

CITY OF FAIR OAKS RANCH AGENDA (THE FUTURE OF FAIR OAKS RANCH)

CITY COUNCIL STAKEHOLDERS COMMITTEE MEETING (Master Water/Wastewater Plan)

June 7, 2018; 10:30 AM City Hall Council Chambers, 7286 Dietz Elkhorn, Fair Oaks Ranch

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| | | | | | | | | |

A. Roll Call

II. WORKSHOP

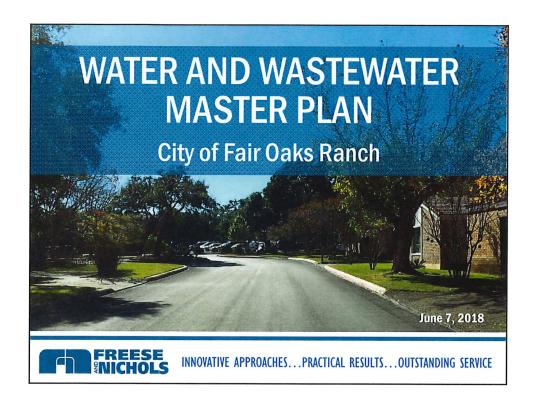
A. Conduct a workshop led by Freese & Nichols (Consultant) regarding the Master Water/Wastewater Plan.

III. ADJOURNMENT

Signature of Agenda Approval:

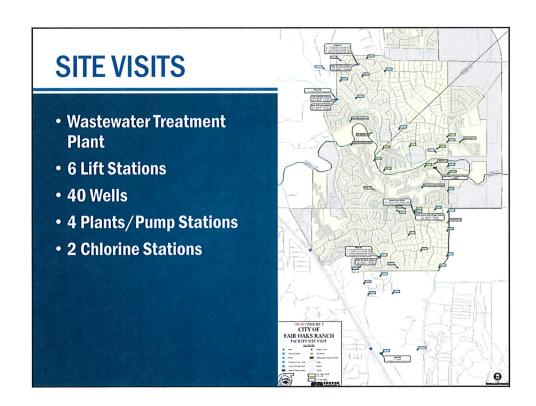
I, Christina Picioccio, City Secretary, certify that the above Notice of Meeting was posted on the outside bulletin board at the Fair Oaks Ranch City Hall, 7286 Dietz Elkhorn, Fair Oaks Ranch, Texas, and on the city's website www.fairoaksranchtx.org, both places being convenient and readily accessible to the general public at all times. Said Notice was posted by 5:00 PM, June 1, 2018 and remained so posted continuously for at least 72 hours before said meeting was convened.

The Fair Oaks Ranch City Hall is wheelchair accessible at the side entrance of the building from the parking lot. Requests for special services must be received forty-eight (48) hours prior to the meeting time by calling the City Secretary's office at (210) 698-0900. Braille is not available. The City Council reserves the right to convene into Executive Session at any time regarding an issue on the agenda for which it is legally permissible; pursuant to *Texas Government Code* Chapter 551. Section 551.071 (Consultation with Attorney), 551.072 (Deliberations about Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices) and 551.087 (Economic Development).

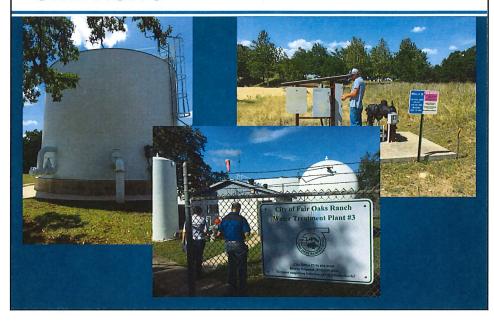


- Site Visits and Scoring
- Land Use Data
- Water Demands and Wastewater Flows
- Existing System Analysis
- Water Supply
- Questions/Discussion

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SITE VISITS



SITE VISITS

Risk = f (Condition **Criticality**) x What is the What is the Likelihood of Consequence of Asset Asset Failure? Failure? Asset age Loss of service Asset material Damage to property Performance of Public image asset Environmentally Physical Inspection **Sensitive Areas** of asset

