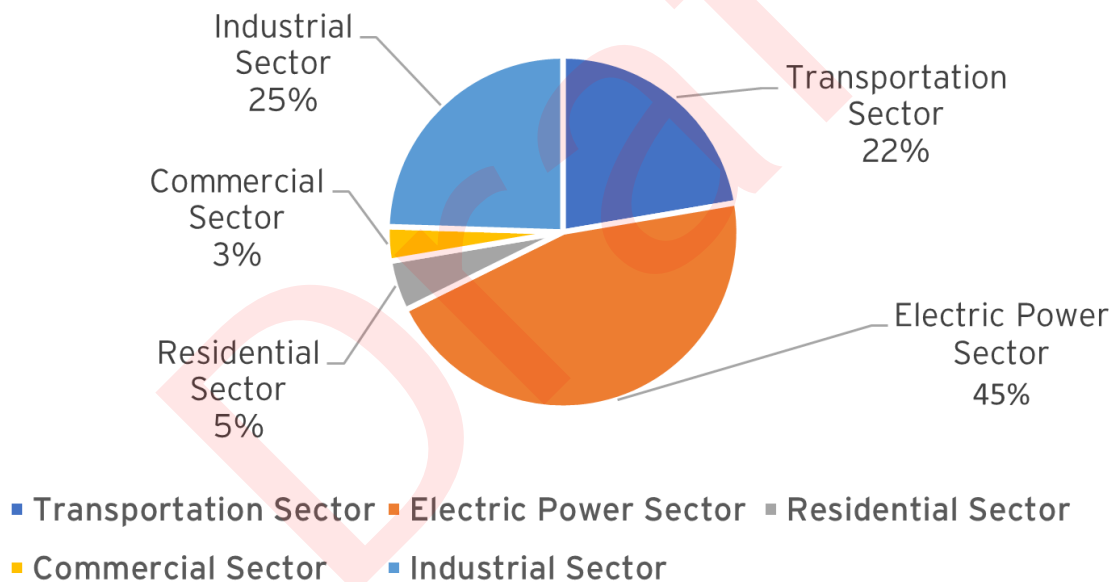
- a. CO₂ emissions from primary energy consumption. Each energy source is measured in different physical units and converted to metric tons of CO₂.
- b. The electric power sector includes electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. CO₂ emissions from electricity retail sales to each end-use sector are equal to the weighted average of fuels used to generate electricity and allocated proportion-ally to the amount of retail sales to each end-use sector.
- c. Industrial and commercial sectors include primary energy consumption by CHP and electricity-only plants in the sector. Includes the CO₂ emissions from the electricity retail sales allocated to each end-use sector.

Source: U.S. Energy Information Administration, Annual Energy Outlook 2022 (AEO2022) www.eia.gov/aeo

from many sources, including the emissions generated through the production and distribution of fuels, manufacturing of vehicles, or production of construction materials for infrastructure such as concrete and asphalt. Efforts to reduce transportation carbon emissions can have a variety of positive effects for the public and economy, from improving air quality and public health to enhancing energy efficiency and cost-savings for motorists and businesses.

The U.S. has set a goal of net-zero GHG emissions by 2050, with an interim target of 50-52% reduction below 2005 levels by 2030.¹ The national framework also establishes a new national GHG performance measure that will be incorporated into the transportation planning process, with 2-to-4-year reduction targets set by individual states. In the U.S. 37% of total CO₂ emissions comes from the combustion of fossil fuels to transport people and goods (see Figure 3). For Indiana, 22% of the state's total CO₂ emissions results from the transportation sector due to the higher use of coal in the state's current electric generation mix (see Figure 4).

Figure 4: Indiana Carbon Emissions by Sector (Avg. Annual 2015-2020)

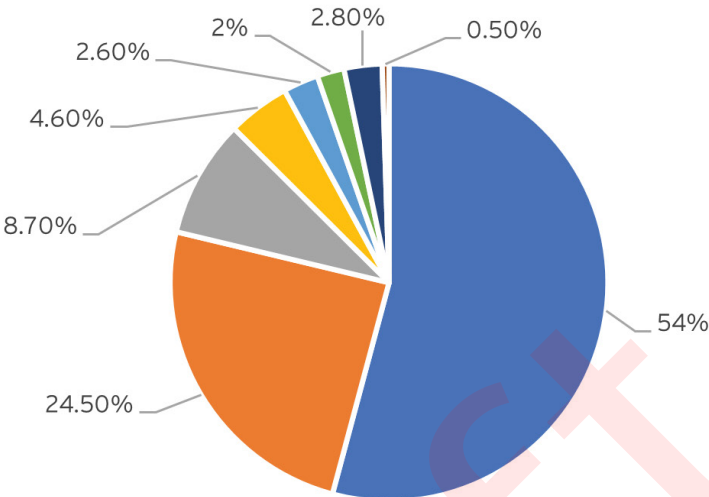


Source: HNTB graphic from US EIA Energy-Related CO₂ Emissions Data Tables: Table 3: State Energy Related Carbon Dioxide Emissions by Sector, Average Annual Emissions 2015-2020

While these total transportation sector CO₂ emissions include on-road, air, marine, and rail emissions, 80% of the transportation sector emissions nationally come from cars, trucks, and buses on the roads (see Figure 5).

¹ U.S. Department of State and Executive Office of the President. [The Long-term Strategy of the United States, Pathways to Net-zero Greenhouse Gas Emissions by 2050](#). November 2021

Figure 5: National Transportation Emissions by Vehicle Type



- Light Duty (cars, small trucks, vans, SUVs, and motorcycles)
- Aviation
- Trains & Buses
- Pipelines
- Commercial Trucks / Freight
- Ships/Boats
- Military (all modes)
- Lubricants

Source: U.S. Energy Information Administration, Annual Energy Outlook 2022 (AE02022) www.eia.gov/aeo

Recognizing the significant contribution of the transportation sector to CO₂ emissions in general, and the sizable contribution of on-road vehicles specifically, the federal Carbon Reduction Program aims to provide funding for projects that reduce on-road emissions, also known as tailpipe emissions. There are three complementary pathways to reduce total tailpipe emissions for on-road vehicles:



Reduce Total Fuel Consumption of on-road vehicles through fuel efficiency, congestion mitigation, and shifting to more fuel-efficient modes of transportation (like transit, walking or biking).



