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Resilience and Disaster Recovery (RDR) Tool Suite

Public Version of the Resilience and Disaster Recovery Tool Suite

Resilience and Disaster Recovery (RDR) Tool Suite

Description:

The RDR Tool Suite enables transportation agencies to assess transportation resilience return on investment (ROI) for specific transportation assets over a range of potential future conditions and hazard scenarios, which can then be used as a consideration in existing project prioritization processes. The tool suite utilizes established Robust Decision-Making concepts developed to build on current TDM analyses and address deeply uncertain future scenarios. The RDR Tool Suite was developed at the US Dept. of Transportation's Volpe National Transportation Systems Center in support of FHWA and the Office of the Secretary of Transportation. Click here to download the technical documentation, user guide, quick start guide, reference scenario library, and scenario checklist, as well as a brief overview document.

Installation and Usage:

The RDR Tool Suite is a Python based tool.

The RDR Exposure Analysis Tool and some helper tools also depend on ESRI ArcGIS Pro.

Installation instructions are provided in the RDR Quick Start Guide documentation. A video tutorial on how to install RDR is also available.

- Install the required dependencies (including ESRI ArcGIS Pro if using the RDR Exposure Analysis Tool or dependent helper tools).
- Clone or download the repository. Click here to download the most recent release. Alternatively, the GitHub code repository is available here. Extract the contents into the following directory on your local machine: C:\GitHub\RDR. (Note: *On some systems the RDR directory may need to be renamed from RDR-Public-main*.)
- The documentation and example scenario files are included with the code release.

Using this code

The RDR Tool Suite runs in a custom conda environment built on Python 3.11. The Python dependencies are detailed in the `environment.yml`. There are R components as well, which will install automatically to the R package library within the user's RDR conda environment when first running the Tool Suite. To set up the RDR conda environment, follow these steps based on this reference.

Open Anaconda Prompt. From the Anaconda Prompt terminal, navigate to the location where you cloned the RDR repository and run the following:

```
conda env create -f environment.yml
conda info --envs
```

You should see `RDRenv` show up as an available environment.

Next steps

At this point, you can verify that RDR is fully functional by running the pre-built quick start scenario. For detailed instructions, consult the RDR Quick Start Guide. You can also follow along with the video tutorial for running the Quick Start scenario. Alternatively, consult the RDR User Guide and RDR Run Checklist for guidance on developing your own scenarios.

Contributing:

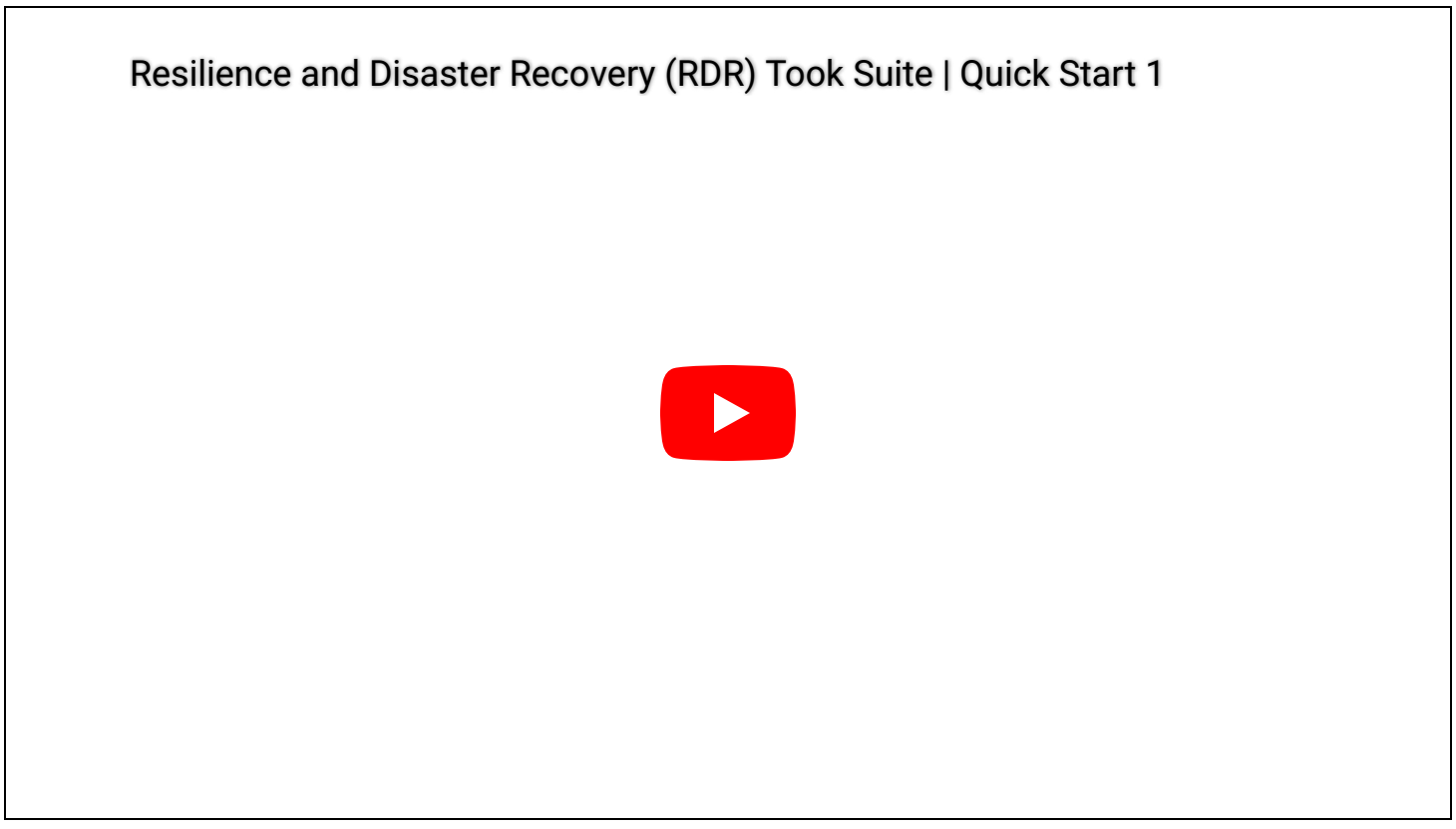
Add bugs and feature requests to the Issues tab in the RDR-Public GitHub repository for the Volpe Development Team to triage.

Video Series:

RDR Overview

Installing RDR

Running Quick Start 1



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