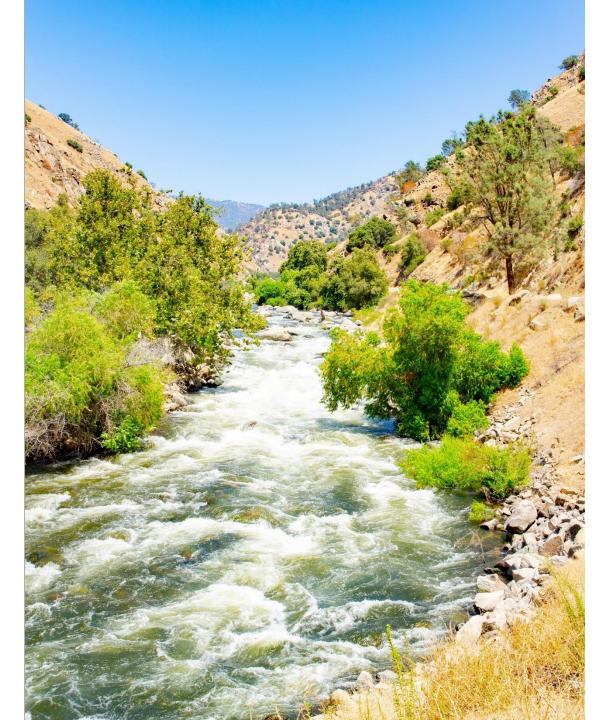


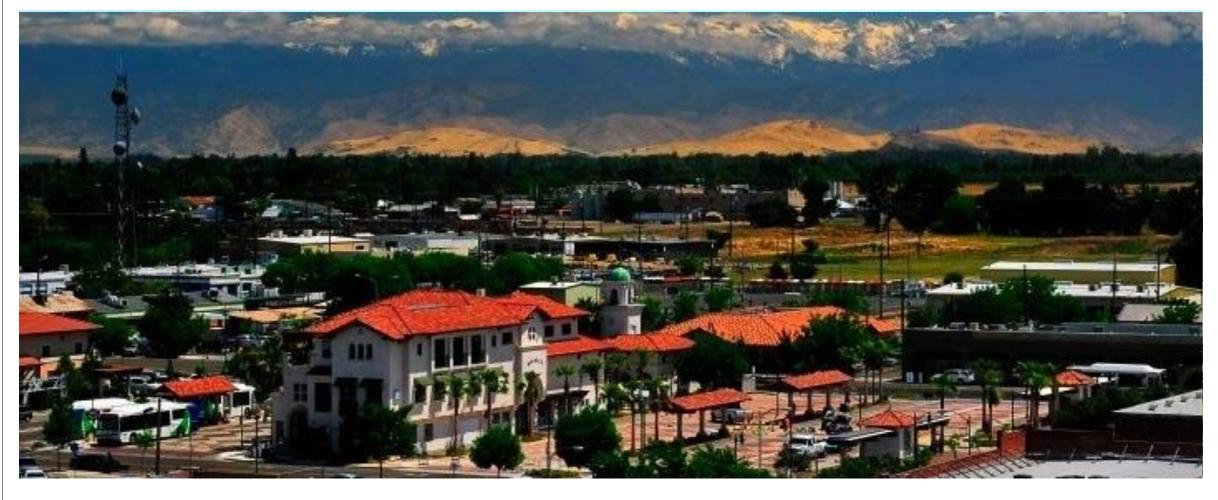
Kaweah Subbasin Water Marketing Strategy

Strategy Committee Meeting April 26, 2022



Agenda

- 1. Welcome and Previous Meeting Recap
- 2. WMS Document Structure
- 3. Guiding Principles Follow-up
- 4. Existing Water Markets Chapter
- 5. Public Workshop No. 2 Scheduling
- 6. Next Steps



Welcome & Previous Meeting Recap



WMS Document Structure



WMS Guiding Principles | Follow-up

Water Market Guiding Principles

Flexibility

Provide water users with the flexibility to comply with new regulations and to respond to changing water availability

Adaptability

The WMS should promote adjustments in practices, rules and procedures as conditions change and as the experience of market participants grows and new information becomes available.

Transparency

The process of developing the WMS and for conducting market activities should be visible and understandable to interested stakeholders. Transparency includes the availability of accurate and reliable water use data and the timely reporting of water market activity.

Do No Harm

The WMS strategy should anticipate and avoid adverse impacts to water users and uses (add SGMA citation).

