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- (1) BEFORE THE MEETING SUBMIT YOUR TELEPHONE NUMBER BY E-MAIL TO THE CLERK AT MNELSON@SDCWA.ORG AND THE CLERK WILL CALL YOU WHEN THE BOARD IS READY TO HEAR YOUR PUBLIC COMMENT (THREE MINUTES OR LESS); OR**
- (2) BEFORE THE MEETING E-MAIL YOUR COMMENT TO THE WATER AUTHORITY GENERAL COUNSEL AT MHATTAM@SDCWA.ORG AND MAY BE READ ALOUD AT THE PUBLIC COMMENT PERIOD (THREE-MINUTE LIMIT).**

IF MODIFICATIONS OR ACCOMMODATIONS FROM INDIVIDUALS WITH DISABILITIES ARE REQUIRED, SUCH PERSONS SHOULD PROVIDE A REQUEST AT LEAST 24 HOURS IN ADVANCE OF THE MEETING BY E-MAIL TO THE WATER AUTHORITY GENERAL COUNSEL AT MHATTAM@SDCWA.ORG]

AGENDA

SPECIAL MEETING WATER PLANNING AND ENVIRONMENTAL COMMITTEE

NOVEMBER 12, 2020
1:30 p.m. – Teams Meeting

Tony Heinrichs – Chair
Brian Boyle – Vice Chair
Doug Wilson – Vice Chair
Gary Arant
Jimmy Ayala
David Barnum
Jack Bebee
Jerry Butkiewicz

Chris Cate
Jim Desmond
Kathleen Coates Hedberg
Michael Hogan
Tom Kennedy
Keith Lewinger
Mona Rios

1. Roll call – determination of quorum.
2. Additions to agenda (Government Code Section 54954.2(b)).

3. Public comment – opportunities for members of the public to address the Committee on matters within the Committee's jurisdiction.
4. 2020 Urban Water Management Plan & Regional Demand Forecast Update. (Presentation)
5. ADJOURNMENT

Melinda Nelson
Clerk of the Board

NOTE: This meeting is called as a Water Planning and Environmental Committee meeting. Because a quorum of the Board may be present, the meeting is also noticed as a Board meeting. Members of the Board who are not members of the Committee may participate in the meeting pursuant to Section 2.00.060(g) of the Authority Administrative Code (Recodified). All items on the agenda, including information items, may be deliberated and become subject to action. All public documents provided to the committee or Board for this meeting including materials related to an item on this agenda and submitted to the Board of Directors within 72 hours prior to this meeting may be reviewed at the San Diego County Water Authority headquarters located at 4677 Overland Avenue, San Diego, CA 92123 at the reception desk during normal business hours.



November 4, 2020

Attention: Water Planning and Environmental Committee

Report on Preparation of Draft 2020 Urban Water Management Plan. (Presentation)

Purpose

To provide a report on preparation of the Water Authority's 2020 Urban Water Management Plan (UWMP).

Executive Summary

- The UWMP serves as the Water Authority's long-term planning document to ensure a reliable water supply for the region.
- The California Urban Water Management Planning Act requires most urban wholesale and retail water suppliers to prepare an UWMP and update the document in years ending in one and six.
- The Water Authority's 2020 UWMP must be submitted to the California Department of Water Resources by July 1, 2021.
- The technical review draft of the 2020 UWMP is scheduled for distribution to the member agencies for internal review and comments by December 2020.
- The public draft of the 2020 UWMP is scheduled for distribution to the Board and public for review and comments by January 2021.

Background

The California Urban Water Management Planning Act (Act), which is part of the California Water Code, requires urban water suppliers within the state to adopt and submit an UWMP to the California Department of Water Resources (DWR) in years ending in one and six. 2020 UWMPs must be submitted by July 1, 2021. The Act defines an urban water supplier as an agency that provides water for municipal purposes to more than 3,000 customers or supplies more than 3,000 acre-feet of water annually. Under this definition, the Water Authority and its member agencies, excluding the City of Del Mar, Yuima Municipal Water District, and Camp Pendleton Marine Corps Base, are required to adopt and submit an UWMP to DWR.

