



PUBLIC INVOLVEMENT PLAN

Prepared for:

Merced Irrigation-Urban Groundwater
Sustainability Agency (MIUGSA)

To Support the Implementation of the:
Merced Subbasin Groundwater Sustainability Plan

June 2021

Olsson Project No. 021-03426

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1. OVERVIEW OF THE PUBLIC INVOLVEMENT PLAN

Creating an inclusive and transparent public involvement process is paramount to achieve the goals of the Merced Groundwater Subbasin Groundwater Sustainability Plan (GSP). The Merced Irrigation-Urban Groundwater Sustainability Agency (MIUGSA) is leading the way in their proactive approach to stakeholder engagement, keeping the decision-making process about the GSP as close as possible to those who will be affected by it. With the local economy and community at the forefront, GSP implementation will ensure success for all water users well into the future.

The MIUGSA developed this Public Involvement Plan (PIP) to facilitate communication, provide for the dissemination of information and involvement between the Stakeholder Guidance Committee (SGC), board members and administrators at MIUGSA, and the Olsson project team during the implementation of the GSP. It is the project team's intention to establish active communication channels between the community leaders of the SGC and MIUGSA, so that collaboration and engagement can result in policy recommendations.

The goal of this PIP is to describe the anticipated public involvement process and to outline the roles and responsibilities for MIUGSA and the SGC regarding the public participation and engagement strategy for the project. The PIP includes details on the topics, outcomes, and event formats. The PIP will be reviewed and approved by MIUGSA prior to the commencement of public engagement activities.

2. PROJECT DESCRIPTION

With the passage of the Sustainable Groundwater Management Act (SGMA) into law on January 1, 2015, high- and medium- priority groundwater basins in the state of California are required to be managed by one or more groundwater sustainability agencies (GSA). GSAs are required to develop a groundwater sustainability plan (GSP) that outlines solutions for the long-term sustainable management of groundwater resources in their area. The 512,000-acre Merced Groundwater Subbasin (Subbasin) is classified as critically-overdrafted, meaning “a continuation of water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts” (California Department of Water Resources [DWR] 2021).

Three GSAs were established in the Subbasin: MIUGSA covering approximately 160,000 acres, Turner Island Water District GSA-1 covering 12,000 acres, and the Merced Subbasin GSA covering approximately 340,000 acres. The three GSAs submitted the Merced Subbasin GSP to the California DWR on January 28, 2020 with the goal of “achieving sustainable groundwater management on a long-term average basis by increasing recharge and/or reducing groundwater pumping, while avoiding undesirable results” (Woodard & Curran 2019). Following completion of the GSP, the MIUGSA sought Olsson’s professional services to aid in the development of principle guidelines for its implementation. Tasks to be completed in this process include gathering technical information to support the water supply evaluation, facilitating public engagement through stakeholder meetings to solicit feedback on water management actions and policies, and gathering and incorporating feedback to compile a recommendations report.

3. MERCED SUBBASIN GSP

During the development of the Merced Subbasin GSP, the three GSAs collaborated on the many technical details of the GSP, including the development of a hydrogeologic conceptual model (basin-wide groundwater model), description of groundwater conditions, development of historical, current, and projected water budgets, as well as high-level policy decisions around the establishment of sustainable management criteria.

In Section 7 of the GSP, implementation efforts and schedule are provided in detail. The intent upon publication of the GSP was to provide a framework for activities and publications that must be accomplished for successful GSP implementation through 2040. Since the GSP applies to the entire Subbasin, the implementation process is described through the coordination of the three GSAs and does not concentrate on individual GSA activities. Oversight of individual GSA projects and programs is administered independently but reporting of joint activities are to culminate during the “Five-Year Update” years (Woodard & Curran 2019). Details on activities to be completed during the Five-Year Updates are provided in Figure 1.

2020	2025	2030	2035	2040
Monitoring and Reporting	Preparation for Allocations and Low Capital Outlay Projects	Prepare for Sustainability	Implement Sustainable Operations	
<ul style="list-style-type: none"> Establish monitoring network Install new monitoring wells Reduce/fill data gaps 	<ul style="list-style-type: none"> Conduct 5-year evaluation/update Monitoring and reporting continue 	<ul style="list-style-type: none"> Conduct 5-year evaluation/update Monitoring and reporting continue 	<ul style="list-style-type: none"> Conduct 5-year evaluation/update Monitoring and reporting continue 	
<ul style="list-style-type: none"> GSAs allocated initial allocations GSAs establish their allocation procedures and demand reduction efforts Develop metering program 	<ul style="list-style-type: none"> As-needed demand reduction to reach Sustainable Yield allocation Metering program continues 	<ul style="list-style-type: none"> As-needed demand reduction to reach Sustainable Yield allocation 	<ul style="list-style-type: none"> Full implementation demand reduction as needed to reach Sustainable Yield allocation by 2040 	
<ul style="list-style-type: none"> Funded and smaller projects implemented 	<ul style="list-style-type: none"> Planning/ design/ construction for small to medium sized projects 	<ul style="list-style-type: none"> Planning/ design/ construction for larger projects begins 	<ul style="list-style-type: none"> Project implementation completed 	
<ul style="list-style-type: none"> Extensive public outreach regarding GSP and allocations 	<ul style="list-style-type: none"> Outreach regarding GSP and allocations continues 	<ul style="list-style-type: none"> Outreach continues 	<ul style="list-style-type: none"> Outreach continues 	

Figure 1 GSP schedule for implementation from 2020-2040.

During the first five-year update (2020-2025), key tasks include establishing a metering program, implementing initial allocations, and performing extensive public outreach to inform water users about the development of allocations. By establishing the SGC described in this PIP, the MIUGSA is taking the first steps needed to develop the allocation framework while maintaining public involvement. Discussions with the SGC members will aid in making recommendations for:

- Establishing allocations
- Developing estimates of developed groundwater supply

- Determining how pumping will be measured through a metering program
- Establishing potential water trading and crediting policies
- Conducting continued outreach and public communication

4. PREVIOUS PLANNING EFFORTS

The water supply and water budget of the Subbasin have been extensively studied and documented in recent years through several initiatives and basin-wide stakeholder-driven projects. These previous planning efforts will be essential in driving forward toward recommendations of how the MIUGSA can implement the GSP. Prior technical work is intended to be built upon and not duplicated so that the discussions held over the course of this project can generate fresh ideas and contribute directly to policy formation.

4.1 Agricultural Water Management Plan(s) (2012, 2015)

The Merced Irrigation District (MID) owns, operates, and maintains the water supply system (i.e. storage facilities, canals, irrigation wells) within the MIUGSA and surrounding areas. The MID's Agricultural Water Management Plan was adopted in 2016 with the goal of providing an updated inventory of water management projects and to "gauge its performance in meeting water resources management goals" (MID 2016). Public outreach was periodically accomplished through presentations and meetings during the development of the plan. MID operations and facilities that are used in integrated water management activities are described in detail in the plan and will help to provide background information to the SGC discussions.

4.2 Additional Regional Coordination, Water Management Activities, Plans, etc.

- **Merced Water Supply Plan (1993)**

In 1993, MID and the City of Merced entered into a cooperative program to plan for the region's future water supply. Completed in 1995 and updated in 2001, the Merced Water Supply Plan (MWSP) was founded on the conclusion that, through planned conjunctive management of MID's water resources, the region's future agricultural and M&I demands, including selected environmental water demands, could be satisfied.

