

October 23, 2023

11:45 AM

# Region K Water Management Strategy Committee Meeting



## Agenda Item 2: Introduction to the WMS Committee



### Committee Tasks

- **NEW:** Identify infeasible strategies in 2021 Plan
- Review process for identification of potentially feasible water management strategies and recommend any changes to the RWPG
- Review strategies from 2021 Plan and discuss changes for 2026 Plan
- Brainstorm new strategies to be included in 2026 Plan
- Review screening process for selection of strategies for further analysis.
- Review evaluated strategies and projects for recommended or alternative status

Agenda Item 4: infeasible strategies

# Evaluation of Infeasible Strategies from the 2021 Region K plan



# Infeasible Strategies: Background

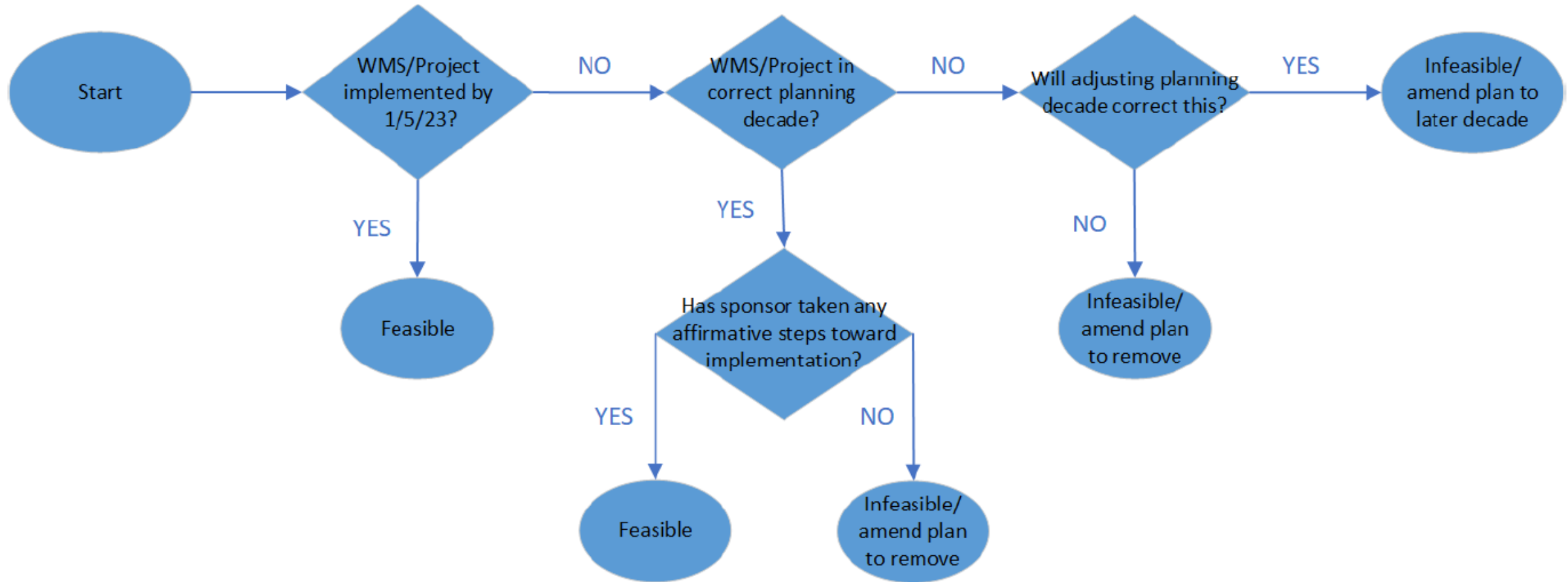


- A new ask for this cycle: “identify infeasible WMS in the 2021 RWP”
- At a minimum, review strategies/projects with an online decade of 2020
- Encouraged to review additional near-term WMS
- Recommended strategies/projects for 2020 decade must be online and delivering water by January 5, 2023
- Infeasible if:
  - Not currently implemented
  - Project sponsor not taken affirmative steps towards implementation (spending money, voting to spend money, applying for federal or state permits)
- Not required for strategies or projects that **do not require a permit or involve construction** (focus on reservoirs, desal, DPR, ASR, out of state transfers, etc)

