



# **WATER FORWARD**

INTEGRATED WATER RESOURCE PLAN

Austin Integrated Water Resource Planning Community Task Force

Packet Index

September 4, 2020

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## **Versión en español a continuación.**

### **Special Meeting of the Austin Integrated Water Resource Planning Community Task Force September 4, 2020 at 1pm**

#### **Austin Integrated Water Resource Planning Community Task Force to be held September 4, 2020 with Social Distancing Modifications**

Public comment will be allowed via telephone; no in-person input will be allowed. **All speakers must register in advance (Day before the scheduled meeting, September 3<sup>rd</sup> by Noon).** All public comment will occur at the beginning of the meeting.

To speak remotely at the September 4<sup>th</sup> Austin Integrated Water Resource Planning Community Task Force Meeting, residents must:

- Call or email the board liaison at 512-972-0194 or [marisa.flores@austintexas.gov](mailto:marisa.flores@austintexas.gov) no later than noon, (the day before the meeting). The information required is the speaker name, item number(s) they wish to speak on, whether they are for/against/neutral, and a telephone number or email address.
- Once a request to speak has been called in or emailed to the board liaison, residents will receive either an email or phone call providing the telephone number to call on the day of the scheduled meeting.
- Speakers must call in at least 30 minutes prior to meeting start in order to speak, late callers will not be accepted and will not be able to speak.
- Speakers will be placed in a queue until their time to speak.
- Handouts or other information may be emailed to [marisa.flores@austintexas.gov](mailto:marisa.flores@austintexas.gov) by Noon the day before the scheduled meeting. This information will be provided to Board and Commission members in advance of the meeting.
- Residents may watch the meeting here: <http://www.austintexas.gov/page/watch-atxn-live>

### **Reunión del Austin Integrated Water Resource Planning Community Task Force FECHA de la reunion (September 4, 2020)**

La junta se llevará con modificaciones de distanciamiento social

Se permitirán comentarios públicos por teléfono; no se permitirá ninguna entrada en persona. Todos los oradores deben registrarse con anticipación (**September 3<sup>rd</sup>** antes del mediodía). Todos los comentarios públicos se producirán al comienzo de la reunión.

Para hablar de forma remota en la reunión, los residentes deben:

Austin Integrated Water Resource Planning Community Task Force Meeting  
September 4, 2020

- Llame o envíe un correo electrónico al enlace de la junta en 512-972-0194 o [marisa.flores@austintexas.gov](mailto:marisa.flores@austintexas.gov) a más tardar al mediodía (el día antes de la reunión). La información requerida es el nombre del orador, los números de artículo sobre los que desean hablar, si están a favor / en contra / neutrales, y un número de teléfono o dirección de correo electrónico.
- Una vez que se haya llamado o enviado por correo electrónico una solicitud para hablar al enlace de la junta, los residentes recibirán un correo electrónico o una llamada telefónica con el número de teléfono para llamar el día de la reunión programada.
- Los oradores deben llamar al menos 15 minutos antes del inicio de la reunión para poder hablar, no se aceptarán personas que llamen tarde y no podrán hablar.
- Los oradores se colocarán en una fila hasta que llegue el momento de hablar.
- Los folletos u otra información pueden enviarse por correo electrónico a [marisa.flores@austintexas.gov](mailto:marisa.flores@austintexas.gov) antes del mediodía del día anterior a la reunión programada. Esta información se proporcionará a los miembros de la Junta y la Comisión antes de la reunión.
- Si esta reunión se transmite en vivo, los residentes pueden ver la reunión aquí: <http://www.austintexas.gov/page/watch-atxn-live>



**Austin Integrated Water Resource Planning Community Task Force  
September 4, 2020 at 1:00pm  
VIA VIDEOCONFERENCING**

**For more information go to:**  
**[Austin Integrated Water Resource Planning Community Task Force](#)**

## **AGENDA**

### **Voting Members:**

Sharlene Leurig - Chair	Perry Lorenz	Vanessa Puig-Williams
Jennifer Walker – Vice Chair	Robert Mace	Sarah Richards
Todd Bartee	Hani Michel	Lauren Ross
Diane Kennedy	Bill Moriarty	

### **Ex Officio Non-Voting Members:**

Austin Water: Kevin Critendon  
Austin Energy: Kathleen Garrett  
Austin Resource Recovery: Tony Davee  
Neighborhood Housing and Community Development: Sam Tedford  
Office of Innovation: Kerry O'Connor  
Office of Sustainability: Lucia Athens  
Parks and Recreation: Liana Kallivoka  
Watershed Protection: Mike Kelly

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## **1. CALL TO ORDER – September 4, 2020 at 1:00pm**

## **2. APPROVAL OF MEETING MINUTES**

- a. Approval of the meeting minutes from the July 17, 2020 Task Force meeting

## **3. STAFF BRIEFINGS, PRESENTATIONS, AND OR REPORTS**

- a. Water Forward Implementation Progress and Outlook – City Staff (15 min)
  - i. Task Force Questions and Discussion
- b. Technical Advisory Group and Task Force Subcommittees Recap – City Staff (30 min)
  - i. Ordinance Subcommittee
  - ii. Task Force Questions and Discussion
- c. Presentation on Toxic Algae in Lady Bird Lake Discussion – City Staff (15 min)

- i. Task Force Questions and Discussion`

#### **4. FUTURE AGENDA ITEMS**

#### **5. ADJOURN**

Note: Agenda item sequence and time durations noted above are subject to change.

The City of Austin is committed to compliance with the American with Disabilities Act. Reasonable modifications and equal access to communications will be provided upon request. Meeting locations are planned with wheelchair access. If requiring Sign Language Interpreters or alternative formats, please give notice at least 2 days (48 hours) before the meeting date. Please call Austin Integrated Water Resource Planning Community Task Force, at 512-972-0194, for additional information; TTY users route through Relay Texas at 711.

For more information on the Austin Integrated Water Resource Planning Community Task Force, please contact Marisa Flores Gonzalez at 512-972-0194 or [marisa.flores@austintexas.gov](mailto:marisa.flores@austintexas.gov)

# MINUTES



**The Austin Integrated Water Resource Planning Community Task Force convened in a Special Meeting on July 17, 2020 with Social Distancing Modifications.**

**Members in Attendance:**

Jennifer Walker – Vice Chair  
Robert Mace  
Vanessa Puig-Williams

Perry Lorenz  
Bill Moriarty  
Hani Michel

Diane Kennedy  
Sarah Richards  
Todd Bartee

**Ex-Officio Members in Attendance:**

Kevin Critendon, Sam Tedford

**Staff in Attendance:**

Teresa Lutes, Marisa Flores Gonzalez, Helen Gerlach, David Anders

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**1. CALL TO ORDER**

Chair Leurig called the meeting to order at 1:05 p.m.