Equity & Inclusion

The WMS should be developed with an open process that includes the full range of potential market participants and other interested parties. Implementation of the WMS should be relatively simple and understandable to interested parties.

One Kaweah Subbasin Market Strategy (formerly Structural Consistency)

The WMS will develop a common framework available to all Kaweah Subbasin GSAs.



Existing Water Markets Chapter

- a. Overview of Existing Water Markets Chapter
 - Key Market Features Measles Chart
 - Decision Points & Guiding Principles
- b. Open Discussion/Q&A

Existing Water Markets Chapter

A Water Market is defined as any Management Strategy that:

- Caps total water use within a defined geographic region
- Allocates a portion of the cap to individual users
- Allows users to transfer allocation to another party for beneficial use

Evaluated Water Markets

8 California Adjudicated Basins with Trading Institutions

Central Puente Tehachapi

Goleta Santa Paula W San Bernardino

Mojave Scott River

9 Additional Markets from around the Western United States & Australia

Buena Vista, California Central Kansas Water Bank

Pajaro Valley*, California Edwards Aquifer, Texas

Westlands Irrigation District Oregon Freshwater Trust

Fox Canyon, Ventura County

Twin Platte District, Nebraska

Murray-Darling Basin, Australia

^{*}Pajaro Valley is in planning stage and has not been implemented

Existing Water Markets Chapter

While markets vary based on structure, operating mechanisms and rules, all markets shore common components:

Allocation

- Market Structure
- Mitigation of Adverse Impacts

Existing Water Markets Chapter

While markets vary based on structure, operating mechanisms and rules, all markets shore common components:

- Allocation includes different methodologies for assigning a specific quantity of pumping to individual parties as well as approaches to monitoring and enforcing individual allocations
- Market Structure includes different mechanisms for facilitating transfers of allocation as well as the availability of price information
- Mitigation of Adverse Impacts includes various rules which seek to avoid negative impacts to individuals, groups or the environment as well as systems for discovering and responding to unintended consequences

Existing Water Markets – Key Features

	Market	t Origin	I		Market S	tructure			Pr	rice Informat	ion	Term of	Transfers	II	Mitigtatio	on of Advers	e Impacts		Market Testing	Method o	f Allocation	I	Allocation	n Flexibilty			Monit	toring of Wat	er Use	
	CA Adjudicated Basin	Legal Settlement		mal			ormal		None	Transaction specific	Aggregate Prices	Temporary	Permanent		Directional Restrictions	Exchange Rates	Screening of transfers	Reducing Market Power	Pilot Markets	Historical Use		Carryover	Borrowing		Well Aggregation		Metering		Aerial Imaging	Satellite Remote Sensing
			Clearinghouse		Coffee Shop	Dullatia	Brokerage	Со-Ор																		metering w/self- report	metering or pump test & electrical rec.	metering w/ telemetric monitoring		
Central	•				•				•			•	· ·							•		•	•							
Goleta										9/		10700							1								10			
Mojave	•				•				200	•									1		100						•			
Puente Santa Paula									1 :				1 :	II					1	ll .										
Scott River					1 :								1 :	II					1	-						•				4
Tehachapi													1	II					1	II .	1 -									
W San Bernardino														II									1,50							
Buena Vista											•	•																		
Pajaro Valley*	1								I					II					1											4
Westlands	1													II					1											
Fox Canyon	1		•						1			•										•			•					
Twin Platte	1		•	•	•	•			I							•				ll .	•								•	
Central Kansas	1		3.5						I			3.00		II		•			1	ll .						•				
Edwards Aquifer	1	•				•	•					•		II					1											4
OR Freshwater Trust			•									•							1											
Murray-Darling	1	l l	•			•			I		I			II •	J	1		L	I .	·	L	I]	I		•				

Existing Water Markets – Key Features

	Market	t Origin	Method of	f Allocation		Allocation	Flexibilty			Monit	oring of Wat	er Use	
	CA Adjudicated Basin	Legal Settlement	Historical Use	Equal Shares	Carryover	Borrowing	Rolling Average	Well Aggregation		Metering		Aerial Imaging	Satellite Remote Sensing
									metering w/self- report	metering or pump test & electrical rec.	metering w/ telemetric monitoring		
Central	•		•		•	•							
Goleta	•												
Mojave	•									•			
Puente	•			•									
Santa Paula	•		•				•		•				
Scott River	•			•									
Tehachapi	•		•			•							
W San Bernardino	.	L	l•	l			•	l			[]		
Buena Vista			•										
Pajaro Valley*			•										
Westlands			•										
Fox Canyon			•		•			•			•		
Twin Platte				•								•	
Central Kansas					•				•				
Edwards Aquifer			•										
OR Freshwater Trust													
Murray-Darling									•				

