

# BUILDING A WORLD OF DIFFERENCE

## 2021 REGIONAL WATER PLAN

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13 September, 2017



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# AGENDA

## 6.A Status Reports on TWDB Contract Activities

1. Population and Municipal Demand Projections
2. Proposed Revisions to Irrigation Demands
3. Groundwater Availability
4. Contract
5. 2016 RWP Process for Identifying WMS

# TIMELINE FOR REVIEW OF DRAFT DATA

- List WUGs with the Utility-based approach (June, 2016)
- **Review draft projections from TWDB**
  - Population and Municipal Demand (received in December)
  - Other Demand Projections
    - Irrigation (received 6/2/2017)
    - Manufacturing (received 6/2/2017)
    - Steam-Electric (received 6/2/2017)
    - Livestock (received 6/2/2017)
    - Mining (received 12/22/2016)
- **Sub-WUG response submitted September 1, 2017**
- **Request changes if needed by January 12, 2018**

# 6.A.1. POPULATION AND MUNICIPAL DEMAND PROJECTIONS

- a. REVISION OF POPULATION  
AND DEMAND PROJECTIONS
- b. SUB-WUG UPDATE

# PROPOSED REVISIONS TO POPULATION AND MUNICIPAL DEMAND PROJECTIONS

- A survey was sent (or attempted) for all municipal WUGs; revisions are based on survey responses and historical data provided
- Population totals in each county are not changed, so County-Other absorbs most of the changes
- 9 of 71 Municipal WUGs requested changes, affecting the estimates for Hidalgo, Cameron, and Maverick County-Other (a total of 12 WUGs).

# POPULATION AND DEMAND REVISIONS

## Population

- Used Master Plan population estimates where available
- Historical population & growth if no master plan

## GPCD

- Used highest estimated historical GPCD or average historical, based on feedback
- Applied efficiency improvement estimates developed by TWDB to all revised GPCD

## Demand

- Compared estimates with 2010-2015 records
- Calculated as  $\text{GPCD} \times \text{population}$

# PROPOSED REVISIONS TO POPULATION AND MUNICIPAL DEMAND PROJECTIONS

BROWNSVILLE	Used BPUB Master Plan population projection for 2020
COUNTY-OTHER, CAMERON	Revised to maintain county-wide totals
EL JARDIN WSC	Used BPUB/El Jardin Master Plan population projection for 2020
LAGUNA MADRE WATER DISTRICT	Used interpolation of Laguna Madre Master Plan population for 2020
PALM VALLEY	Limited population growth based on boundaries of the system
COUNTY-OTHER, HIDALGO	adjusted to maintain county total population
HIDALGO COUNTY MUD 1	Population growth rate revised down to historical growth rate, GPCD revised up to average of historical GPCD estimates
PHARR	Population was increased using Pharr's master plan estimate for 2020, demand increased using max historical GPCD
WESLACO	Population seemed too high, revised down to historical growth (waiting on data from Weslaco)
COUNTY-OTHER, MAVERICK	Population revised down to maintain county total
EAGLE PASS	Population estimate increased based on the average of the Eagle Pass Master Plan and the TWDB estimates for the base year, TWDB growth rate. GPCD revised down to maximum historical estimate.
UNION WSC	GPCD revised from lowest of 2010-2015 to average of 2010-2015

# SUB-WUG UPDATE

- **Attempted to contact all potential Sub-WUGs**
- **Either did not respond or did not have capacity to develop required data for the planning process**
- **Executive Committee agreed to move forward without Sub-WUG designations, and continue to plan for these entities in County-Other**