**CITIZEN COMMUNICATION: GENERAL**

None.

**2. APPROVAL OF MEETING MINUTES**

The meeting minutes from the May 4, 2020 Austin Integrated Water Resource Planning Community Task Force regular meeting were approved on Member Mace's motion and Member Walker's second for a final 7-0-2-2 vote.

**3. STAFF BRIEFINGS, PRESENTATIONS, AND/OR REPORTS**

- a. A staff update on Water Forward implementation progress and outlook was provided by Marisa Flores Gonzalez, Austin Water. This was followed by Task Force discussion and input.
- b. A staff recap of Technical Advisory Group and Task Force Subcommittees was provided by Marisa Flores Gonzalez, Austin Water. This was followed by Task Force discussion and input.
- c. A staff presentation on Affordability was provided by Dave Anders, Austin Water. This was followed by Task Force discussion and input.

**4. ADJOURN**

Chair Leurig adjourned the meeting at approximately 2:22 pm.

# **PRESENTATION**



# Water Forward Task Force Meeting



9/4/2020



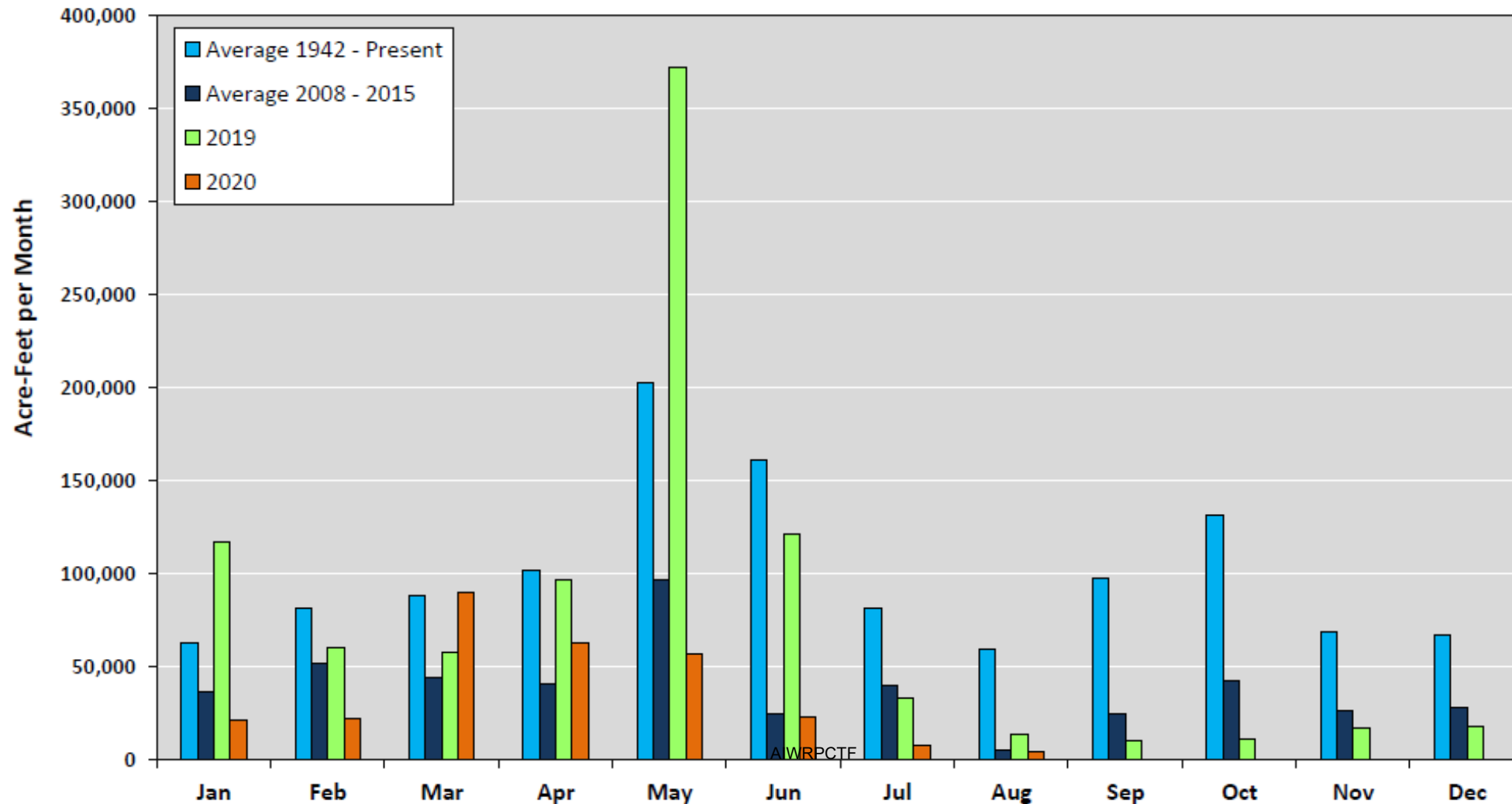
# Agenda

- Approval of the July 17, 2020 Meeting Minutes
- Water Forward Implementation Progress and Outlook – City Staff (15 min)
  - Task Force Questions and Discussion
- Technical Advisory Group and Task Force Subcommittees Recap – City Staff (15 min)
  - Ordinance Subcommittee
  - Task Force Questions and Discussion
- Presentation on Toxic Algae in Lady Bird Lake – City Staff (30 min)
  - Task Force Questions and Discussion

