



**Research, Applied Technology,  
Education and Service, Inc.**

***Sphinx extension to extract slide content  
embedded in narrative content for generating  
sphinx-revealjs presentations.  
Project Deliverable ID Manual***

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**Aug 22, 2022**

# Approval Page

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## SPHINX SLIDES

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- [Sphinx Extension Tutorials](#)
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## INDICES AND TABLES

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## GLOSSARY

**API**

Application Programming Interface

**API.RGVFlood.com**

*RGVFlood.com* data assimilation service.

**AU**

Assessment Unit

**AWS**

Amazon Web Services

**Azure**

Microsoft's Cloud Computing Platform

**Bernoulli**

The Bernoulli equation is a simplification of the Navier-Stokes equations assuming inviscid fluid and steady (non-time-variant) flow.

**BLE**

Base Level Engineering

**Celery**

A task scheduling and messaging application used to maximize parallel task processing.

**CentOS**

A *Linux* distribution

**CI**

Cyberinfrastructure

**CLI**

Command-Line Interface

**Clover**

Cloud Virtual Water Model Executor

**COP**

Common Operating Picture

**CPU**

Centralized Processing Unit

**Crowdsourcing**

Data collection from open, relatively un-controlled, sources.

**CUAHSI**

Consortium of Universities for the Advancement of Hydrologic Science

**Cyberinfrastructure**

computing systems, data storage systems, advanced instruments and data repositories, visualization environments, and people, all linked by high speed networks

**DEM**

Digital Elevation Model

**Deterministic**

Approaches to describing processes that do not rely on randomness.

**DFIRM**

Digital Flood Insurance Rate Map

**DHS**

Department of Homeland Security

**DIKW**

Data, Information, Knowledge, Wisdom

**Django**

<<https://www.djangoproject.com/>>

**DO**

Dissolved Oxygen

**Docker**

Docker is a container deployment platform that allows for the rapid deployment of applications in the cloud, independent of the physical infrastructure.

**DRF**

*Django ReST* Framework

**DSS**

Decision Support System

**EC2**

*AWS* Elastic Cloud Compute

**Eeyore**

URL: [Eeyore.ratesresearch.org](http://Eeyore.ratesresearch.org) CPU: Dual Intel(R) Xeon(R) E-2124 CPU @ 3.30GHz Memory: 16GB HD: 4TB OS: Ubuntu Linux 20.04

**FEMA**

Federal Emergency Management Agency



**FIF**

Flood Infrastructure Fund

**FOSS**

Free and Open Source Software

**GCE**

Google Compute Engine

**GCP**

Google Cloud Platform

**GCS**

Google Cloud storage

**GeoNode**

<<https://geonode.org/>>

**GeoNode/db**

*PostgreSQL* with *PostGIS* extensions database server storing *GeoNode Django* and *GeoServer* data.

**GeoServer**

Open source server for sharing geospatial data.

**GeoTIFF**

A public domain metadata standard which has the georeferencing information embedded within the *TIFF* file.

**GIS**

Geospatial Information System

**GKE**

Google *Kubernetes* Engine

**H&H**

Hydrologic and Hydraulic

**HAND**

Height Above Nearest Drainage <<http://handmodel.ccst.inpe.br/>>

**HEC**

Hydrologic Engineering Center

**HEC-DSS**

*HEC* Data Storage System

**HEC-HMS**

Hydrologic Engineering Center Hydrologic Modeling System. <<https://www.hec.usace.army.mil/software/hec-hms/>>

**HEC-RAS**

Hydrologic Engineering Center River Analysis System. <<https://www.hec.usace.army.mil/software/hecras/>>

**HEC-RTS**

Hydrologic Engineering Center Real Time Simulation

**HPC**

High Performance Computing

**HPCC**

*HPCC* cluster

**HTML**

Hypertext Markup Language

**HUC**

Hydrologic Unit Code

**HWMD**

Hidalgo/Willacy Main Drain

**IBWCNF**

*USIBWC* North Floodway

**IDV**

Integrated Data Viewer from *UniData*

**InfoWorks ICM**

<<https://www.innovyze.com/en-us/products/infoworks-icm>>

**IT**

Information Technology

**K8s**

*Kubernetes*

**Kubernetes**

An orchestration system facilitates the deployment and management of containerized applications, with a specific focus on scaling to increase demand for the provided services.

**LaTeX**

A high-quality typesetting system including features designed for the production of technical and scientific documentation

**LiDAR**

Light Detection and Ranging

**Linux**

An open source operating system that is made up of the kernel, the base component of the OS, and the tools, apps, and services bundled along with it.

**LLM**

Lower Laguna Madre

**LLM/BSC**

Lower Laguna Madre/Brownsville Ship Channel watershed.

**LRGV**

Lower Rio Grande Valley

**LRGVDC**

Lower Rio Grande Valley Development Council

**LSM**

Land Surface Models focus on describing the processes driving the exchange of terrestrial water with atmospheric.

**Mechanistic**

Formulations describing physical, biological or chemical processes based on a theoretical understanding.

**MIKE Urban+**

<<https://www.mikepoweredbydhi.com/download/mike-2019/mike-urban-plus?ref=%7B5399F5D6-40C6-4BB2-8311-37B615A652C6%7D>>

**MPI**

Message Passing Interface

**NAT**

Network Address Translation

**Navier-Stokes**

The Navier-Stokes equations are mathematical representations of conservation of mass and momentum for simple fluids such as water.

