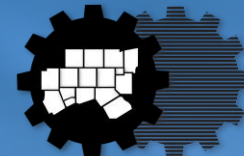


Integrated Stormwater Management (iSWM) Subcommittee Meeting

Staff Planner: Casey Cannon

April 12, 2023



North Central Texas
Council of Governments
Environment & Development

Agenda

I. Welcome and Introductions

II. Presentation and Action Items

1. Approval of January 11, 2023, Meeting Summary.
2. Presentation on NOAA Atlas 14 Rainfall Intensities Under Future Climate Scenarios

III. Discussion Items

- I. Halff Associates, Inc. Introduction
- II. FY23 Work Program Update
- III. SWPP Training Update Assistance

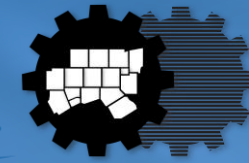
IV. Information Items

1. Regional Public Works Program Update
2. Total Maximum Daily Load Program Update

V. Other Business and Roundtable Discussion

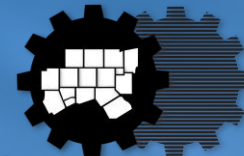
1. Arlington iSWM Certification Recognition
2. Upcoming Events and Conferences
3. Future Agenda Items and Roundtable Discussion
4. Schedule for the Next Meeting

Adjournment



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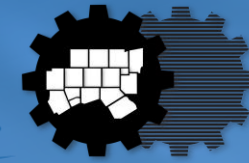
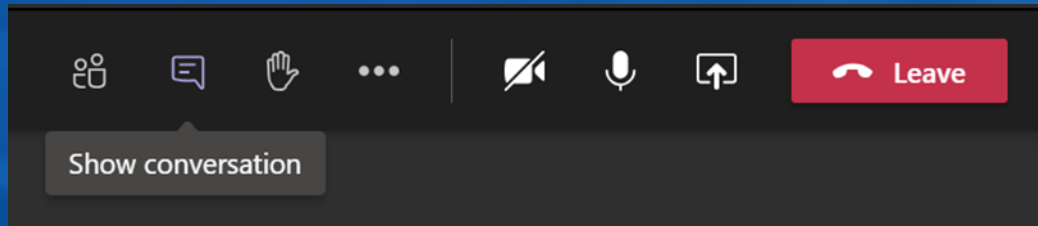
Welcome & Introductions



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Welcome and Introductions

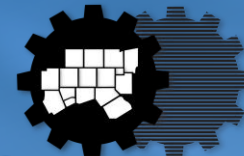
- The meeting agenda, presentation and handouts are located on the [iSWM subcommittee webpage](#)
- Please use the chat function to add your name and organization for attendance



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Approval of January 11, 2023, Meeting Summary

- The meeting summary is posted [online](#) for Subcommittee approval.

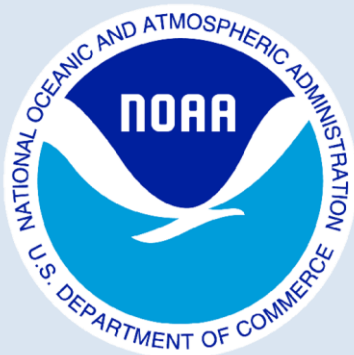


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Changes in Heavy Precipitation and IDF Curves

David R. Easterling, Ph.D.
NOAA/National Centers for Environmental
Information
Asheville, NC

Kenneth E. Kunkel
NC State University
Asheville, NC

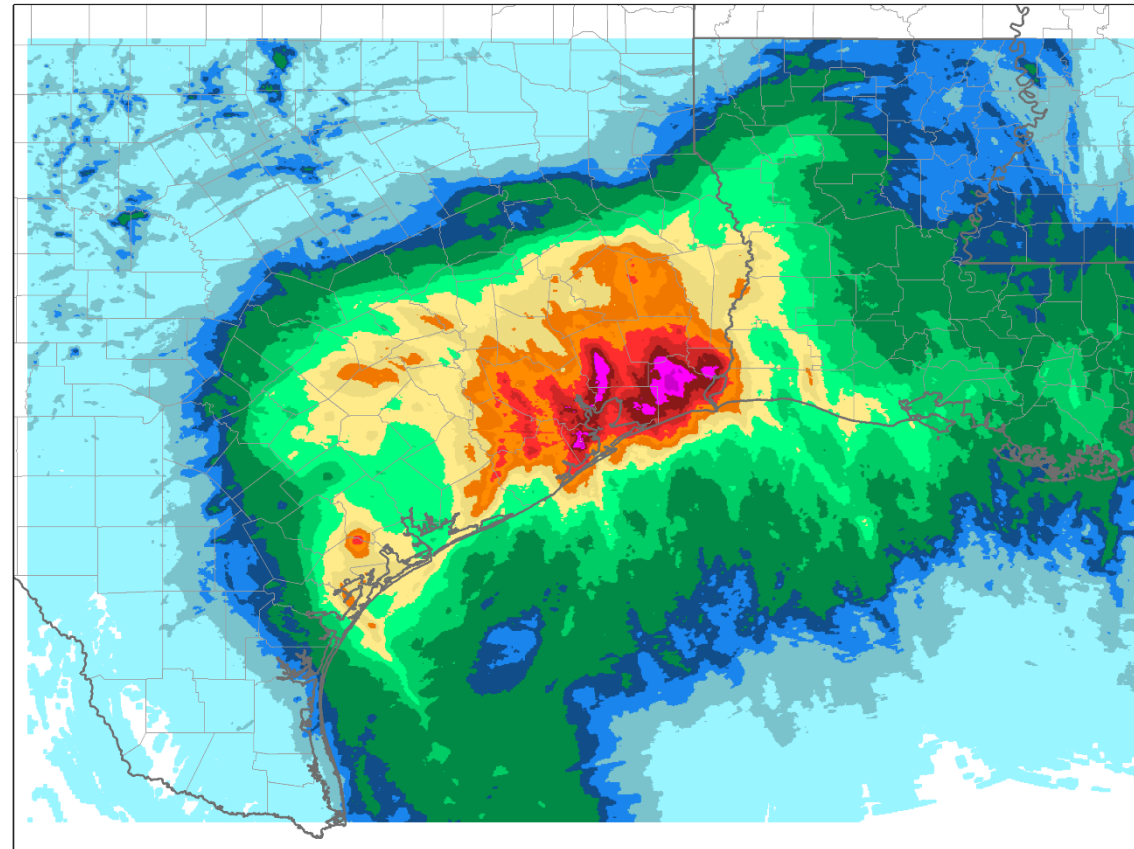


Recent Events

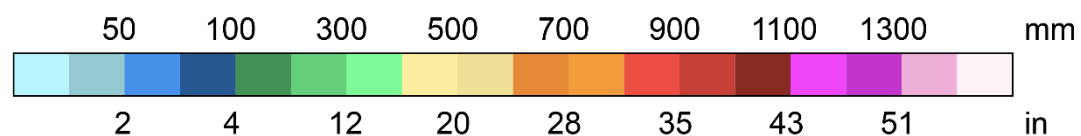
- August 2017, Hurricane Harvey: 50+ inches
- September, 2018, Hurricane Florence: 36 inches
- September 2021, Hurricane Ida: many stations in the northeast U.S. (NJ, NY, PA, CT, MA, RI) experience 25-yr, 50-yr, 100-yr (or more) rainfall totals
- August 21, 2022, Dallas, TX, more than 15 inches in 24h in some places.

