



YAKIMA BASIN WATER MARKET RESEARCH & DEVELOPMENT



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June 2, 2021





GOAL: DEVELOP SMART MARKET STRATEGY

Objective(s):

- Research past market-based transactions and efforts to identify tools and mechanisms to reduce barriers to water transactions to identify the positives and negative attributes of those efforts.
- Analyze and synthesize water marketing/banking research to develop mechanisms that increase market access and facilitate water transfers for all interested stakeholders.
- Develop a framework (smart) that will advance market-based transactions that include environmental benefits in the Yakima Basin by reducing systemic inefficiencies.
- Provide recommendations for increased stakeholder participation in market-based transactions for surface water rights in the Yakima Basin.



KEY DEFINITIONS

- **Water right transfer:** the transfer of an existing valid water right to a new purpose and/or place of use as allowed under RCW 90.03.380 and accomplished through an application to Ecology or Water Conservancy Board.
- **Water market:** a system through which water rights are traded between willing sellers and buyers on a temporary or permanent basis in accordance with applicable laws.
- **Smart water market:** a computer-based system with a tailored algorithm designed to match water trades among market participants.
- **Water bank:** an institutionalized process specifically designed to facilitate the transfer of already developed water to new uses. In Washington, water banks are generally established through the transfer of existing valid water rights to the State Trust Water Rights Program (RCW 90.42 and RCW 90.38) for instream flow and mitigation purposes and a Trust Water Right Agreement between Ecology and the water bank manager, which are typically local and state government agencies, private individuals or entities, and non-profit organization.



GENERAL APPROACH

- **Outreach:** stakeholders to understand viewpoints and vet research/findings
- **Research:** water rights, water values, past market activity, instream flow needs, legal needs, water supply/storage, and policy needs plus current activity
- **Analysis:** smart market simulations and water valuations, water rights transferability, instream flow needs, legal and policy needs,
- **Strategy:** smart market development and administrative needs
- **Outreach:** stakeholders – water users, landowners, YBIP members, etc. website



APPROACH: OUTREACH

- **All stakeholders:** anyone with a potential Yakima Basin water interest, website, newspaper, presentations
- **Technical Work Group: “TWG”**

 - Irrigation district members, state water right holders, irrigation district managers, county water managers, non-profit, Ecology, Yakama Nation
 - Provides insight into past activity, current limitations, research vetting

- **Engage with other efforts:** WSU study



APPROACH: RESEARCH – LIT REV'W & POLICY

- **Coverage:** Australia, Canada, Chile, U.S. (WA, OR, ID, CO)
- **Common themes:**
 - Timeliness and transparency of decisions/outcomes **matter**
 - Stakeholders **must** have confidence in market structure and administration
 - Local collaboration useful to promote market legitimacy
 - Enforcing and managing transferred rights is a challenge (concern)
 - Defining and measuring rights before and after transfer is a challenge



APPROACH: RESEARCH – PAST ACTIVITY WTTWG

- Use data from 2005 through 2020 to identify market activity and specific attributes to inform market simulations
 - Drought year
 - Quantity
 - Permanent v Temporary
 - Purpose
- Results:
 - Imperfect data but significant research value
 - Includes 3 drought years – 2005, 2015, 2019
 - Approx. 900 transfers *proposed* through WTTWG, avg. 42/year
 - Est. 40% were WBN – domestic uses



APPROACH: RESEARCH – TRANSFER RULES

Transfer rules dictate the market simulations and strategy development

Creation of rules framework allows us to identify inefficiencies and propose improvements

1. Is it a valid water right?
2. Can the transfer be made without detriment or injury (impairment) to existing junior or senior rights?
3. Would the transfer result in an adverse change in instream flows?
4. Does the transfer have or create negative operational considerations for USBR, other water users, or fish/aquatic life?
5. Are there other factors that must be considered?
6. The transfer can be approved (assuming all rules + sub-rules) met.

Create automation where possible to allow market to create opportunities.