The purpose and importance of UWMPs has evolved since first required more than 35 years ago. Initially, UWMPs served to provide general information about a water supplier and its water supplies. Over the years, new requirements were added to the Water Code and the amount of information included in UWMPs greatly increased. State agencies and the public are now able to review a water supplier's forecast of water demands and a detailed evaluation of the supplies necessary to meet those demands over a minimum 20-year planning horizon for both normal, single-dry, and multiple dry-year conditions. UWMPs are also used to document supply availability for the purpose of compliance with the state laws such as Senate Bills (SB) 610 and 221. Those bills, passed in 2001, require retail water suppliers to provide documentation on water supply availability as part of the approval process for large land-use developments.

More recently, with the passage of SB 606 and Assembly Bill (AB) 1668 in 2018, additional UWMP reporting requirements were added to the Water Code. For example, UWMPs must now

include a water shortage contingency plan that can also serve as a stand-alone document and be updated more frequently than every five years. UWMPs must also include the water supplier’s drought risk assessment methodology that will be used to compare available water supplies to projected water demands. The drought risk assessment must be submitted to DWR annually. Another change due to the passage of the legislation in 2018 is that water suppliers must now plan for a dry period that lasts for five consecutive years. This is an increase over the previous requirement to plan for a dry period of three consecutive years.

Some provisions of SB 606 and AB 1668 require DWR and the State Water Resources Control Board to work with stakeholders to develop the details for implementation. An example is the drafting of new water use efficiency standards that will not be addressed in the 2020 UWMPs submitted to DWR in 2021, but rather addressed in 2025 UWMPs that must be submitted to DWR by July 1, 2026.

Discussion

At the January 23, 2020 Water Planning and Environmental (WP&E) Committee meeting, staff provided a presentation on the requirements, approach, and schedule for preparation of the 2020 UWMP. Included in that presentation was an overview of six major elements in the UWMP. Those elements were the following: 1) Baseline demand forecast; 2) Conservation savings and water demand projections; 3) Water supplies; 4) Supply reliability assessment; 5) Scenario planning; and 6) Shortage contingency analysis.

Building off of the six major elements listed above, staff developed the 11 sections and appendices that will comprise the 2020 UWMP. Table 1 provides a list of the 2020 UWMP’s sections, the names of the sections, and a description of the contents of each section. It also includes a list of the appendices. It should be noted that as part of the process to develop Section 2, Water Demands, staff worked collaboratively with the member agencies to develop the draft long-range demand forecast. That process included the collection of member agency-provided local water supply projections. In addition, Water Authority staff met with the member agencies on an individual basis to review the draft demand projections for their respective agency. Detailed information on the process to prepare the long-range demand forecast is included in a separate board memo as part of the November 12, 2020, Special WP&E Committee meeting.

**Table 1
Outline of 2020 Urban Water Management Plan**

Section	Name of Section	Contents of Section
1	Introduction	<ul style="list-style-type: none"> • Information on the California Urban Water Management Planning Act (Act) • Key legislation affecting 2020 UWMP requirements • History and description of the Water Authority, service area and member agencies • Physical water delivery system • Activities related to climate change

2	Water Demands	<ul style="list-style-type: none"> • Current and historical water use • Projected regional baseline demand forecast for normal year, single dry-year, and multiple dry-year scenarios • Adjustments for future conservation savings • Projected member agency water demands on Water Authority
3	Demand Management	<ul style="list-style-type: none"> • Role of water use efficiency as component of the Water Authority’s long-term strategy to increase reliability through diversification of supply portfolio • Overview of water use efficiency programs, achievements, and resources • Public outreach programs and strategies, including sponsored legislation
4	Water Authority Supplies	<ul style="list-style-type: none"> • Actions to diversify its supply sources • Existing and projected supply sources by category <ul style="list-style-type: none"> – Verifiable projects – Additional planned projects – Conceptual projects
5	Member Agency Supplies	<ul style="list-style-type: none"> • Information on local resources being developed and managed by Water Authority member agencies • Projected yields in 5-year increments from 2025 to 2045 <ul style="list-style-type: none"> – Surface water – Groundwater – Recycled water – Potable reuse – Seawater desalination – San Luis Rey Water transfers
6	Metropolitan Water District of Southern California	<ul style="list-style-type: none"> • General information about MWD • Reliability and environmental considerations of MWD’s imported supply sources
7	Water Quality	<ul style="list-style-type: none"> • Water quality of existing supply sources and the impact on supply reliability • Water quality issues associated with supplies serving the San Diego region
8	Integrated Regional Water Management Plan	<ul style="list-style-type: none"> • IRWM planning and the importance of coordination and integration of water planning activities occurring within the San Diego region • Information on IRWM grant projects