Switch to Low/Zero Emission Fuels for on-road vehicles such as using electric vehicles which have no tailpipe emissions.



Reduce Vehicle Miles Traveled (VMT) of on-road vehicles by reducing the total number and length of vehicle trips.

Emission reductions in transportation often depend on choices made by individuals or private businesses using the transportation network. For example, choosing to make a bicycle trip results in zero emissions and choosing to ride a bus or in a carpool with other riders can result in less total emissions than if everyone made the same trip in their own vehicle. Individuals or fleet managers could choose to purchase more fuel-efficient vehicles or go fully electric (zero direct emissions). Transportation agencies can support carbon efficient choices by planning, designing and building safe and convenient infrastructure and transportation services and by providing incentives through policies and programs. Public agencies can also lead by example, implementing fuel saving programs for employee commutes and other work-related travel and switching to low or zero-emission public fleet vehicles.

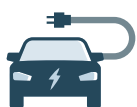
In addition to user behaviors, systemwide transportation emissions also depend on other growth and land-use policy trends that can increase the need for travel and the congestion on our roads. Indiana's latest LRTP expects population and employment to increase by 19% and 30% respectively between 2015 and 2045. Population and employment will grow at a faster rate in rural and suburban areas than in urban areas. This type of growth is typically associated with more vehicle trips and longer trips; it is estimated that between 2015 and 2045 VMT will increase by 27%. Truck VMT is expected to increase at an accelerated rate, growing by more than 39% between 2015 and 2045. Transport of goods typically requires more energy (and therefore higher fuel consumption and emissions) per vehicle mile than passenger transport and given the significant growth that is expected in this sector, dedicated efforts to reduce freight emissions are needed to reduce overall CO₂ emissions in Indiana.

Projects and Strategies

In consultation with MPOs, INDOT identified five categories of transportation projects and strategies that can support carbon reduction in Indiana (see Figure 6).

Each category includes specific projects and strategies detailed in Tables 1 through 5. These projects and strategies are the foundation of how Indiana will achieve carbon reductions in the transportation system. INDOT and its partners can use this list to identify new projects and strategies appropriate to each geographic area and to the unique needs of travelers in each area of the state.

Figure 6: Carbon Reduction Categories



**Alternative Fuels/
Energy Efficiency**



**Active
Modes**



**Transportation
Demand Management**



**Technology
Solutions**



Other

Table 1: Electric Vehicles, Alternative Fuels and Energy Efficiency

Potential strategies that support electric or alternative fuel vehicle adoption or improve overall energy efficiency and lower carbon fuel sources for the transportation network.	
Electric Vehicles (EV) Adoption and Charging Infrastructure	Programs that support and incentivize adoption of EVs. Includes tax rebates, preferential parking spots, access to high occupancy facilities, etc. Programs or projects that result in increased installation of EV charging infrastructure and support energy generation with lower carbon emissions (solar, wind, etc.).
Alternative Fuel Vehicle (AFV) and Infrastructure	Programs that support other alternative fuel vehicles and infrastructure such as hydrogen, natural gas, or propane, especially on heavy duty vehicles where no market ready options to electrify are available. Includes strategies that improve vehicle emissions for infrastructure construction programs.
Freight Emission Reductions	Strategies that support improved freight movement (without increasing single occupancy vehicle capacity). Projects that help freight vehicles reduce emissions and save fuel, including electric charging and alternative fueling facilities.
Emission Reduction at Port Facilities	Programs that reduce emissions from idling freight vehicles and port equipment (such as cargo handling equipment).
Diesel Engine Retrofits	Truck engine retrofits that improve fuel efficiency and reduce vehicle emissions.
Energy Efficient Lighting and Equipment	Projects that replace lighting and other on-road equipment with more energy efficient models.

Table 2: Active Modes

Potential strategies that encourage active transportation such as walking, biking, and transit.	
Pedestrian Facilities	Infrastructure that supports safe and secure pedestrian travel, including sidewalks, trails, pedestrian crossing amenities (signalized crosswalks and intersections, curb ramps, pedestrian overpasses, etc.).
Bicycle Facilities	Infrastructure that supports safe and secure bicycle travel, including separated bike lanes, trails, bicycle crossing amenities (signalized intersections with bicycle signals, bicycle overpasses, etc.).
Transit	Investments that support efficient transit operations and higher transit ridership.
Shared Mobility	The availability of shared bicycle, scooter or on-demand shuttle services can support door-to-door connectivity from a suburban transit hub to a final destination further than is convenient to walk or connect travelers taking short trips urban environments that is difficult to serve with fixed-route transit.

Table 3: Transportation Demand Management

Potential strategies that reduce demand for travel on roadways by incentivizing reduced trip making and higher occupancy modes of travel.	
Managed Lanes	Lanes separated from general-purpose lanes managed to benefit the flow of traffic and the overall capacity of the system. Some examples included higher occupancy vehicle (HOV) lanes, high-occupancy toll (HOT) lanes, or special use lanes such as truck only lanes. Operational rules are established to determine eligibility (e.g. zero-emission vehicles or high occupancy vehicles only), pricing and controlled access points.
Congestion Pricing	Road pricing charged in heavily congested areas to incentivize travel at off-peak hours.
Electronic Tolling	Systems that reduce bottlenecks and congestion at tolled facilities by more rapidly executing the toll transaction through wireless technology.
Land Use	Mixed use, dense, and transit-oriented development practices support reduced travel demand on roadway infrastructure. Higher parking fees or parking restrictions when transit, walking or biking are readily available can also reduce demand on roadways.
Commute Trip Reduction	Programs that support commutes to work in higher occupancy modes such as carpools, vanpools, employer-based shuttles or employer subsidized transit programs. Work-from-home programs also remove the need to commute.

Table 4: Technology Solutions

Potential strategies that deploy advanced technology solutions for roadway operations and communications and improve traffic flow and person throughput. Critical to success of all technology solutions are investments in communications network as well as data management, analytics and visualization capabilities.	
Traffic Management Facilities	Traffic monitoring, management, or control facilities.
Adaptive Signals	Systems that adjust traffic signal timing to optimize traffic flow.
Intelligent Transportation Systems	Infrastructure-based intelligent transportation systems capital improvements (e.g., traffic signal control systems, ramp metering, dynamic message signs, connected vehicle infrastructure).
Advanced Transportation Technologies	Advanced traveler information systems, collision avoidance technology, transportation management technologies, automated and connected vehicle infrastructure, integrated payment systems, shared-use and on-demand mobility applications, integration with energy systems, parking reservation systems, etc.