# Infeasible Strategies: Flowchart



Figure 3 – Criteria of an infeasible WMS



# Infeasible Strategies: Background



- TWDB provided data to each region
- Each region must review both **strategies** and **projects**
  - Strategies divided into “demand reduction” and “source-related”
  - Source-related may or may not have an associated **project**
- Acronym alert
  - WMS = water management strategy
  - WMSP = water management strategy project
- The following data provided by TWDB are not identified infeasible strategies or projects, they are just requiring us to review the full list with 2020 use

# 2020 Decade Strategies from 2021 plan: A Look at the Data



## Demand Reduction

1	Recommended demand reduction WMS strategy supply with an online decade of 2020									
2	RWPG Comments	WMS Sponsor Region	WMS Type	WMSid	WMS Name	WholeEntityRWF	WUG Beneficiary	WUG Primary Region	Strategy Supply 2020	
18				2482	Drought Management		184 Aqua WSC	K	1,971	
19				2482	Drought Management		7 Austin	K	8,266	
20				2482	Drought Management		210 Barton Creek West WSC	K	79	
21				2482	Drought Management		12923 Barton Creek WSC	K	119	
22				2482	Drought Management		213 Bastrop	K	372	
23				2482	Drought Management		214 Bastrop County WCID 2	K	24	
24				2482	Drought Management		215 Bay City	K	583	
25				2482	Drought Management		233 Bertram	K	78	
26				2482	Drought Management		247 Blanco	K	63	
27				2482	Drought Management		12939 Boling MWD	K	12	
28				2482	Drought Management		2927 Briarcliff	K	60	
29				2482	Drought Management					1
30				2482	Drought Management					322
31				2482	Drought Management					302
32				2482	Drought Management					26
33				2482	Drought Management					11
34				2482	Drought Management					410
35				2482	Drought Management					18
36				2482	Drought Management					206
37				2482	Drought Management					77
38				2482	Drought Management					5
39				2482	Drought Management					45
40				2482	Drought Management					258
41		K	Drought management	2482	Drought Management					123
42		K	Drought management	2482	Drought Management					683
43		K	Drought management	2482	Drought Management					170
44		K	Drought management	2482	Drought Management					189
45		K	Drought management	2482	Drought Management					150
46		K	Drought management	2482	Drought Management					158
47		K	Drought management	2482	Drought Management		516 County-Other, Llano	K		13
48		K	Drought management	2482	Drought Management		527 County-Other, Matagorda	K		52

Demand reduction would not typically meet criteria requiring review of feasibility

The infeasibility review is **not** required for strategies or projects that do not **require a permit or involve construction**. Regions should focus their efforts and resources for this task primarily on reviewing strategies and projects in the 2021 regional plans that **that require a permit and/or involve construction** and that

- are shown to be online by the 2020 (in this case no later than January 5, 2023) or 2030 decade,
- are related to new major reservoirs, seawater desalination, direct potable reuse, brackish groundwater, aquifer storage and recovery, and out of state water transfers (see [data spreadsheets](#) provided to RWPGs on 1/10/23) and shown to be online in the nearer-term planning decades (i.e., 2020, 2030), or
- that will generally require significant resources and require significant time to implement.