Hurricane Harvey

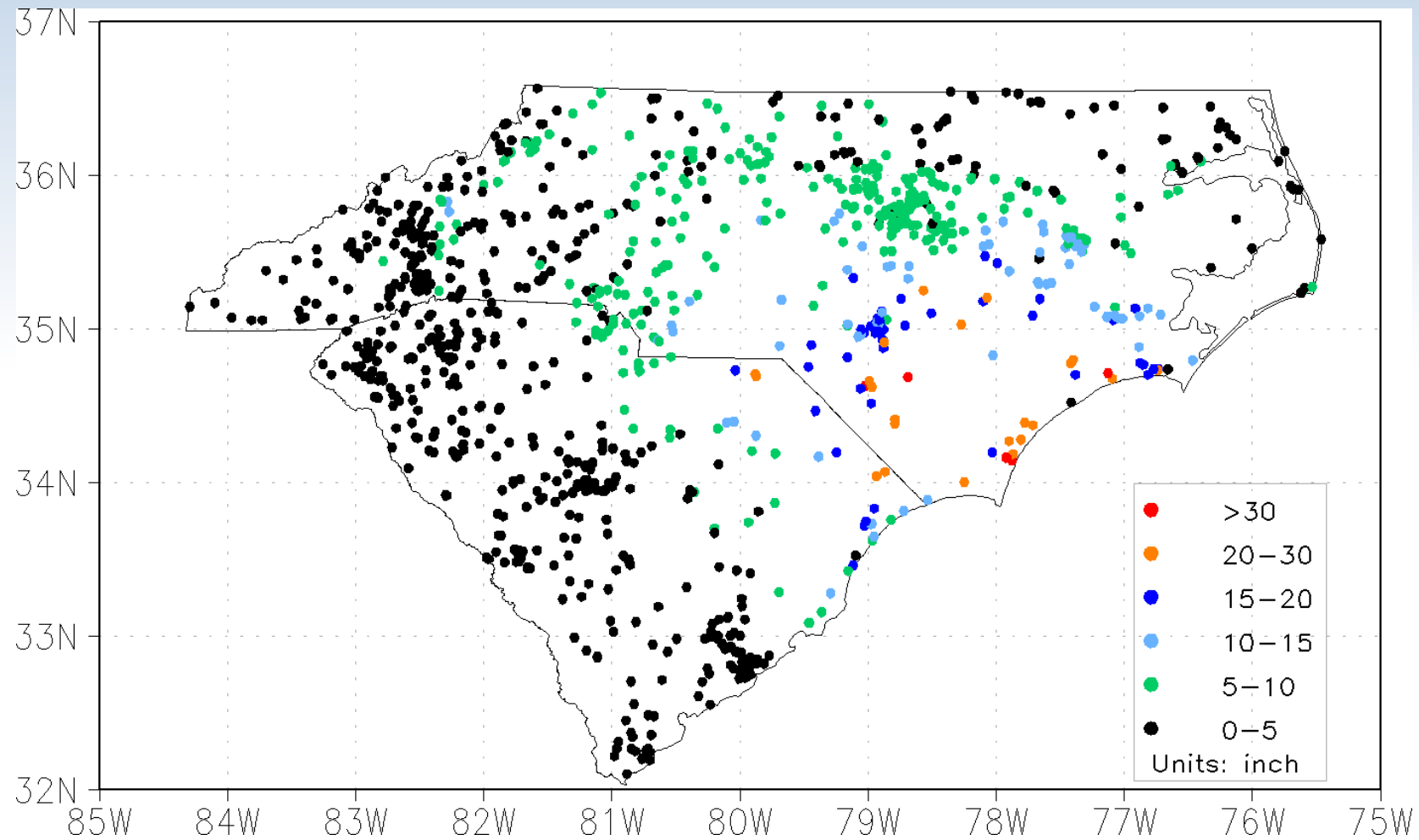
Hurricane Harvey Rainfall, August 24–31, 2017