**NCAR**

National Center for Atmospheric Research

**NetCDF**

*NetCDF (Network Common Data Form) is a set of software libraries and machine-independent data formats that support the creation, access, and sharing of array-oriented scientific data. It is also a community standard for sharing scientific data. The Unidata Program Center supports and maintains netCDF programming interfaces for C, C++, Java, and Fortran. Programming interfaces are also available for Python, IDL, MATLAB, R, Ruby, and Perl. Reproduced from [NetCDF](#).*

**NGINX**

High performance web server.

**NIC**

Network interface controller

**NLDAS**

North American Land Data Assimilation System

**NOAA**

National Oceanic and Atmospheric Agency

**NWC**

National Water Center

**NWM**

National Water Model

**NWS**

National Weather Service

**ODM**

Observations Data Model

**PostGIS**

Spatial database extender for *PostgreSQL*

**PostgreSQL**

Open source object-relational database system, available with *PostGIS* extensions

**Primo**

Parallel raster inundation model

**PWA**

Progressive Web Application, an application format that allows installation as native applications onto mobile devices and desktop PCs directly from the web.

**Python**

<<https://www.python.org/>>

**R**

A language and environment for statistical computing and graphics

**RabbitMQ**

An open-source inter-process message broker

**RATES**

Research, Applied Technology, Education and Service, Inc., a non-profit technology-based company.

**RBAC**

Role Based Access Control

**REON**

River and Estuary Observation Network. A partnership of organizations, supported by cloud software, committed to furthering the Democratization of Water Intelligence by sharing water data, analytics and models for local and regional decision making.

## **REON.cc**

Cloud-based cyber-infrastructure that supports *REON*'s goals.

## **REON/db**

*PostgreSQL* with *PostGIS* extensions database server storing *REON* specific data for *RTHS*, *REON/WM* & *REON.cc* data.

## **REON/RGV**

Instantiation of *REON* with specific application to the Lower Rio Grande Valley - this includes the collection of *RTHS* stations, the *REON* partners with a stake in the LRGV, and the application of the *REON/WM* to the *LRGV*.

## **REON/WM**

*REON* Water Model

## **ReST**

REpresentational State Transfer

## **RGVFlood**

Instantiation of the *REON* Cyberinfrastructure specific to the *LRGV*.

## **RGVFlood.com**

The domain name and *URL* for *RGVFlood*.

## **RTHS**

Real Time Hydrologic System

## **RTHS.us**

Cloud server of *RTHS* network data

## **RVD**

Raymondville Drain

## **RWRAC**

Regional Water Resources Advisory Committee

## **SA**

Situational Awareness

## **SaaS**

Software as a Service

## **SMT**

Simultaneous Multi-Threading

## **SONAR**

Sound Navigation Ranging, a technique for detecting and determining the distance and direction of underwater objects by acoustic means.

## **Sphinx**

Documentation generator supporting multiple output formats

**SPRNT**

Simulation Program for River Networks

**Spyce**

Smartphone Python Computing Environment

**Stochastic**

Approaches to describing processes in statistical terms.

**SWMM**

Stormwater Management Model

**SWTF**

Stormwater Taskforce

**Tastypie**

a webservice *API* framework for *Django*

**TGLO**

Texas General Land Office

**Tier I**

Tier I Real-Time Regional Hydrologic Modeling Framework

**Tier II**

Tier II On-Demand Sub-Regional Hydraulic Modeling Framework

**Tier III**

Tier III Off-Line Urban Stormwater Modeling Framework

**TIFF**

Tag Image File Format, a computer file used to store raster graphics and image information.

**Tigger**

URL: [Tigger.water-wizard.org](http://Tigger.water-wizard.org) CPU: Dual Intel(R) Xeon(R) CPU E3-1245 v3 @ 3.40GHz  
Memory: 16GB HD: 4TB OS: Ubuntu Linux 20.04

**TIN**

Triangular Irregular Networks are a form of vector-based digital geographic data and are constructed by triangulating a set of vertices.

**TWDB**

Texas Water Development Board

**TWDB/FIF**

The Texas Water Development Board Flood Infrastructure Fund.

**Ubuntu**

A *Linux* distribution

**UCAR**

University Corporation for Atmospheric Research

## UI

User Interface

## UniData

A *UCAR* community program focused on sharing geoscience data and the tools to access and visualize that data.

## URL

Uniform Resource Locator

## USACE

United States Army Corps of Engineers

## USGS

United States Geological Survey

## USIBWC

United States International Boundary Water Commission

## UTRGV

University of Texas Rio Grande Valley

## vCPU

Virtual *CPU*

## VIC

Variable Infiltration Capacity (VIC) Macroscale Hydrologic Model. <<https://vic.readthedocs.io/en/master/>>

## VM

Virtual Machine

## Water Wizard

A suite of decision support tools designed for regional decision makers.

## Wizard.RGVFlood.com

A web, mobile and desktop client-side application that, working with the server-side components at *RGVFlood.com*, provides the end-user with the up-to-date analytics, visualization and decision support services from the core *REON.cc CI*.

## WPP

Watershed Protection Plan

## WPS

WRF Preprocessing System

## WRDA

Water Resources Development Act

## WRF

Weather Research and Forecasting Model

### **WRF-Hydro**

*WRF* Hydrological modeling system. <[https://ral. .edu/projects/wrf\\_hydro/overview](https://ral. .edu/projects/wrf_hydro/overview)>



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