



**CLIMATE CHANGE**

# Climate Change



## USDOT

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## USDOT Legal Stance

- \* [Executive Order \(EO\) 13690](https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and) Federal Flood Risk Management Standard (FFRMS - 2015) <https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and>
- \* [EO 11988](https://www.federalregister.gov/articles/2015/02/05/2015-02284/guidelines-for-implementing-executive-order-11988-floodplain-management-as-revised) Floodplain Management Guidelines (1977) <https://www.federalregister.gov/articles/2015/02/05/2015-02284/guidelines-for-implementing-executive-order-11988-floodplain-management-as-revised>
- \* [Guidelines for Implementing EO11988, Floodplain Management, as Revised](http://www.archives.gov/federal-register/codification/executive-order/11988.html) (2015) <http://www.archives.gov/federal-register/codification/executive-order/11988.html>
- \* [US DOT Order 5650.2](http://www.floods.org/ace-files/documentlibrary/FHWA/DOT_floodplain_management_protection_4_23_79.pdf) Floodplain management & protection [http://www.floods.org/ace-files/documentlibrary/FHWA/DOT\\_floodplain\\_management\\_protection\\_4\\_23\\_79.pdf](http://www.floods.org/ace-files/documentlibrary/FHWA/DOT_floodplain_management_protection_4_23_79.pdf)
- \* [23 CFR 650 A](https://www.gpo.gov/fdsys/granule/CFR-2009-title23-vol1/CFR-2009-title23-vol1-part650) - Location & Hydraulic Design of Encroachments on Flood Plains <https://www.gpo.gov/fdsys/granule/CFR-2009-title23-vol1/CFR-2009-title23-vol1-part650>



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# FHWA Policy & Guidance

-  [FHWA Order 5520](http://www.fhwa.dot.gov/tegrs/directives/orders/5520.cfm) "Transportation System Preparedness and Resilience to Climate Change & Extreme Weather Events" (12/15/2014) <http://www.fhwa.dot.gov/tegrs/directives/orders/5520.cfm>
-  USDOT [Climate Adaptation Plan](https://www.transportation.gov/sites/dot.gov/files/docs/2014-%20DOT-Climate-Adaptation-Plan.pdf) (10/2014) <https://www.transportation.gov/sites/dot.gov/files/docs/2014-%20DOT-Climate-Adaptation-Plan.pdf>
-  [Hydraulic Engineering Circular 25, Vol. 2: Highways in the Coastal Environment: Assessing Extreme Events](http://www.fhwa.dot.gov/engineering/hydraulics/pubs/nh14006/nh14006.pdf) (10/31/2014) <http://www.fhwa.dot.gov/engineering/hydraulics/pubs/nh14006/nh14006.pdf>
-  [Eligibility of Activities To Adapt To Climate Change and Extreme Weather Events Under the Federal-Aid and Federal Lands Highway Program](http://www.fhwa.dot.gov/federalaid/120924.cfm) (9/24/12) <http://www.fhwa.dot.gov/federalaid/120924.cfm>
-  Eligibility of Activities To Adapt To Climate Change and Extreme Weather Events Under the Federal-Aid & Federal Lands Highway Program, [USDOT Policy Statement on Climate Change Adaptation](http://www.fhwa.dot.gov/environment/climate_change/adaptation/policy_and_guidance/usdot.cfm) (6/2011) [http://www.fhwa.dot.gov/environment/climate\\_change/adaptation/policy\\_and\\_guidance/usdot.cfm](http://www.fhwa.dot.gov/environment/climate_change/adaptation/policy_and_guidance/usdot.cfm)

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## This is how we do business:

- Preserve our assets and minimize their whole life cost
- Operate in a financially sustainable manner
- Provide a framework to improve performance on a long-term basis

 FHWA Program & Policy Guidance Center

<https://www.fhwa.dot.gov/pgc/>

 FHWA Climate Adaptation Policy & Guidance

[http://www.fhwa.dot.gov/environment/climate\\_change/adaptation/policy\\_and\\_guidance/](http://www.fhwa.dot.gov/environment/climate_change/adaptation/policy_and_guidance/)

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## USDOT: Cabinet Level

-  Within the United States, **transportation is the largest source of greenhouse gas (GHG) emissions** after electricity generation. With scientific recognition that GHG emissions are contributing to a long-term warming trend of the earth, there is an increasing realization that **transportation**, as a significant contributor of GHGs, **plays an important role in climate change policy and program decisions.**

<http://climate.dot.gov/about/index.html>

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## USDOT Center for Climate Change and Environmental Forecasting

-  Coordinates transport & climate-change research, policies, and actions within DOT
-  Promotes comprehensive approaches to reduce emissions, address climate-change impacts, & develop adaptation strategies

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### Climate Change Impacts & Adaptation

Climate change is expected to have an impact on transportation infrastructure. Issues such as rising sea level and changes in regional temperature may change the nation's road and rail network that could eventually require strategic adaptation planning to respond to the impacts.

#### Climate Change Impacts



As climate change affects transportation, it will be important to understand how transportation infrastructure and systems could be impacted. This section provides resources on the possible impacts of climate change on transportation.

