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1	Resource Name	Resource Type	Developers and Partners	Hazard	Resource Description	Outputs	Links
2	ADCIRC Model	Generic Model	UNC	Coastal hazards	ADCIRC is a hydrodynamic modeling technology that conducts short- and long-term simulations of tide and storm surge elevations and velocities in deep-ocean, continental shelves, coastal seas, and small-scale estuarine systems	Prediction of storm surge and flooding	https://adcirc.org
3	Analysis of Critical Infrastructure Dependencies and Interdependencies	Methodology; Guidebook	Argonne National Library		Provide a guide for assessing infrastructure dependencies and interdependencies	This report proposes a multi-phase plan supporting dependency and interdependency assessments, identifying a range of data inputs, analysis activities, and potential products for each phase.	https://publications.anl.gov/anlpubs/2015/06/111906.pdf
4	CDC Social Vulnerability Index (SVI)	Data Source	CDC	Natural hazards	The SVI uses a ranking system for census tracts that is comprised of 15 social factors and is designed to help emergency response planners and public health officials identify and map communities that will most likely need support before, during, and after a hazardous event	Online tool available for any county, city, state or census tract that provides Useful databases and maps for emergency planning	https://svi.cdc.gov/factsheet.html
5	Climate Hydrology Assessment Tool	Tool	USACE	Flood and drought	Tool enables user to conduct trend detection in annual peak flow and annual maximum monthly flow, and view climate-modeled projected annual maximum monthly flow range.	trend detection and climate-modeled flows	https://www.usace.army.mil/corpsclimate/Public_Tools_Dev_by_USACE/Climate-Impacted_Hydrology.aspx ; https://corpsmapz.usace.army.mil/apex/f?p=313:2:0::NO::
6	Community Resilience Planning Guide for Buildings and Infrastructure Systems	Methodology; Guidebook	NIST	All hazards	Six-step guide to help communities think through and plan for their social and economic needs, particular hazard risks, and recovery of built environment	Resilience economic decision-making framework/plan	https://www.nist.gov/topics/community-resilience/planning-guide
7	Corps Shoaling Analysis Tool (CSAT)	Tool	USACE ERDC	Shoaling	CSAT provides users the ability to calculate and forecast channel shoaling volumes, thus serving as a decision support tool that can maximize the use of dredging funds and minimize disruption to vessel traffic through the navigation channels.	Forecasted channel shoaling volumes	http://cirp.usace.army.mil/products/csat.php ; https://cirpwiki.info/wiki/CSAT
8	COTP Zone Area MTS Recovery Plan Guidelines	Tool; Guidebook	USCG	All hazards	The MTSRP is a guidebook that provides procedures for a safe, timely, and effective short term recovery of the MTS to pre-disruption condition	Short-term recovery framework	https://www.dco.uscg.mil/Portals/9/CG-FAC/Documents/Marine%20Transportation%20System%20Recovery%20Plan%20Template%20NVIC%2004-18.pdf?ver=2018-08-30-124026-983 ; https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=729d008770244f96b12fa5f6f339e62e
9	Disaster Recovery Tracking Tool	Tool	University of Texas A&M, Supported by DHS	All hazards	The web-based tool is designed to aid local government stakeholders and other end users in tracking the progress and quality of post-disaster recovery	Measurement of a community's disaster recovery status across events	http://www.trackyourrecovery.org/
10	DHS Resilience Baseline Assessment Tool (Version 2.4)	Methodology	DHS	Natural hazards	The RBAS tool is an excel tool designed to assist DHS component agencies develop their internal resilience plans and is to be used alongside the DHS Resilience Framework and the DHS Component Plan for Resilience template	Summary report that summarizes Resilience Factor Scores for each Mission Essential Asset, provides a copy of the stakeholder list, shows historical site hazards, shows site vulnerability scores broken down by infrastructure area, and summarizes narratives entered for each MEA.	https://www.energy.gov/sites/prod/files/2019/11/f68/8-fupwg-fall-2019-merlino.pdf
11	e-Hydro (USACE Hydrographic Surveys)	Data Source	USACE	Coastal hazards	eHydro is a database of hydrographic surveys and other navigation-related data that have been processed and uploaded by USACE Districts	Hydrographic survey maps	https://www.arcgis.com/apps/opsdashboard/index.html#/4b8f2ba307684cf597617bf1b6d2f85d ; https://proceedings.esri.com/library/userconf/oceans16/papers/oceans_34.pdf
12	Earthquake Hazards	Data Source	USGS	Earthquakes	Website for USGS information and publications on earthquakes	Maps of earthquake occurrences; early warning system; scientific publications, fact shets	https://www.usgs.gov/natural-hazards/earthquake-hazards/publications