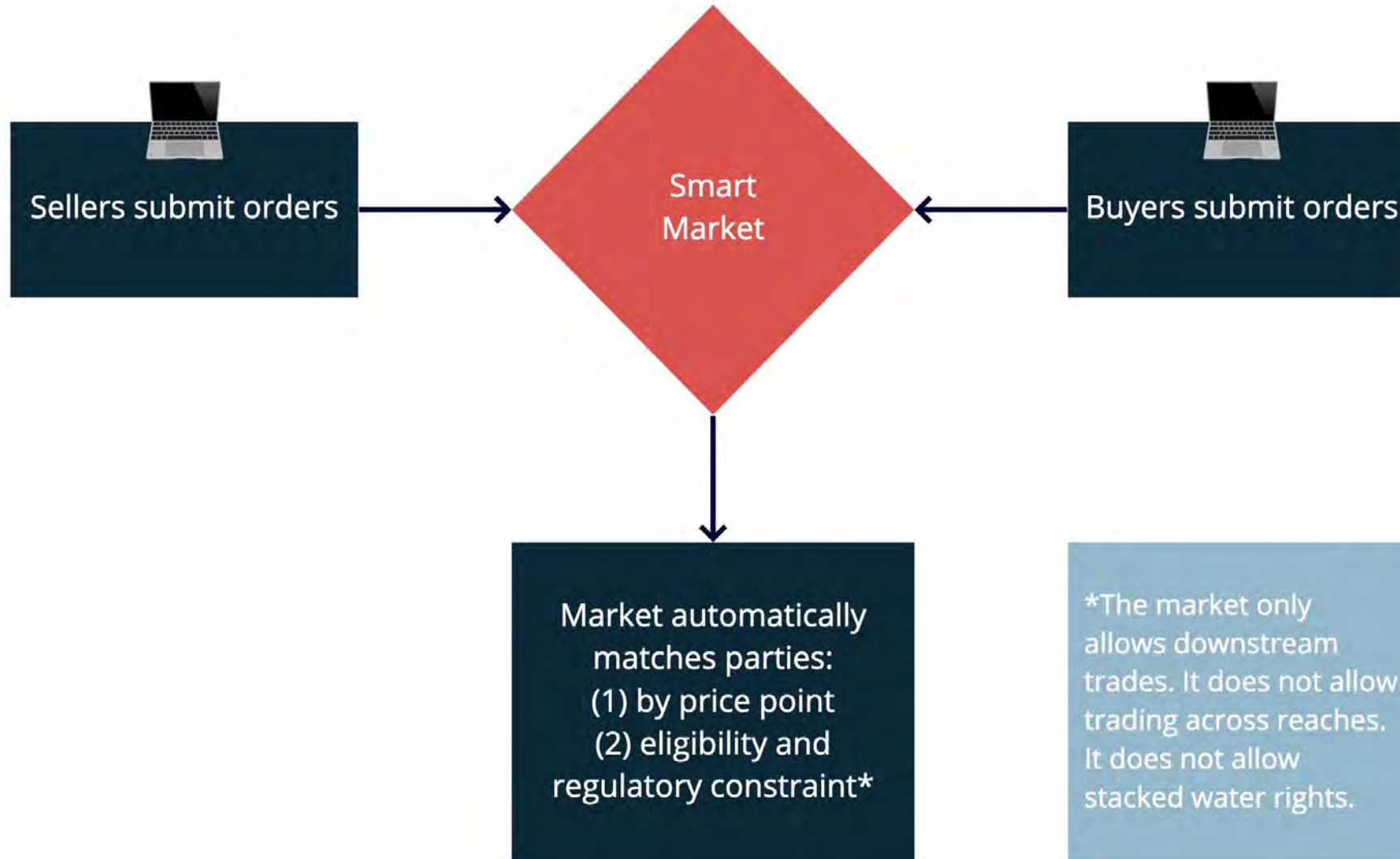


APPROACH: ANALYSIS – WATER RIGHTS

- GIS database to spatially “sort” water rights as more or less suitable for transfer
- Cross reference to WRTS as needed/possible
- Transferability of a water right can be generally identified (**process bottleneck**)
- Results:
 - >2000 total water surface water rights
 - Amount transferable can vary significantly – analysis in process to identify the range