# 3a. Water Forward Implementation Progress and Outlook

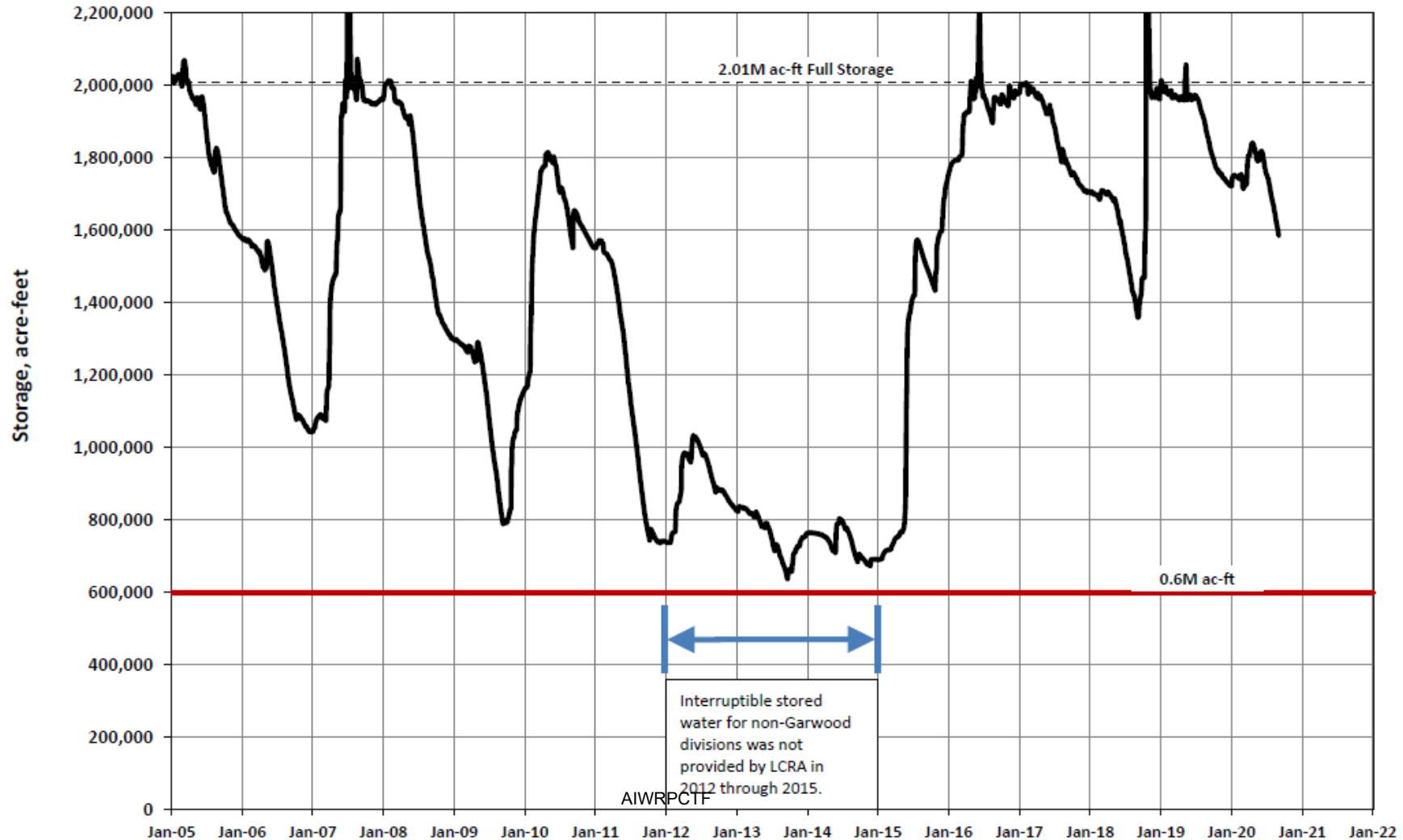
# Current Water Supplies

Monthly Inflows to Lakes Buchanan and Travis  
Data through August 31, 2020

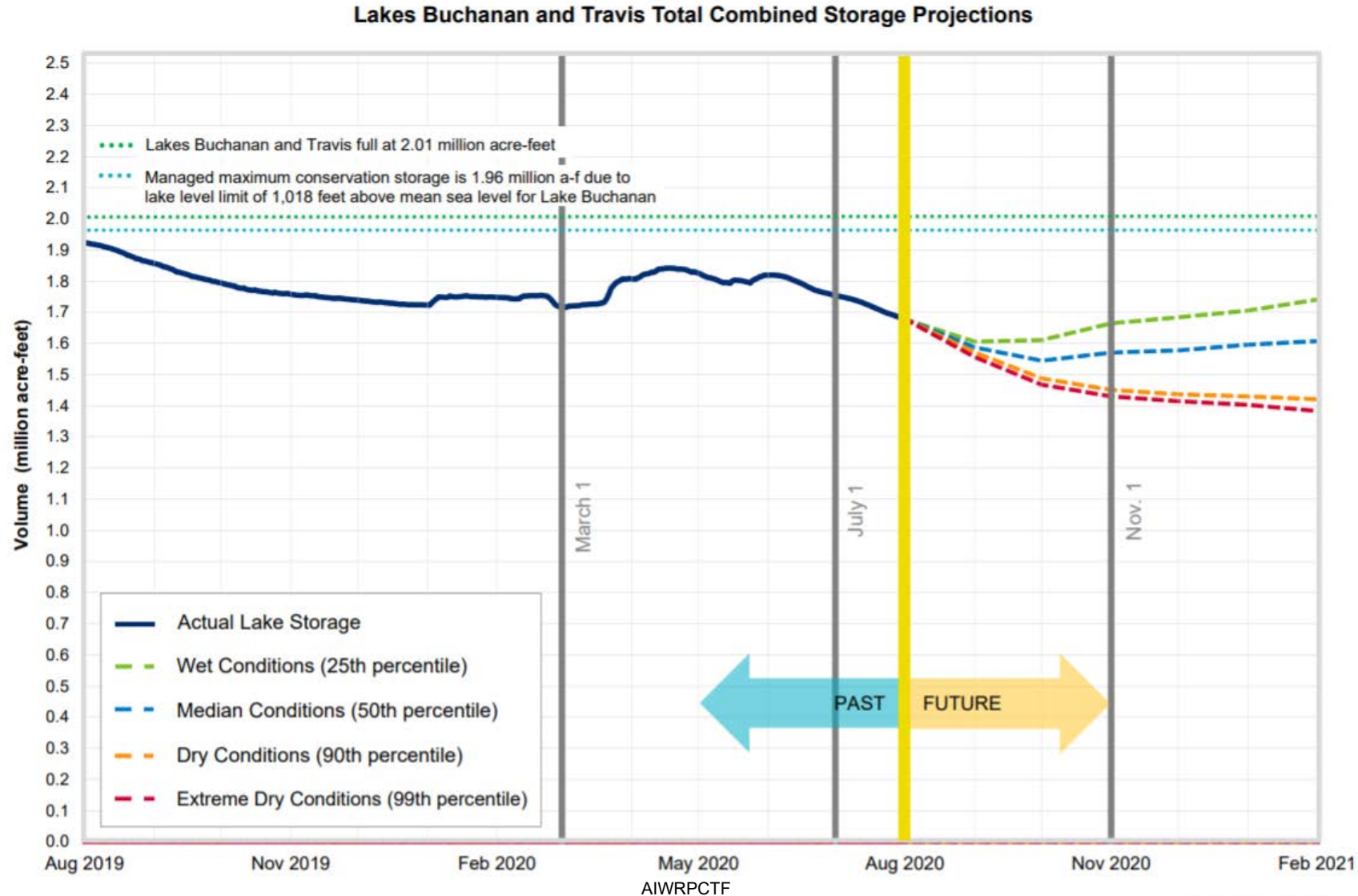


# Current Water Supplies

Combined Storage of Lakes Buchanan and Travis  
January 1, 2005 through September 1, 2020