Total QPE



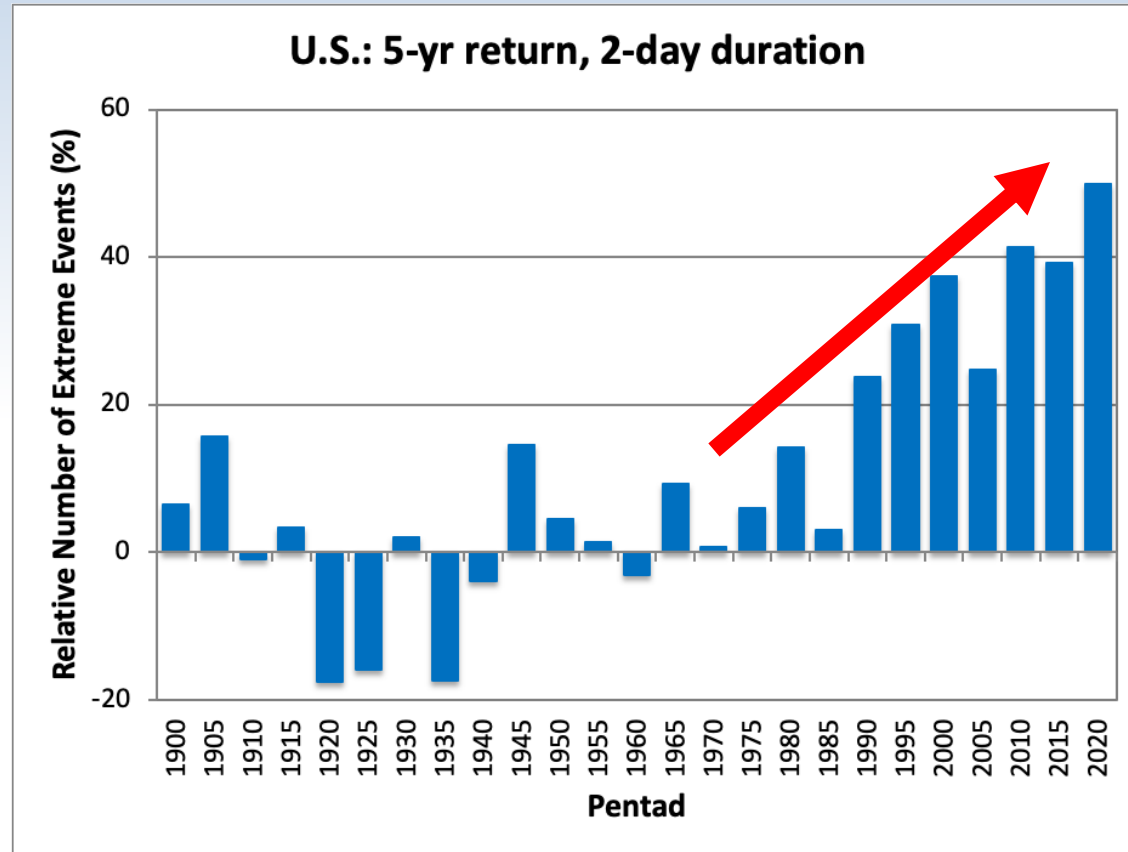
Hurricane Florence



Overarching Questions

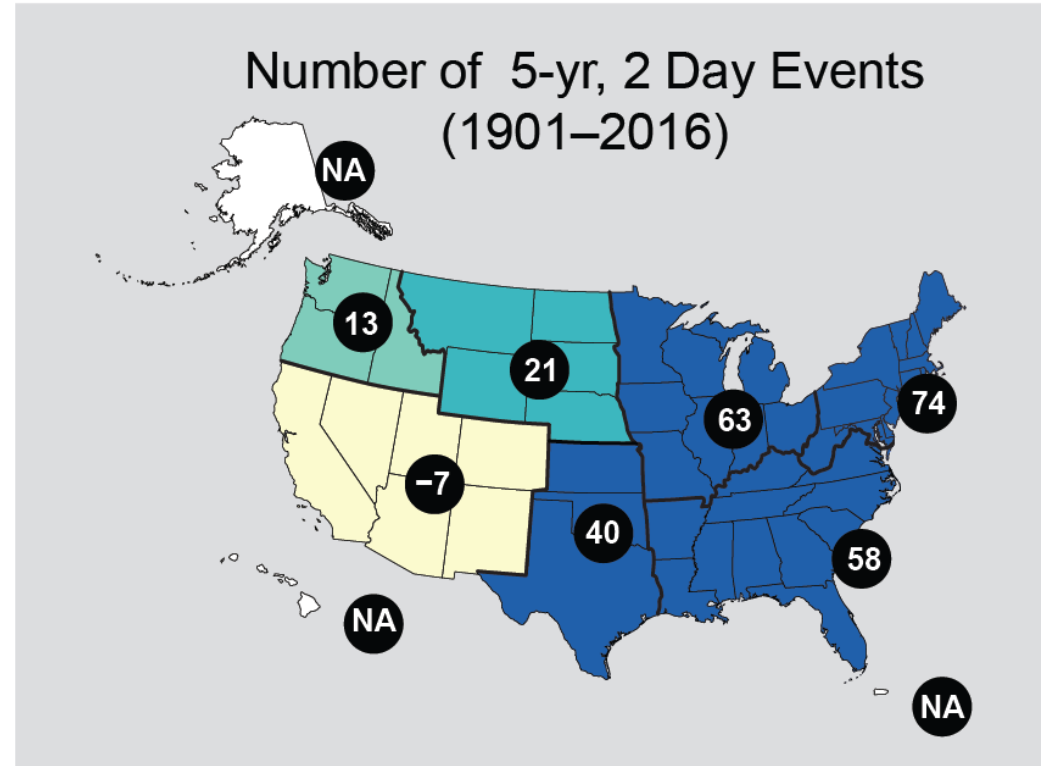
- Has extreme precipitation increased?
- What historical evidence can support future projections of the risk of extreme precipitation events?

Historical Trends

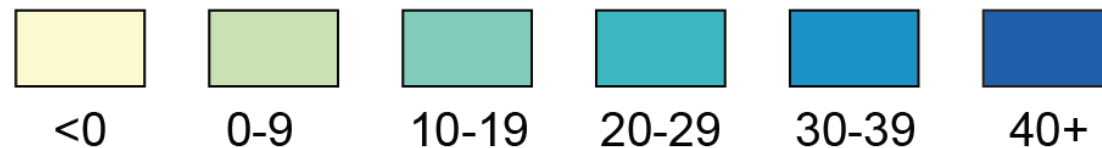


Historical Trends

Observed Change in Heavy Precipitation



Change (%)

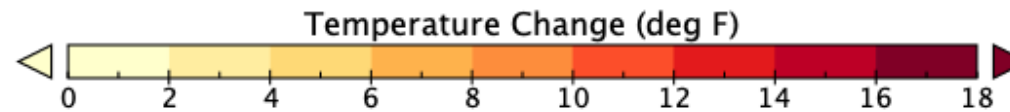
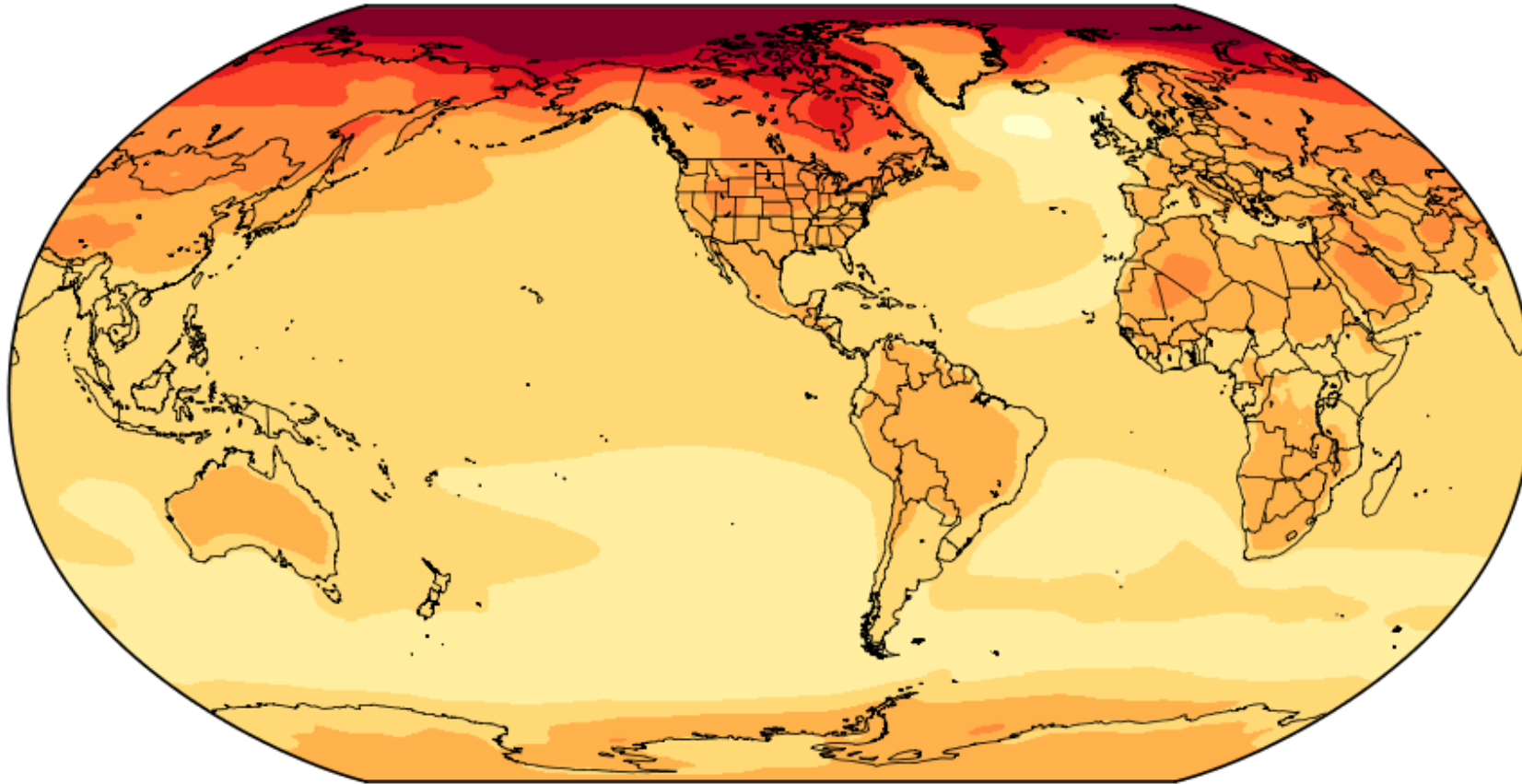