^{*}Note: Pajaro Valley fallowing auction is in planning stage and has not been conducted

Existing Water Markets – Allocation Flexibility

	Market	Origin	Method of	f Allocation		Allocation	Flexibilty			Monito	oring of Wat	er Use	
	CA Adjudicated Basin	Legal Settlement	Historical Use	Equal Shares	Carryover	Borrowing	Rolling Average	Well Aggregation		Metering		Aerial Imaging	Satellite Remote Sensing
									metering w/self- report	metering or pump test & electrical rec.	metering w/ telemetric monitoring		
Central	0		0		•	•							
Goleta													
Mojave													
Puente				•									
Santa Paula			0				•		۰				
Scott River													
Tehachapi	0					•							
W San Bernardino							•						
Buena Vista			0										
Pajaro Valley*			0										
Westlands			0										
Fox Canyon			0		•			•			۰		
Twin Platte				•								0	
Central Kansas					•				•				
Edwards Aquifer													
OR Freshwater Trust													
Murray-Darling	<u> </u>		0						٠				

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Existing Water Markets – Monitoring Water Use

	Market	Origin	Method of	Allocation		Allocation	Flexibilty			Monito	oring of Wat	er Use	
	CA Adjudicated Basin	Legal Settlement	Historical Use	Equal Shares	Carryover	Borrowing	Rolling Average	Well Aggregation		Metering		Aerial Imaging	Satellite Remote Sensing
									metering w/self- report	metering or pump test & electrical rec.	metering w/ telemetric monitoring		
Central	•												
Goleta													
Mojave			0							•			
Puente				0									
Santa Paula			0						•				
Scott River	۰			•									
Tehachapi													
W San Bernardino							۰	 			[<u>.</u> .		
Buena Vista			0										
Pajaro Valley*			0										
Westlands			0										
Fox Canyon			0								•		
Twin Platte		•										•	
Central Kansas									•				
Edwards Aquifer													
OR Freshwater Trust													
Murray-Darling			۰						•				

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Existing Water Markets – Market Structure

			Market S	tructure			Pri	ce Informati	on	Term of	Transfers
	Forn	mal		Info	rmal		None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Со-Ор					
Central			•								
Goleta			•								0
Mojave			•							۰	
Puente			•								
Santa Paula			•			•					0
Scott River	•		•								
Tehachapi			•								
W San Bernardino			•								0
Buena Vista		•							•		
Pajaro Valley*		•									
Westlands		•									
Fox Canyon	•										
Twin Platte	•	•	•	•	•						0
Central Kansas	•										
Edwards Aquifer			•	•	•						0
OR Freshwater Trust	•										0
Murray-Darling	•		•	•	•	25	,	۰		۰	

^{*}Note: Pajaro Valley fallowing auction is in planning stage and has not been conducted

Existing Water Markets – Market Structure

Market Structure refers to all of the mechanisms that facilitate transfers between buyers and sellers. Foundational components determine:

- how a participant learns the status of their own pumping
- how they validate the availability of another participant's allocation
- how they submit bids and offers and agree to a price for a transfer
- how they receive regulatory approval for a particular transfer



FORMAL

Existing Water Markets – Market Structure

			Market S	tructure			Pri	ce Informati	on	Term of	Transfers
	Forn	mal		Info	rmal		None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Со-Ор					
Central			•								
Goleta			•								0
Mojave			•							۰	
Puente			•								
Santa Paula			•			•					0
Scott River	•		•								
Tehachapi			•								
W San Bernardino			•								0
Buena Vista		•							•		
Pajaro Valley*		•									
Westlands		•									
Fox Canyon	•										
Twin Platte	•	•	•	•	•						0
Central Kansas	•										
Edwards Aquifer			•	•	•						0
OR Freshwater Trust	•										0
Murray-Darling	•		•	•	•	25	,	۰		۰	

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Existing Water Markets – Price Information