# LCRA Lake Levels Forecast



# Water Forward Strategies

## Reducing Demand

- Benchmarking
- Advanced Metering Infrastructure
- Water Loss Control
- Conservation Ordinances and Incentives

## Moving Reuse Forward

- Onsite Reuse
- Centralized and Decentralized Reclaimed

## Protecting our Core Colorado River Supplies

- Working with our Regional Partners

## Building Resiliency

- Aquifer Storage and Recovery
- Indirect Potable Reuse

Continued Stakeholder Engagement

	FY20 Q3 Progress	Planned FY20 Q4 Activities	Future Implementation Steps
Protecting our Core Colorado River Supplies	AW staff worked to integrate Water Forward strategies into the Region K planning process.	Region K Initially Prepared Plan will move towards adoption in early Fall 2020.	2021: Anticipated State Water Plan development and initial planning for 2026 Region K plan.
Conservation	AW's Advanced Metering Infrastructure project was branded as <a href="#">My ATX Water</a> .	Smart Water Meter systems testing pilot including nearly 5,000 water meters to begin.	2021: Installation of 250,000 meters begins. 2025: Anticipated project completion.
Onsite Reuse	AW staff developed a draft Onsite Reuse Regulatory Framework and reviewed with internal stakeholders.	Staff are planning to present the onsite reuse regulatory framework and incentives for community input in Fall 2020.	2021: Anticipated Council adoption of onsite reuse regulatory framework and, as necessary, incentives. 2023: Anticipated onsite water reuse mandate in effect for new developments >250,000 square feet.
Centralized Reclaimed	Staff continued work to 1) implement AW's 2013 Completing the Core plan to create a reclaimed loop through downtown and east Austin and 2) update the Centralized Reclaimed Master Plan.	Staff will continue to support reclaimed infrastructure projects, development review, and updates to the Centralized Reclaimed Master Plan among other activities.	2021: Anticipated completion of updates to the Centralized Reclaimed Master Plan and development of a Decentralized Reclaimed Plan. 2025: Anticipated completion of the downtown & east Austin core reclaimed loop.
Drought Supplies	AW moved toward the final phases of procuring an Aquifer Storage and Recovery (ASR) pilot and program management consultant.	RCA for consultant procurement will go to Commission & Council. Procurement is for Phase1 services for desktop modeling and field testing to evaluate potential sites for piloting.	FY20-23: Initial contract and identify where to pilot. FY24-27: Design, construct, and test ASR pilot. Develop recommendations for full-scale ASR. FY28-35: Preliminary engineering, design, & construction of full-scale ASR.



# Aquifer Storage and Recovery

- ♦ On 8/27 Council authorized negotiation & execution of a contract with HDR Engineering, Inc. to provide ASR pilot & program management services
- ♦ Post-contract execution in ~October 2020, team will begin desktop modeling and field testing to evaluate potential sites for a pilot project
- ♦ Community engagement will continue throughout project
- ♦ The project plan includes designing and constructing a pilot project by 2027

# Onsite Water Reuse and Conservation Code Change Workshop

Austin Water is seeking review and feedback on an ordinance to establish regulations in Chapter 15 of City Code (Utility Regulations) for the voluntary design, treatment, permitting, and ongoing maintenance of alternative water sources that are treated for reuse for non-potable applications (Onsite Water Reuse Systems). These regulations are being implemented to advance Austin Water's Water Forward Plan, which was adopted by City Council in 2018. The plan recommended adopting ordinances and incentives to increase capture, treatment and reuse of onsite alternative water supplies in new development.

Please join us for a virtual public workshop on:

**Wednesday, September 23 from 10:00 a.m. - 12:00 p.m. CST**

[Click Here for the Workshop Link](#)

The workshop will provide background and training on the proposed regulatory framework and new incentives to reuse water onsite in development projects. In addition, the workshop will cover updates to commercial, industrial and institutional conservation ordinances that align with the Water Forward Plan. The workshop is targeted to individuals involved in the design, operation and management of commercial and multi-family buildings and their mechanical and plumbing systems.

# Climate Planning Work

- AW staff planning to convene a Climate Technical Advisory Group made up of climate experts, academics, and other Texas utilities to provide recommendations to enhance AW's 2018 Water Forward Climate and Hydrology Analyses
- Recommendations will inform scope of work for technical climate and/or resilience work required for the Water Forward 2023 plan update process

# Questions and Discussion

# **3b. Technical Advisory Group and Task Force Subcommittees Recap**

# 8/12 Ordinance Subcommittee

## 💧 LDC Revision Update

- Discussed current LDC status, updates from LDC leadership team, and possible approaches for Water Forward code elements in LDC

## 💧 Affordability

- Discussed AW & NHCD work to date, PACE update, and setting up future opportunities for continued affordability learning/discussion