9	Water Supply Reliability	<ul style="list-style-type: none"> • Projected mix of resources (verifiable supplies) to meet future demand • Assessment of water supply reliability <ul style="list-style-type: none"> - Normal year - Single dry year - Multiple dry years
10	Scenario Planning	<ul style="list-style-type: none"> • Reliability of the region’s future resource mix and plans for potential uncertainties • Management strategies to address uncertainties
11	Water Shortage Contingency Planning	<ul style="list-style-type: none"> • Plans to address supply shortages due to a catastrophe, drought or other situations • Supplies available under multiple dry year scenario • Water Shortage Contingency Plan and drought risk assessment
Appendix A		California Water Code Changes
Appendix B		Water Authority 2020 UWMP Implementation Documents
Appendix C		DWR 2020 UWMP Checklist
Appendix D		Documentation of Water Authority Supplies
Appendix E		Member Agency Local Supply Projections
Appendix F		Water Shortage Contingency Plan
Appendix G		Model Drought Ordinance
Appendix H		Water Authority Demands Provided by Metropolitan
Appendix I		Distribution System Water Losses
Appendix J		Water Authority’s Energy Intensity Calculations
Appendix K		DWR’s Standardized Tables

Over the next month, Water Authority staff will continue to prepare the sections of the 2020 UWMP and work to refine the demand forecast projections. By December, a technical review draft of the 2020 UWMP will be distributed to the member agencies for their internal review and comment. At the conclusion of the member agency technical review process, the Water Authority plans to release the Public Review Draft 2020 UWMP to the Board and general public for a 60-day review and comment period. Staff anticipates presenting the final draft of the 2020 UWMP to the Board for consideration at its April 2021 meeting. Pending any changes requested by the Board at that time, it will then be submitted to DWR by July 1, 2021. Table 2 provides a complete list of the past and upcoming milestones related to preparation of the 2020 UWMP.

**Table 2
2020 UWMP Milestones**

Past Milestones	Month/Year
Presentation to Board on preparation of 2020 UWMP	January 2020
Coordination meeting with member agencies	March 2020
Collect local supply projections from member agencies	February – May 2020
Review draft demand forecast projections with individual member agencies	September – October 2020
Upcoming Milestones	Month/Year
Meeting of Special Water Planning and Environmental Committee	November 2020
Distribute Technical Review Draft 2020 UWMP to member agencies	December 2020
Distribute Public Review Draft 2020 UWMP to Board and public	January 2021
Public hearing on Public Review Draft 2020 UWMP	March 2021
Board considers approval of Final Draft 2020 UWMP	April 2021
Submit Board-approved 2020 UWMP to DWR	June 2021

Prepared by: Alexi Schnell, Water Resources Specialist
 Reviewed by: Jeff Stephenson, Water Resources Manager
 Reviewed by: Kelley Gage, Director of Water Resources
 Approved by: Sandra L. Kerl, General Manager

November 4, 2020

Attention: Water Planning and Environmental Committee

Report on Preliminary 2045 Baseline Water Demand Forecast, Conservation Savings Projections, and Water Resources Mix. (Presentation)

Purpose

To provide information on the preliminary 2045 baseline water demand forecast, conservation savings projections and water resources mix to be included in the Water Authority's draft 2020 Urban Water Management Plan (UWMP).

Executive Summary

- The California Urban Water Management Planning Act requires most urban wholesale and retail water suppliers to prepare an UWMP and update the document in years ending in one and six.
- The UWMP must contain a water supply reliability assessment, over a minimum 20-year planning horizon.
- The reliability assessment utilizes total projected water demands to assess the required water resource mix for the region.
- Projected total water demand is forecasted using the CWA-MAIN econometric water demand forecast model and the Alliance for Water Efficiency Conservation Tracking Tool.
- The water resource mix incorporates local supply projections submitted by the member agencies.