# 6.A.2. PROPOSED REVISION TO IRRIGATION DEMAND PROJECTIONS

# DRAFT IRRIGATION DEMAND PROJECTION METHODOLOGY



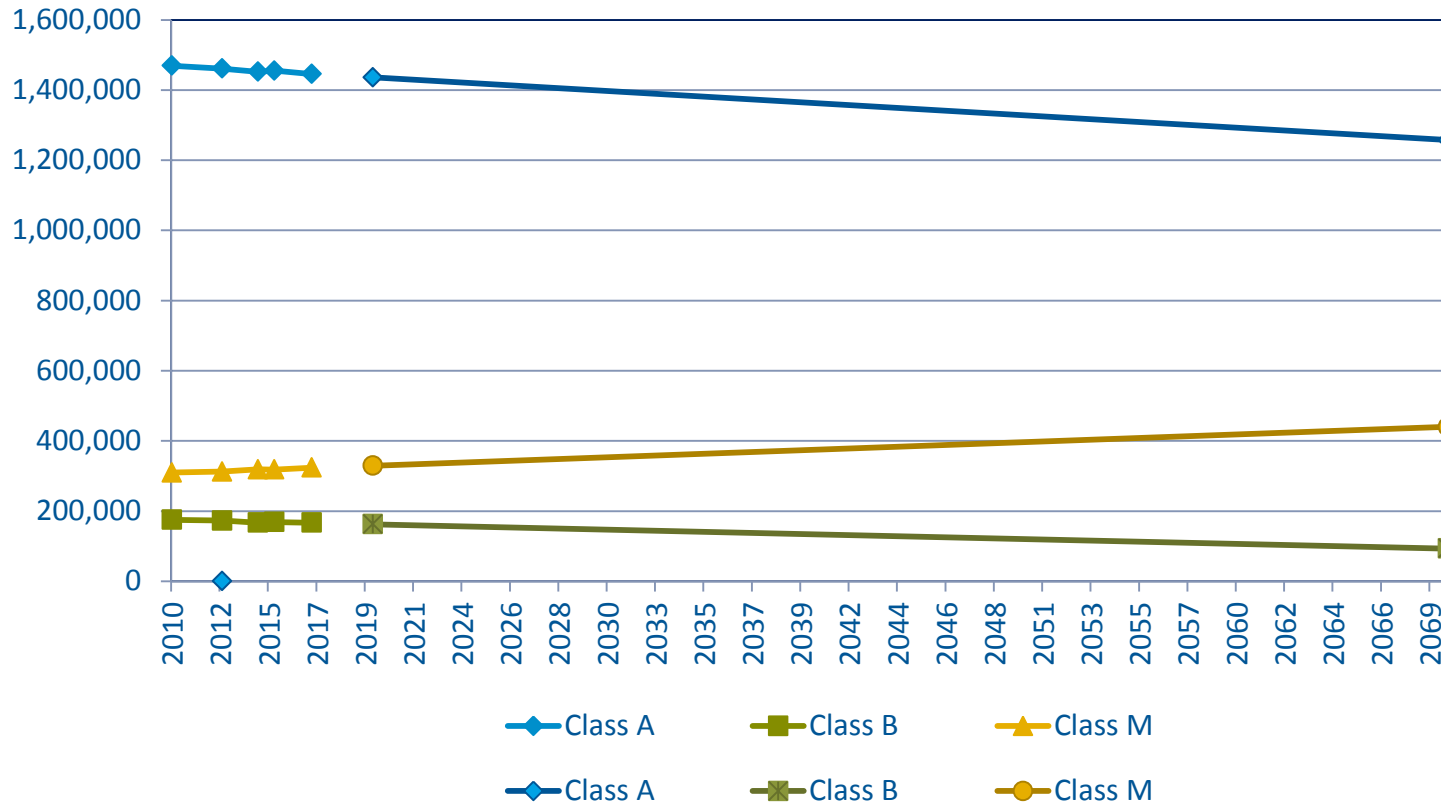
**2016 RWP: 2005-2009 Max by Co. – Muni Demand**  
**2021 RWP: average of last 5 years, steady**

# IRRIGATION DEMAND PROJECTIONS: THE BIGGER PICTURE

- The Plan is supposed to describe the demands present in a drought year (high irrigation demand)
- The planning process will use NEEDS to drive the development of water management strategies.  
Demands – Existing Supplies = Needs
- Supplies will be constrained by the Firm Yield (Rio Grande), delivery losses, and groundwater availability