13	Economic Decision Guide Software (EDGE\$)	Tool	NIST	All hazards	EDGE\$ is an economic software tool that implements a rational, systematic method for selecting cost-effective community resilience alternative strategies and is to be used in conjunction with NIST's Community Resilience Planning Guide	Comparative cost-effectiveness of resilience enhancement project alternatives	https://www.nist.gov/services-resources/software/edge-economic-decision-guide-software-tool
14	Environmental Response Management Application (ERMA)	Tool	NOAA with University of New Hampshire, EPA, USCG, DOI.	Natural and manmade hazards	ERMA is an online mapping tool that integrates both static and real-time data (e.g., ship locations, weather, and ocean currents) in a centralized, easy-to-use format for environmental responders and decision makers	User can upload, analyze, export, and display spatial data in GIS. Spatially displayed data (maps) that can be exported for use in geospatial analysis	https://response.restoration.noaa.gov/resources/maps-and-spatial-data/environmental-response-management-application-erma
15	Federal Funding Handbook for Marine Transportation System Infrastructure, revision 3.0	Data Source	CMTS	N/A	List of available opportunities and resources, organized by 4 categories (energy/economy/resilience; safety & security; environment; and infrastructure).	List of current and past funding programs, online resources, search engines, and federal assistance resource centers	https://www.cmts.gov/downloads/2017_CMTS_Federal_Funding_Handbook_for_MTS_Infrastructure.pdf
16	FEMA Flood Mapping Products	Data Source	FEMA	Flooding	Provides users with FEMA flood data and risk maps.	Risk assessment; floodplain modeling; flood maps.	https://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping
17	FigureGen	Tool	NCSU	Coastal hazards	FigureGen creates publication-quality images of ADCIRC outputs in raster graphics formats including TIFF, JPG, and PNG, and also geo-references images for use with software packages such as Esri's ArcGIS and Google Earth	Images of SWAN+ADCIRC simulations	https://ccht.ccee.ncsu.edu/figuregen-v-49/
18	HAZUS-MH	Tool	FEMA	Earthquake, hurricane, flood, tsunami	HAZUS is a model that uses Geographic Information Systems technology to estimate losses from hazards (including physical damage, economic loss, social impacts) and is designed to help government planners, GIS specialists, and emergency managers identify the most beneficial mitigation approaches to minimize future losses	Estimated potential losses from earthquake, wind, hurricane, floods	https://www.fema.gov/hazus
19	Inland Marine Transportation System (MTS) Travel Time Atlas	Methodology	USACE ERDC	N/A	Written description of travel time estimation methodology and applications to three case studies.	link travel time performance measures and total travel time above baseline time	https://erdc-library.erdrc.dren.mil/jspui/handle/11681/34083
20	Integrated Rapid Visual Screen (IRVS)	Tool	DHS - S&T	All hazards	A downloadable tool with built in risk and resilience assessment capabilities	Assessment of risk and consequences of various scenarios	https://toolkit.climate.gov/tool/integrated-rapid-visual-screening-buildings
21	IWR Tide Tool	Data Source	USACE IWR	Select tide/current station(s)	Provides access to information on astronomical tidal stations around the world	Tidal height and current information for primary and secondary tidal stations; statistics on tidal availability.	https://www.iwr.usace.army.mil/Missions/Economics/Container-Model-Suite-of-Tools-CMST-IWR-Tide-Tool/
22	Marine Cadastre	Data Source	NOAA and BOEM	N/A	Provide direct access to available ocean data, including transportation / obstruction data	Geospatially refined data	https://marinecadastre.gov
23	Multicriteria Decision Analysis (MCDA)	Methodology	N/A	All hazards	MCDA is a method for evaluating alternatives (project plans, locations, etc) given a set of stakeholder-defined criteria. The higher a score, the better stakeholder needs are met.	Ranked list of potential choices	https://projects.ncsu.edu/nrli/decision-making/MCDA.php
24	National Water Model	Data Source	NOAA / National Weather Service	Flood and Drought	The NWM simulates the water cycle with mathematical representations to estimate stream flow, evaporation, soil saturation, etc.	Short-, medium-, long-range flow forecast	https://water.noaa.gov/about/nwm
25	National Weather Service Enhanced Data Display (EDD)	Data Source	NOAA / National Weather Service	All weather	Display of NWS information about current and forecasted weather, climate, and flooding conditions	Current and forecasted conditions for temperature, snow and rainfall, wind, fires, floods, etc.	https://preview.weather.gov/edd/