Historical Trends

- **Large increases** in national average **extreme precipitation** frequency
- Increases concentrated in **eastern half of the U.S.**; small trends in the west
- **Globally**, there are many more observing stations exhibiting increases than decreases in extreme precipitation

Future Global Temperature Change

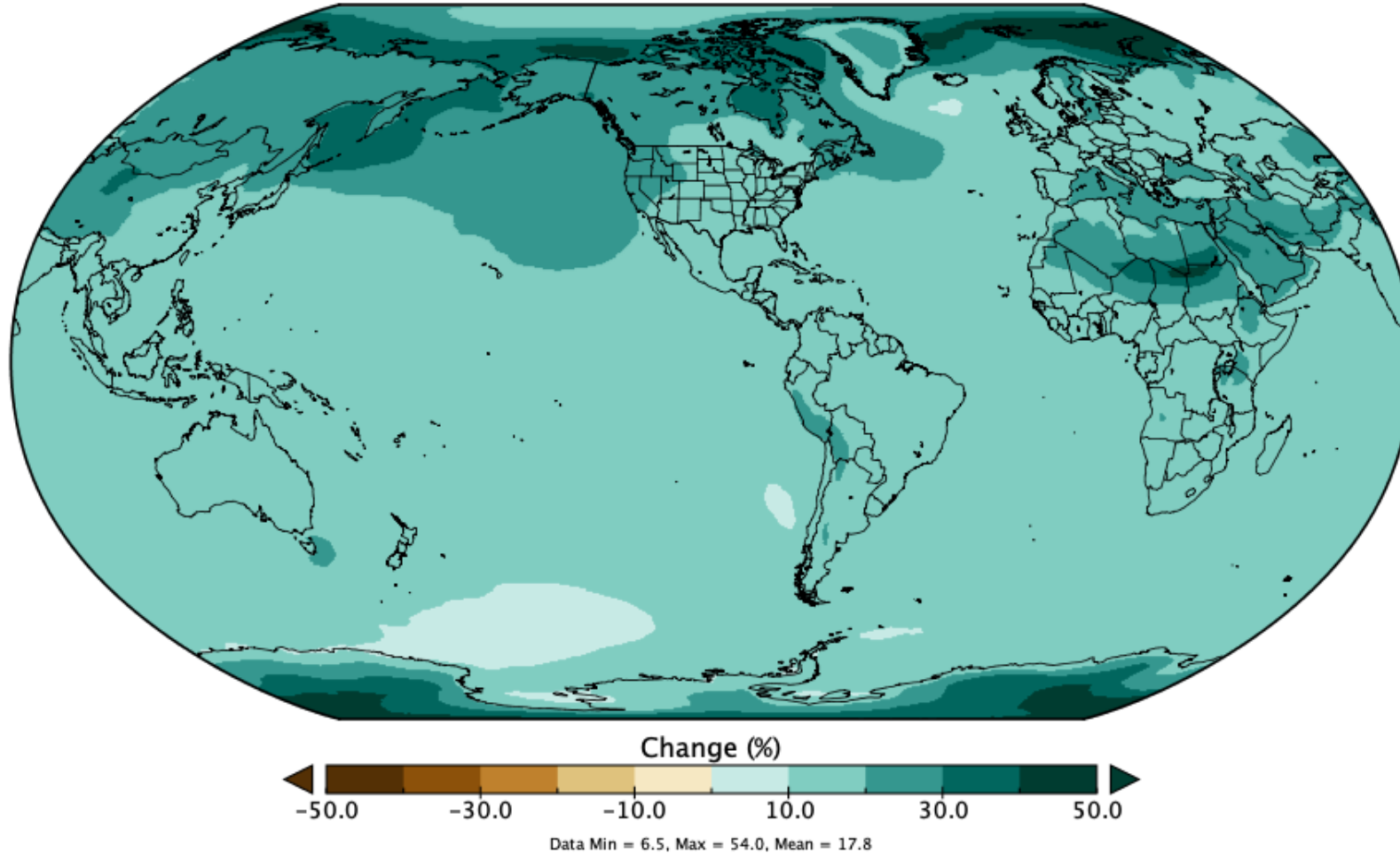
Temperature Change, SSP3-7.0
(2070-2099) minus (1985-2014)