# 2020 Decade Strategies from 2021 plan: A Look at the Data



## Source Related

WMS Type	WMS Description	WMSId	WMS Name	WMS Sponsor and/or select WUG Beneficiary List	Source Description	Strategy Supply 2020	Is Strategy Supply Related to a WMS Project
Aquifer storage and recovery	Aquifer Storage & Recovery	3318	Edwards/Middle Trinity ASR	Buda	Trinity Aquifer ASR   Hays	150	Y
Groundwater wells and other	Groundwater Well Development	3303	Development of New Groundwater Supplies - Gulf Coast Aquifer	Irrigation, Matagorda	Gulf Coast Aquifer System   Matagorda	510	Y
Groundwater wells and other	Groundwater Well Development	5029	Development of New Groundwater Supplies - Sparta Aquifer	County-Other, Fayette	Sparta Aquifer   Fayette	400	Y
Groundwater wells and other	Groundwater Well Development	3272	Expansion of Current Groundwater Supplies - Gulf Coast Aquifer	Irrigation, Colorado	Gulf Coast Aquifer System   Colorado	8,050	Y
Groundwater wells and other	Increase Groundwater Pumping Using Existing Wells	3272	Expansion of Current Groundwater Supplies - Gulf Coast Aquifer	County-Other, Fayette	Gulf Coast Aquifer System   Fayette	0	N
Groundwater wells and other	Groundwater Well Development	3272	Expansion of Current Groundwater Supplies - Gulf Coast Aquifer	Irrigation, Matagorda	Gulf Coast Aquifer System   Matagorda	300	Y
Groundwater wells and other	Groundwater Well Development	3272	Expansion of Current Groundwater Supplies - Gulf Coast Aquifer	Irrigation, Wharton	Gulf Coast Aquifer System   Wharton	5,600	Y
Groundwater wells and other	Groundwater Well Development	3293	Expansion of Current Groundwater Supplies - Trinity Aquifer	Mining, Hays	Trinity Aquifer   Hays	600	Y
Groundwater wells and other	Groundwater Well Development	3293	Expansion of Current Groundwater Supplies - Trinity Aquifer	Irrigation, Mills	Trinity Aquifer   Mills	300	Y
Groundwater wells and other	Groundwater Well Development	5032	Expansion of Current Groundwater Supplies - Yegua-Jackson Aquifer	Mining, Fayette	Yegua-Jackson Aquifer   Fayette	760	Y
Indirect reuse	Non-Potable Reuse	3331	Austin Return Flows	Irrigation, Colorado; Irrigation, Matagorda; Irrigation,	Colorado Indirect Reuse	39,145	Y
Indirect reuse	Non-Potable Reuse	3341	Downstream Return Flows	Lower Colorado River Authority - Unassigned Water	Colorado Indirect Reuse	3,985	N
Other direct reuse	Non-Potable Reuse	4984	Austin - Centralized Direct Non-Potable Reuse	Austin	Direct Reuse	500	Y
Other direct reuse	Non-Potable Reuse	5011	Direct Reuse - Meadowlakes	Meadowlakes	Direct Reuse	75	N
Other surface water	Surface Water Yield Enhancement	3485	Austin - Lake Austin Operations	Austin	Colorado Run-of-River	1,250	N
Other surface water	Surface Water Yield Enhancement	3342	Blend Brackish Surface Water in STPNOC Reservoir	Steam-Electric Power, Matagorda	Gulf of Mexico	3,000	N
Other surface water	Transfer/Transaction	2825	LCRA - Interruptible Water for Agriculture (LCRA WMP Amendments)	Lower Colorado River Authority	Highland Lakes Lake/Reservoir System	63,495	N
Other surface water	Transfer/Transaction	5050	New Water Purchase - Llano	Burnet	Highland Lakes Lake/Reservoir System	17	N
Other surface water	Transfer/Transaction	5047	Water Purchase Amendment - Barton Creek WSC	Travis County MUD 4	Highland Lakes Lake/Reservoir System	90	N

## Source Related: No Project

WMS Type	WMS Description	WMSId	WMS Name	WMS Sponsor and/or select WUG Beneficiary List	Source Description	Strategy Supply 2020	Is Strategy Supply Related to a WMS Project
Groundwater wells and other	Increase Groundwater Pumping Using Existing Wells	3272	Expansion of Current Groundwater Supplies - Gulf Coast Aquifer	County-Other, Fayette	Gulf Coast Aquifer System   Fayette	0	N
Indirect reuse	Non-Potable Reuse	3341	Downstream Return Flows	Lower Colorado River Authority - Unassigned Water	Colorado Indirect Reuse	3,985	N
Other direct reuse	Non-Potable Reuse	5011	Direct Reuse - Meadowlakes	Meadowlakes	Direct Reuse	75	N
Other surface water	Surface Water Yield Enhancement	3485	Austin - Lake Austin Operations	Austin	Colorado Run-of-River	1,250	N
Other surface water	Surface Water Yield Enhancement	3342	Blend Brackish Surface Water in STPNOC Reservoir	Steam-Electric Power, Matagorda	Gulf of Mexico	3,000	N
Other surface water	Transfer/Transaction	2825	LCRA - Interruptible Water for Agriculture (LCRA WMP Amendments)	Lower Colorado River Authority	Highland Lakes Lake/Reservoir System	63,495	N
Other surface water	Transfer/Transaction	5050	New Water Purchase - Llano	Burnet	Highland Lakes Lake/Reservoir System	17	N
Other surface water	Transfer/Transaction	5047	Water Purchase Amendment - Barton Creek WSC	Travis County MUD 4	Highland Lakes Lake/Reservoir System	90	N