# RIO GRANDE WATER RIGHTS ESTIMATE

Amistad-Falcon Water Right Amount by Priority Class: Historical and Projected



All estimates may be adjusted with future WAM data

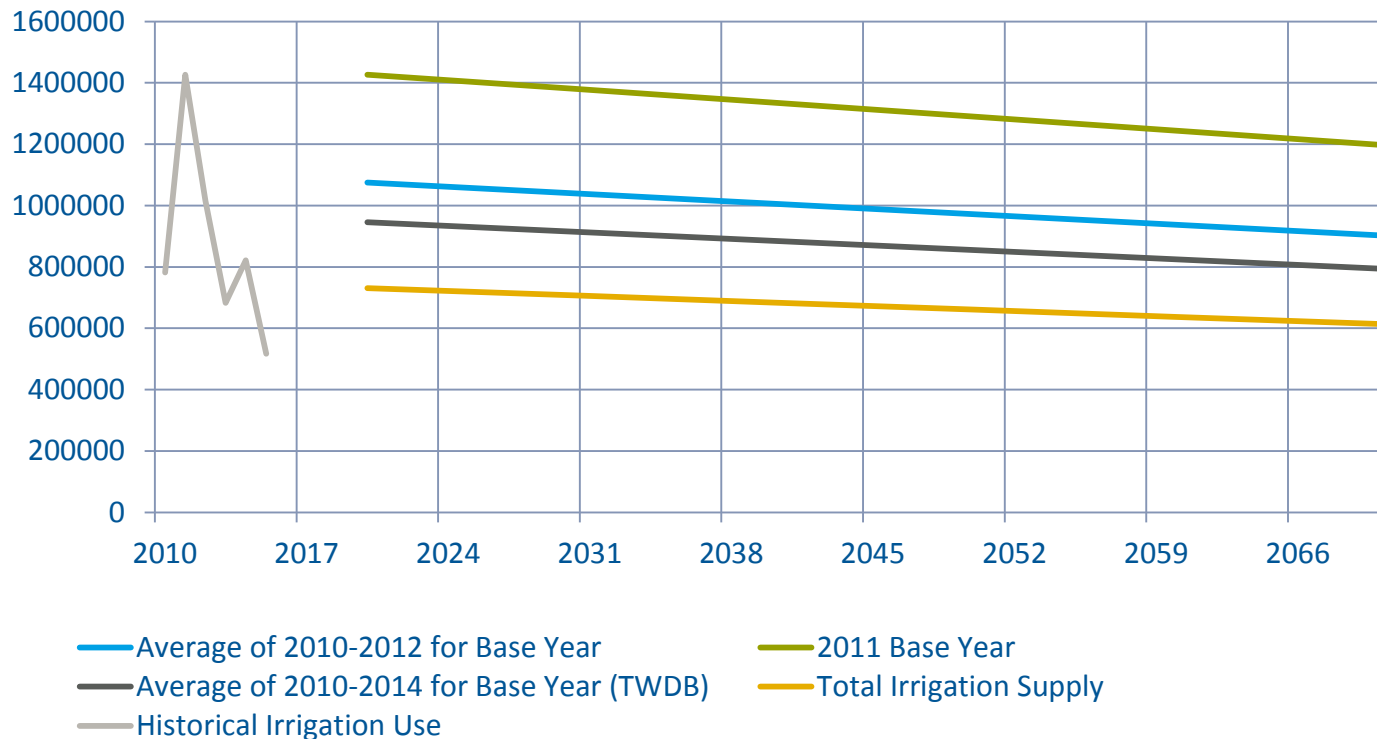


# RIO GRANDE FIRM YIELD ESTIMATE

	Source	2020	2030	2040	2050	2060	2070
	Amistad-Falcon Reservoir - Firm Yield	1,060,616	1,059,260	1,057,903	1,056,547	1,055,191	1,053,834
Water Right Face Value	Class A	1,436,017	1,400,331	1,364,645	1,328,959	1,293,273	1,257,587
	Class B	162,301	148,507	134,713	120,919	107,125	93,331
	Class M	329,493	351,607	373,722	395,837	417,951	440,066
		2020	2030	2040	2050	2060	2070
	Total Available for Irrigation	731,123	707,653	684,181	660,710	637,240	613,768
	Class A Reliability	46.8%	46.7%	46.5%	46.4%	46.3%	46.1%