Table 5: Other

Potential projects or programs that can demonstrate a reduction of carbon emissions when implemented.	
Traffic flow improvements that do not add vehicular (single occupancy) capacity	Intersection improvements (such as roundabouts or other operational improvements), breakdown and merging lanes, or other infrastructure improvements, that can improve traffic flow and reduce congestion without adding general-purpose capacity that tend to increase single occupancy vehicles and VMT.
Calculated Carbon Reductions	Using proven methodologies (e.g., lifecycle analysis and travel demand models) to calculate how changes in policies or programs will result in reduced carbon emissions in Indiana.
Sustainable Construction	Strategies that reduce on-road emission from construction equipment and use materials that require less carbon emissions to produce.

Equity Considerations

INDOT is committed to advancing an equitable transportation system for Indiana. Carbon reduction projects and strategies must be appropriate for and take into consideration the needs of vulnerable, historically disadvantaged or underserved communities across the state. For example, low-income communities might have less access to potentially more expensive alternative fuel vehicles and rural communities might have fewer destinations accessible through active modes such as bicycle and transit. Ensuring carbon reduction projects are sensitive to the context and needs of each community is a critical equity consideration during project selection and development.

Alignment with LRTP Goals and Objectives

Indiana’s Long Range Transportation Plan (LRTP) vision, goals and objectives support reductions of on-road carbon emissions. Indiana’s vision of a safe, efficient, and integrated transportation system supports carbon emission reductions by creating a transportation network that can help Indiana travelers make low-carbon, fuel-efficient choices.

VISION

INDIANA'S TRANSPORTATION SYSTEM WILL BE SAFE, EFFICIENT, INTEGRATED, AND SERVE AS THE FOUNDATION OF THE STATE'S ECONOMIC VITALITY AND QUALITY OF LIFE AND SUPPORT FOR ITS RESIDENTS AND INDUSTRIES.

Seven policy goals in the LRTP underpin the vision, each with specific objectives. In Figures 7 through 13, each of the policy objectives that support carbon emission reductions is highlighted in green. The icon next to each objective illustrates which projects and strategy categories (see *Projects and Strategies* section) are aligned with each objective.

Figure 7: Safe & Secure Travel

Move Indiana toward zero deaths and reduction of serious injuries by applying proven strategies and enhancing the safety and security of our transportation system for all users.

Share Information: Work closely with local, state, and federal agencies to improve information reporting on transportation and pedestrian crashes, safety risks, and safety trend analysis for the development of comprehensive strategies and solutions.

Work Zone Safety Enhancements: Safe work zones for construction workers, enhance communication to travelers, enforcement, emergency response, educational media, and implementing work zone development best practices.

Address Complete Streets/ADA Needs: Integrate sidewalks, curb ramps, cross-walks, pedestrian signals, bike facilities, transit amenities, and traffic calming strategies in identified areas to provide safe and accessible transportation connections and minimize pedestrian and vehicular crashes, injuries, and fatalities.

Targeted Safety Investments and Strategies: Intersection improvements, railroad crossing enhancements, modernized traffic signals, signage, lighting, rumble strips, and other solutions.

System Resiliency: Reduce vulnerability to various threats and risks (e.g., severe weather, acts of terrorism, and cyber-attacks) and ensure redundancy and reliability to meet essential travel needs.

Implement the 4Es of Safety: Education, enforcement, engineering, and emergency responses.

Support Safety Policies and Laws: Distracted and impaired driving, law enforcement, yield to pedestrian crossing, and share the road and bike lane awareness.

Boost Security: Coordinate communication needs with police, public safety, and security agencies, and emphasize enforcement practices and techniques with proven safety benefits.



A safe and secure system is critical to ensure that zero emission transportation modes, such as walking or biking, are a safe and attractive choice for travelers. Addressing complete streets by integrating pedestrian, bike and transit facilities and traffic calming strategies, improving vulnerable user safety at crossings, and ensuring all vehicles understand safety policies that protect pedestrians and bicyclists can enable more travelers to make carbon efficient choices in transportation.

Figure 8: System Preservation

Go beyond taking care of what we have and maintain our multimodal transportation system and infrastructure in a state of good repair.



Roadway asset management systems support the reduction of on-road emissions when carbon emission criteria are incorporated as part of the decision-making process to prioritize investments. An asset management strategy also decreases emissions in construction by extending the lifecycle of an asset and by minimizing work zone delays.

The Smart Growth and Transportation Demand Management objective can help reduce vehicle miles traveled and reduce on-road carbon emissions. It can also reduce the need for major infrastructure expansion projects (which can be both costly and a major source of CO₂ emissions). MPO representatives also recommended incorporating initiatives such as work-from-home programs, transit-oriented development (TOD) initiatives, road diets, and parking reduction programs under this objective, which are associated with lower VMT per capita. For these strategies, careful consideration of local context is needed.

The Local Corridor Consideration objective supports transportation agency coordination to “right size” transportation investments to improve access to zero emission or fuel-efficient transportation choices (walking, biking and transit) at the local level and reduce the need for major infrastructure expansion.

Figure 9: Economic Competitiveness and Quality of Life

Enhance the competitiveness of Indiana’s economy as the “Crossroads of America” through strategic multimodal transportation investments, reducing transportation costs, and the safe and efficient movement of people and goods.



Transportation Connectivity and Accessibility:

- Provide urban and rural communities with an edge in competing for jobs and business locations; access to national and international trade markets; and connect people with economic opportunities.
- Provide safe and efficient multimodal transportation access to diverse business, recreational, and cultural opportunities in Indiana.
- Work with locals to ensure connectivity of regions and economic centers by various modes of travel.

Project Selection:

Consider economic benefits such as job creation, job access, and economic savings in project selection scoring and infrastructure investment decision-making.



Logistics Industry Coordination:

Coordinate infrastructure needs with freight carriers, freight forwarders, third-party logistics providers, and other stakeholders, including the MPOs, Conexus Indiana Logistics Council, Indiana Economic Development Corporation, and the Ports of Indiana.