			Market S	tructure			Pr	ice Informati	on	Term of	Transfers
	Forn	mal		Infor	rmal		None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Co-Op					
Central			0				•			0	0
Goleta							•				
Mojave								•			
Puente			•				•				
Santa Paula			•				•				
Scott River	•		۰				•				
Tehachapi			۰				•				
W San Bernardino							•				
Buena Vista									•		
Pajaro Valley*								•			
Westlands		0					•				
Fox Canyon									•		
Twin Platte	۰		۰	0					•		
Central Kansas									•		
Edwards Aquifer			0	0			•				
OR Freshwater Trust	•						•				
Murray-Darling			0	•			,	•			

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Existing Water Markets – Term of Transfers

			Market S	tructure			Pri	ce Informati	on	Term of	Transfers
	Forn	mal		Info	rmal		None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Co-Op					
Central			0				0			•	•
Goleta											•
Mojave										•	•
Puente			•							•	•
Santa Paula										•	•
Scott River	۰		0				0			•	•
Tehachapi			0				•			•	
W San Bernardino										•	:
Buena Vista		۰								•	
Pajaro Valley*										•	
Westlands		0					0			•	
Fox Canyon										•	
Twin Platte	۰		۰	۰					۰		•
Central Kansas										•	
Edwards Aquifer			•	•			۰			•	•
OR Freshwater Trust	•									•	•
Murray-Darling			•	•					ļ	•	• 1

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Existing Water Markets – Mitigating Impacts

		Mitigtatio	n of Advers	e Impacts		Market Testing
	Geographic Boundaries	Directional Restrictions	Exchange Rates	Screening of transfers	Reducing Market Power	Pilot Markets
Central						
Goleta						
Mojave	•					
Puente						
Santa Paula				•		
Scott River						
Tehachapi				•		
W San Bernardino				•		
Buena Vista						
Pajaro Valley*						
Westlands						
Fox Canyon	•	•			•	
Twin Platte	•		•		•	
Central Kansas			•			
Edwards Aquifer		•				
OR Freshwater Trust						
Murray-Darling	•	l ,]		l l

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Existing Water Markets – Market Testing

		Mitigtatio	n of Advers	e Impacts		Market Testing
	Geographic Boundaries	Directional Restrictions	Exchange Rates	Screening of transfers	Reducing Market Power	Pilot Markets
Central Goleta Mojave Puente Santa Paula Scott River Tehachapi W San Bernardino Buena Vista Pajaro Valley*						
Westlands Fox Canyon Twin Platte Central Kansas Edwards Aquifer OR Freshwater Trust Murray-Darling		•				•

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Water Market Guiding Principles

Flexibility

Provide water users with the flexibility to comply with new regulations and to respond to changing water availability

Adaptability

The WMS should promote adjustments in practices, rules and procedures as conditions change and as the experience of market participants grows and new information becomes available.

Transparency

The process of developing the WMS and for conducting market activities should be visible and understandable to interested stakeholders. Transparency includes the availability of accurate and reliable water use data and the timely reporting of water market activity.

Do No Harm

The WMS strategy should anticipate and avoid adverse impacts to water users and uses (add SGMA citation).

Equity & Inclusion

The WMS should be developed with an open process that includes the full range of potential market participants and other interested parties. Implementation of the WMS should be relatively simple and understandable to interested parties.

(Structural Consistency)

The WMS will develop a common framework available to the Kaweah Subbasin GSAs.

Existing Water Markets

Relevant Principles

- Flexibility
- Transparency
- Equity & Inclusion

			Market S	tructure			Pri	ice Informati	on	Term of	Transfers
	Forn	nal		Info	rmal		None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Co-Op					
Central			•								
Goleta			•								
Mojave			•							٠	
Puente			•								
Santa Paula			•			•					
Scott River	•		•								
Tehachapi			•								
W San Bernardino			•							0	0
Buena Vista		•									
Pajaro Valley*		•									
Westlands		•					0			۰	
Fox Canyon	•										
Twin Platte	•	•	•	•	•						
Central Kansas	•								*		
Edwards Aquifer			•	•	•						
OR Freshwater Trust	•										
Murray-Darling	•		•	•	•					٠	

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Existing Water Markets

Relevant Principles

- Transparency
- Equity & Inclusion

			Market S	tructure			Pr	ice Informati	on	Term of	Transfers Transfers
	Forn	mal		Info	rmal		None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Со-Ор					
Central					1		•			0	0
Goleta							•				0
Mojave											
Puente			0				•				
Santa Paula							•				
Scott River	•		0				•				0
Tehachapi			0				•				
W San Bernardino			۰				•				0
Buena Vista		•							•	٠	
Pajaro Valley*		•						•		•	
Westlands		0					•				
Fox Canyon									•		
Twin Platte	۰		۰	0	0				•		0
Central Kansas									•		
Edwards Aquifer			0	0			•			•	0
OR Freshwater Trust							•			•	0
Murray-Darling			0	0			20	•]		•	•