## 💧 Community Engagement

- Discussed possible community advisory group

## 💧 Next meeting (9/29) will include detailed discussion of Water Forward code elements in LDC

# Questions and Discussion

# 3c. Presentation on Toxic Algae in Lady Bird Lake





# **Harmful Algal Bloom (HAB): Lady Bird Lake**



**Brent Bellinger, Ph.D. , Liz Johnston**

**Watershed Protection Department**

**8/13/2020**



# What Happened in 2019?

**Lady Bird, dog deaths at Red Bud and Auditorium shores experienced benthic-surface HAB event**







# HAB types

**Planktonic (single cells in water column) – Most Common**

**Lake Erie, Des Moines**



**Cohesive mats (benthic, floating matrix of filaments)**

**Lady Bird Lake**





# Cyano. Pop. Dynamics

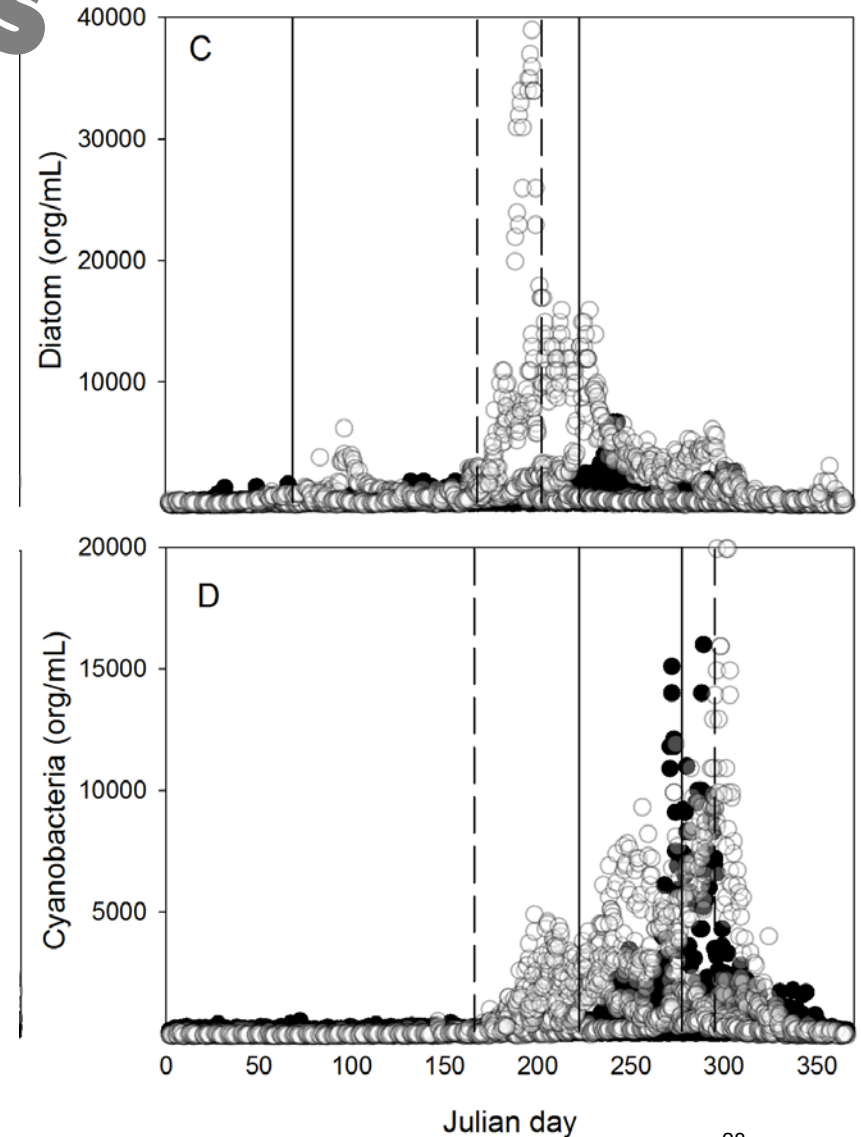
## Seasonality typical (summer)

(Data from Lake Austin at treatment plants;  
no toxins measured!)

## “Three pillars” to a bloom

- Low flows, lack of rain, minimal turbulence
- Hot
- Abundant Nutrients (N, P)

...but why/when does toxicity occur?