- **Merced Area Groundwater Pool Interests (1997)**

MAGPI formed in 1997, with the mission to develop technical data and management strategies to improve the health of the Merced Groundwater Basin. MAGPI members and non-member interest groups include all of the MIUGSA member agencies, and most of the agencies with water supply, water quality and water management authority in the region. MAGPI approved

various groundwater management plans, along with supporting studies and projects, including the initial effort on the groundwater model currently used for the Merced Subbasin GSP.

- **AB3616 Water Management Plan (WMP) (2002)**

MID voluntarily prepared a Water Management Plan (WMP) according to the MOU finalized on November 13, 1996 by the advisory committee for AB3616, which established the Agricultural Water Management Council (AWMC). As a signatory of the MOU since 1999, MID documented its performance with the Efficient Water Management Practices established by the Agricultural Water Suppliers as California outlined in the MOU. The WMP was adopted by the MID Board of Directors and submitted to the AWMC. The plan was further reviewed by DWR staff before its adoption by the AWMC. MID demonstrated meeting all required EWMPs per the plan.

- **Merced Integrated Regional Water Management Plan (2013, 2018)**

The Merced Integrated Regional Water Management (Merced IRWM) program is a collaborative effort to identify water management issues, needs, objectives, actions, and priorities to meet the long-term water needs of the Merced Region. The City of Merced, County of Merced, Merced Irrigation District, City of Atwater, and City of Livingston have joined together to lead the program. The five governing entities comprise the Regional Water Management Group (RWMG), the Merced Integrated Regional Water Management Authority (MIRWMA), created through a Joint Powers Agreement for the purposes of IRWM planning, project implementation, and program administration.

- **Urban Water Management Plan(s) – City of Merced (2017), City of Livingston (2015), City of Atwater (2015)**

The California Water Code requires urban water suppliers within the state to prepare and adopt urban water management plans. The purpose of the plans is to describe regional water supply trends and water use efficiency policies.

- **Merced Stormwater Resources Plan (2019)**

The MIRWMA recognized the need for a regional stormwater planning document, similar to what the IRWMP was to water supply. The Merced Stormwater Resources Plan was completed in 2019, based on heavy involvement from MID. It evaluated water quality, flood protection, groundwater recharge, and climate change concerns among other regional considerations. It also focused on exploring projects that benefit local disadvantaged communities (DAC).

- **Merced Irrigation-Urban Groundwater Sustainability Agency Regulatory Fee Study (2020)**

Under SGMA, GSAs have the authority to collect fees to fund the costs of regulatory activities within their boundaries. The Fee Study was completed in 2020 to establish a fee structure that's

fair, has buy-in from interested parties and communities-at-large, and allows the MIUGSA to effectively manage regulatory activities.

5. COMMUNITY BACKGROUND

The Merced Groundwater Subbasin is located in eastern Merced County. Communities within Merced County enjoy the close proximity to larger cities like San Francisco, and Sacramento, as well as the proximity to Yosemite National Park, and other outdoor opportunities. The top five industry sectors in Merced County are agriculture, educational services, manufacturing, health care and social services, and retail trade (ACS, using 2017 data). The basin supports multiple urban communities that are some of the fastest growing communities in the State of California and the home of UC Merced, the newest UC campus. In addition, it is a major agricultural hub that enjoys some of the most senior surface water rights in the state, held by agencies like Stevinson Water District and Merced Irrigation District.

5.1 About MIUGSA

The MIUGSA is located in Merced County in the San Joaquin Valley of central California (Figure 2). The MIUGSA encompasses most of the densely populated areas of the Subbasin, such as the cities of Atwater, Livingston, and Merced as well as other smaller communities, including Cressey, El Nido, Le Grand, and Planada. MIUGSA occupies approximately 30% of the Merced Groundwater Subbasin; the GSA generally aligns with the footprint of the MID boundary and includes the cities and urban communities that lie within the District. Land use consists primarily of urban development and cropland. Crops typical of the region include various row crops, sweet potatoes, grapes and fruit and nut trees. Many of the communities are categorized as a disadvantaged community (DAC) by the State of California, meaning the community has an annual “median household income (MHI) that is less than 80% of the statewide MHI” (RMC 2013). People in the MIUGSA face challenging economic conditions and rely on water-dependent agriculture, making sustainable water management essential.

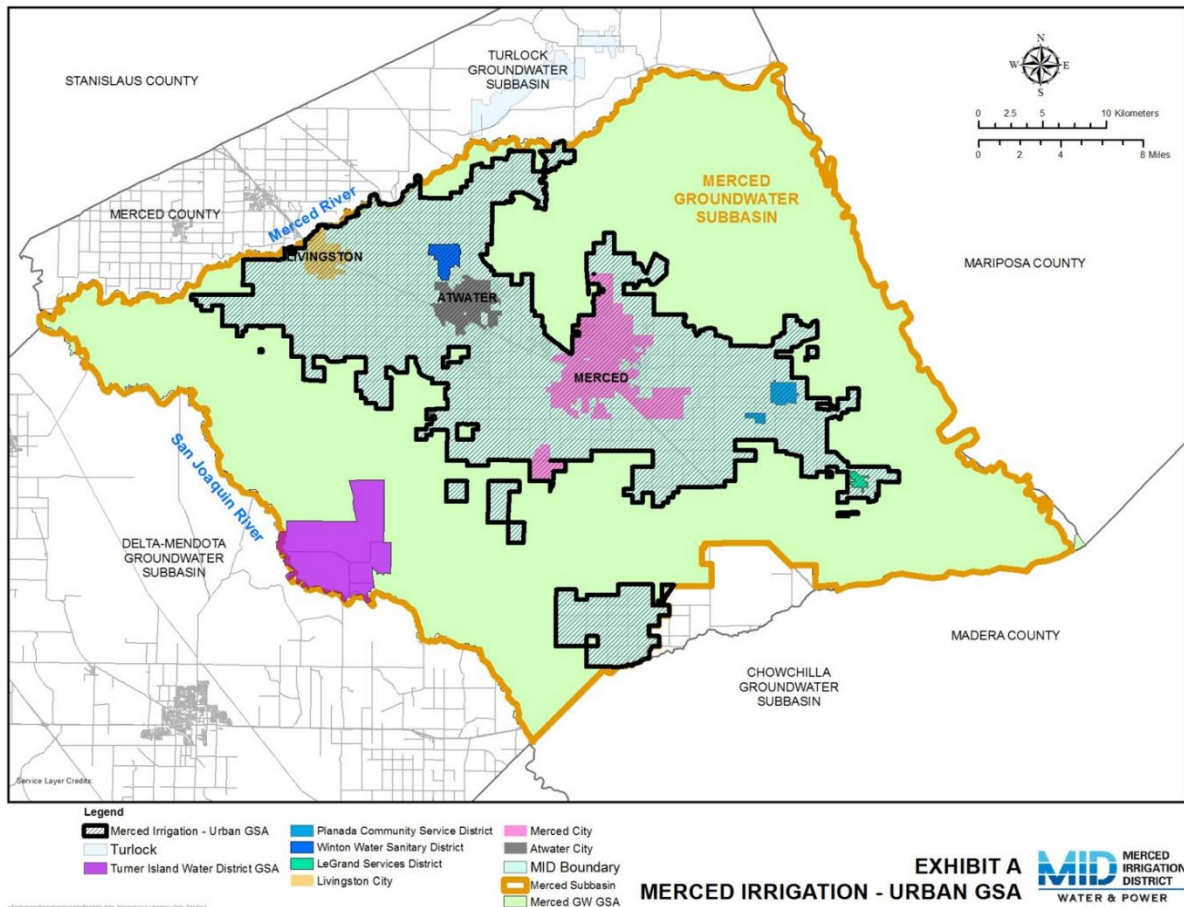


Figure 2 The boundary of the MIUGSA within the Merced Groundwater Subbasin (MIUGSA 2021).