Background

The California Urban Water Management Planning Act (Act), which is included in the California Water Code, requires most urban wholesale and retail water suppliers within the state to prepare an UWMP and update it in years ending in one and six. According to the Act, the UWMP must contain a water supply reliability assessment. The reliability assessment describes the long-term reliability of the water agency's water supplies and is used for compliance with state laws linking supply availability and land-use development approvals. A key element in this assessment analyses is the development of projected water demands for the region over a minimum 20-year planning horizon.

The Water Authority's water demand forecast for the 2020 UWMP is based on the following components:

Baseline Water Demand Forecast (Baseline Forecast): This forecast is derived using an econometric model that incorporates member agencies' historic water use and retail rate data, San Diego Association of Governments (SANDAG) projected regional growth forecast and local weather data.

Additional Water Conservation: Since the Baseline Forecast reflects only conservation savings achieved over the historic dataset, a separate modeling effort is required to forecast future savings.

The projection of future conservation is developed using the Alliance for Water Use Efficiency Conservation Tracking Tool.

Long-Range Water Demand Forecast (Long-Range Forecast): This forecast is calculated by subtracting projected water conservation savings from the Baseline Forecast.

Projected Regional Water Resources Mix: The projected regional water resources mix is comprised of member agency and Water Authority verifiable supplies, along with water supplies from the Metropolitan Water District of Southern California (MWD). Together, they are used to meet demands in both normal and dry year conditions. Further details on these supply components, including preliminary results, are discussed further in this report.

Discussion

Baseline Water Demand Forecast

The Water Authority utilizes an econometric model to forecast baseline water demands for its UWMP updates. Baseline water demands are grouped into two classes of service, municipal and industrial (M&I) demand and agricultural water demand. M&I projections are further broken out by single family, multi-family and non-residential sectors. The CWA-MAIN econometric model utilizes multiple variables, including household income, consumer response to the price of water, weather, as well as demographic and economic projections, to forecast water demands for the Water Authority's service area.

The baseline demand forecast development process includes several key activities that take between 12-18 months to complete. The activities include the following:

- Extensive data collection effort to compile member agency historic monthly water use, accounts, water rates data, local temperature and rainfall data, and regional demographic and economic data
- Standardized formatting of the collected datasets and development of a statistical modeling database to house the information
- Re-estimation of econometric modeling equations based on the updated historic datasets
- Model calibration and back-cast testing

Based on a 1992 Memorandum of Agreement between the Water Authority and the San Diego Association of Government (SANDAG), the Water Authority uses SANDAG's regional demographic and economic projections as driver variables to model future water demands. This ensures a nexus between local jurisdictions' land use plan-based development and forecasted water demands in the San Diego region. Demographic and economic projections from the SANDAG Series 14 Regional Growth Forecast (Version 17), developed for its 2019 Federal Regional Transportation Plan, were used for the baseline demand forecast update. The 2019 Federal Regional Transportation Plan was adopted by SANDAG's Board of Directors on October 25, 2019.

Two key modifications were made to SANDAG’s Series 14 Regional Growth Forecast. First, in response to the Assembly Bill 1086 requirement that population forecasts developed by the council of governments be within 1.5% of the total regional population forecast prepared by the Department of Finance, SANDAG adopted a new approach to utilize Department of Finance population projections for its regional population control totals. Second, because of the projected number of housing units needed to be built, SANDAG utilized all available housing unit capacity from local jurisdictions. Housing unit capacities are determined by a local jurisdiction’s interpretation of their general plans and govern how many units can be accommodated based on land use and available area out to the year 2050.

In addition to the M&I and agricultural demand projections, the baseline forecast also incorporates a small demand increment associated with known potential future annexations and potential accelerated forecasted growth. Demands associated with potential future annexations were provided by the member agencies and are for lands currently outside the Water Authority’s service area that may be annexed within the next five years. However, incorporation of the demands provides no assurance of annexation. Approval by the Water Authority’s Board is still required before water service is provided to these lands.

Additionally, the demand increment associated with accelerated forecasted growth is intended to account for land use development included in SANDAG’s growth forecast and projected to occur beyond 2045, but not yet accounted for in local jurisdictions’ general land use plans. Staff includes a small additional demand increment to ensure the Water Authority is adequately planning supplies for potential growth that could occur within the service area during the 2020 UWMP planning horizon. This will assist member agencies with general plan amendments that rely on the Water Authority’s UWMP to comply with laws linking water availability and land-use approvals and provide any necessary water supply assessments. Table 1 provides a summary of the 2045 preliminary baseline demand forecast.