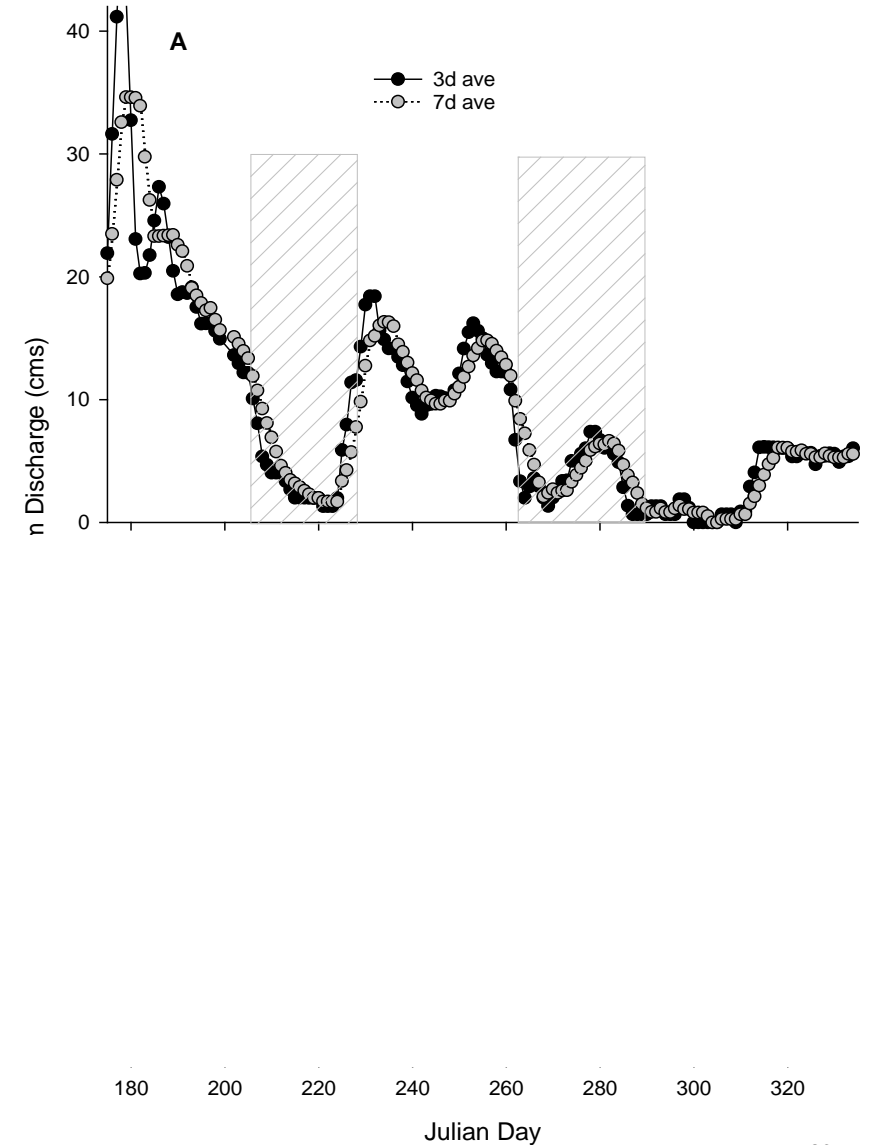




# The 2019 LBL Event

## Discharge rates

- Late July drop in discharge coincided with bloom and toxins event

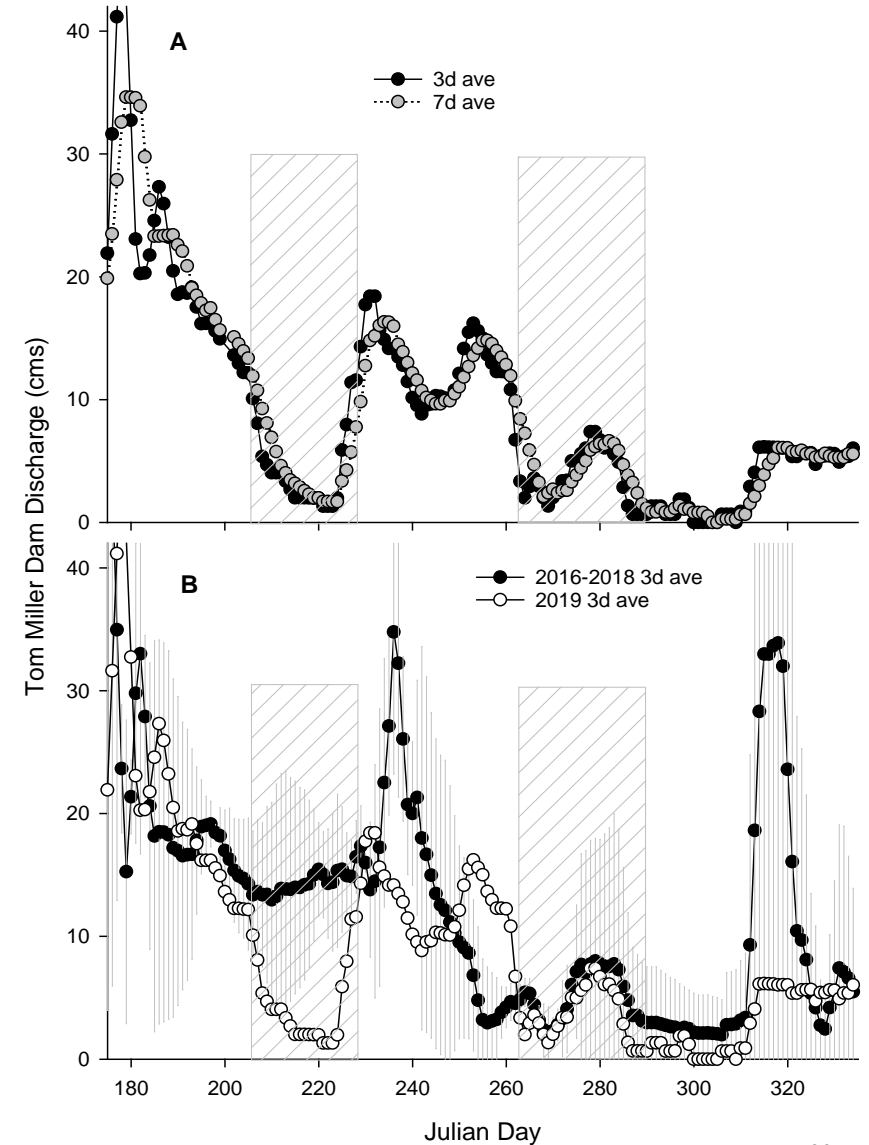




# The 2019 LBL Event

## Discharge rates

- Late July drop in discharge coincided with bloom and toxins event
- Ave was lower than previous 3-year period





# The 2019 LBL Event

## Water Temps

- **>30°C weekend of dog deaths**

## Nutrients

- **Significantly higher  $\text{NH}_3$ ,  $\text{NO}_x$  in 2019 and abundant TP at sites where HAB/dog deaths occurred**
- **Elevated compared to previous years (based on routine monitoring)**

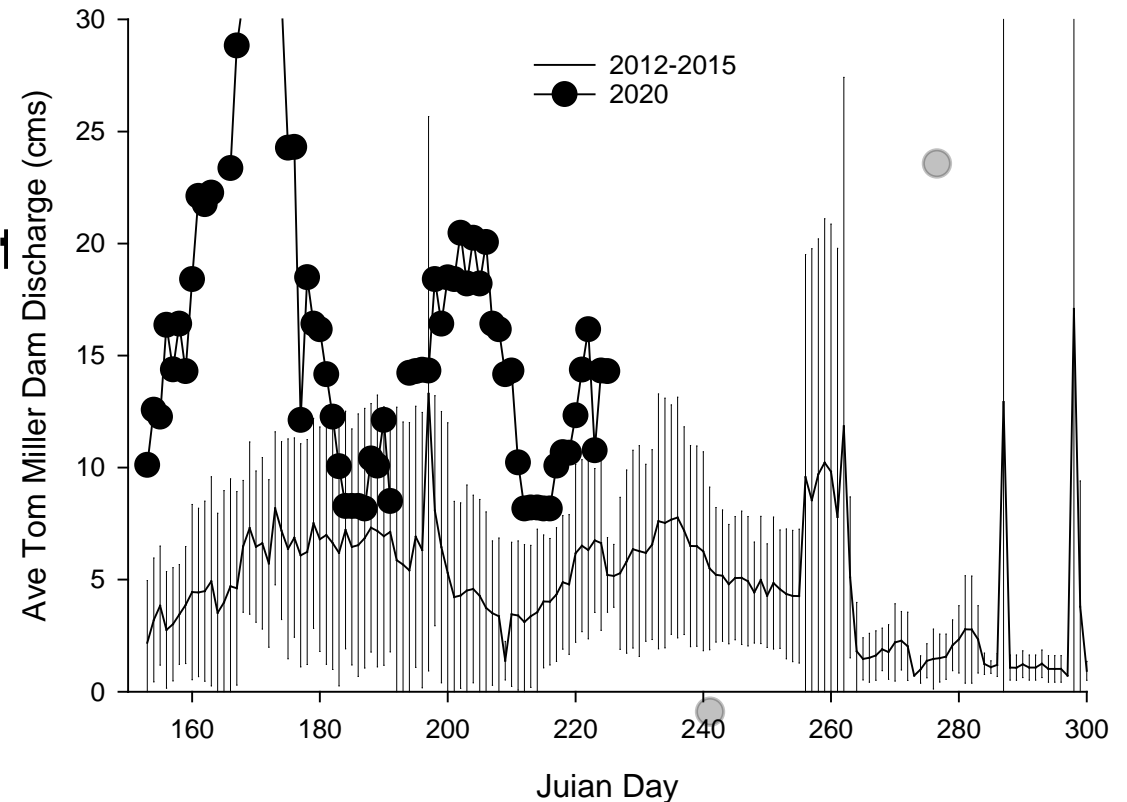
Period	Project	$\text{NH}_3$ ( $\mu\text{g/L}$ )	$\text{NO}_x$ ( $\mu\text{g/L}$ )	TP ( $\mu\text{g/L}$ )
2019	Bloom	$32.5 \pm 16.9$	$253.1 \pm 181.4$	$21.9 \pm 15.0$
2016 – 2018	Monitoring	$8.0 \pm 0.0$	$199.0 \pm 198.0$	$14.1 \pm 9.3$
2019	Monitoring	$19.1 \pm 18.2$	$476.0 \pm 488.0$	$26.4 \pm 15.5$