5.2 Stakeholder Guidance Committee

The SGC will be made up of community members representing a variety of interests across the MIUGSA footprint. Diversity in the stakeholder group is essential to ensure a range of opinions and ideas are heard and considered. It is also important to understand the implications of potential water management actions on different entities, agencies, and industries. For the development of MIUGSA’s Stakeholder Guidance Committee, initial contact will be made with the MIUGSA representatives from the Merced Subbasin’s existing Stakeholder Advisory Committee. The previously formed basin-wide committee intends to help guide the entire basin through the GSP Implementation process. As of the writing of this Plan, members being considered for the SGC include farm owners and operators, city councilmembers, nonprofit organization staff members, and more. Additional stakeholders may be identified in order to ensure the diverse interests of the basin are represented.

SGC members will meet four times during this process to discuss water supply challenges in the MIUGSA, and possible solutions. Olsson will facilitate these discussions by providing technical education and assessments of water management alternatives, answering stakeholder's questions, soliciting feedback, and providing draft recommendations for discussion. The Project Team will listen to suggested needs and concerns and will work collaboratively and transparently with the SGC to ensure productive conversations, develop shared understandings, and build consensus.

Previous planning efforts and the development of the GSP have identified the major water supply concerns that will be the primary focus of this process. Topics to be covered during the four SGC meetings are further outlined in the following section. Many of the anticipated stakeholders have participated in prior planning processes and have a basic to advanced understanding of the technical terminology and issues facing the area. As such, the focus of the meetings will be in depth discussion of existing conditions and potential solutions. Supplemental information can be provided for those with less technical knowledge.

5.3 Water Supply Challenges

Questions to be considered by the SGC revolve around the water supply challenges identified by the MIUGSA. Water supply for the Subbasin was extensively researched for inclusion in the GSP. Historical and current water budget estimates were developed to evaluate the long-term reliability of surface water deliveries and groundwater withdrawals relative to climate conditions. The projected water budget was developed to assess the hydrologic state of the Subbasin under increased future agricultural and urban demands and anticipated land use changes. The water budgets were determined using the Merced Water Resources Model (MercedWRM), a fully integrated surface and groundwater flow model. These water budgets will be central to the SGC meeting discussions as the project team moves toward recommending water management actions.

A major challenge materializes when considering that MIUGSA should be sustainable with the available imported surface water and the native groundwater. However, the groundwater levels in MIUGSA continue to drop as a result of groundwater extraction in the overall basin and surrounding basins.

The concept of sustainable yield is defined by SGMA as "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus that can be withdrawn annual from a groundwater supply without causing an undesirable result" (California Water Code §10721(w) 2019). In the GSP, the Subbasin sustainable yield was estimated by balancing out the change in stored water over time using the MercedWRM (Woodard & Curran 2019). A hypothetical water budget under sustainable management conditions is shown in Figure 3.

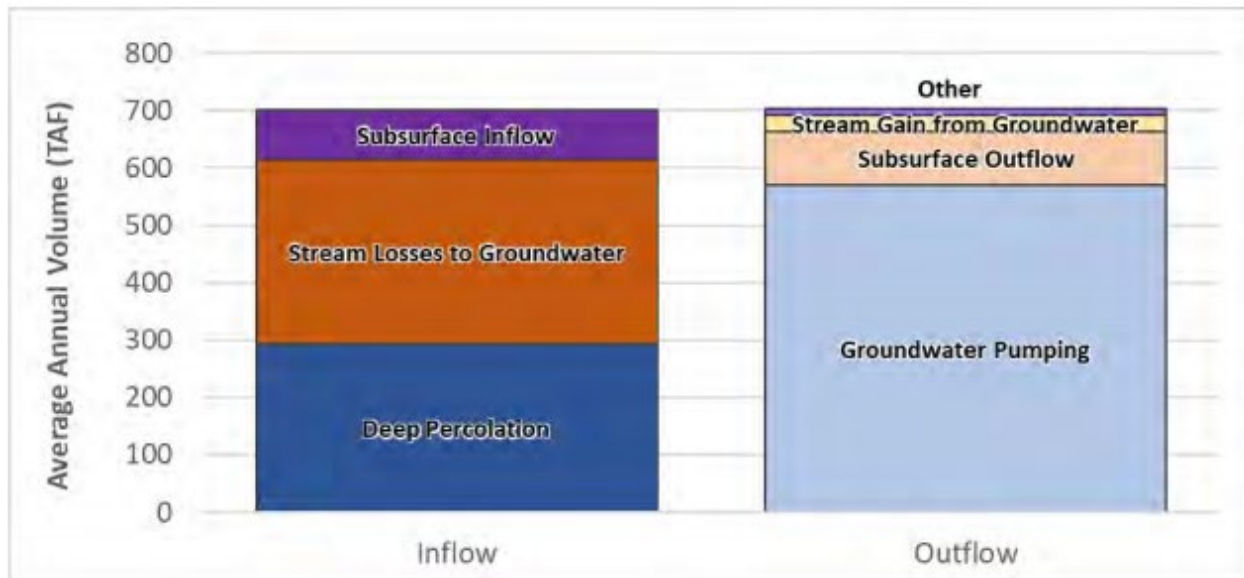


Figure 3 The long-term (50-year) average water budget under sustainable groundwater management conditions (Woodard & Curran 2019).

Specific to the MIUGSA, reaching groundwater sustainability is a very nuanced issue that demands a strong understanding of current water management operations. In the MIUGSA, water is available via three primary sources: MID surface water supplies, MID developed groundwater through canal seepage and deep percolation of surface applied water on agricultural lands within the District, and native groundwater. A significant challenge, however, is the volatility of surface water supplies depending on climate conditions each year. For example, from the years 2010-2015, groundwater sources supplied anywhere from 30% to 98% of the needed irrigation water when drought conditions rendered surface water supplies unavailable (see Table 2).

Table 2 Irrigation use in the MIUGSA for the years 2010-2015. (MID 2016)

	2010	2011	2012	2013	2014	2015
Average Unit Applied Irrigation Water (AFA)	2.86	2.81	3.44	3.38	3.23	2.87
Average Proportion of Applied Water Comprised of Groundwater Pumping	32%	30%	35%	48%	73%	98%
Water Year Type	Above Normal	Wet	Dry	Critical	Critical	C

Further complicating this issue, not all irrigators are connected to the MID surface water deliveries, so it is not possible for them to use surface water when it is plentiful. It is apparent that in order for the GSA to be sustainable, the allocation of the native groundwater supply to these irrigators will be less than their historic use. Developed groundwater could help offset irrigation demands, but the nature and timing of managed recharge projects relies on robust

surface water supplies. Drought over the 2010-2015 time period significantly reduced the volume MID was able to recharge through their distribution system (see Figure 4). MIUGSA with the help of the SGC has to navigate the Sustainable Management Act, the Common Law, working with surrounding sustainability agencies within and outside the Merced Groundwater Basin, considering the positive impact of surface water, as policies and allocations are set.