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Existing Water Markets

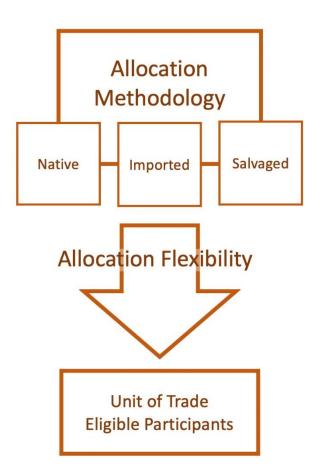
Relevant Principles

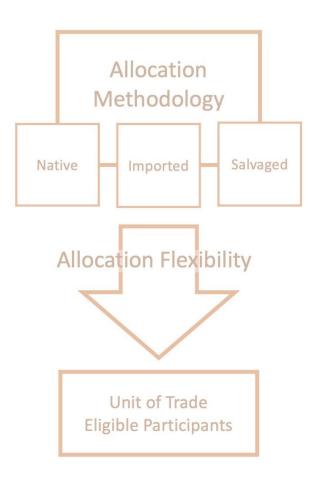
- Flexibility
- o Do No Harm

	Market Structure						Price Information			Term of Transfers	
	Formal		Informal				None	Transaction specific	Aggregate Prices	Temporary	Permanent
	Clearinghouse	Auction	Coffee Shop	Bulletin Board	Brokerage	Co-Op					
Central Goleta Mojave Puente Santa Paula Scott River Tehachapi W San Bernardino	0					٠		0		• • • • • • • • • • • • • • • • • • • •	•
Buena Vista Pajaro Valley* Westlands Fox Canyon Twin Platte Central Kansas Edwards Aquifer OR Freshwater Trust Murray-Darling	•						0	٠	•		•

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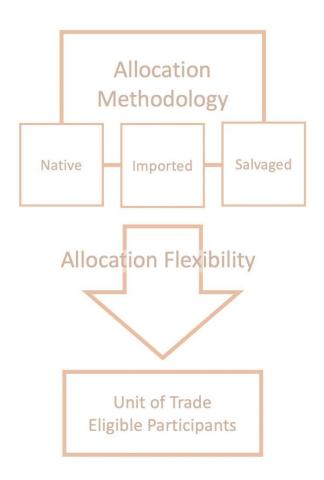
WMS Development – Flow Chart