26	Port Resilience Index: A port Management Self Assessment	Tool	Gulf of Mexico Alliance, NOAA	All hazards	PRI is an initial step in analyzing port resilience; targeted to Port Authority or port management organization. A set of indicators of resilience are presented as Yes/No questions about existing port facility conditions and operations. Basic resilience "score" computed at the end of analysis.	Resilience rating based on yes / no answers; plan for 3, 6, and 12 month actions.	http://masgc.org/assets/images/Ports_resilience_index.pdf
27	Port Planning and Investment Tool	Guidebook	AAPA & MARAD		Report containing a planning framework and resources to aid ports in developing "investment-grade" project plans and position them to obtain capital for their projects in a variety of ways		https://www.aapa-ports.org/empowering/content.aspx?itemNumber=21263
28	Ports and Waterways Safety Assessments (PAWSA)	Methodology	USCG	Waterway hazards	Assessment to identify major waterway safety hazards, estimate risk levels, evaluate potential mitigation measures, and plan implementation of selected measures.	Risk analysis, potential mitigation actions, PAWSA report.	https://www.navcen.uscg.gov/?pageName=pawsaMain

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29	Rapid Assessment of Hurricane Damage and Disruption to Interdependent Civil Infrastructure Systems	Methodology	CIRI (Loggins and Wallace)	Hurricane	This methodology can guide infrastructure management communities to a method for estimating the effects of hazards and the cascading effects of failure.	Determines asset failures in power, water, waste, transportation, and communication outages.	https://asc.library-ou.edu/doi/full/10.1061/%28ASCE%29IS.1943-555X.0000249
30	RS Means Online Services for Costing	Data Source	Gordian	N/A	RS Means Online Services for Costing offers planners the ability to generate cost estimates for heavy duty construction projects related to enhancing resiliency, including shoreline protection features necessary to prepare for climate change	Cost estimates for structural solutions essential to climate proofing and rendering installations more resilient to sea level change	https://www.rsmeans.com/products/online.aspx
31	Sea Level Rise Viewer	Tool	NOAA	Sea-level rise	Interactive online map showing projected changes of sea level.	Projected sea level rise, vulnerable areas, etc.	https://coast.noaa.gov/digitalcoast/tools/slr.html
32	Stakeholder Preparedness Review (SPR)	Methodology	FEMA	All hazards	Annual 3-step self-assessment of community capability based on the capability targets identified in THIRA.	Comparison of current capabilities to capability targets with plan for improving capabilities	https://www.fema.gov/stakeholder-preparedness-review
33	Streamflow Prediction Tool (SPT)	Tool	ERDC (originally BYU)	Flood; drought	Tool predicts runoff and uses return period estimates and warning flags to determine potential severity of flow.	Estimates of runoff flow severity	https://streamflow-prediction-tool.readthedocs.io/en/latest/
34	Threat and Hazard Identification and Risk Assessment (THIRA)	Methodology	FEMA	All hazards	A 3-step risk assessment process for communities to identify potential threats and consequences and determine necessary capabilities to manage threats.	Capability targets including timeframe metrics, critical tasks, and impacts	https://www.fema.gov/threat-and-hazard-identification-and-risk-assessment
35	USACE Sea Level Change Curve Calculator	Tool	USACE	Sea Level Rise	Developed to meet the need for considering Local Mean Sea Level changes into USACE Civil Works and planning coastal projects. Applies methodology from USACE Engineering Regulation 1100-2-8162 to calculate low, intermediate, and high SLR scenarios for consideration in coastal projects. Range of exceedance probabilities included.	Low, intermediate, and high SLR scenarios	https://cwbi-app.sec.usace.army.mil/rcscslc_calc.html
36	USACE Sea Level Tracker	Tool	USACE	Sea Level Rise	Developed to provide current sea level data and sea level rate of change, alongside projected change.	Table and graphical forms of historic and projected sea level change at high, intermediate, and low level, as well as with extreme water level	https://climate.sec.usace.army.mil/slr_app/
37	Waterborne Commerce Statistics Center Public Domain Data	Data Source	USACE	N/A	Repository of aggregated data collected from transportation firms.	Downloadable data for port, lock and waterway facility characteristics; vessel characteristics; commodity movement across nation.	https://www.iwr.usace.army.mil/About/Technical-Centers/WCSC-Waterborne-Commerce-Statistics-Center/
38	What-If Hazard Analysis	Methodology	MIT	All hazards	Used to determine what can go wrong, how likely it is to go wrong, what the consequences of failure are, and potentially how to mitigate those consequences. Involves assembling a review team to brainstorm, in an organized fashion, what threats are likely and what their consequences are.	Assessment of likely threats, their consequences, and remediating actions	http://web.mit.edu/course/10/10.27/www/1027CourseManual/1027CourseManual-AppVI.html