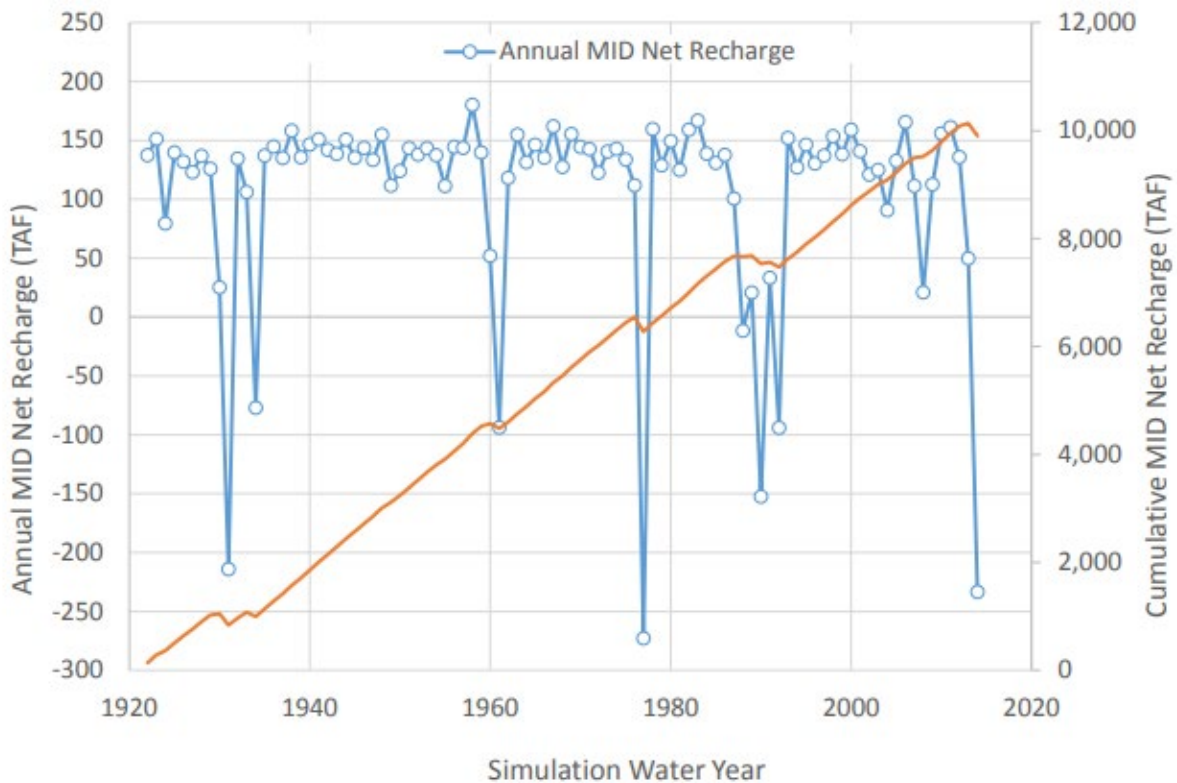


Figure 4 Annual and cumulative recharge volumes over a 100-year simulation. (MID 2016).

Management actions taken must also avoid “undesirable results,” which relate to groundwater levels, storage, water quality, land subsidence, and surface water depletion minimum thresholds. Undesirable results for the Subbasin are extensively documented in Section 3 of the GSP. All these issues will be taken into consideration as the SGC discusses potential water management actions and policies. Actions to be discussed include water use allocations (single or multi-year), water trading, annual carry-over/pooling, and credits. The enforcement and possible penalties from the violation of these policies will also be up for discussion.

6. PUBLIC ENGAGEMENT DETAILS

The project team is committed to ensuring that SGC members have the tools and resources necessary to discuss important water supply issues, management actions, and policies. The MIUGSA is home to a wide range of municipal, domestic, agricultural, environmental, and industrial water users, so it is important to capture opinions and comments from each group. In addition to facilitating the four meetings with SGC members, the project team will conduct coordination meetings with the MIUGSA staff members and provide status updates to the MIUGSA board of directors. Presentations, pamphlets, a public website, and other resources will be developed to assist the MIUGSA in disseminating project information. Further information on these components, their timing, and implementation are described in more detail below.

6.1 Project Roles

Each entity's role in the project should be well-defined to ensure project success. Project roles are defined as follows:

Role of MIUGSA

- Lead decision-making process.
- Provide venue and handle logistics for SGC meetings.
- Provide feedback on planned SGC meeting content and public project information.

Role of the SGC

- Contribute to the development of goals for SGC meetings.
- Provide information on specific water use needs and concerns.
- Provide feedback on water management actions and enforcement.
- Understand how different water management policies affect water users and align with GSP requirements.

Role of Olsson

- Coordinate and facilitate the stakeholder engagement process.
- Provide technical information, answer technical questions, provide outreach materials and easy-to-understand visuals, and other relevant meeting materials.
- Collect stakeholder feedback to incorporate into the development of the alternatives and draft plan recommendations.

6.2 Meeting Materials and Public Information

Meeting materials and public information will be prepared by Olsson and reviewed by MIUGSA before being presented. Materials will be prepared for each stakeholder meeting, including

meeting agenda and sign in sheet. Depending on the intended discussion topics, materials could include fact sheets, handouts, and presentation slides. All meeting materials will be made available to MIUGSA to upload to the project website. Meetings will include dedicated comment opportunities for stakeholders to provide their feedback on project deliverables.

6.3 Activities and Schedule

Activities to be completed over the course of this project include SGC member selection, the facilitation of the SGC meetings, progress meetings with MIUGSA staff and the Board of Directors, and the development of a final recommendations report that incorporates feedback from the SGC. Depending on the status of the COVID-19 pandemic, local health directives, and participant comfort level, one-on-one in-person, virtual or phone meetings will also be made available for SGC and MIUGSA board members to share information and gather feedback. Timing and additional details of these activities are included in Table 3 and Figure 5.

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Table 3 Public Involvement Matrix of Activities.

Activity	Timing	Method
Public Involvement Plan	May 28, 2021	Draft a public involvement plan detailing SGC meeting schedule, discussion topics, and public engagement materials
Stakeholder Committee Member Selection	May 28, 2021	Committee Member suggestions from MIUGSA
Stakeholder Committee Member Invitation	June 11, 2021	Send letter of invitation to Stakeholder Committee members on behalf of the MIUGSA
Coordination meetings	Six in person / virtual meetings	Discuss technical issues, progress, and action items identified throughout stakeholder process
Stakeholder Committee meetings*: <i>Generally, stakeholders shape the recommendations report in part by helping to identify priorities.</i>	<ol style="list-style-type: none"> 1. August 2021 2. September 2021 3. October 2021 4. March 2022 	<p>Meeting 1: Intro to the stakeholder committee including roles/responsibilities, GSP introduction and objectives. Information to educate the stakeholders on the water allocation issues facing MID and the larger basin such as basin setting, existing governance, purpose for establishing a water allocation process, goals and guiding principles associated with a water allocation process. Finally, the stakeholders will be asked to identify their concerns related to water use needs.</p> <p>Meeting 2: Recap of input from the previous meeting; presentation of the spectrum of alternatives for additional input.</p> <p>Meeting 3: Narrow alternatives, obtain feedback on narrowed list, presentation of systems options (water trading, pooling, monitoring, enforcement, etc.)</p> <p>Meeting 4: Present draft water management actions such as methods to monitor groundwater use, water use accounting system for tracking water use and trading water, water allocation approaches and rules, and enforcement and penalties for overuse. The draft plan components will include stakeholder committee input provided from previous meetings.</p>
MIUGSA Board of Directors Updates	TBD	Present project progress to MIUGSA Board of Directors.
Recommendation Report	March 2022	Develop a final recommendations report based on SGC input.