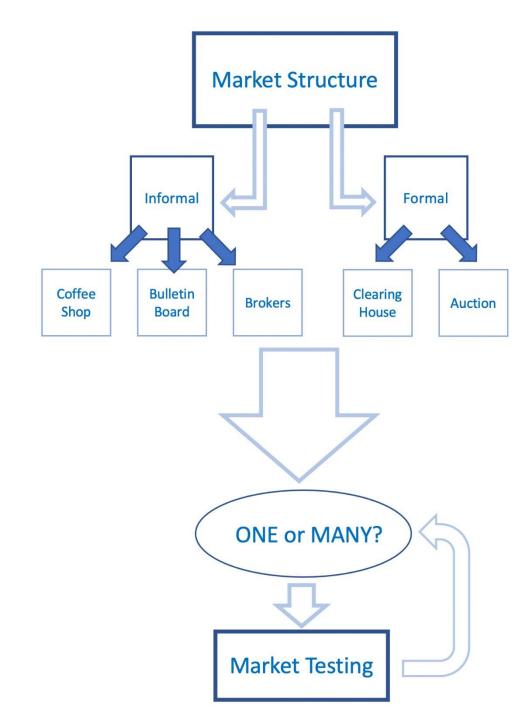


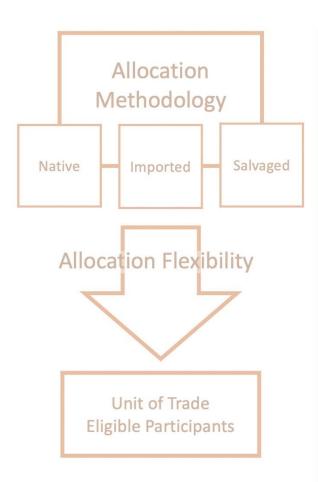
Guiding Principles

Flexibility
Adaptability
Transparency
Do no harm
Equity & inclusion





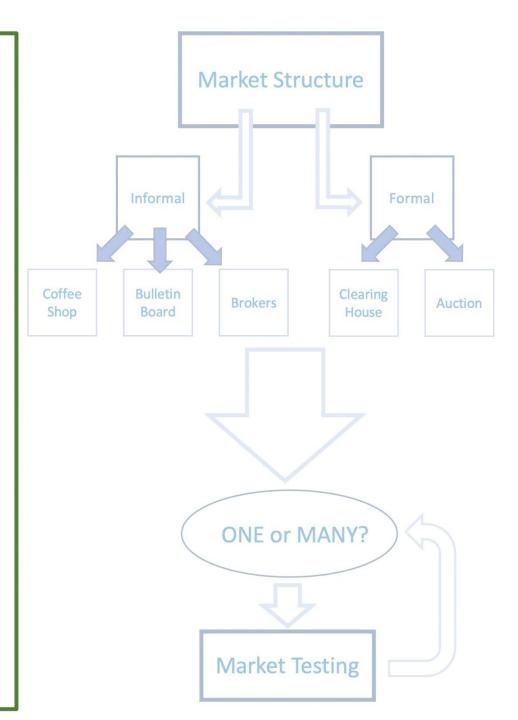


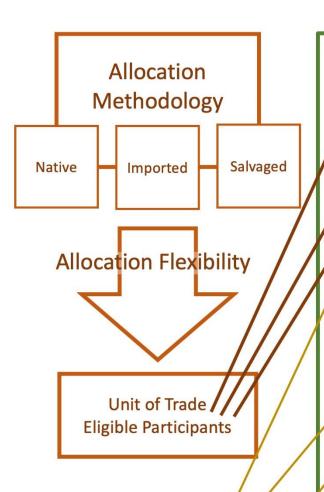


Guiding Principles Flexibility Adaptability Transparency Do no harm Equity & inclusion

MARKET RULES

- Monitoring of Extraction
 - Penalties for overextraction
- Unit of Trade
- Participant Eligibility
 - O Who is eligible? Diff user groups?
 - O How do you become eligible?
 - How is availability of allocation verified?
- •Who can trade with whom?
 - o User groups: Ag, Urban, Environment
 - o Geographic limitations on transfers
 - o Temporal limitations on transfers
- Mechanics of Trade
 - O How are transfers Matched?
 - o Approved by GSA?
 - o Financially consummated?
- Information about Market Activity
 - Price information
 - Quantity & location information

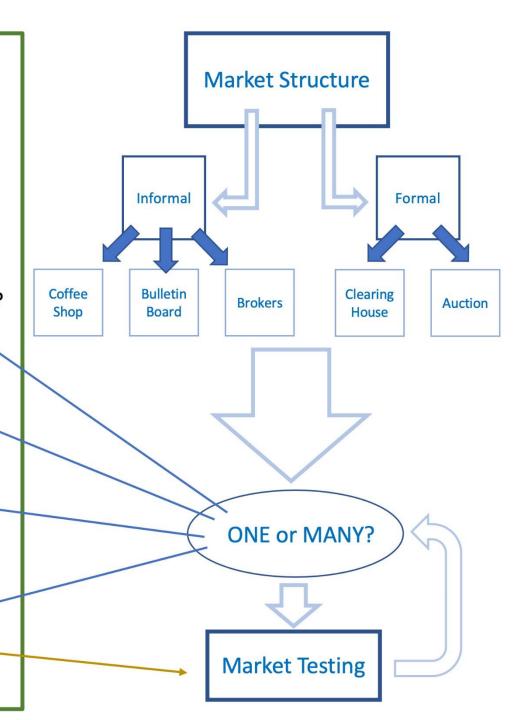




Goals & Objectives Flexibility Adaptability Transparency Do no harm Equity & inclusion

MARKET RULES

- Monitoring of Extraction
 - Penalties for overextraction
- Unit of Trade
- Participant Eligibility
 - O Who is eligible? Diff user groups?
 - o How do you become eligible?
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- Mechanics of Trade
 - O How are transfers Matched?
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- Information about Market Activity
 - Price information
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Public Workshop No. 2 | Scheduling



Next Steps & Action Items