# 2020 Decade Projects from 2021 plan: A Look at the Data



This is only the top few records of 91 total

Project Category	WMS Project Id	WMS Project Name	Capital Cost	Online Decad	Project Sponsors	Project Components
Other project type	2131	Austin Conservation	\$719,616,000	2020	Austin	Monitoring Technology; Conservation - not include meter replacement or water Control
Aquifer storage and recovery	2238	BS/EACD Edwards/Middle Trinity ASR - Buda	\$7,349,000	2020	Buda	Conveyance/Transmission Pipeline; Injection Well; Multiple Wells/Well Field; New Water Treatment Plant; Pump Station
Other project type	4053	Development of New Gulf Coast Aquifer Supplies - Matagorda County Irrigation	\$1,195,000	2020	Irrigation (Matagorda)	Multiple Wells/Well Field
Other project type	4056	Development of New Sparta Aquifer Supplies - Fayette County-Other	\$6,056,000	2020	Municipal county-other (Fayette)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field; New Water Treatment Plant
Other project type	4068	Expansion of Gulf Coast Aquifer Supplies - Colorado County Irrigation	\$14,680,000	2020	Irrigation (Colorado)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4069	Expansion of Gulf Coast Aquifer Supplies - Matagorda County Irrigation	\$1,431,000	2020	Irrigation (Matagorda)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4070	Expansion of Gulf Coast Aquifer Supplies - Wharton County Irrigation	\$11,049,000	2020	Irrigation (Wharton)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	1732	Expansion of Trinity Aquifer Supplies - Hays County Mining	\$2,409,000	2020	Mining (Hays)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	1733	Expansion of Trinity Aquifer Supplies - Mills County Irrigation	\$1,323,000	2020	Irrigation (Mills)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4064	Expansion of Yegua-Jackson Aquifer Supplies - Fayette County Mining	\$5,463,000	2020	Mining (Fayette)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4022	Irrigation Conservation - Drip Irrigation - Gillespie County	\$64,000	2020	Irrigation (Gillespie)	Conservation - Agricultural; Conveyance/Transmission Pipeline
Other project type	4199	Irrigation Conservation - Drip Irrigation - Mills County	\$857,000	2020	Irrigation (Mills)	Conservation - Agricultural; Conveyance/Transmission Pipeline
Other project type	4201	Irrigation Conservation - Drip Irrigation - San Saba County	\$834,000	2020	Irrigation (San Saba)	Conservation - Agricultural; Conveyance/Transmission Pipeline
Other project type	1977	Irrigation Conservation - On Farm - Colorado County	\$16,465,031	2020	Irrigation (Colorado)	Conservation - Agricultural
Other project type	4205	Irrigation Conservation - On Farm - Matagorda County	\$14,677,716	2020	Irrigation (Matagorda)	Conservation - Agricultural
Other project type	4206	Irrigation Conservation - On Farm - Wharton County	\$33,010,253	2020	Irrigation (Wharton)	Conservation - Agricultural

# 2020 Decade Projects from 2021 Plan: Summary



Count of Project Related	Column Labels					
Row Labels	ASR	Conservation	Groundwater	Reuse	Surface Water	Grand Total
Irrigation		12	5		3	20
Mining			2			2
Municipal	1	66	1	1		69
Grand Total	1	78	8	1	3	91

- 78 of the 91 identified WMS are conservation based
- 2020 decade projects under review
  - Eight are groundwater
  - One reuse
  - One ASR
  - Three surface water irrigation
- Selected Projects Online After 2020
  - 2 ASR Projects (Austin in 2040 and LCRA 2040)
  - 4 Reservoir Projects by Austin and LCRA