**Table 1
2045 Preliminary Baseline Demand Forecast (AF)**

Baseline Water Demand Forecast	2025	2030	2035	2040	2045
Municipal and Industrial	569,674	595,267	620,242	642,562	661,587
Agricultural	46,719	45,993	45,266	45,218	45,168
Accelerated Forecasted Growth	2,072	3,817	5,526	7,298	9,051
Near-term Annexations	5,648	6,168	6,168	6,168	6,168
Total Forecasted Demand ^{1,2}	624,112	651,245	677,202	701,247	721,974

¹ Baseline demands reflect historic conservation savings from active and passive measures through 2018, but do not reflect future additional conservation savings.

² Demand increment based on SANDAG’s estimate of roughly 53,000 housing units forecasted beyond 2045 could be developed within the 2020 UWMP planning horizon. Efficient residential water-use factors were used to determine the acre-foot volume.

Additional Water Conservation

With the baseline forecast established, it is necessary to account for future water conservation savings. Water Authority staff utilized the Alliance for Water Efficiency Conservation Tracking Tool (AWE Tool) to compute future savings. The AWE Tool is an industry standard application

and is listed in the California Department of Water Resources UWMP Guidebook as an application to assist water purveyors in developing savings estimates. It is a spreadsheet-based application that enables the evaluation of different conservation scenarios based on “active” program water savings that result from the implementation of water conservation programs, and “passive” code-based water savings.

Preliminary future water conservation projections are shown below in Table 2. For planning purposes, the active conservation savings component assumes the same level of conservation program activity moving forward as occurred in 2018. Actual active conservation program implementation will be at the discretion of the Board and individual member agencies. The passive conservation element includes estimated future savings from appliance standards and plumbing code changes, as well as savings from the updated Model Water Efficient Landscape Ordinance (MWELO). An MWELO compliance level of 80% was assumed on new accounts and 90% of the estimated savings was assumed to continue over the UWMP planning horizon. An updated analysis will be conducted with every five-year update of the UWMP.

Table 2
Preliminary Projected Additional Conservation Savings¹ (AF)

	2025	2030	2035	2040	2045
Active Conservation Savings	38,667	33,415	32,263	32,200	27,614
Passive Conservation Savings	23,876	33,609	40,846	49,475	58,104
Additional Conservation Savings post-2018	62,543	67,024	73,109	81,675	85,718

¹ Additional conservation savings post-2018.

It should be noted that the impacts from Governor Brown’s emergency actions and mandatory water-use restrictions in 2015 and 2016, as well as the State Water Resources Control Board’s (SWRCB) emergency regulation during the same period, accelerated the implementation of water conservation measures in the region. As a result of the accelerated conservation savings, the potential to achieve regional water conservation savings beyond 2018 was reduced. The accelerated water conservation savings that took place prior to 2018, due to the factors listed above, are accounted for in the preliminary baseline demand forecast in Table 1.

In the future, water use efficiency targets will be set for individual member agencies through the implementation of the provisions of Senate Bill 606 and Assembly Bill 1668. The bills were signed into law by Governor Brown in 2018 and are the direct outcomes of Executive Order B-37-16. SB 606 and AB 1668 establish a new foundation for long-term improvements in water conservation through water use efficiency standards. Currently, DWR and the SWRCB are developing target recommendations required by the law through a stakeholder process. Final targets will be adopted by the SWRCB in 2022. Because of previous efforts to reduce demand, most member agencies are expected to meet or exceed the new water use efficiency targets being developed without implementation of additional conservation measures. Even with some member agencies taking more proactive measures to reduce demand to meet the new targets, preliminary estimates do not anticipate more than a 10% conservation reduction across the entire

region. Actual impacts on individual member agencies and the region will be determined after targets are adopted and will be addressed in the 2025 UWMP.

Long-Range Demand Forecast

To derive the long-range forecast, the projected additional conservation savings is subtracted from the baseline water demand forecast. This long-range forecast is used in the Water Authority’s supply reliability assessment. Table 3 shows the preliminary 2045 long-range demand forecast.