# What Made 2019 Different?

- **Zebra mussels (new)**
  - Alter water chemistry
  - Promote dense benthic growth
- **Large flooding, runoff, depositional event (Fall 2018) (new)**
  - Altered sediment and water chemistry?
- **Climate change (new)**
- **Dog waste (old)**
- **Low flows (old)**
  - But now coupled with new drivers!







# Forecasting and Prevention (?)

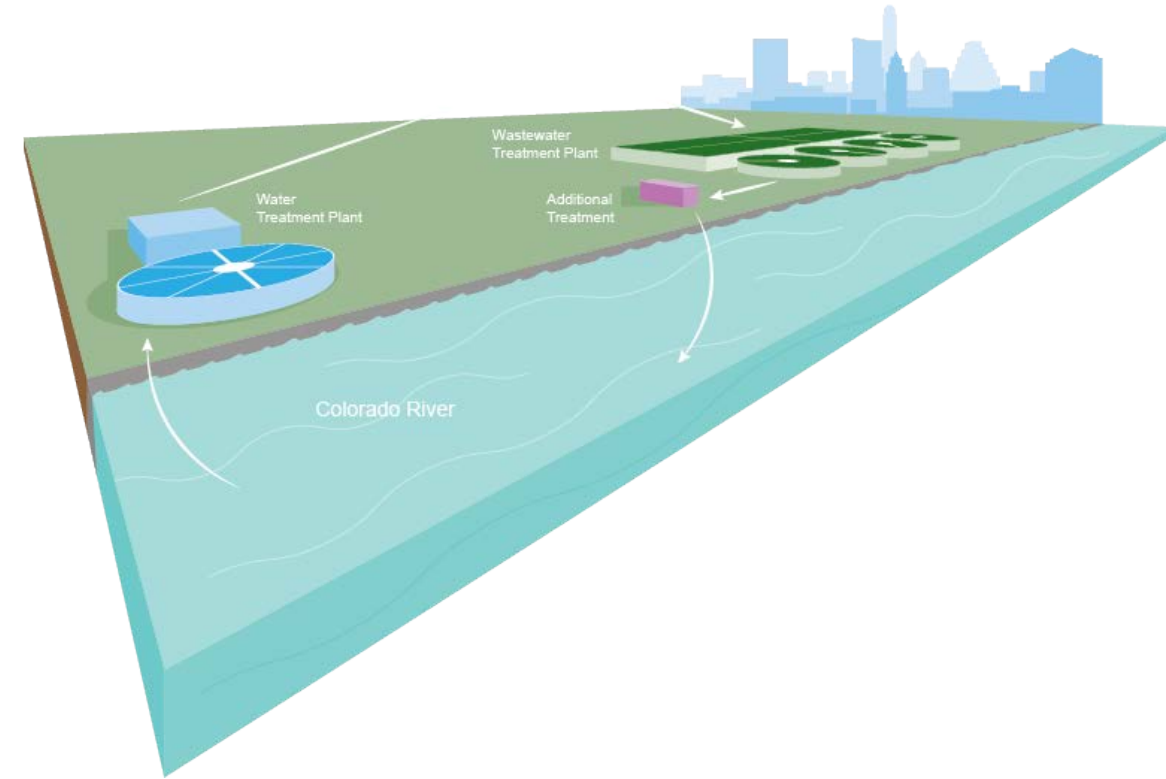
Need to know why a bloom is occurring, when, and what is causing it—then can try and control it

- **Weekly WQ sampling; Daily Discharges; Hourly Temps; Toxin abundances; Species Library** (DNA fingerprinting)
- **Understanding causes and impacts**
- **Treatment or preventative options to explore**
  - **Nutrient Reductions or Flushing/Physical Disturbance**
  - **Unclear how effective any of these treatments would be in reservoir (typically applied to ponds and where inflows can be managed)**
    - Increasing flows (but: water rights, drought)
    - Aeration
    - Alum
    - Biochar
    - $H_2O_2$