# 2020 Decade Strategies from 2021 Plan: Projects Under Review



an online decade of 2020

Project Category	WMS Project Id	WMS Project Name	Capital Cost	Online Decade	Project Sponsors	Project Components
Other project type	2132	Austin - Direct Reuse	\$286,031,000	2020	Austin	Conveyance/Transmission Pipeline; Pump Station; New Water Treatment Plant; Storage Tank; Water Treatment Plant Expansion
Aquifer storage and recovery	2238	BS/EACD Edwards/Middle Trinity ASR - Buda	\$7,349,000	2020	Buda	Conveyance/Transmission Pipeline; Injection Well; Multiple Wells/Well Field; New Water Treatment Plant; Pump Station
Other project type	4053	Development of New Gulf Coast Aquifer Supplies - Matagorda County Irrigation	\$1,195,000	2020	Irrigation (Matagorda)	Multiple Wells/Well Field
Other project type	4056	Development of New Sparta Aquifer Supplies - Fayette County-Other	\$6,056,000	2020	Municipal county-other (Fayette)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field; New Water Treatment Plant
Other project type	4068	Expansion of Gulf Coast Aquifer Supplies - Colorado County Irrigation	\$14,680,000	2020	Irrigation (Colorado)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4069	Expansion of Gulf Coast Aquifer Supplies - Matagorda County Irrigation	\$1,431,000	2020	Irrigation (Matagorda)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4070	Expansion of Gulf Coast Aquifer Supplies - Wharton County Irrigation	\$11,049,000	2020	Irrigation (Wharton)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	1732	Expansion of Trinity Aquifer Supplies - Hays County Mining	\$2,409,000	2020	Mining (Hays)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	1733	Expansion of Trinity Aquifer Supplies - Mills County Irrigation	\$1,323,000	2020	Irrigation (Mills)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	4064	Expansion of Yegua-Jackson Aquifer Supplies - Fayette County Mining	\$5,463,000	2020	Mining (Fayette)	Conveyance/Transmission Pipeline; Multiple Wells/Well Field
Other project type	1985	Irrigation Operations Conveyance Improvements - Colorado County	\$21,711,976	2020	Irrigation (Colorado)	Data Gathering/Monitoring Technology; Canal Lining; Conservation - Agricultural
Other project type	4211	Irrigation Operations Conveyance Improvements - Matagorda County	\$49,254,266	2020	Irrigation (Matagorda)	Canal Lining; Conservation - Agricultural; Data Gathering/Monitoring Technology
Other project type	4212	Irrigation Operations Conveyance Improvements - Wharton County	\$30,013,756	2020	Irrigation (Wharton)	Canal Lining; Conservation - Agricultural; Data Gathering/Monitoring Technology

# Infeasible Strategies: Next Steps



- Determine (by reaching out to owners, mostly) whether any of the strategies are infeasible
- Present findings at December 1 RWPG meeting
  - 14 day notice required
  - Public comments required specifically for infeasible strategy agenda item
- If infeasible strategies are identified, make major/minor amendments to 2021 plan

Agenda Item 5: Feasible Strategies

# Feasible strategies for the 2026 Region K plan



# Feasible Strategies for 2026 Plan: First Step



## Approval of process for identifying potentially feasible water management strategies

- Consider TWDB guidelines on identifying potentially feasible strategies
- Water management strategies committee (WMSC) develops process for recommendation to Region K planning group
- Public Meeting (Scheduled for December 1, 2023)
  - Present process recommended by the WMSC
  - Allow discussion and comment by full Region K planning group
  - Take public comments on the Region K process for identifying potentially feasible strategies
  - RWPG to consider making any revisions to process, based on public comments and RWPG discussion
  - RWPG to take action to approve finalized process.

# Feasible Strategies: TWDB guidelines



- A RWPG shall hold a public meeting to determine the process for identifying potentially feasible water management strategies
- After reviewing the potentially feasible strategies using the documented process, the RWPG shall list all possible water management strategies that are potentially feasible for meeting a need in the region

# Feasible Strategies: TWDB guidelines



**RWPGs shall consider these strategies (but are not limited to):**

1. conservation
2. drought management
3. reuse
4. management of existing water supplies
5. conjunctive use
6. acquisition of available existing water supplies
7. development of new water supplies
8. developing regional water supply facilities or providing regional management of water supply facilities
9. developing large-scale desalination facilities for seawater or brackish groundwater that serve local or regional brackish groundwater production zones identified and designated under TWC §16.060(b)(5)34
10. developing large-scale desalination facilities for marine seawater that serve local or regional entities
11. voluntary transfer of water within the region using, but not limited to, contracts, water marketing, regional water banks, sales, leases, options, subordination agreements, and financing agreements
12. emergency transfer of water under TWC §11.139
13. interbasin transfers of surface water
14. system optimization
15. reallocation of reservoir storage to new uses
16. enhancements of yields
17. improvements to water quality
18. new surface water supply
19. new groundwater supply
20. brush control
21. precipitation enhancement
22. aquifer storage and recovery
23. cancellation of water rights
24. rainwater harvesting