Task	Description of Work	2021										2022		
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Task 1	Project Mgt and Status Mtgs													
	Project Management													
	Kickoff Meeting	▲												
	Project Status Meetings (6)		▲		▲		▲		▲		▲		▲	
Task 2	MIUGSA Water Supply and Demand Evaluation													
	Data Review													
	Data Analysis													
Task 3	Public Engagement													
	Public Involvement Plan													
	SAC Meeting Preparations													
	SAC Meetings (4)						▲	▲	▲					▲
Task 4	Water Allocation Recommendations Report													
	Report Outline													
	Draft Report Preparation and Submittal													
	Draft Report Review by MIUGSA Representatives													
	Draft Final Report Preparation and Submittal													
	Draft Final Report Review by MIUGSA Board of Directors													
	Final Report Preparation and Submittal													

Figure 5 Proposed project schedule for MIUGSA GSP implementation.



7. REFERENCES

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http://mercedsgma.org/assets/pdf/gsp-sections/Merced-Subbasin-GSP-no-appendices_2019-11-12.pdf.

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APPENDIX A

Example Meeting Agenda and Sign In Sheet

SALT CREEK FLOODPLAIN RESILIENCY STUDY

STAKEHOLDER MEETING 2

October 25, 2019 11:30am -1:00pm

Lancaster County Extension Office – 444 Cherrycreek Road, STE A

AGENDA

Stakeholder Meeting 1 Review (5 minutes)

Distribution of information sheet from Stakeholder Meeting 1

Questions/discussion

Salt Creek Floodplain Resiliency Study

1. Floodplain Best Management Practices (BMPs) (10 minutes)

Best Management Practices summary sheet

Best Management Practices Online Resources

Questions/discussion

2. Climate data and evaluation (30 minutes)

Climate Evaluation summary sheet

Questions/discussion

3. Recommended Non- Structural Floodplain Measures (15 Minutes)

Non-Structural Measures summary sheet

Questions/discussion

4. Recommended Structural Floodplain Measures (15 Minutes)

Questions/discussion

5. Funding Information (10 Minutes)

Funding Evaluation summary

Questions/discussion

Summary and next steps (5 minutes)

1. Public meeting date - TBD

2. Study timeline

Presentation to council - TBD

Full published study - TBD



LOWER PLATTE SOUTH
natural resources district

olsson

Michael Baker
INTERNATIONAL

SK
SEACREST & KALKOWSKI, P.C., LLC

Table 2. Stakeholder Meeting 1 Invitation List

Initial	Name	Organization Name	Email
X	Ann Post	Home Builders Association of Lincoln	APost@baylorevnen.com
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X	Brian Dunnigan	Olsson	bdunnigan@olsson.com
X	Carter Hubbard	Olsson	chubbard@olsson.com
	Chad Blahak	Lincoln Building and Safety	bldgsafe@lincoln.ne.gov
	Dan Duncan	University of Nebraska Lincoln	dduncan1@unl.edu
X	Dan Steinkruger	NRD Director	dsteinkruger.nrd@outlook.com
	David Haring	Lincoln Airport Authority	dharing@lincolnairport.com
	David Landis	NRD Director	dlandis2@unl.edu
	Deb Schorr	Lancaster County Commissioner	dschorr@lancaster.ne.gov
X	Donna Garden	Transportation and Utilities	DGarden@lincoln.ne.gov
X	Emily Bausch	Olsson	ebausch@olsson.com
	Gary Bentzinger	AG Producer/Rural Landowner	
X	Grant Daily	South Salt Creek Community Organization	grant.daily@nwlincoln.org
X	J.D. Linscott	Lincoln Electric System	jlinscott@les.com
X	James Davidsaver	Lancaster County Emergency Manager	jdavidsaver@lancaster.ne.gov
	Jane Raybould	Lincoln City Council	jraybould@lincoln.ne.gov
X	Jared Nelson	Lower Platte South NRD	jnelson@lpsnrd.org
	Joey Hausmann	Hausmann Construction	joeyh@hausmannconstruction.com
X	Kara Burwell	Olsson	kburwell@olsson.com
X	Ken Fougeron	Speedway Properties	kgfougeron@speedwayproperties.com
X	Kim Morrow	Verdis	kim@verdisgroup.com
X	Leo Schumacher	Lincoln Federal Savings Bank	lschumacher@lincolnfed.com
	Marc LeBaron	Lincoln Industries	marc.lebaron@lincolnindustries.com
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X	Penny Costillo	Friends of Wilderness Park	friendsofwildernesspark@gmail.com
	Roy Christensen	Lincoln City Council	rchristensen@lincoln.ne.gov
X	Shelly Simonson	Lincoln Federal Savings Bank	SSimonson@LincolnFed.com
	Ted Triplett	Belmont Neighborhood Association	ted_triplett@yahoo.com
X	Todd Wiltgen	Lincoln Chamber of Commerce	TWiltgen@lcc.com
X	Tracy Corr	Neighborhood Roundtable	tlines24@hotmail.com
X	Tracy Straatmeyer	Northridge Heights	tstraatmeyer@hotmail.com

APPENDIX B

Example Meeting Fact Sheets/Handouts

SALT CREEK FLOODPLAIN RESILIENCY STUDY



GOAL OF THE SALT CREEK FLOODPLAIN RESILIENCY STUDY:
Reduce adverse impacts from flooding to life and property from existing and future flood events



WHAT DOES RESILIENCY MEAN?

- Meet the floodplain challenges of today and safeguard against the uncertainties of the future.

WHY IS SALT CREEK FLOODPLAIN SPECIFICALLY BEING STUDIED?

- Salt Creek is the largest stream, with the largest floodplain and impacts the most structures and property within Lincoln and Lancaster County.

- Since 1900, 100 floods have been recorded along Salt Creek and its tributaries in and near the City of Lincoln. Of those, 17 were classified as major, 30 as moderate, and 49 as minor.

WHAT IS A FLOOD EVENT AND WHAT IS THE RISK?

- "100-year" -1% chance annually of a storm producing many inches of rain in a 24-hour period (current standard is 6.68 inches).



WHAT IS BEING DONE FOR FLOOD PROTECTION?

- Lincoln and Lower Platte South Natural Resource District (LPSNRD) have a comprehensive approach to flood reduction.



WHAT HAS BEEN STUDIED?

- Currently, the study team has reviewed national floodplain management Best Management Practices and evaluated Lincoln and LPSNRD floodplain Best Management Practices.
- The study team has evaluated and summarized Lincoln and LPSNRD existing floodplain management measures and practices in conjunction with national and local flood history.