Tourism Support:

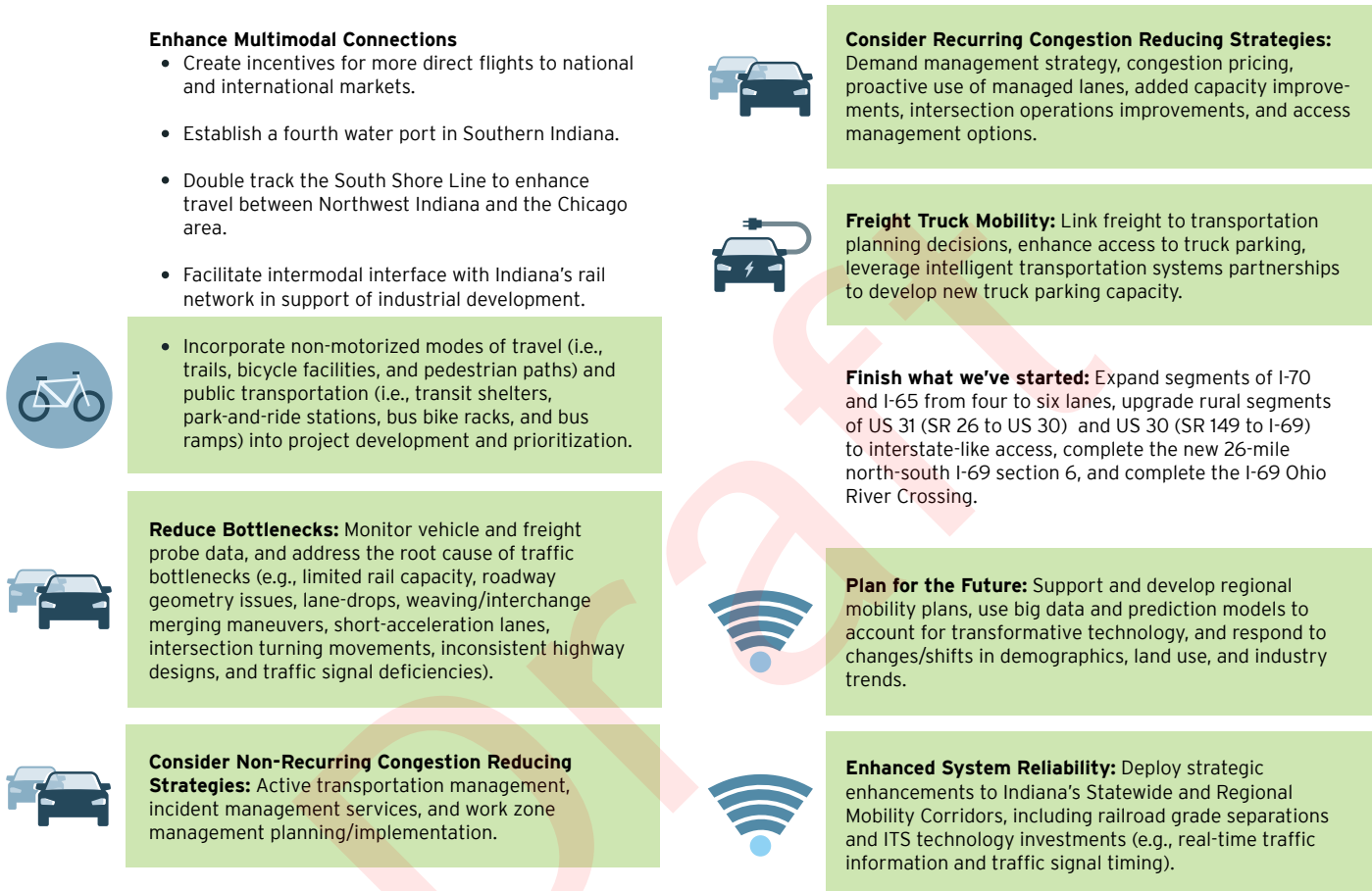
Connect transportation to major tourism destinations and promote tourism benefits.

The Transportation Connectivity and Accessibility objective prioritizes a robust multimodal network that includes energy efficient and cost-effective travel options. Investing in multimodal travel options that are more carbon efficient than single occupancy vehicle (driving alone) can support reductions of overall transportation emissions while maintaining Indiana’s economic competitiveness and quality of life.

Coordination with the logistics industry is critical to reduce carbon emissions in Indiana. On-road freight vehicles produce more carbon emissions per mile when burning carbon intensive fuels like diesel, and freight vehicle miles traveled growth is expected to outpace light duty vehicle miles traveled growth moving forward. Supporting the transportation industry as it transitions to more fuel-efficient or zero-emission vehicles is an effective pathway to reduce emissions without impacting economic competitiveness in the region. INDOT and other public partners can support the freight industry in deployment of alternative fueling facilities and other investments needed for successful transition to net-zero emission freight operations.

Figure 10: Multimodal Mobility

Maximize the performance of our transportation system, ensuring efficient movement of people, goods, and regional connectivity by enhancing access to different modes of transportation.



Multimodal mobility that ensures safe and efficient movement of people and goods is key to achieving overall transportation system carbon reductions. Reducing congestion can help improve traffic flow and provide fuel savings. Focusing on improving freight movement and providing infrastructure that can help freight reduce emissions and transition to zero-emission options is of particular importance for reducing carbon emissions in Indiana. Nonetheless, capacity improvements will need to be evaluated carefully to prioritize investments that add efficient capacity for moving people and goods with less overall carbon emissions. Technology and innovation hold significant potential for improving congestion and traffic flow while reducing single occupant vehicle use and overall vehicle miles traveled per capita.

Figure 11: Environmental Responsibility

Minimize the potential impacts of the transportation system on the natural and human environment.

Natural Hazards Mitigation: Incorporate proactive extreme weather and natural disaster planning and infrastructure designs.

Practical Design Approach: Use a collaborative decision-making approach that involves all stakeholders to develop transportation infrastructure that fits into its surroundings and preserves scenic, aesthetic, historic, and cultural needs while enhancing the overall transportation system.



Recycling and Waste Programs: Support initiatives, operations, and construction program methods aimed at increasing recycled construction materials and reducing waste, energy usage, air pollution, and impacts to waterways.