Table 3
2045 Preliminary Long-Range Water Demand Forecast (AF)

	2025	2030	2035	2040	2045
Preliminary Regional Baseline Water Demand Forecast	624,112	651,245	677,202	701,247	721,974
Additional Conservation Savings post-2018	62,543	67,024	73,109	81,675	85,718
Preliminary Long-Range Demand Forecast	561,569	584,221	604,093	619,572	636,256

When compared to the long-range demand forecast in the 2015 UWMP, Table 4 shows that the preliminary 2020 UWMP long-range demand forecast (Table 3) is on average 13.5% lower over the 2025 through 2040 planning horizon. The lower preliminary demand projections are due to changes in demographic projections provided by SANDAG, the influence of the statewide emergency water use restrictions in 2015 and 2016, and the long-term effect of customers continuing to adopt a more water use efficient lifestyle.

Table 4
Comparison Preliminary 2045 and 2040 Long-Range Demand Forecast (AF)

	2025	2030	2035	2040	2045
2040 Long-Range Demand Forecast (2015 UWMP)	648,124	676,721	694,431	718,773	N/A
Preliminary 2045 Long-Range Demand Forecast (2020 UWMP)	561,569	584,221	604,093	619,572	636,256
Difference	-86,555	-92,500	-90,338	-99,201	N/A
Change	-13.4%	-13.7%	-13%	-13.8%	N/A

Projected Regional Water Resources Mix

Developing the region’s projected resources mix starts with the member agencies’ estimates of future local water supplies. Member agencies provide local project supply projections and classify them into one of three categories: verifiable, additional planned, or conceptual. Project categorization aids in analyzing the availability of projected water supplies for reliability and planning purposes. Table 5 lists the supply categories and a brief definition for each category. These categories are used as a guideline when a member agency categorizes a project.

Table 5
General Description of Supply Project Categories Used for Planning Purposes

Project Category	General Description ¹
Verifiable	Adequate documentation on implementation (e.g. CEQA certification, permits satisfied, contracts executed). These supplies are utilized in the reliability assessment.
Additional Planned	Feasibility phase complete. Continue to fund advanced planning efforts.
Conceptual	Pre-planning or pre-feasibility analysis phase.

¹ The general description is provided as a guideline and member agencies have the discretion to include a project in the category that best fits the decision making of their agency.

Once the member agency local supplies have been identified, the Water Authority’s regional supplies are added to the resources mix. In a normal water year analysis, the local and regional supplies are compared to the long-range demand forecast to project the region’s purchases from MWD. Table 6 includes the preliminary verifiable water resources mix for inclusion in the draft 2020 UWMP.

Table 6
Water Reliability Assessment
Preliminary Verifiable Water Resource Mix, Normal Weather Year (AF)

	2025	2030	2035	2040	2045
IID Water Transfer	200,000	200,000	200,000	200,000	200,000
ACC and CC Lining Transfers	78,700	78,700	78,700	78,700	78,700
Seawater Desalination	50,000	50,000	50,000	50,000	50,000
Water Authority Supplies	328,700	328,700	328,700	328,700	328,700
Surface Water ¹	46,542	46,442	46,342	46,242	46,242
Water Recycling	54,805	58,305	58,405	58,505	58,605
Groundwater	22,070	23,270	23,270	19,770	19,770
Groundwater Recovery	9,000	9,000	9,000	9,000	9,000
Seawater Desalination	6,000	6,000	6,000	6,000	6,000
San Luis Rey Water Transfer	15,800	15,800	15,800	15,800	15,800
Potable Reuse	33,042	53,202	53,202	53,202	53,202
Member Agency Verifiable Local Supplies	187,259	212,019	212,019	208,519	208,619
MWD Supplies ²	45,610	43,502	63,374	82,353	98,937
Total Projected Supplies	561,569	584,221	604,093	619,572	636,256
Long-Range Water Demand Forecast	561,569	584,221	604,093	619,572	636,256

¹ Local surface water supply reflects normal year conditions, no future increase in surface water yield is anticipated.

² MWD purchases are calculated as the difference between the water demand forecast and total local and regional supplies.

By December 2020, a technical review draft of the 2020 UWMP will be distributed to the member agencies for their internal review and comment. At the conclusion of the member agency technical review process, the Water Authority plans to release the Public Review Draft 2020 UWMP to the Board and public in early 2021. Staff anticipates presenting the Final Draft 2020 UWMP to the Board for consideration at its April 2021 meeting.

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