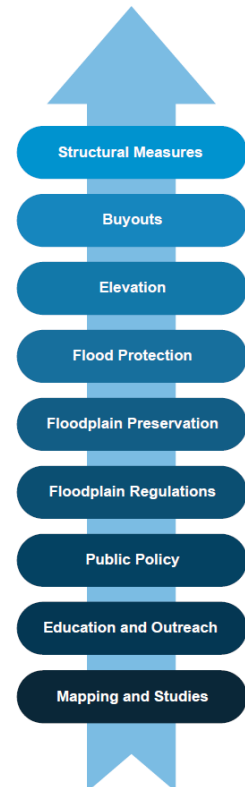
WHAT ARE THE NEXT STEPS FOR THIS STUDY?

- Lincoln and LPSNRD are currently evaluating future climate projections to estimate the impacts of future flood events.
- This information will be presented at the next stakeholder meeting on **October 1, 2019**.
- This study will provide an evaluation of potential flood reduction measures in comparison to current and future climate models to evaluate Salt Creek floodplain's resiliency.
- A public meeting will be held at the conclusion of the study to present the information to the public.

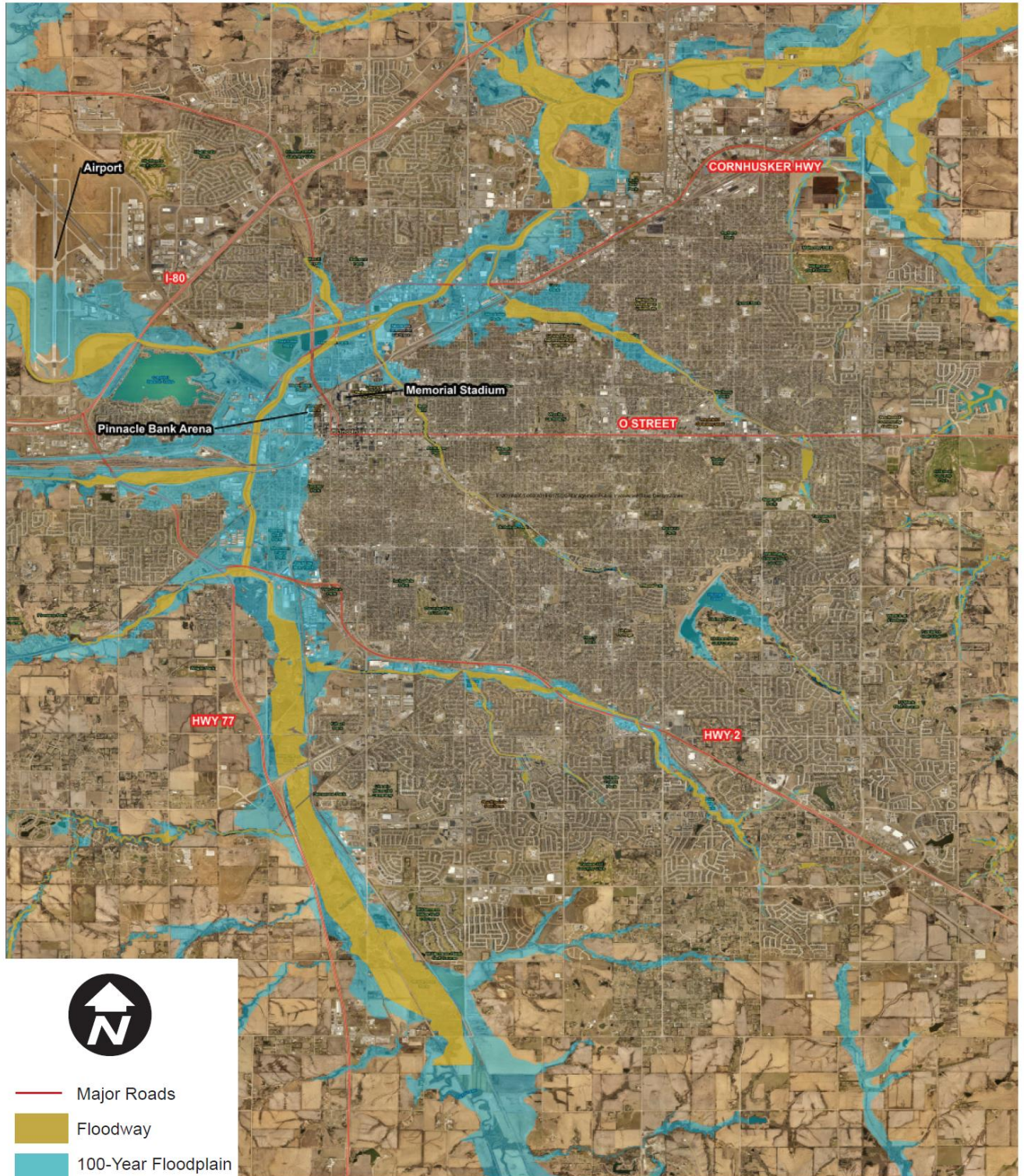


WHAT CAN I DO?

- Share the knowledge you gain with your organization, community, friends, and neighbors.
- Help determine where information gaps exist.



SALT CREEK FLOODPLAIN RESILIENCY STUDY



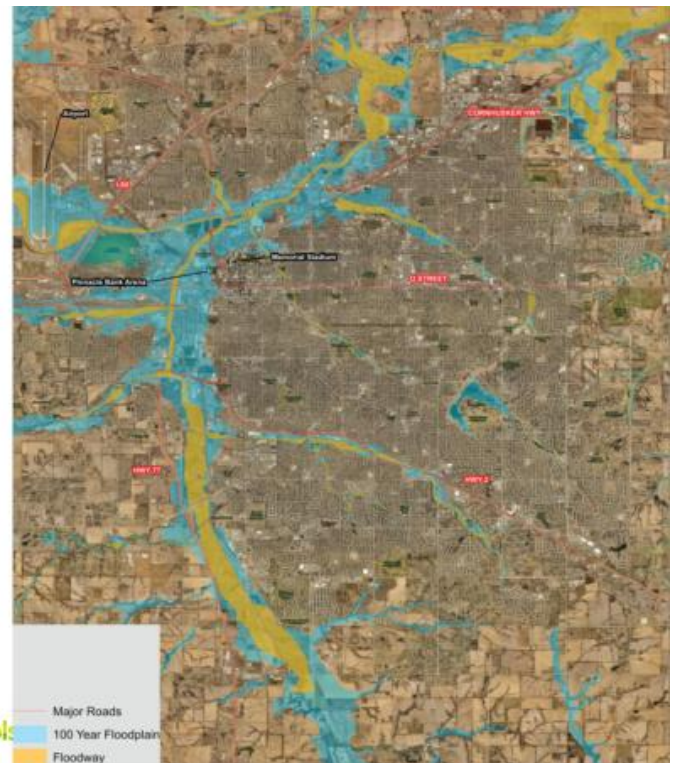
APPENDIX C

Example Presentation Slides



Welcome Agenda

1. Stakeholder Meeting 1 Review
 - Review sheet
2. Salt Creek Floodplain Resiliency Study
 - Floodplain Best Management Practices
 - Best Management Practices Resources
3. Climate data and evaluation
 - Climate Evaluation summary sheet
4. Non- Structural Floodplain Measures
 - Summary Sheet
5. Structural Floodplain Measures
6. Funding Information
 - Summary Sheet
7. Wrap-up



Goal of the salt creek resiliency study

Evaluate adverse impacts from flooding to life and property from existing and future flood events.