Data Min = 2, Max = 20, Mean = 6

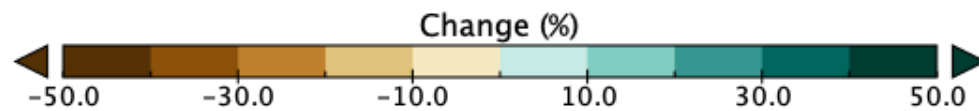
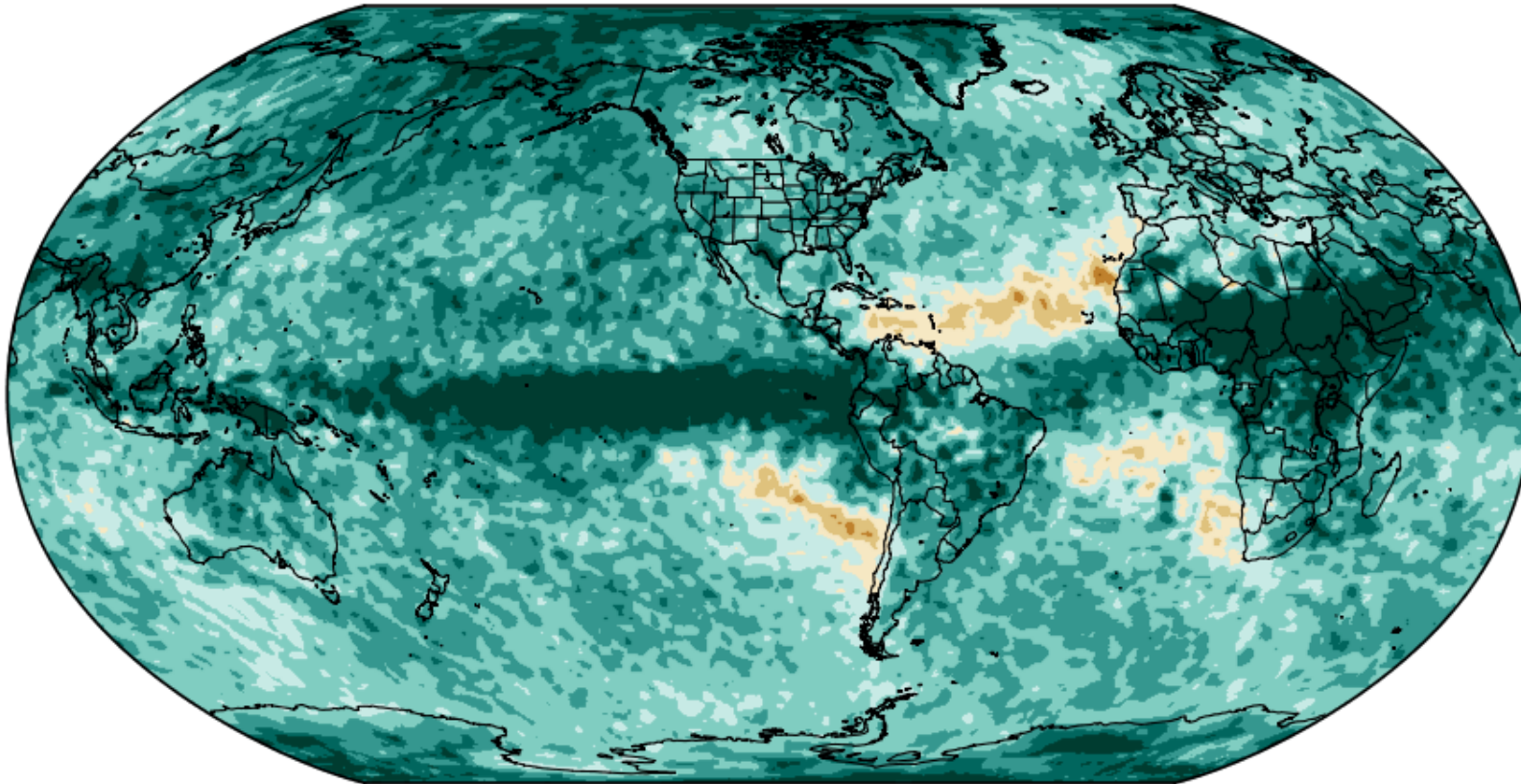
WATER VAPOR

CMIP6 Projected Change [(2070–2099)] minus (1985–2014)], SSP3–7.0
Annual Maximum Daily 2m Specific Humidity



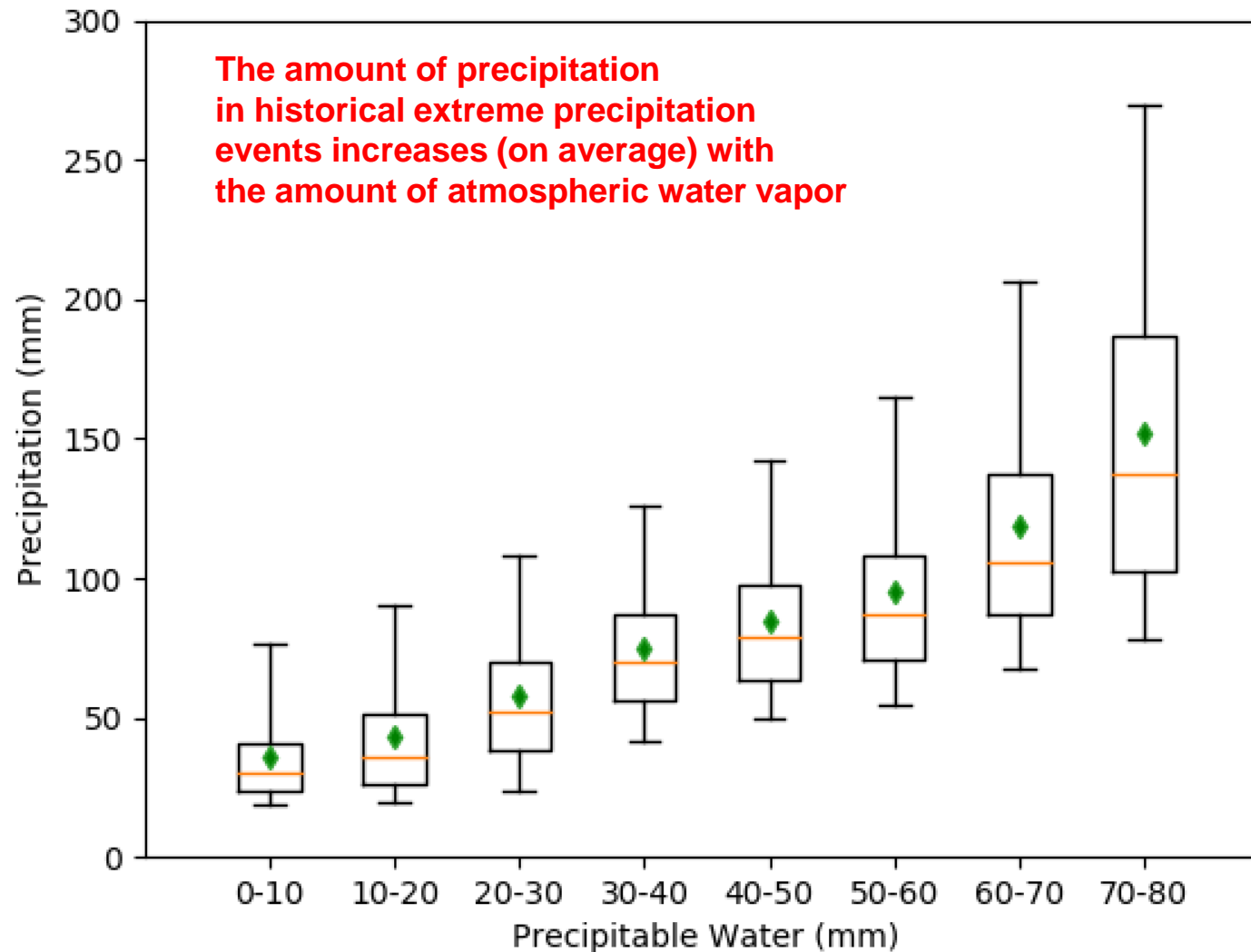
Extreme Precipitation

CMIP6 Projected Change [(2070–2099)] minus (1985–2014)], SSP3–7.0
30-yr Extreme Daily Precipitation