Encourage Active Transportation: Track commute mode shares and miles traveled by mode, support mixed-use development, consider complete streets designs, and look for opportunities to restripe urban roadways with bike lanes (if feasible).

Active Environmental Reviews: Ensure all projects undergo timely and proper environmental reviews and follow the National Environmental Policy Act (NEPA) and State and Federal Statutes.



Environmental Justice:

- Improve public health and safety in transportation of people and goods.
- Harmonize transportation policies and investments with environmental and socioeconomic issues.
- Consider the interests and contributions of historically disadvantaged and disenfranchised communities, and provide opportunities for them to be involved in the decision-making process.



Smart Growth: Encourage local smart growth initiatives to support efficient transportation for all modes, conserve energy, reduce motor-vehicle emissions, and future infrastructure needs.



Improved Quality of Life: Partner and coordinate with Indiana Health Department, Department of Natural Resources, and Department of Energy to track health related impacts of transportation decisions and provide input on mitigation strategies to support more active life styles.

Carbon reduction is core to the goal of environmental responsibility. MPO members recommended adding a more explicit objective about carbon reduction in future LRTP updates during stakeholder meeting discussions. They also noted that strategies that support alternatives to petroleum-based fuels such as electric and other zero-emissions vehicles are also important pathways to reducing carbon emissions in Indiana and recommended they be included as an objective. Related, INDOT's ongoing efforts to improve electric vehicle charging infrastructure support cleaner energy generation for transportation and are important to support the transition to cleaner vehicles.

Carbon reduction can also be achieved during construction of transportation infrastructure, which is currently embedded under the Recycling and Waste Programs objective. For example, more fuel efficient and zero emissions vehicles can help reduce on-road emission during construction. Greener materials can also support Indiana carbon emissions reductions. INDOT, in partnership with the Indiana chapters of the American Concrete Pavement Association (ACPA) and Asphalt Pavement Association has secured a federal climate challenge grant under the Technology and Innovation Deployment Program (TIDP) to implement sustainable pavement approaches that advance the knowledge and practice of designing, constructing and maintaining more sustainable pavements.

The final report for this grant will include strategies to reduce GHG emissions and achieve carbon neutrality through new material, design, and maintenance strategies for projects that can be integrated into Indiana's carbon reduction efforts. INDOT is reducing carbon emissions of its operations through its overhauled Roadside Management Program, which supports more native species and reduces the need for mowing and other carbon intensive maintenance activities. Trees and other vegetation in the right-of-way can help capture carbon and support Indiana's path to net-zero emissions by 2050.

As mentioned for previous goals, encouraging active transportation and smart growth can also help reduce on-road carbon in Indiana.

The environmental justice and improved quality of life objectives relate to carbon reduction priorities since the resulting impacts of carbon emissions in the atmosphere impact quality of life and can place greater burdens on historically disadvantaged or vulnerable communities. Aligning transportation investments with improved health and environmental justice outcomes can lead to carbon emission reductions and help minimize adverse impacts to vulnerable communities.

Figure 12: New Technology and Advancements

Develop and deploy advanced transportation technologies and embrace a broad-based, comprehensive research program to plan for the future.



New Online Platforms: Consider the potential effects of new technology (e.g., grocery and restaurant delivery services, drone flyovers, integrated electronic payment, dynamic ride sharing programs, and guided public transit systems) in future transportation decision-making and system demands.



Big-data: Evaluate and deploy the use of big-data throughout the INDOT process, including transportation planning, data collection, asset management, survey work, construction, system monitoring, crowd sourcing, and public outreach.



Unmanned Aerial Vehicles (UAVs): Use of drones and UAVs for efficient non-intrusive asset inspections, field checks, and emergency response support to minimize disruptions and to enhance coordination and sharing of information.



Automated Transportation: Consider and plan for potential impacts of autonomous, connected vehicles, and truck platooning technologies on safety, transportation demand, roadway design, infrastructure needs, human behavior, and policies.



Sharing of Information: Work with auto and truck manufacturers to share data (e.g., traffic signal timing and vehicle information, such as speed, hard braking, acceleration, and wiper usage) for advanced roadway maintenance and improvements.

Technology and innovation in transportation are important elements to meeting future traveler needs while reducing carbon emissions from the overall system. New online platforms, big-data and an increased focus on sharing of information among public and private sectors can support more efficient management of the transportation network and help reduce carbon emissions. Improving data quality and better understanding the relationship between VMT and land-use can improve decision making that leads to a future transportation network with lower overall emissions. Bureau of Motor Vehicle (BMV) data can help in evaluating progress and predicting trends related to the transition to electric and other zero-emission vehicles registered in Indiana.

New technologies such as Unmanned Aerial Vehicles and Automated Transportation offer new ways to solve transportation challenges and reduce carbon emissions. Over the next 30 years, innovation will be key to achieving all Indiana transportation objectives while simultaneously offering solutions to reduce on-road transportation emissions. For example, INDOT in cooperation with the Ohio DOT is conducting a pilot of autonomous vehicle technologies along I-70 from Indianapolis to Columbus, OH.

Figure 13: Strategic Policy Actions

Address multiple goal areas through key policy initiatives.



Performance Management: Use of performance measures and targets to inform decision-making and show progress toward meeting national, statewide, regional and local goals (e.g. VMT per capita, on-road emissions).



Open Decision Making: Make transportation system decisions through processes that are inclusive, engaging, and supported by data analysis and meaningful public input.



Integrating Operations: Develop a regional operations plan and corridor operations plan to better focus cost-effective and efficient transportation systems management and operations solutions at the regional and corridor level.



Public-Private Partnerships: Examine the potential for a public-private partnership to design and construct key multimodal projects and system maintenance.

Reduced Project Delivery Delays: Reduce project costs and accelerate project completion through eliminating delays in project development and delivery.

The objectives included in this goal support carbon emission reductions through better measurement of emissions, improved decision making that prioritize carbon reductions, more efficient operations of the system, and leveraging private investment for delivering a network that supports reductions in carbon emissions.

Carbon Reduction Performance Measures

Performance measures provide a framework to measure and quantitatively evaluate success. INDOT uses performance measures and targets to quantitatively determine if policy goals and objectives are moving forward. INDOT currently estimates on-road mobile source emissions reductions through its air quality performance measure. Emission reductions (including carbon emission reductions) are calculated from air quality benefits provided through investments funded through the Congestion Mitigation and Air Quality (CMAQ) federal program.