Stakeholder Meeting 1

Summary

- Study
- Floodplain
- Precipitation
- Streamflow
- Levees
- Reservoirs
- Detention



Best Management Practices BMPs

What is floodplain management?

What are "Non-structural" floodplain management measures?

What are "Structural" floodplain management measures?

How can I get more information about BMPs?



BMP Resources

SALT CREEK FLOODPLAIN RESILIENCY STUDY

PUBLIC OUTREACH AND EDUCATION

Source: Federal Emergency Management Agency and Army Corps of Engineers

Topic: **Levee**

Resources:

- What is a Levee
- So, You Live Behind A Levee
- Living with Levees: Ideas, Effects, Outreach
- National Levee Database

Reason: According to the National Levee Database, Salt Creek levee systems are associated with 1,229 structures at risk, 5,912 people at risk, and \$847 million in property value. Effective outreach to residents affected by these levee systems could significantly improve flood preparedness and resiliency.

Opportunity: Lincoln could develop its own fact sheet that is specifically tailored to the Salt Creek levee systems.



Source: National Oceanic and Atmospheric Administration (NOAA)

Topic: **Disaster Preparedness**

Resources:

- Weather Ready Nation Website
- National Weather Service Flood Related Products
- Weather Ready Nation Ambassadors: In Their Own Words
- NOAA National Weather Service Flood Safety Tips and Information
- Preparation Before a Flood
- Informal Response During a Flood
- Proper Action After a Flood

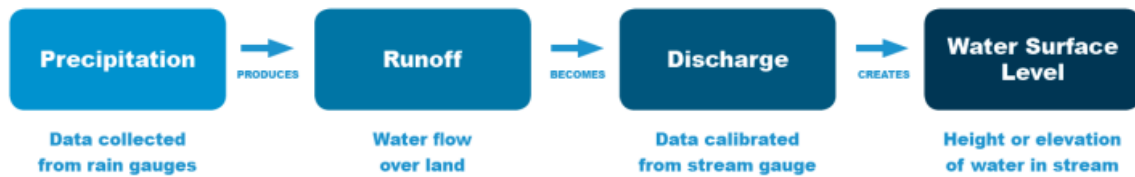
Reason: Preparation and awareness are critical before, during, and after a disaster.

Opportunity: Institutionalizing NOAA's Weather Ready Nation principles can help the City of Lincoln increase its resilience to extreme weather and flooding.

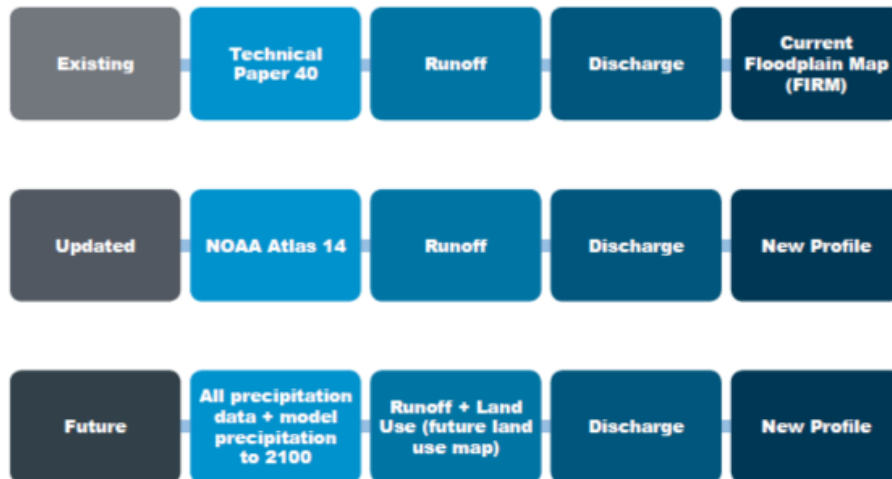


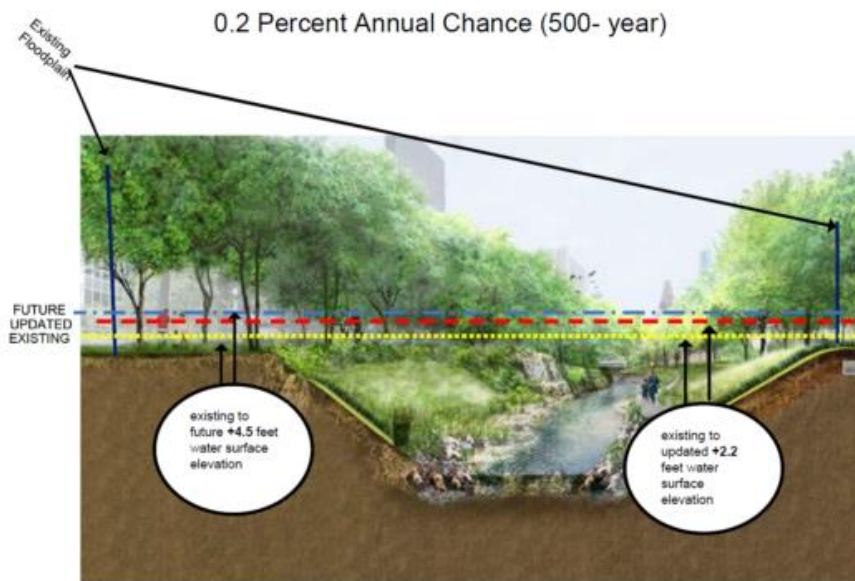
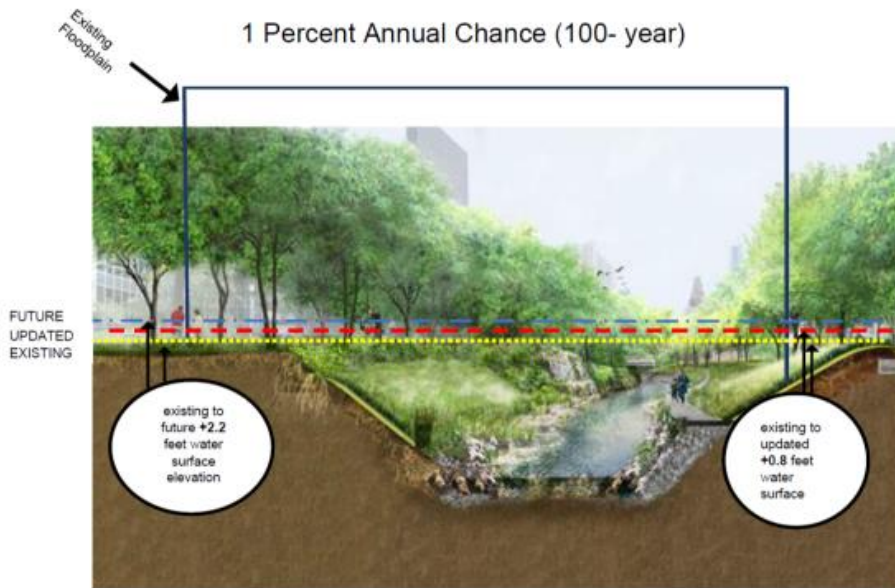
How are floodplain maps created?