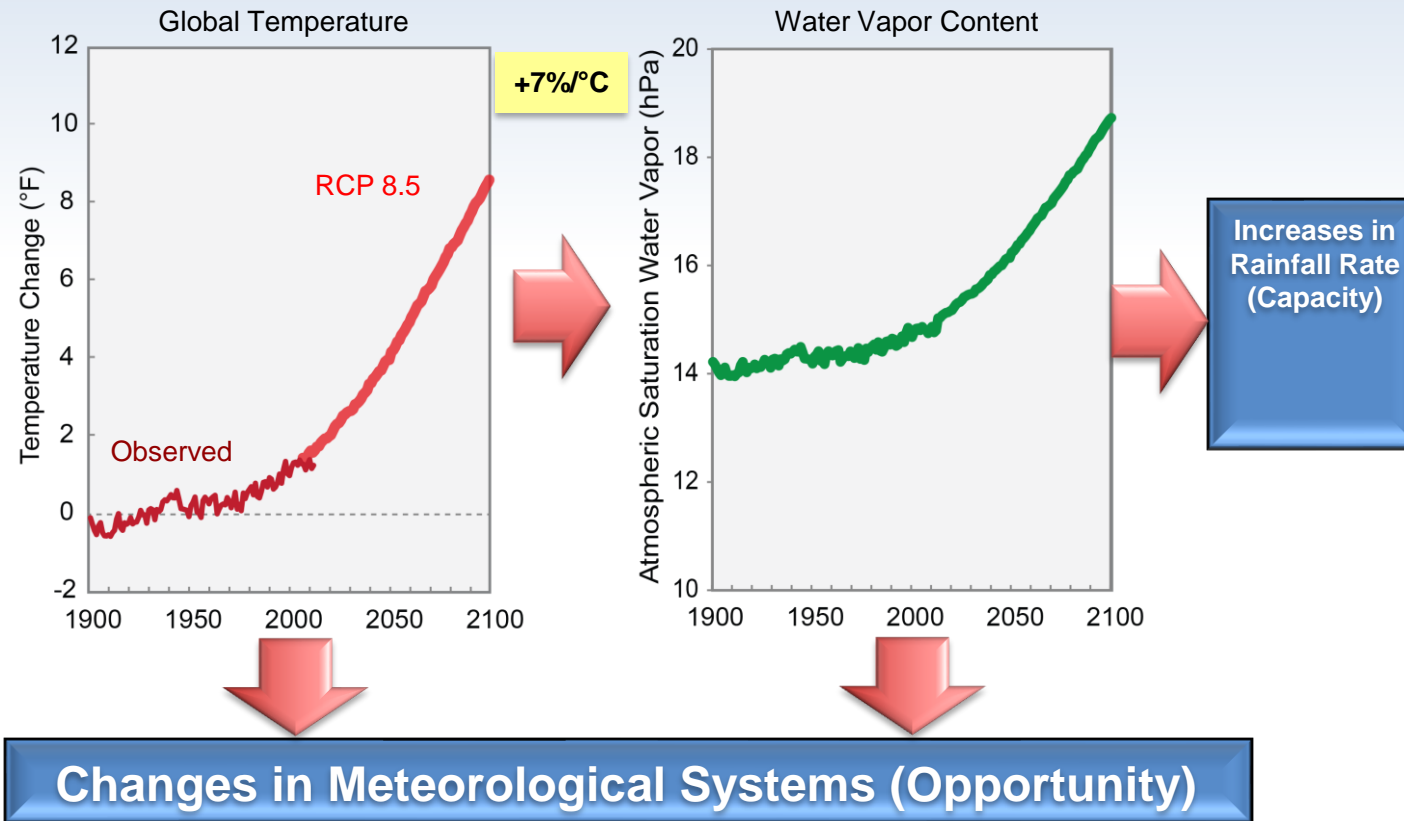


Data Min = -32.1, Max = 178.7, Mean = 23.5

Extreme Precipitation Amounts and Water Vapor



Global Warming → Weather Changes



Intensity-Duration-Frequency (IDF) curves

- These represent the risk of extreme precipitation amounts and are used in the design of runoff control structures
- NOAA Atlas-14 (NA14) is the common source of these design values
- NA14 does not consider future climate change; the underlying assumption is that the climate is stationary

IDF Adjustment

- Calculated adjustment factors to be applied to NOAA Atlas 14 values for different years in the future and two GHG increase scenarios: RCP4.5 and RCP8.5.
 - Adjustments based on two things:
 - 1. projected increase in water vapor and changes in meteorological causes of heavy precipitation events (e.g. hurricanes, fronts, extratropical cyclones).
 - 2. Statistically downscaled climate model output.

These results are for research use only.

Select a location by clicking on the map, by entering a lat/lon (in decimal degrees), or by choosing a Department of Defense (DoD) installation.

Enter Lat/Lon

Lat: DD.D

Lon: DD.D

Display

OR

Select a DOD Installation

State: -- Select --

Installation:

Data Source: U.S. Department of Transportation (USDOT)/Bureau of Transportation Statistics National Transportation Atlas Database

Enter Year and Scenario

Year: Atlas 14

Scenario: N/A

Update

Location

Lat:	Lon:
City:	State:
Country:	Zip Code:



Scenario: RCP8.5

Lon: -81.3

State: Florida

Zip Code: 33825



ON FREQUENCY ESTIMATES (in inches), Year: 2055, Scenario: RCP85

These values are for research use only.



n Park, Florida

DURATION	AVERAGE RECURRENCE INTERVAL						
	1 year	2 years	5 years	10 years	25 years	50 years	100 years
60-min	2.09	2.36	2.81	3.20	3.76	4.16	4.58
2-hr	2.62	2.95	3.52	4.02	4.74	5.27	5.84
3-hr	2.88	3.24	3.87	4.45	5.29	5.94	6.65
6-hr	3.27	3.70	4.47	5.21	6.32	7.21	8.19
12-hr	3.62	4.14	5.11	6.04	7.47		
24-hr	4.05	4.66	5.80	6.91	8.63		
2-day	4.69	5.35	6.60	7.82	9.71		
3-day	5.21	5.91	7.23	8.49	10.43		
4-day	5.66	6.40	7.76	9.06	11.04		
7-day	6.80	7.63	9.13	10.53	12.66		
10-day	7.87	8.77	10.40	11.90	14.18		
20-day	11.06	12.21	14.20	16.06	18.61		
30-day	13.77	15.16	17.52	19.68	22.55	24.73	26.89

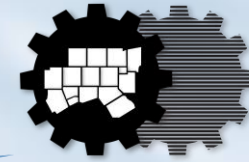
Atlas 14: 11.67 in
Projected Value: 13.83 in
90% Confidence Interval: 8.68-22.28