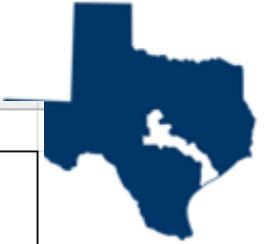


# Feasible Strategies: TWDB guidelines



- The Technical Memorandum, Initially Prepared Plan, and final adopted Regional Water Plan shall include:
  - the documented process used by the RWPG to identify potentially feasible WMS; and,
  - the list of all identified WMSs that were considered potentially feasible for meeting a need in the region

# Feasible Strategies: TWDB guidelines



Template for Presenting Water Management Strategies Considered and Evaluated (see Exhibit C Section 2.5.1)																					
Every WUG Entity with an Identified Need	WUG Name	Maximum need 2030-2080 (af/yr)	WMSs to be considered by statute <sup>1</sup>										Additional WMSs to be considered by rule								
			conservation - water use reduction	conservation - water loss mitigation	drought management	reuse	management of existing supplies	development of large-scale marine seawater or brackish groundwater	conjunctive use	acquisition of available existing supplies	development of new supplies	development of regional water supply or regional management of water supply facilities	voluntary transfer of water (including regional water banks, sales, leases, options, subordination agreements, and financing agreements)	emergency transfer of water under Section 11.139	system optimization, reallocation of reservoir storage to new uses, contracts, water marketing, enhancement of yield, improvement of water quality	new surface water supply	new groundwater supply	brush management; precipitation enhancement	interbasin transfers of surface water	aquifer storage and recovery	cancellation of water rights
	WUG A	20,000	PF	PF	nPF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF
	WUG B	5,500	PF	PF	PF	PF	nPF	PF	nPF	PF	nPF	PF	nPF	PF	nPF	PF	nPF	nPF	PF	nPF	nPF

<sup>1</sup> Texas Water Code §16.053(e)(5)

nPF = considered but determined 'not potentially feasible' (may include WMSs that were initially identified as potentially feasible)

PF = considered 'potentially feasible' and therefore evaluated

(all pertinent information for WMS evaluations must be presented in the regional water plan, including for WMSs considered potentially feasible but not recommended)

# Feasible Strategies: TWDB guidelines



- All recommended WMSs and water management strategy projects (WMSPs) that are entered into the State Water Planning Database and prioritized by RWPGs shall be designed to
  - reduce the consumption of water
  - reduce the loss or waste of water
  - improve the efficiency in the use of water, or
  - develop, deliver or treat additional water supply volumes to WUGs or WWPs in at least one planning decade such that additional water is available during DOR conditions.
- Any other RWPG recommendations regarding permit modifications, operational changes, and/or other infrastructure that are not designed to meet one of the above criteria shall be indicated as such and presented separately in the RWP and shall not be eligible for funding from the State Water Implementation Fund for Texas.

# Feasible Strategies: TWDB guidelines



## Evaluation of potentially feasible strategies shall include:

- Comparison of all potentially feasible WMS
- Quantitative analysis of quantity, reliability, cost, environmental factors, and impacts to agriculture
- Discussion of impacts on other water and natural resources
- Consideration of third-party social and economic impacts
- Consideration of water pipelines and facilities that are currently used for water conveyance
- Descriptions of impacts to water quality and of other factors deemed relevant including recreational impacts

# Feasible Strategies: Initial Proposed Process



- Define groupings or common areas with supply deficiencies
- Develop a comprehensive list of potentially feasible strategies for each area
  - Recommended and alternative strategies from previous Region K Water Plan
  - Strategies documented in local plans
  - Suggestions from the public
- Meet with potential suppliers/WUGs for each area to determine current strategies under consideration
- Prepare qualitative rating based on cost, reliability, environmental impact, and political acceptability for the various strategies
- Select one or more additional strategies for each area, if appropriate
- Present proposed shortlist at Public Meeting during Region K Planning Group meeting for modification and/or approval