#### Adaption Planning



Resources about approaches to planning for expected impacts caused by climate change.

<http://climate.dot.gov/impacts-adaptations/index.html>

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### State/Local Actions & Policies

Many states and local government are setting greenhouse gas (GHG) reduction goals through legislation, regulation, and other policies. States and regional coalitions are developing climate action plans to identify and evaluate feasible policies to reduce their greenhouse gas emissions through a combination of public and private sector policies and programs. With growing interest in climate change, transportation decision makers are facing increased public emphasis on the relationship between transportation and climate change. In response, transportation agencies and planning organizations are increasingly integrating climate change impacts into transportation decision making.

#### Climate Action Plans and Initiatives



Resources and information about climate action plans and examples of specific actions that states are taking to lower their greenhouse gas emissions from the transportation sector.

#### Integration of Climate Considerations into Transportation Decision Making



Reports and studies that address how State Departments of Transportation (DOTs), metropolitan planning organizations (MPOs), transit agencies, and other transportation organizations are including climate change considerations in transportation decision making, including their specific approaches to integrating considerations of climate change impacts into transportation planning and decision making.

<http://climate.dot.gov/state-local/index.html>

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### Federal Actions

The transportation sector, as one of the largest and fastest growing sources of greenhouse gas (GHG) emissions, is becoming a major policy focus for addressing climate change. Programs and policies are being initiated at the Federal level, through the U.S. Department of Transportation (DOT) and additional federal agencies.

#### Federal Programs Related to Transportation and Climate Change

 Information about programs carried out by U.S. Department of Transportation (DOT) and other Federal agencies that directly or indirectly reduce greenhouse gas emissions and other types of pollution from the transportation sector.

#### DOT Activities and Partnerships

 Information about the types of climate change related activities and partnerships that the U.S. Department of Transportation is involved in to reduce greenhouse gas emissions from the transportation sector.

<http://climate.dot.gov/policies-legislation-programs/index.html>

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# USDOT Program Highlights

-  NHTSA Automotive Fuel Economy Program
-  FAA Programs and Policies to Reduce Aviation Emissions
-  FHWA
  -  Bicycle & Pedestrian Program
  -  Congestion Mitigation and Air Quality (CMAQ) Improvement Program
  -  Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: The Gulf Coast Study
  -  It All Adds Up to Cleaner Air

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# FAA & FTA: Modal Levels

- 🌐 Aviation Climate Change Research Initiative (ACCRI)
- 🌐 Environmental Policies

- 🌐 FTA Climate Change Adaptation Initiative - Pilot studies

<https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/fta-climate-change-adaptation-initiative>

[https://www.faa.gov/regulations\\_policies/policy\\_guidance/envir\\_policy/](https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/)

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# MARAD: Modal Level

- 🌐 Port infrastructure
  - 🌐 owned and operated by public agencies or private firms
  - 🌐 built to many different standards
  - 🌐 environmental risk is varied
- 🌐 Recommendation
  - 🌐 ensure that vulnerabilities analysis be considered
  - 🌐 consider adaptation during project planning and during the NEPA evaluation

[http://www.climate.dot.gov/impacts-adaptations/workshop\\_20150225/pdf/Yuska.pdf](http://www.climate.dot.gov/impacts-adaptations/workshop_20150225/pdf/Yuska.pdf)

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## FHWA: Modal Level

- 🌐 Partner with state and local transport agencies to increase the resilience of the transportation system.
- 🌐 FHWA committed to reducing GHG pollution from vehicles traveling on nation's highways.
- 🌐 Adaptation is critical to FHWA's goal to improve highway system performance - particularly its safety, reliability, effectiveness, and sustainability.

[http://www.fhwa.dot.gov/environment/climate\\_change/](http://www.fhwa.dot.gov/environment/climate_change/)

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## TRB - Research

- 🌐 TRB's gateways website to activities and products that address transportation and climate change.



<http://www.trb.org/Main/SpecialtyPageClimateChange.aspx>

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## TRB Special Report 290, "Potential Impact of Climate Change on U.S. Transportation"

- 🌍 Climate change will *affect every mode of transportation*, the challenges to infrastructure providers will be new and often unfamiliar.
- 🌍 *State and local governments* incorporate adjustments into long-term capital improvement plans, facility designs, maintenance practices, operations, and emergency response plans.
- 🌍 *Design standards* re-evaluated and new standards developed for future climate conditions.
- 🌍 *Transportation planners* consider climate change effects on infrastructure investments.
- 🌍 *Planning timeframes* should extend beyond 20-30 years.
- 🌍 *Institutional arrangements* for planning and operations will need to change to incorporate cross-jurisdictional and regional cooperation.
- 🌍 *Adaptation planning* is in the early stages, with much more research and work to be done.

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## AASHTO - State DOTs

- 🌍 Climate Adaptation:
  - 🌍 Actions by individuals or systems to avoid, withstand, or take advantage of current and projected climate changes and impacts. Adaptation decreases a system's vulnerability, or increases its resilience to impacts.

AASHTO's  
**VISION** on Climate Change

<http://climatechange.transportation.org/>

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