Hydrology and Hydraulic Analysis



Floodplain Models





What is the difference between the **existing** and **updated** floodplain conditions?

When compared to the **“existing” floodplain condition:**

- **“updated”** conditions shows that discharges are approximately 12% higher for the one percent (100-year) annual chance flood
- **“updated”** conditions shows that discharges are approximately 27% higher for the .2 percent (500-year) annual chance flood

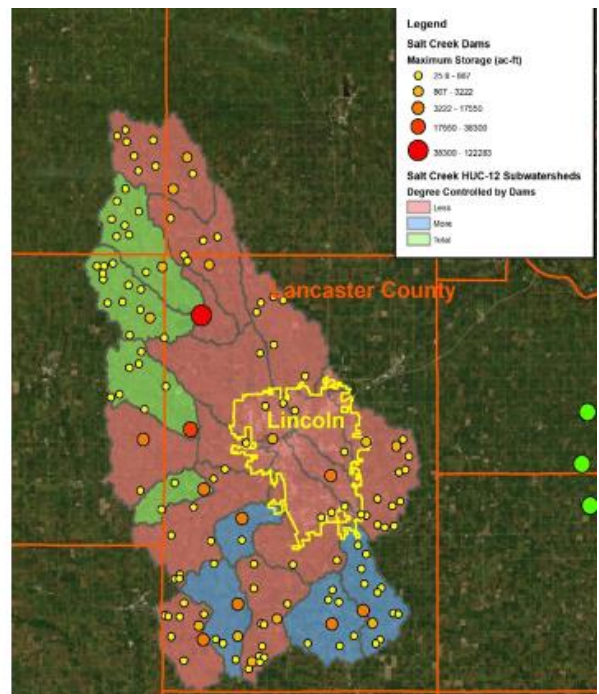
Questions

Non-Structural Recommendations

- Voluntary Buyout Program
- Setbacks and Riparian Preservation
- Cluster Subdivisions
- Overlay Zoning District
- Low Impact Development Regulations
- Higher Floodplain Management Standards

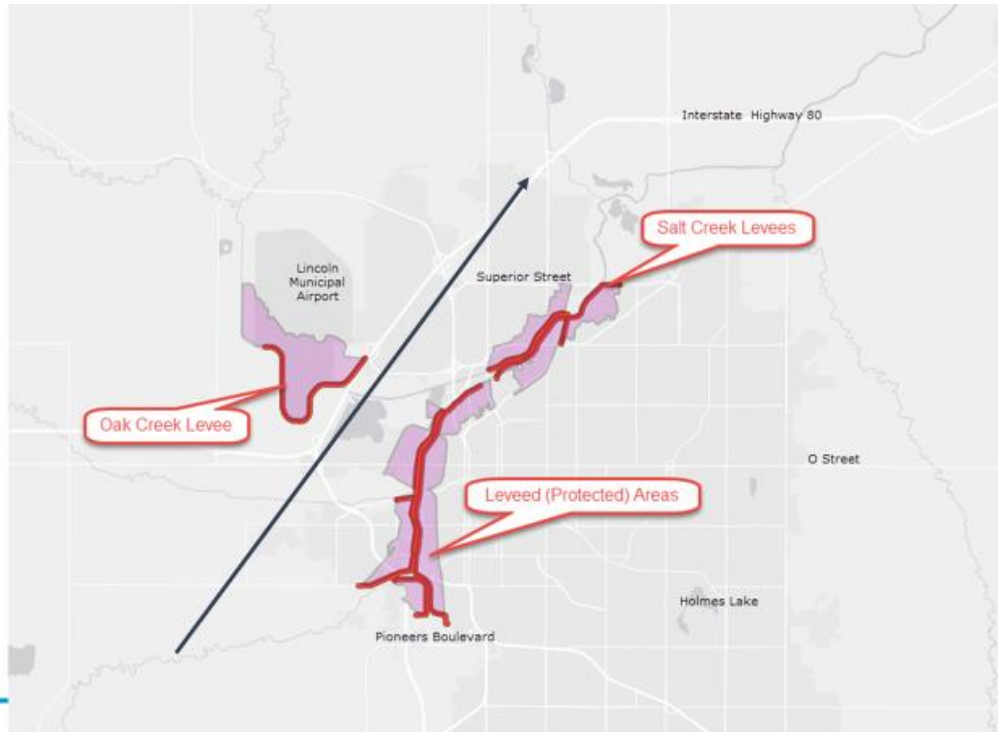


Existing Structural Measures



Salt Creek Floodplain Study Results

Streamflow south to north



EXISTING FLOODPLAIN



**EXISTING FLOODPLAIN
UPDATED FLOODPLAIN**

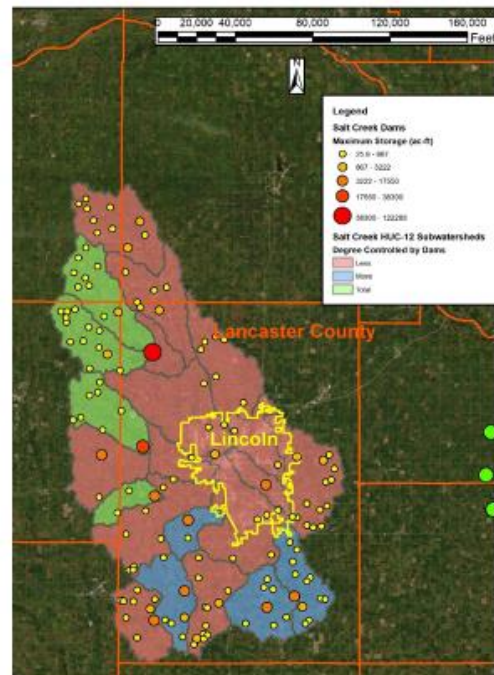
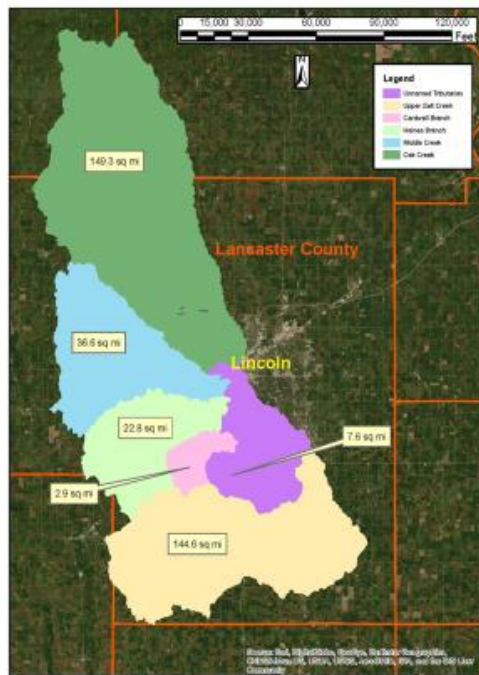


**EXISTING FLOODPLAIN
UPDATED FLOODPLAIN
FUTURE FLOODPLAIN**





To preserve the updated condition, 16 flood control structures in the Salt Creek basin were conceptually analyzed.



Funding Opportunities

Federal Emergency Management (FEMA)

United States Army Corps of Engineers (USACE)

Natural Resource Conservation Service (NRCS)

Nebraska Natural Resource Commission (NRC)

Nebraska Environmental Trust (NET)

Nebraska Department of Environment and Energy (NDEE)