APPROACH: ANALYSIS – SMART MARKET

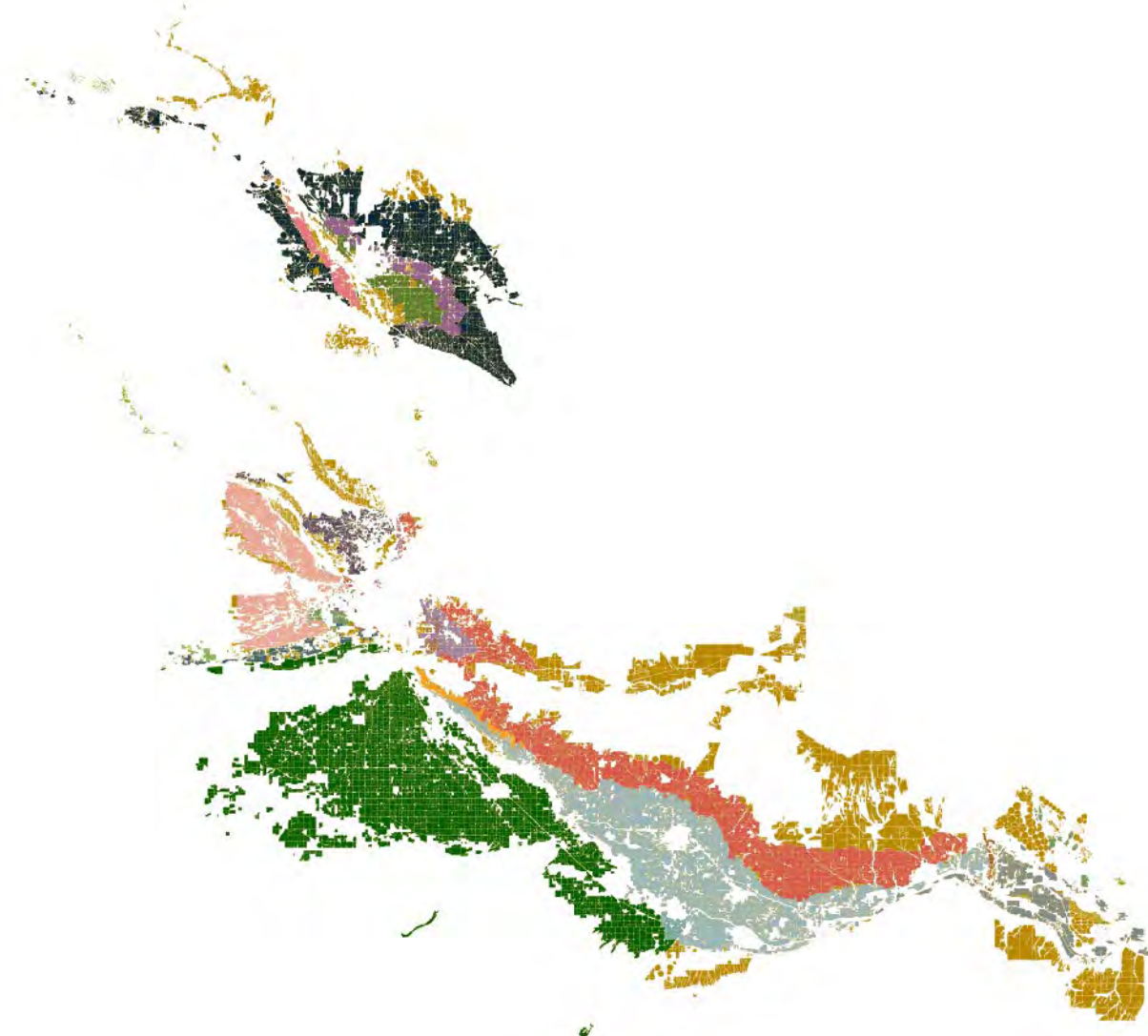




APPROACH: ANALYSIS – MARKET SIMULATIONS

Methodology:

- Removing potentially stacked water rights from the simulation (only those outside of irrigation districts)
- Using WSDA crop data layer to estimate consumptive use