Thank You For Your Time

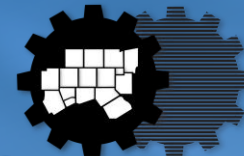


Discussion Items



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Halff Associates, Inc. Introduction

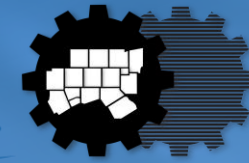


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FY23 Work Program Update

I. FY23 Task List

- I. Review and Compile iSWM Manual Changes
- II. iSWM BMP Training
- III. Develop Technical Case Studies
- IV. iSWM Implementation Guidance for Communities
- V. iSWM Promotional Presentation for Partnering Organizations
- VI. Stormwater Quality Monitoring of Existing iSWM BMPs
- VII. Website Updates
- VIII. Guidance or Training on Temporary Sediment Basins
- IX. Guidance on Pipe Utility Crossing
- X. Expanded Use of Trees in Detention Ponds for Dual Purposes; water quality and carbon sequestration
- XI. Research “Cumulative Impacts” on Small Footprint Developments



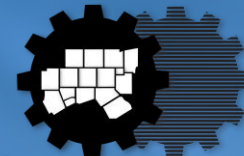
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SWPPP Training Update Assistance

NCTCOG Staff have received a request to assist with updating the Stormwater Pollution Prevention Practices During Construction Training Material.

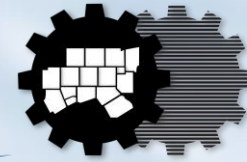
The iSWM Subcommittee assisted with updating this material in FY2019, and NCTCOG staff would like to gauge interest in providing this service again.

The SWPPP Trainings are currently conducted by Lee Stimpson through NCTCOG's [Training and Development Institute](#).



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Information Items

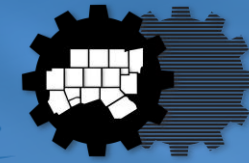


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Public Works Program Update

- Public Works Council (PWC), May 18, 9:30am online via Microsoft Teams, visit www.nctcog.org/envir/committees/public-works-council
- 24th Annual Public Works Roundup, visit www.nctcog.org/envir/public-works/annual-public-works-roundup
 - Save the Date: September 29, 2023 at the Grapevine Convention Center
 - Call for Sponsors: May 2023
 - Call for Presenters: June 2023
 - Registration will open: July 2023

For more information on the Public Works program please contact Kate Zielke at kzielke@nctcog.org or (817) 695-9227

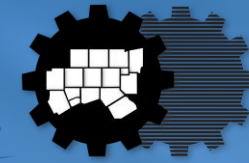


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TMDL Program Update

- Upcoming Webinar: Regional Case Studies & Roundtable – May 4, 2023 at 10:00 AM via Microsoft Teams
- Projects Under Finalization – expected June 2023:
 - Doo the Right Thing (Pet Waste) Educational Explainer Video
 - On-Site Sewage Facility (OSSF, or septic system) postcard
- Projects Under Development:
 - On-Site Sewage Facility (OSSF, or septic system) brochure
- Upcoming Meetings:
 - TMDL Coordination Committee Meeting: June 14, 2023 at 9:30 AM via Microsoft Teams
 - Joint TMDL Stormwater & Wastewater Technical Subcommittee Meeting: August 1, 2023 at 9:30 AM via Microsoft Teams

For more information on the TMDL program please contact Hannah Allen at hallen@nctcog.org or (817) 695-9215



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Arlington iSWM Certification Recognition



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Stakeholder Meetings

- Transportation and Stormwater Infrastructure planning study
- Addresses increasing flooding in the face of rapid development and intense rain events
- Integrates transportation, stormwater, and environmental planning

April 25-Burleson

10 a.m.

Burleson City Hall
141 W. Renfro Street
Burleson, TX 76028

May 4-Weatherford

10 a.m.

Weatherford College:
Workforce & Emerging
Technologies Building
225 College Park Drive
Weatherford, TX 76086

April 26-Decatur

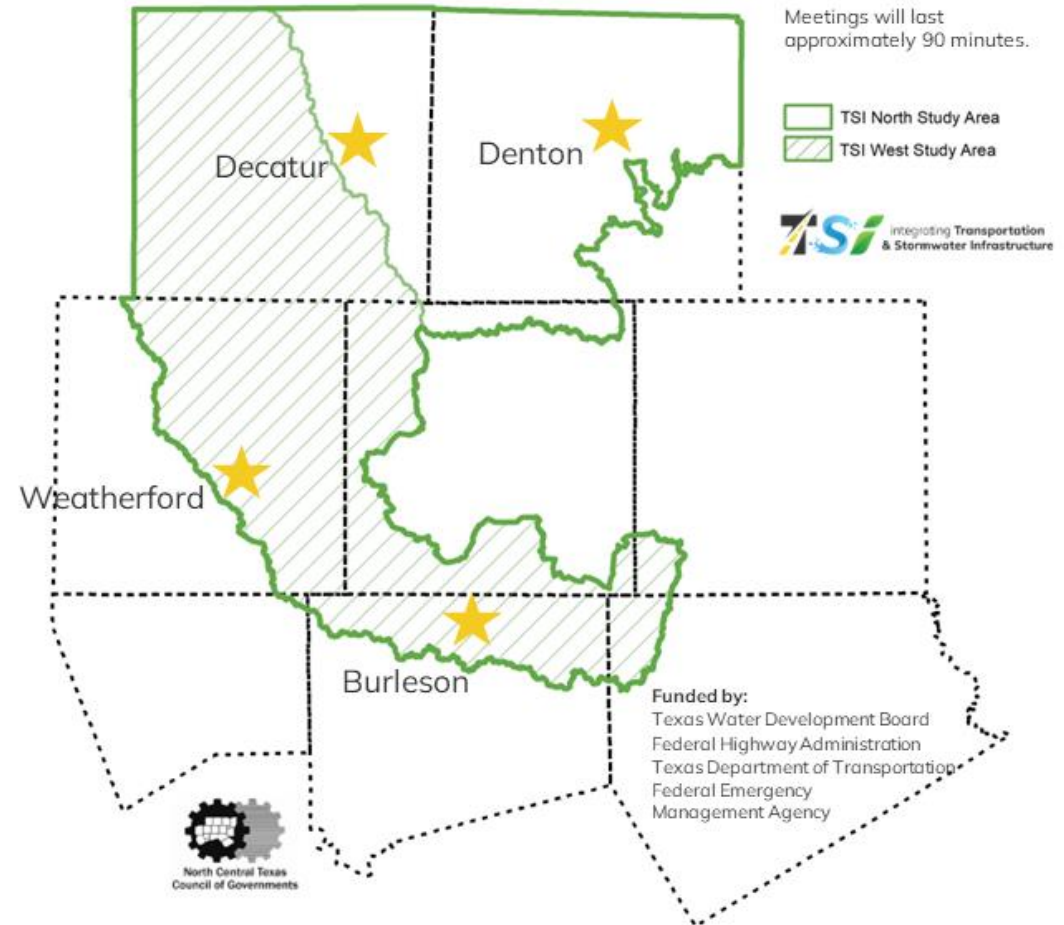
1:30 p.m.