	Class B Reliability	36.6%	36.5%	36.4%	36.3%	36.2%	36.1%
Projected Supplies	Class A Supply	671,761	653,469	635,158	616,829	598,480	580,107
	Class B Supply	59,362	54,184	49,023	43,881	38,760	33,661
	<b>Total Irrigation Supply</b>	<b>731,123</b>	<b>707,653</b>	<b>684,181</b>	<b>660,710</b>	<b>637,240</b>	<b>613,768</b>

Projected using sedimentation and historical rate of WR conversion

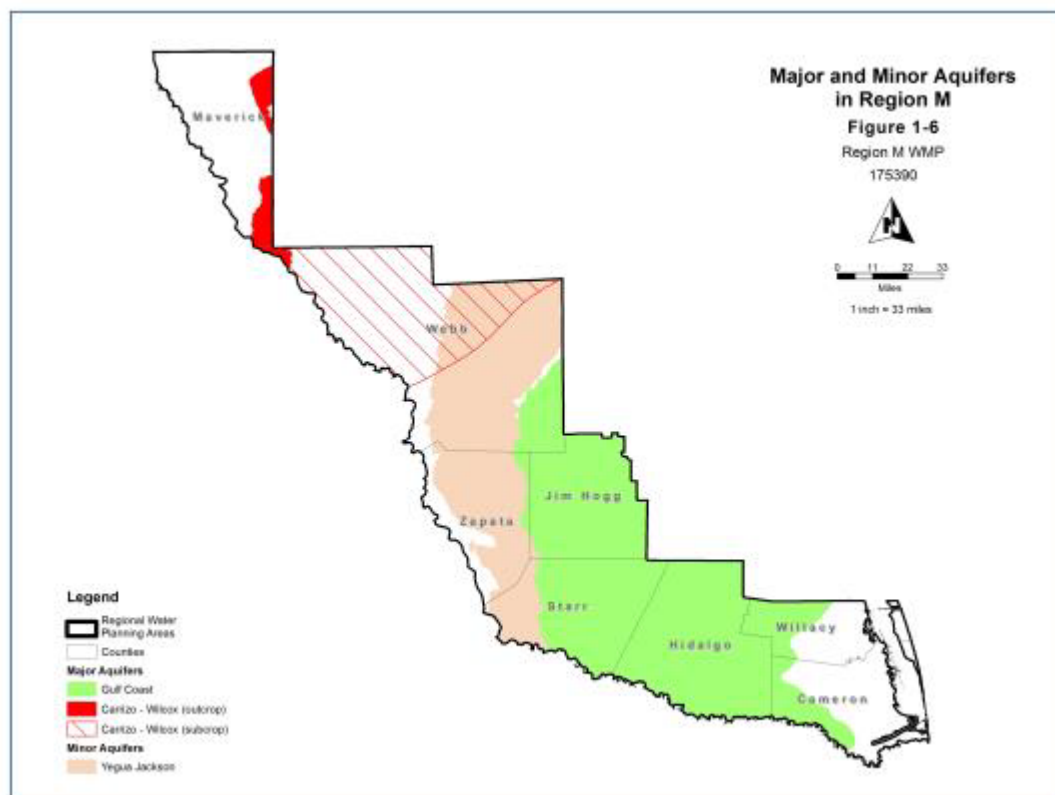
# IRRIGATION DEMAND PROJECTIONS: THREE POSSIBLE OPTIONS



# 6.A.3. GROUNDWATER AVAILABILITY

# GROUNDWATER AVAILABILITY

- MAGs are the basis of groundwater availability in the plan
- Split into geographic units of aquifer/ county/ basin
- Can establish availability for “Non-Relevant Aquifers” for aquifers/portions of an aquifer not modeled