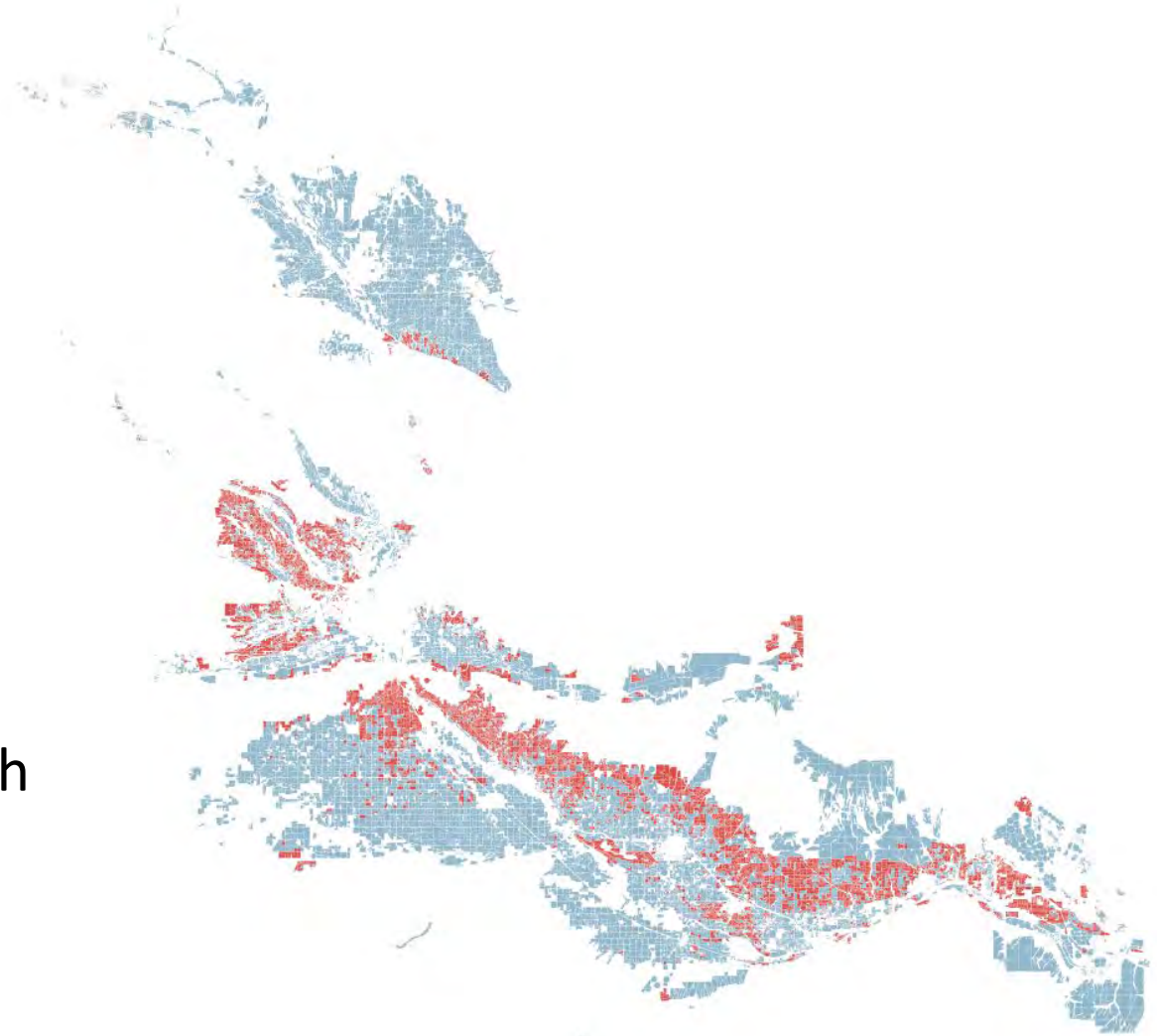




APPROACH: ANALYSIS – MARKET SIMULATIONS

Methodology:

- Looking at differences in values of irrigated crops (trading opportunities)
- Simulating trades
 - Downstream only (instream benefit)
 - Where there's a financial benefit to both parties





MILESTONES FOR STRATEGY DEVELOPMENT

- Outreach: ongoing – stakeholder meetings summer 2021 – spring 2022
- Research + Analysis: 2021 – TWG feedback into fall/winter
- Modeling: August
 - WTWG: August
 - Water rights: August
 - Storage & Water Supply: August
 - Instream Flow: August
- Analysis/Strategy Development: fall 2021