Decatur Conference Center-
Chisholm Suites
2010 W. HWY US 380
Decatur, TX 76234

May 8-Denton

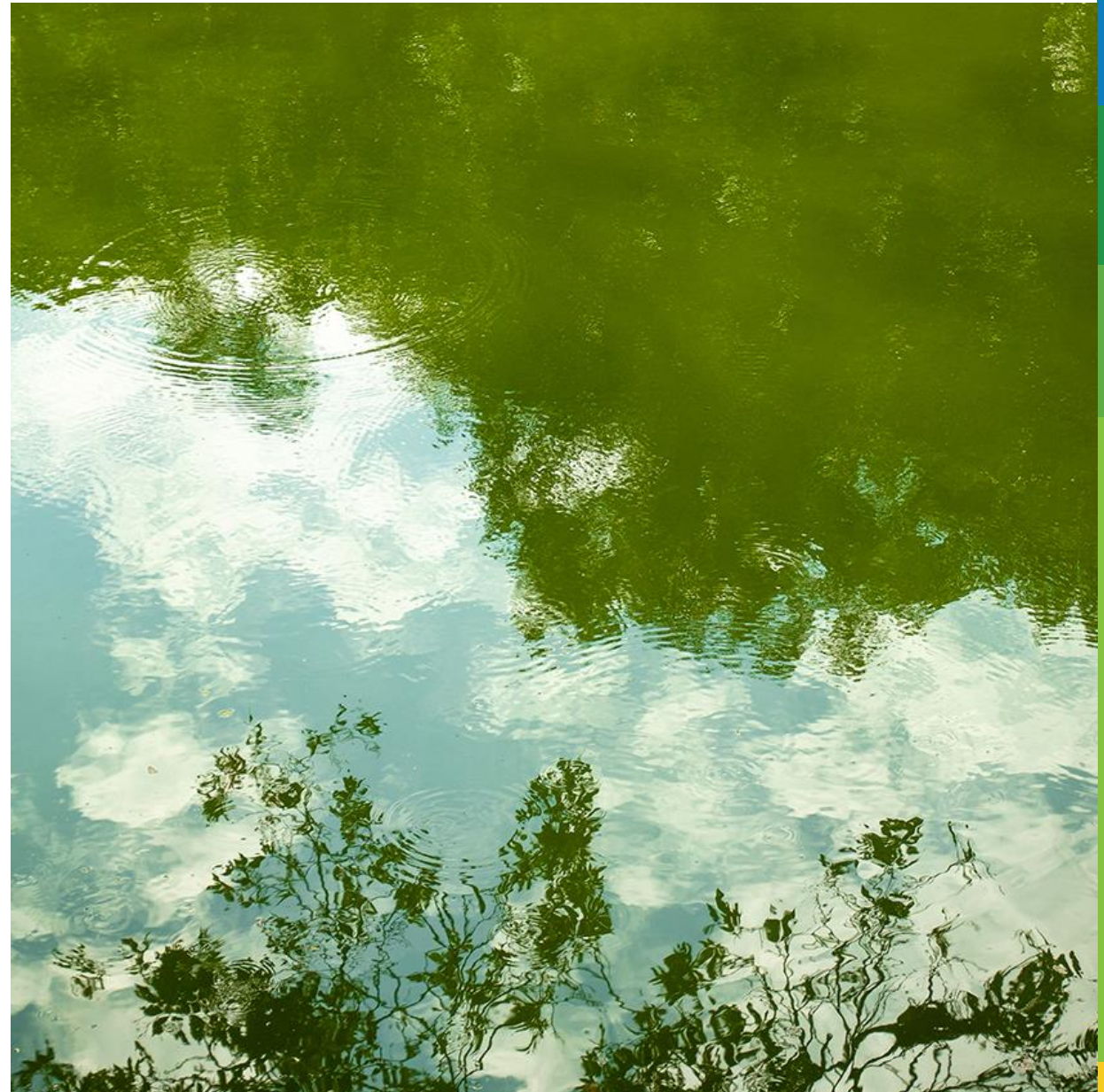
1:30 p.m.

Denton County
Administrative Court House
1 Courthouse Drive
Denton, TX 76208



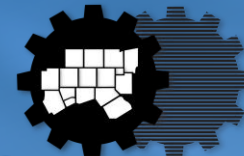
Introduction to Green Asset Management

- Hybrid workshop from EPA and City of Denton
- Green infrastructure maintenance needs
- Asset management documentation
- City of Denton experience
- Site visit
- How green infrastructure complements NCTCOG's TSI study and iSWM program
- Tuesday, **May 16**, NCTCOG Pitstick Conference Room (or via Teams), 9 a.m. to 3 p.m.
- **Registration and Teams link will be available on NCTCOG Events page, <https://www.nctcog.org/envir/Events>**



Upcoming Events, Conferences, and Opportunities

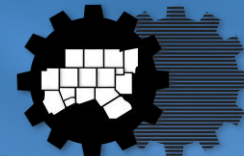
- EPA Region 6 PFAS Virtual Listening Session
 - April 25, 2023, 6:00 pm – 8:00 pm CST
 - Via Zoom
 - Registration available [online](#).
- TCEQ Environmental Trade Fair & Conference
 - May 16-17, 2023
 - Austin Convention Center
 - More information available [online](#).



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Upcoming Events, Conferences, and Opportunities

- EWRI International Low Impact Development Conference
 - Oklahoma City, OK
 - August 6-9, 2023
 - More information available [online](#).
- StormCon 2023
 - Dallas, TX
 - August 28-30, 2023
 - More information available [online](#).

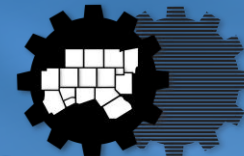


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Upcoming NCTCOG Meetings

- Next iSWM Meeting: July 12, 2023 at 1:30 PM
- Regional Stormwater Management Coordinating Council, May 10, 2023
- Public Works Council, May 18, 2023

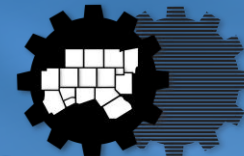
Environment & Development Committees Information
Available at nctcog.org/envir/committees



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Upcoming iSWM Agenda Topics

- FY23 Work Program Update
- Finalize FY24 Work Program Tasks



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Roundtable Discussion



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Contact & Connect

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Cassidy Campbell
Environment & Development Program Manager
North Central Texas Council of Governments
ccampbell@nctcog.org
817.695.9211



iswm.nctcog.org



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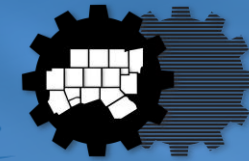
[@nctcogenv](https://www.instagram.com/nctcogenv)



youtube.com/user/nctcoged



EandD@nctcog.org



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