# 6.A.4. CONTRACT UPDATE

# CURRENT AND PROJECTED FUNDS

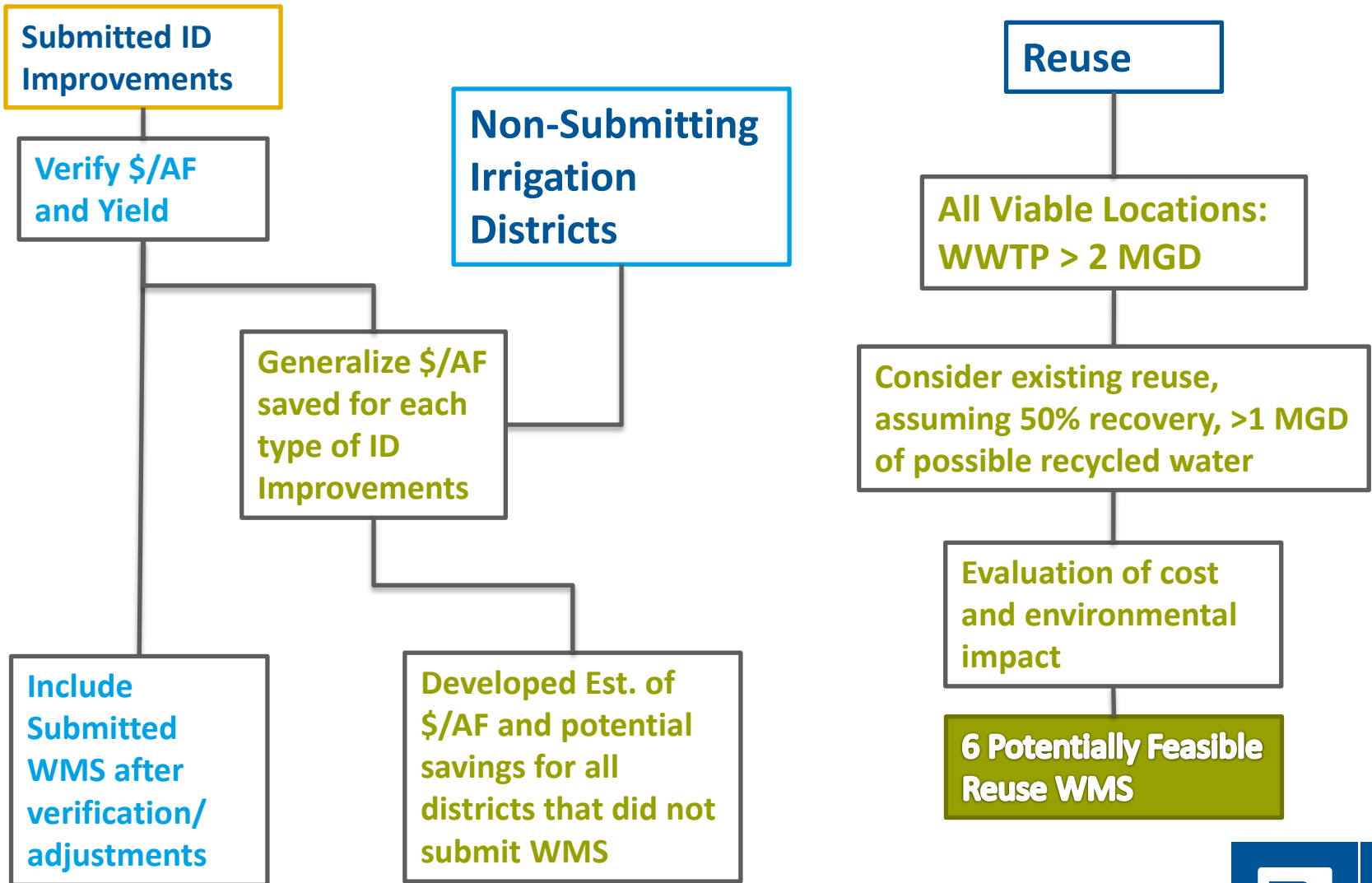
	Task	Funding Package 1	Funding Package 2	Requires NTP	Funding Package 3 (2018)	Total Funding	Operating Budget
1	Planning Area Description				\$17,663	\$17,663	\$0
2A	Non-population Water Demand Projections	\$14,860				\$14,860	\$14,860
2B	Population & Population-Related Water Demand Projections	\$30,630				\$30,630	\$30,630
3	Evaluation of Existing Water Supply		\$62,696			\$62,696	\$62,696
4A	Identification of Water Needs(TWDB)		\$29,494			\$29,494	\$29,494
4B	Identification of Potentially Feasible Water Management Strategies/ Projects		\$29,673			\$29,673	\$29,673
4C	Technical Memorandum		\$26,431			\$26,431	\$26,431
5A	Evaluation of Selection of Water Management Strategies			\$88,653	\$227,796	\$316,449	\$0
5B	Conservation Recommendations		\$10,795		\$18,868	\$29,663	\$10,795
6	Impacts of Plan and Consistency				\$42,577	\$42,577	\$0
7	Drought Response Information, Activities & Recommendations		\$5,075		\$36,800	\$41,875	\$5,075
8	Unique sites and Policy Recommendations				\$6,927	\$6,927	\$0
9	Infrastructure Financing Analysis				\$15,335	\$15,335	\$0
10	Public Participation	\$24,629	\$60,000		\$58,653	\$143,282	\$84,629
11	Implementation & Comparison to Previous Water Plan				\$28,597	\$28,597	\$0
12	Prepare and submit prioritization of projects in the 2021 Regional Water Plan				\$16,010	\$16,010	\$0
	<b>SUBCONTRACT TOTAL</b>	<b>\$70,119</b>	<b>\$224,164</b>	<b>\$88,653</b>	<b>\$469,226</b>	<b>\$852,162</b>	<b>\$294,283</b>
	LRGVDC Administration Tasks	\$15,566				\$15,566	\$15,566
	<b>TOTAL</b>	<b>\$85,685</b>	<b>\$224,164</b>	<b>\$88,653</b>	<b>\$469,226</b>	<b>\$867,728</b>	<b>\$309,849</b>

