

***Preliminary Cost Estimates of  
Edwards Aquifer Recharge & Recirculation  
Springflow Protection Alternative***

***Edwards Aquifer  
Recovery Implementation Program  
Recharge Facility Feasibility Subcommittee***

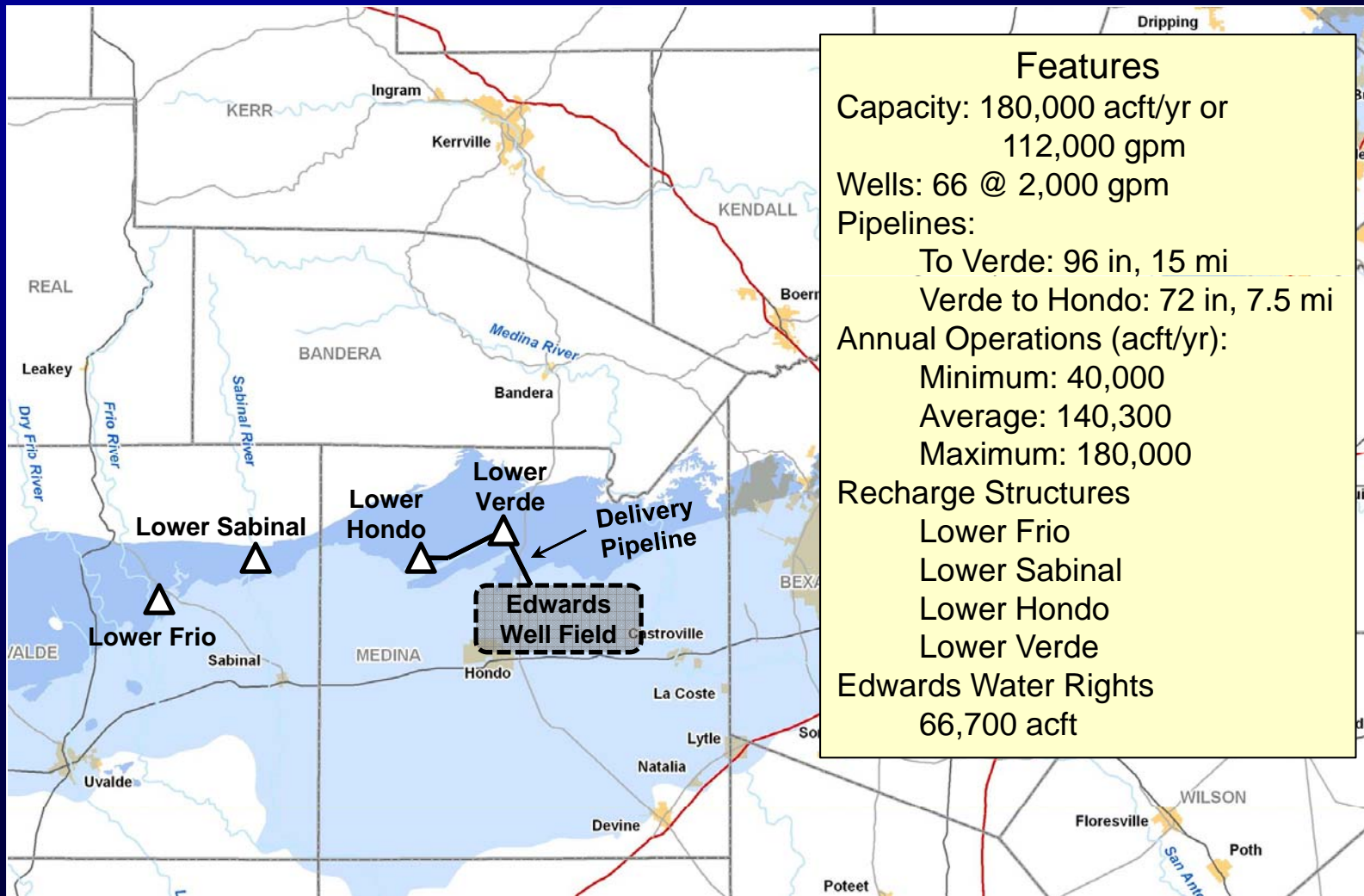
**HDR Engineering  
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# ***Topics of Discussion***

- 1) Preliminary Design**
- 2) Capital and Project Cost Estimates**
- 3) Annual Operating Costs**



# Preliminary Design



**Features**  
Capacity: 180,000 acft/yr or  
112,000 gpm  
Wells: 66 @ 2,000 gpm  
Pipelines:  
To Verde: 96 in, 15 mi  
Verde to Hondo: 72 in, 7.5 mi  
Annual Operations (acft/yr):  
Minimum: 40,000  
Average: 140,300  
Maximum: 180,000  
Recharge Structures  
Lower Frio  
Lower Sabinal  
Lower Hondo  
Lower Verde  
Edwards Water Rights  
66,700 acft

# Capital and Project Costs

Item	R & R Facilities	Type II Structures	Total
<b>Capital Costs</b>			
Dams and Reservoirs	\$0	\$60,552,000	\$60,552,000
Intake and Pump Station	\$26,011,000	\$0	\$26,011,000
Transmission Pipeline	\$106,452,000	\$0	\$106,452,000
Well Fields	\$62,414,000	\$0	\$62,414,000
Distribution	\$200,000	\$0	\$200,000
Purchase of GW Rights and Relocations	\$367,350,000	\$0	\$367,350,000
<b>Total Capital Cost</b>	<b>\$562,427,000</b>	<b>\$60,552,000</b>	<b>\$622,979,000</b>
<b>Project Cost</b>			
Engineering, Legal Costs and Contingencies	\$191,527,000	\$23,536,000	\$215,063,000
Environmental & Archaeology Studies and Mitigation	\$1,117,000	\$14,295,000	\$15,412,000
Land Acquisition and Surveying	\$1,045,000	\$14,476,000	\$15,521,000
Interest During Construction (1 years)	\$30,245,000	\$4,785,000	\$35,030,000
<b>Total Project Cost, including Capital</b>	<b>\$786,361,000</b>	<b>\$124,339,000</b>	<b>\$910,700,000</b>

# Annual Operating Costs

Item	Minimum Year	Average Year	Maximum Year	Type II Structures
<b>Annual Costs</b>				
Debt Service	\$68,559,000	\$68,559,000	\$68,559,000	\$819,000
Reservoir Debt Service	\$0	\$0	\$0	\$7,639,000
Operation and Maintenance				
Intake, Pipeline, Pump Station	\$2,341,000	\$2,341,000	\$2,341,000	\$0
Dam and Reservoir	\$0	\$0	\$0	\$908,000
Pumping Energy Costs	\$1,743,000	\$6,114,000	\$7,891,000	\$0
Purchase of Water	\$0	\$0	\$0	\$696,000
<b>Total Annual Cost</b>	<b>\$72,643,000</b>	<b>\$77,014,000</b>	<b>\$78,791,000</b>	<b>\$10,062,000</b>
<b>Level of Operation (acft/yr)</b>	<b>40,000</b>	<b>140,300</b>	<b>180,000</b>	<b>N/A</b>