In the future, INDOT expects to develop a GHG reduction performance measure and target for its overall transportation program per new federal requirements. The methodology for this performance measure will be developed following federal guidance.

Strategy Implementation

INDOT's Carbon Reduction Strategy details Indiana's challenges and viable solutions to reducing carbon from the transportation sector. INDOT will implement this strategy with the specific actions detailed in this section.

1. Develop carbon reduction performance measure and targets

Performance measures are essential to understand the magnitude of the challenge and measure progress. INDOT is developing methodologies to assess carbon emissions from state transportation investments (as identified in the Statewide Transportation Improvement Plan). INDOT will also develop carbon reduction targets that lead to net-zero greenhouse gas emissions by 2050, as required by future federal policy. Once developed, the measurement framework will be integrated into future updates of the LRTP and help INDOT make informed decisions about future transportation investments.

2. Identify early opportunities for carbon reduction

INDOT performed an analysis of the Statewide Transportation Improvement Plan projects and other projects provided by MPOs during the development of this strategy to identify projects that are eligible for Carbon Reduction Program funds. Each eligible project was assessed with a qualitative (low - high) scale of carbon reduction potential. This information will help INDOT and its MPO partners deliver projects in alignment with carbon reduction goals and objectives.

3. Identify new opportunities for carbon reduction in each project and strategy category

3.1 *Electric Vehicles, Alternative Fuels and Energy Efficiency*

INDOT will leverage nearly \$100 million made available through the National Electric Vehicle Infrastructure (NEVI) program by installing Level 3 DC Fast Charge charging stations along all of Indiana's Interstates and U.S. 31. The stations will be located at least every 50 miles along these corridors, providing convenient and equitable charging access in rural and urban areas.

INDOT will coordinate with freight and logistics industry to identify specific projects and strategies that will support reduction of carbon emissions from moving goods in and across the state of Indiana. Under the Research Priorities for 2022-2023 effort INDOT is currently working with Conexus Indiana to identify potential P3 projects to improve congestion at freight-heavy bottlenecks, identify strategies to strengthen the multimodal freight system and leverage third party data sources, and enhance collaboration with the multimodal freight industry. INDOT will include discussions about reduction of carbon emissions as part of this effort.

INDOT will evaluate policies for its public fleet that promote fuel savings (e.g. no idling programs) and transitioning its fleet to electric or alternative fuels. Lessons learned will be shared with other public agencies to promote similar programs across all public fleets in Indiana.

3.2 *Active Modes*

INDOT is developing a Performance-Based Practical Design approach with the goal of implementing projects that address performance, surroundings, and life-cycle considerations. This effort includes evaluating options for incorporating bicycle and pedestrian elements into INDOT's corridor planning, project prioritization, and project development processes.

INDOT will coordinate with transit agencies and MPOs to identify opportunities to support new transit projects and strategies across the entire state.

INDOT will coordinate with MPOs to identify opportunities to support trail projects throughout the state.

3.3 *Transportation Demand Management*

For Central Office employees, INDOT encourages carpooling as a way to decrease congestion, reduce emissions on NO-ZONE action days, and save state employees money, providing special parking areas designated for individuals who carpool. INDOT also offers Commuter Benefit Reimbursement program to fund transit and vanpool commute options for employees. INDOT is exploring development of a statewide commute trip reduction program and ozone public education and awareness campaigns that will support higher occupancy during peak time commute trips and high ozone days, as well as work from home arrangements.

3.4 *Technology Solutions*

INDOT will continue to advance technology initiatives that will help improve traffic congestion and reduce carbon emissions, such as installing cameras and detection at every interchange, installing dynamic message signs at critical interstate diversion points, upgrading message boards throughout the state to provide more real-time information to drivers and, connecting all 2,500 traffic signals on the state network for improved signal timing and issue detection.

INDOT will monitor the impact of ongoing Transportation System Management and operations (TSMO) efforts on I-465 and I-94 and evaluate the use of these strategies along other congested corridors.

3.5 Other

INDOT is using roundabouts to replace traditional four-way traffic signals to reduce accidents, traffic delays, fuel consumption, air pollution and construction costs, while improving safety, increasing capacity and enhancing intersection beauty. FHWA research² indicates that emission rates at roundabouts can be lower than at intersections, although reductions are varied depending on specific conditions at each location. INDOT currently has 32 roundabouts on the State Roadway Network, with an additional 36 in development. Local jurisdictions have installed hundreds more across the state. INDOT will continue to evaluate opportunities for additional roundabouts on state routes.

INDOT will incorporate strategies that reduce GHG emissions and support carbon neutrality through new material, design, and maintenance strategies for construction projects identified through the final report of the Technology and Innovation Deployment Program climate challenge award.

INDOT will build off the research describe above and explore additional sustainable approaches for managing the state highway system and the public right of way.

INDOT will continue to investigate how to reduce carbon emissions through it's Roadside Management Program, by reducing fuel intensive roadside management practices and selecting vegetation with higher carbon reduction potential wherever feasible.

4. Integrate carbon reduction into the transportation planning process.

INDOT will incorporate carbon reduction policy goals and objectives, projects and strategies, and performance measures included in this strategy within the next update of the LRTP. The coordination and public engagement process for the next LRTP update will begin in 2023.

Conclusion

INDOT is committed to supporting national efforts to achieve a net-zero transportation system for the U.S. by 2050. Indiana's expected growth and heavy freight activity across the state are some of the headwinds INDOT will face in achieving this objective. INDOT is embracing this challenge, focusing on leveraging technological advances and deepening partnerships with MPOs, logistics industry, transit agencies and other key stakeholders to deliver a multimodal, safe and efficient transportation network that leads to carbon reductions across Indiana's transportation system.