39	Atlas 14 Program	Data Source	NOAA National Weather Service, Hydrometeorological Design Studies Center	Precipitation	NOAA Atlas 14 is the official peer-reviewed record of precipitation frequency estimates. Users can utilize the site map to ID a location of interest or access regional volumes of data. It is funded by affected states and other users on a cost-reimbursable basis.	Precipitation frequency, probable max precipitation	https://www.weather.gov/owp/hdsc
40	Mainstreaming System Resilience Concepts into Transportation Agencies: A Guide	Methodology	National Cooperative Freight Research Program (NCFRP)		Guide and a toolkit of supplemental materials present the state of the art and state of practice for understanding how to mainstream resilience concepts into agency decision-making and procedures.	Maturity score and recommendations	http://www.trb.org/Main/Blurbs/181963.aspx
41	Vulnerability Assessment Scoring Tool (VAST)	Tool	Department of Transportation	Climate hazards	VAST enables users to document the vulnerability of transportation assets in a study area. The assessment includes (1) determining the scope of the vulnerability assessment, (2) selecting appropriate indicators, (3) collecting data about those indicators, and (4) devising an approach to convert raw data about indicators into scores. The result is a set of vulnerability scores that can be used to rank assets by vulnerability or inform other analyses of the results.	A score for exposure, sensitivity, and adaptive capacity.	https://www.fhwa.dot.gov/environment/sustainability/resilience/tools/
42	Vulnerability Assessment and Adaption Framework, 3rd Edition	Methodology	Federal Highways Administration	Natural hazards	The Framework describes the seven primary steps involved in conducting a vulnerability assessment. For each step the Framework features examples from assessments conducted nationwide between 2010 and 2017 and includes links to related resources that practitioners can access for additional information.		https://www.fhwa.dot.gov/environment/sustainability/resilience/adaptation_framework/
43	Interdependent Networked Community Resilience Modeling Environment (INCORE)	Tool	Center of Excellence for Risk-Based Community Resilience Planning funded by National Institute of Standards and Technology	Natural hazards	IN-CORE incorporates a risk-based approach to decision-making that enables quantitative comparisons of alternative resilience strategies. On the IN-CORE platform, data from the community can be seamlessly integrated which allows users to optimize community disaster resilience planning and post-disaster recovery strategies intelligently using physics-based models of inter-dependent physical systems combined with socio-economic systems.		https://incore.ncsa.illinois.edu/
44	Probabilistic Resilience Assessment of Interdependent Systems (PRAISys)	Tool	National Science Foundation, Lehigh University, Florida Atlantic University, Georgia State University	All hazards	After extreme events, a community's socio-economic recovery depends on the recovery of its infrastructure systems, such as power and water distribution systems, transportation networks, communications systems, and critical buildings. We need to build resilient infrastructure systems to support the national economy and wellbeing of citizens, resist extreme events, and ensure their capacity to rapidly recover to full service afterwards. The PRAISys (Probabilistic Resilience Assessment of Interdependent Systems) platform will perform post-event resilience analysis of communities by addressing stochastic interdependencies among infrastructure systems in a probabilistic way.		http://www.praisys.org/
45	Incorporating the Costs and Benefits of Adaptation Measures in Preparation for Extreme Weather Events and Climate Change - Guidebook	Methodology	National Cooperative Freight Research Program (NCFRP)	Natural hazards	Can serve as 1) a single resource to summarize the CBA state-of-practice for incorporating adaptation into plans, 2) a source for ID'ing existing tools and data to support adaptation planning and; 3) an intuitive guide for incorporating CBA into state and local transportation asset management and planning policies and procedures.		https://www.nap.edu/catalog/25744/incorporating-the-costs-and-benefits-of-adaptation-measures-in-preparation-for-extreme-weather-events-and-climate-change-guidebook
46	Physical Oceanographic Real-Time Systems (PORTS)	Tool	NOAA	Natural hazards	The PORTS program information is available in a webviewer format and direct through Navigation Services. Users can set up a MyPORTS application to allow them to customize their own PORTS page and quickly view any data of interest.		https://tidesandcurrents.noaa.gov/ports_info.html