# Indirect Potable Reuse

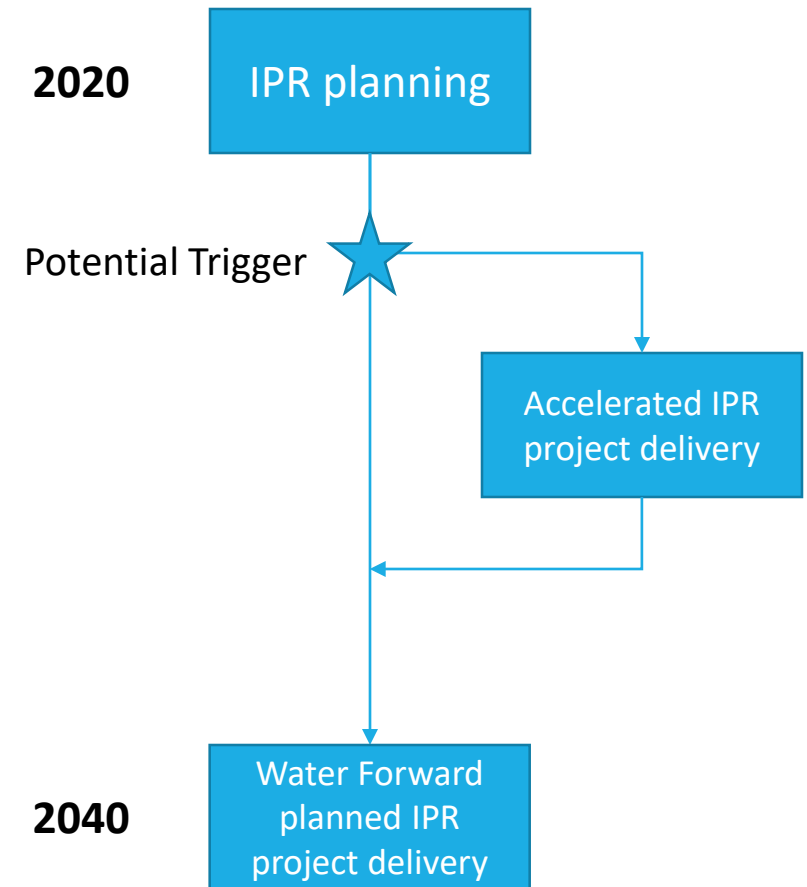
## Water Forward Drought Strategy

- ♦ Emergency water supply strategy intended to be used infrequently during severe drought situations
- ♦ Would convey highly treated reclaimed water from a wastewater plant to Lady Bird Lake so it could be diverted for treatment to drinking water standards
- ♦ Infrastructure will also used for non-drought strategy to capture local inflows to Lady Bird Lake from Barton Springs and other creeks
- ♦ Planned to be online by 2040



# Indirect Potable Reuse Next Steps

- Next steps will include refinement of our near term strategy plan
  - Further research and study
  - Algae toxicity considerations will be incorporated into IPR planning
  - Hydrologic modeling to assess risks and timing to inform triggers & approaches
  - Development of a strategy-specific adaptive management framework
- AW will work in close collaboration with WPD & provide updates to the IPR Subcommittee and full Task Force as we move forward







# Questions?

Brent Bellinger, Ph.D., Environmental Scientist Senior  
[brent.bellinger@austintexas.gov](mailto:brent.bellinger@austintexas.gov)

Liz Johnston, Environmental Program Coordinator  
[liz.johnston@austintexas.gov](mailto:liz.johnston@austintexas.gov)



# HAB E(a)ffects



Human and animal health

Economic

Perception

Drinking water standards

- **Limited and Planktonic-focused**
- **EPA – microcystins 0.3 µg/L; Cylindrospermopsin 0.7 µg/L**
- **States – Anatoxin-a 0.7 – 20 µg/L; Saxitoxin – 0.3 – 3 µg/L**

## Health Impacts of Cyanotoxins



*Note: Not all cyanotoxins lead to all of these health impacts. These listed impacts are caused by microcystins or cylindrospermopsin, the two cyanotoxins that EPA has issued Health Advisories for.*

### IN HUMANS

#### Brain

*Source:* Ingestion

*Symptoms:*

- Headache
- Incoherent speech
- Drowsiness
- Loss of coordination

#### Respiratory System

*Source:* Inhalation

*Symptoms:*

- Dry cough
- Pneumonia
- Sore throat
- Shortness of breath
- Loss of coordination

#### Digestive System

*Source:* Ingestion, drinking contaminated water, or eating contaminated fish

*Symptoms:*

- Abdominal pain
- Nausea
- Vomiting
- Diarrhea
- Stomach cramps

#### Body

*Source:* Contact, e.g. swimming

*Symptoms:*

- Irritation in eyes, nose, and throat
- Blistering around the mouth
- Skin rash, including tingling, burning and numbness
- Fever
- Muscle aches (from ingestion)
- Weakness (from ingestion)

#### Organs

*Source:* Ingestion

*Symptoms:*

- Kidney damage
- Abnormal kidney function
- Liver inflammation

#### Nervous System

*Source:* Ingestion

*Symptoms:*

- Tingling
- Burning
- Numbness

### IN PETS

*Symptoms:*

Vomiting

Fatigue

Shortness of breath

Difficulty breathing

Coughing

Convulsions

Liver failure

Respiratory paralysis leading to death







# The 2019 Bloom



## Species in the Order Oscillatoriales

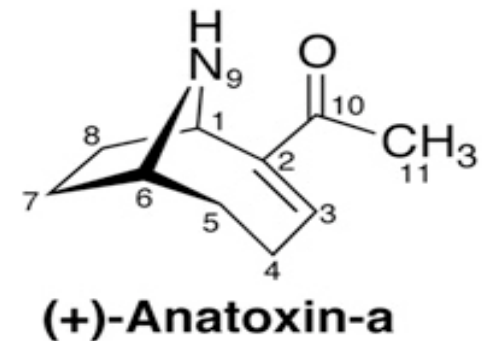
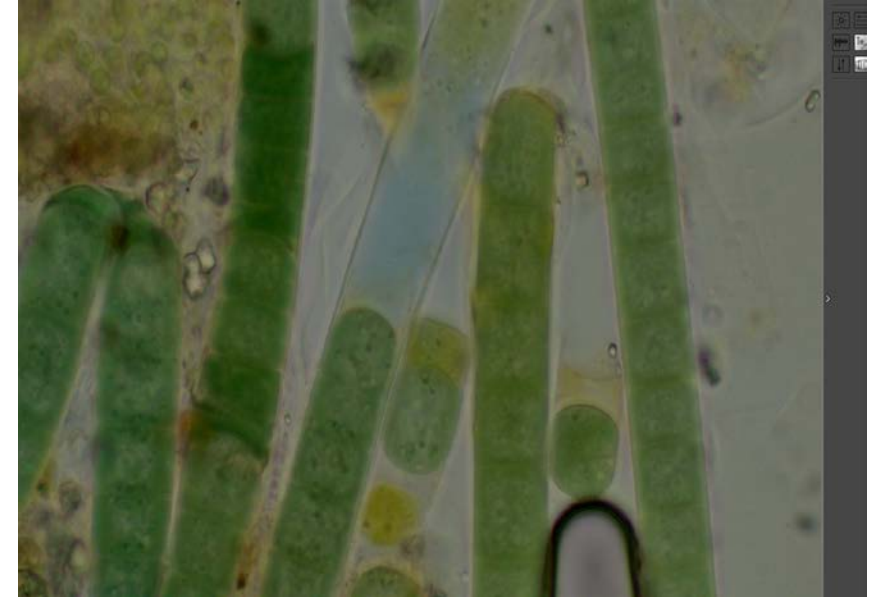
- Many known toxin producers in this group
- UT developing species database

## Within algae mats dihydroanatoxin dominant

- Type of Anatoxin-a (neurotoxin)

**Contents = <1 – >130 ng/g wet weight mat  
(or 0.13 mg/kg)**

- State and federal guidelines and criteria have been developed for water (i.e., ug/L **concentrations**)
  - Means that there is no guidance as to what is a “safe” level of toxins in mats



# Questions and Discussion