2 USDOT FHWA. Assessment of the Environmental Characteristics of Roundabouts. Publication No. FHWA-SA-15-071 (2015. Updated 2020)

APPENDIX A: CRS Alignment with Federal Requirements

Requirement	Detail	Reference Section
Prepare CRS in Consultation with MPOs	<p>MPOs were invited to three meetings and asked to share carbon reduction goals and priorities for Indiana.</p> <p>INDOT evaluated potential projects provided by MPOs.</p> <p>INDOT provided MPOs the opportunity to review this draft strategy and will incorporate feedback into the final version.</p>	Consultation with MPOs on page 4.
Support efforts - and identify projects and strategies - to support the reduction of transportation emissions	This strategy details policy goals and objectives as well as projects and strategies that will support Indiana's efforts to reduce transportation emissions.	<p>Projects and Strategies on page 8.</p> <p>Alignment with LRTP Goals and Objectives on page 12.</p>
Be appropriate to population density and context of the state	This strategy describes Indiana's unique context for carbon reduction, such as projected population and traffic growth rates.	Carbon Reduction, Indiana Context on page 4.
Develop CRS no later than 2 years after enactment of BIL	Strategy developed in 2022 and finalized in early 2023.	Report date on cover page.

APPENDIX B: Stakeholder Meeting Summaries



Indiana Department of Transportation Carbon Reduction Program Stakeholder Meeting #1 Summary

Date & Time: Thursday, 9/22/2022, 9:30 am ET

Attendees:

Ohio-Kentucky-Indiana Regional Council of Governments (OKI)

- Andy Reser

Evansville Metropolitan Planning Organization (EMPO)

- Brooke Vorbeck,
- Pam Drach

Northeastern Indiana Regional Coordinating Council (NIRCC)

- Jeff Bradtmiller

Bloomington/Monroe Co MPO (BMCMPPO)

- Pat Martin

Michiana Area Council of Governments (MACOG)

- Leah Thill
- Allyson Ragan

Northwestern Indiana Regional Planning Commission (NIRPC)

- Scott Weber
- Charles Bradsky
- Kathy Luther

Indy MPO (IMPO)

- Andrew Swenson
- Cole Jackson

Federal Highway Administration (FHWA)

- Michelle Allen
- Steven Minor
- Annie Dixon

Indiana Department of Transportation (INDOT)

- Alison Shaner
- Frank Baukert
- Paul Boone
- Jay Mitchell
- Roy Nunally
- Jason Casteel
- Laura Hilden
- Korey Chu

HNTB (Consultant Team)

- Loreana Marciante
- Mallory Duncan
- Jack Sinton

Key Questions and Discussion Topics

- Loreana Marciante from INDOT's consultant team (HNTB) presented an overview of the Federal Carbon Reduction Program and INDOT's plans to develop a Carbon Strategy in consultation with Metropolitan Planning Organizations.
- INDOT is requesting project information from current capital programs to identify eligible projects. Projects are not being selected or prioritized for the CRP as part of this effort, projects will only be evaluated for alignment with CRP eligibility criteria and goals and will help inform the development of Indiana's Carbon Reduction Strategy.



- Project information should be submitted in digital format (any GIS format is preferred but excel will work as well). Project information should be submitted as soon as possible but no later than October 14th, 2022.
- At a minimum, we are looking for a description of the project and its location. Additional information such as cost and expected benefits are also welcome. MPOs can also pre-screen projects, if feasible. If not, the INDOT team will screen the list for eligibility.
- **Kathy Luther** shared NIRPC has a NOFO going out next month soliciting for new CRP projects. Response: Any information that can be provided before this effort ends (November 2022) will be incorporated into the Carbon Reduction Strategy.
- Two more additional meetings will take place with stakeholders (October and November). Carbon Reduction Strategy framework will be discussed at the next meeting and the Draft Carbon Reduction Strategy will be shared for stakeholder feedback during the third and final meeting.

Draft



**Indiana Department of Transportation
Carbon Reduction Program
Stakeholder Meeting #2 Summary**

Date & Time: Monday, 10/17/2022, 1:00 pm ET

Attendees:

- Kentuckiana Regional Planning & Development Agency (KIPDA)
 - Jeremeih Shaw
- Columbus Indiana Bartholomew County Planning
 - Laura Thayer
- Evansville Metropolitan Planning Organization (EMPO)
 - Brooke Vorbeck
 - Pam Drach
- Northeastern Indiana Regional Coordinating Council (NIRCC)
 - Jeff Bradtmiller
- Michiana Area Council of Governments (MACOG)
 - Leah Thill
- Madison County Council of Governments (MCCOG)
 - Varu Musunuri
- Northwestern Indiana Regional Planning Commission (NIRPC)
 - Scott Weber
- Indy MPO (IMPO)
 - Annie Dixon
 - Andrew Swenson
- Terre Haute Metropolitan Planning Organization
 - Ryan Wickens
- Tippecanoe County Metropolitan Planning Organization
 - Timothy Stoshine
 - Doug Poad
- Federal Highway Administration (FHWA)
 - Steven Minor
- Indiana Department of Transportation (INDOT)
 - Alison Shaner
 - Frank Baukert
 - Paul Boone
 - Brandon Burgoa
 - Roy Nunally
 - Jason Casteel
 - Laura Hilden
 - Catherine Seeley
- HNTB (Consultant Team)
 - Loreana Marciante
 - Andrew Conley
 - Mallory Duncan
 - Lacey Duncan
 - Jack Sinton



Key Questions and Discussion Topics

- Andrew Conley from INDOT's consultant team (HNTB) presented an overview of carbon dioxide emissions from transportation sources across the nation and at the state level. This includes an overview of federal targets for emissions reductions and projected carbon emissions trends.
 - Loreana Marciante from INDOT's consultant team (HNTB) presented on the development of a Carbon Reduction Strategy and project categories that may qualify for Carbon Reduction Program funding. This also includes a description of how these project categories align with INDOT's Long Range Transportation Plan (LRTP) goals and objectives
 - Breakout group sessions discussed two questions:
 1. Are there other elements not already included in the LRTP goals and objectives that your organization believes should be considered when thinking about carbon reduction goals for Indiana?
 2. What types of projects and strategies (from the five categories or others) does your organization consider important to support carbon reduction goals in Indiana?
1. Discussions on question 1 included the following topics for consideration in developing goals and objectives of the carbon reduction strategy:
- Green Building Materials can be emphasized as an element of transportation construction projects.
 - Alternatives to petroleum-based fuels are important. Promoting EVs is an important way to reduce carbon emissions from transportation. Additional considerations for EV infrastructure include:
 - Equitable distribution of charging infrastructure.
 - The grid's ability to support the needed growth in electric vehicle adoption and the need for a "cleaner" grid to increase the reductions of carbon emissions in the power sector from transportation electrification.
 - The average age of a vehicle in Indiana is about 12 years old. Transitioning to electric vehicles will take time in Indiana.
 - Smart growth, TDM, road diets, transit oriented development, and parking reduction were discussed as important components to support carbon emission reductions. But there is not a one-size-fits-all approach and strategies should align with local context and priorities. Policy and program based solutions, such as work-from-home strategies and incentives can also support reduction in carbon emissions.
 - Improving data quality and transportation modeling approaches is important to better understand the interaction between VMT and land-use. This information can lead to better planning and decision making related to transportation investments that reduce VMT such as designing better connections from employment/ jobs and home. Accessing BMV data to better evaluate progress on electric vehicle adoption and VMT traveled by vehicle class can also help develop better strategies.