# 6.A.5. 2016 RWP PROCESS FOR IDENTIFYING WMS

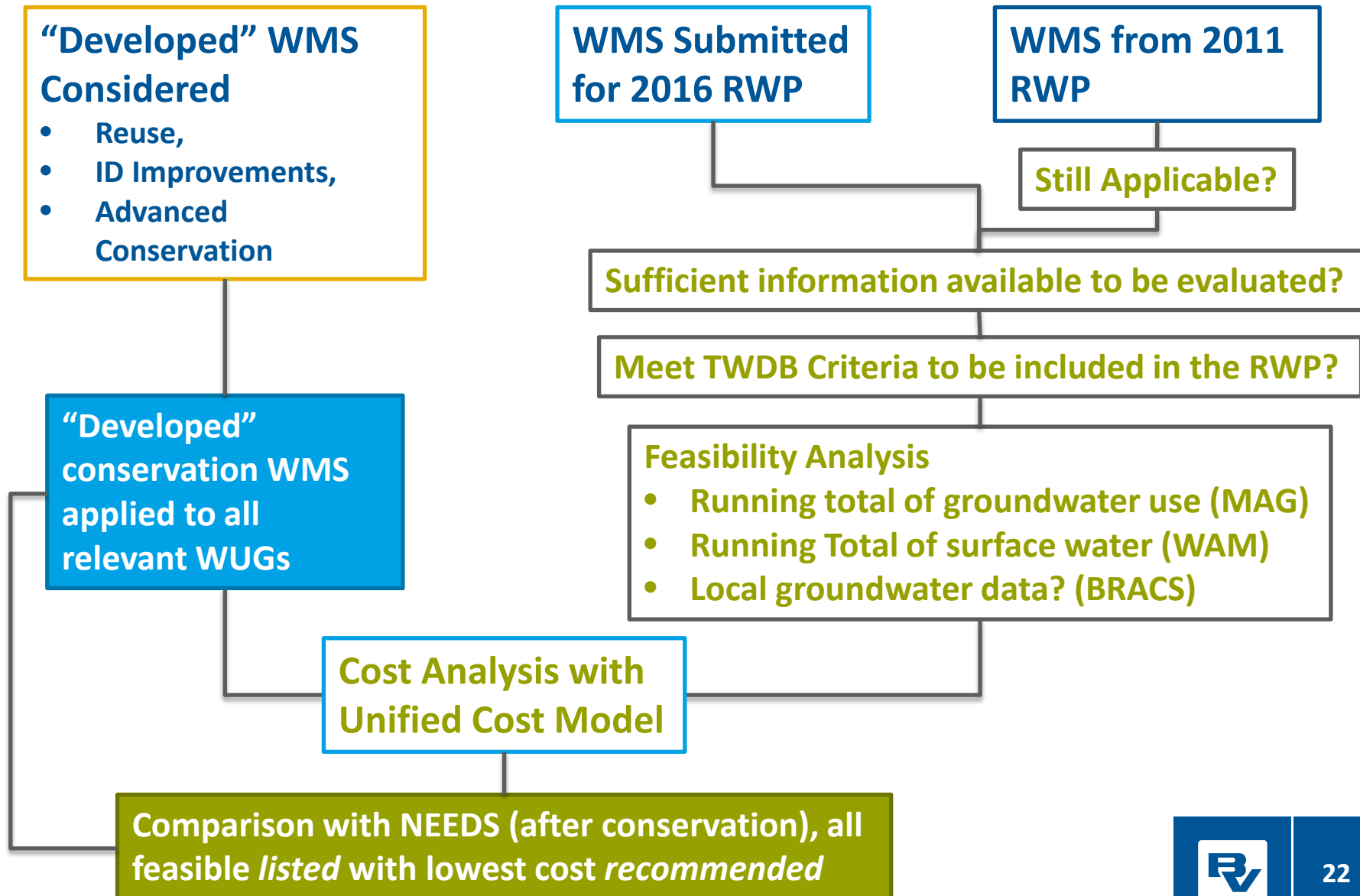
# IDENTIFICATION AND EVALUATION OF WATER MANAGEMENT STRATEGIES

- **Outreach to all WUGs**
  - Request any proposed **Projects/Strategies**
  - Each **Strategy** must include estimated volume of water supplied, source of water, and users who would benefit
  - **Projects** include water volume, water source, users, project components and location, and costs
- **Evaluate based on feasibility, use of limited water sources, costs, and other factors:**
  - WUG-Submitted WMS,
  - WMS from previous Plan,
  - RWPG-Developed WMS, and
  - TWDB-required WMS (i.e. conservation)

# (FROM 2015) “DEVELOPED” WATER MANAGEMENT STRATEGIES: REUSE AND ID IMPROVEMENTS



# (FROM 2015) WATER MANAGEMENT STRATEGY EVALUATION



# IDENTIFICATION AND EVALUATION OF WATER MANAGEMENT STRATEGIES

## OUTREACH

- **2016 Cycle:**
  - Requests to WUGs via email, physical letter, follow-up phone calls
  - RWPG members helped to coordinate meetings with Water District Managers Assn., Producer's Group to gather/develop WMS for District Improvements and Irrigation Conservation
- **2021 Cycle:**
  - Requests to WUGs
  - Other associations/events?

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