2. Discussions on question 2, included the recommendation of the following projects and strategies as important in achieving carbon reduction in Indiana:
 - EV charging
 - Active transportation modes – including multimodal, first-mile/last-mile transportation, and micromobility.
 - Employer shuttle programs.
 - Roundabouts and other intersection improvement projects that could decrease congestion without adding new capacity.
 - The category of “alternative modes” should be changed to “active modes” to align with how MPOs currently communicate these types of projects.
- Following the breakout session, groups reported back to the entire meeting.
- INDOT continues to request project information from current capital programs to identify eligible projects. Projects are not being selected or prioritized for the CRP as part of this effort, projects will only be evaluated for alignment with CRP eligibility criteria and will help inform the development of Indiana’s Carbon Reduction Strategy.
 - Project information should be submitted in digital format (any GIS format is preferred but excel will work as well). Project information should be submitted as soon as possible if it has not been already.
 - At a minimum, we are looking for a description of the project and its location. Additional information such as cost and expected benefits are also welcome. MPOs can also pre-screen projects, if feasible. If not, the INDOT team will screen the list for eligibility.
- One additional meeting will take place with stakeholders (November). The Draft Carbon Reduction Strategy will be shared for stakeholder feedback during this third and final meeting.



**Indiana Department of Transportation
Carbon Reduction Program
Stakeholder Meeting #3 Summary**

Date & Time: Thursday, 11/17/2022, 11:00 am ET

Attendees:

Evansville Metropolitan
Planning Organization (EMPO)

- Brooke Vorbeck

Indy MPO (IMPO)

- Annie Dixon
- Andrew Swenson
- Cole Jackson

Kentuckiana Regional Planning
& Development Agency (KIPDA)

- Jeremeih Shaw

Madison County Council of
Governments (MCCOG)

- Varu Musunuri

Michiana Area Council of
Governments (MACOG)

- Leah Thill

Northwestern Indiana Regional
Planning Commission (NIRPC)

- Scott Weber
- Kathy Luther

Northeastern Indiana Regional
Coordinating Council (NIRCC)

- Jeff Bradtmiller

Ohio-Kentucky-Indiana Regional
Council of Governments (OKI)

- Andy Reser

Terre Haute Metropolitan
Planning Organization

- Ryan Wickens

Tippecanoe County
Metropolitan Planning
Organization

- Michael Thompson

Indiana Department of
Transportation (INDOT)

- Alison Shaner
- Frank Baukert
- Brandon Burgoa
- Roy Nunally
- Jason Casteel
- Laura Hilden
- Catherine Seeley
- Louis Feagans
- Jay Mitchell

HNTB (Consultant Team)

- Loreana Marciante
- Jack Sinton



Key Questions and Discussion Topics

- Loreana Marciante from INDOT's consultant team (HNTB) presented an overview of the content in INDOT's draft Carbon Reduction Strategy.
- Loreana Marciante highlighted changes that have been made to projects and strategies as a result of MPO input. These projects and strategies are meant to be a high-level discussion as to what *could be done* to support carbon emission reductions. The Strategy Implementation section details specific activities INDOT is or plans to engage in.
- A suggestion was made about including tree-planting along the right-of-way. The team will add to the draft strategy. INDOT welcomes additional suggestions from MPOs on potential or specific projects and strategies that could be included in the Draft CRS report.
- A question asked about the timeline for strategy implementation. No timeline is specifically outlined as of now, but the first action is to develop a performance measure and targets for carbon reduction in accordance with federal policy and guidelines. These targets will inform the development of a more specific timeline in the future.
- Jack Sinton from INDOT's consultant team (HNTB) discussed the project assessment portion of the analysis. Updates were given as to the number of projects from INDOT as well as the MPOs that were deemed either eligible or conditionally eligible for CRP funding. Conditionally eligible projects are those that may be eligible, but project description is does not currently provide enough detail to determine whether all applicable eligibility criteria are fully met. Some of the conditionally eligible projects might require the calculation of carbon reduction to become eligible.
- Each eligible or conditional project was also assessed qualitatively for its carbon reduction potential. The assessed CO2 reduction potential is based on state and federal studies on the emissions reduction impacts of different types of projects. The qualitative score (low to high on a five point scale) is assigned on the basis of the type of project, the project's geographic scale, and the type of road (Interstate, State, or Local) the project is performed along. Projects that receive an "N/A" score did not have enough detail in the description to associate the type of project with a carbon reduction level.
- The carbon reduction potential estimate is different from the carbon reduction calculation required by FHWA to approve funding for projects that would eligible only if the project can demonstrate a reduction in on-road vehicle emissions. The FHWA has not yet released guidance on how to demonstrate these emission reductions.
- The Excel-based tool that HNTB has developed to determine the high-level eligibility and CO2 reduction potential of projects was discussed. HNTB will send the tool and analyzed projects back to MPOs that had submitted projects to be considered. The tool is interactive, and inputs can be adjusted to include a higher level of detail to obtain better estimates as to project eligibility and CO2 reduction. A user guide and methodology will be included with the tool.
- INDOT will be releasing the Draft Carbon Reduction Strategy to the public in December 2022 for a 30-day comment period. MPOs will receive an advance copy via email. INDOT requests that MPOs share the announcement of public release of the draft with their members and stakeholders.

APPENDIX C: Public Engagement Summary

To be Developed with Input
from Public Comment Period

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To be Developed with Input
from Public Comment Period

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Indiana Department of Transportation - Carbon Reduction Strategy

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