CONDITION SCORING

| Pump Station Condition Groups | Weight Factor | Ground Storage Tank Condition Groups | Weight Factor | <u>Lift Station</u> Condition Groups | Weight Factor |
|---|------------------|--|------------------|---|------------------|
| Pumps and Motors | 30% | Mechanical – Piping, Hatches, Valves, Vents | 20% | Pumps and Motors | 20% |
| Electrical – MCC, Switch Gear, Alternate Power | 25% | Tank Structure and Roof Slope | 50% | Electrical — MCC, Back-up Power, Cables | 20% |
| Instrumentation – SCADA, alarms | 10% | Instrumentation –SCADA, alarms | 10% | Instrumentation –SCADA, alarms | 15% |
| Structure – Wall, Roof, Foundation | 20% | Tank Overflow | 10% | Structure – Wet Well, Hatches, Corrosion, Cracks, Leaking | 20% |
| Mechanical – HVAC, Piping, Valves, Meters | 15% | Site – Drainage, Access Drive, Security Fencing | 10% | Piping and Valves | 15% |
| | | | | Site - Drainage, Access Drive, Security, Fencing | 10% |
| Total Weighting | 100% | | 100% | | 100% |

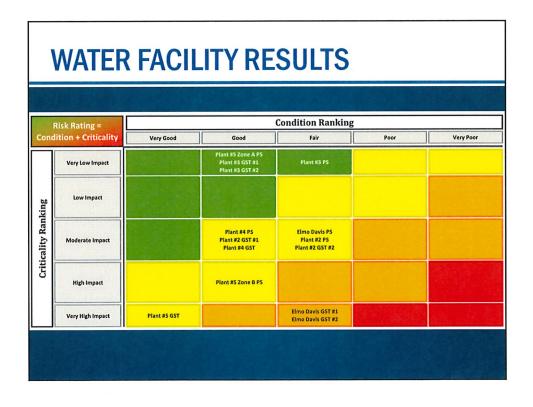
Condition Issues

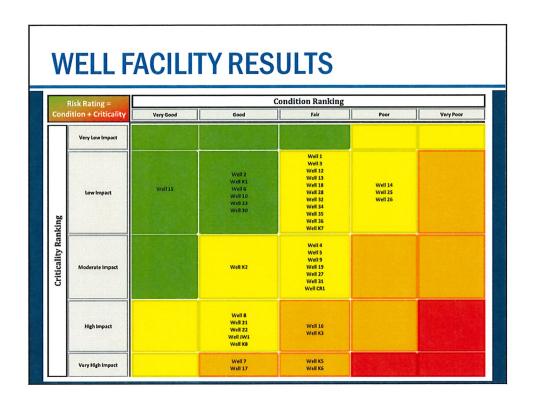
- Electrical at Elmo Davis, Plant #3, Wells 1, 5, 9, 13, 14, 19, 25, 26, 27, 28, 32, CR1, and K6
- Mechanical at Elmo Davis
- Instrumentation at Elmo Davis, Plant #2, and Plant #3
- Structure at Wells 12, 14, 25, 26, 31, 32, JW1, and K7

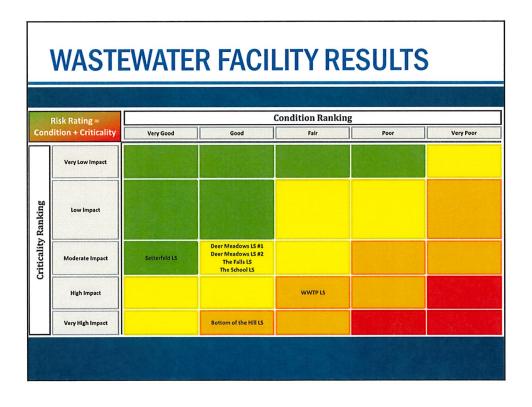
CRITICALITY SCORING

| | A LOS | |
|---|------------------|---------------------------|
| Water Facility Component Groups a | | ctors |
| Pump Stations - Connections Served (100%) | | roduction Capacity (100%) |
| > 1,600 = 5 | 1 | .01 – 150 gpm = 5 |
| 1,201 - 1,600 = 4 | 8 | B1 – 100 gpm = 4 |
| 801 - 1,200 = 3 | | 61 - 80 gpm = 3 |
| 401 - 800 = 2 | | ≤ 60 gpm = 2 |
| ≤ 400 = 1 | | |
| Component Groups and Weight Factors Provimity to High Impact Areas (25%) Propulation Served (50%) | | |
| Proximity to High Impact Areas (25) | <u>%)</u> | Population Served (50%) |
| ≤ 2000 feet from hospital or school | = 5 | > 1,600 = 5 |
| ≤ 2000 feet from parks, recreational areas or l | ball fields = 4 | 1,201 - 1,600 = 4 |
| ≤ 500 feet from residential or commercial st | tructure = 3 | 801 - 1,200 = 3 |
| 501 – 1,000 feet from residential or commercia | al structure = 2 | 401 - 800 = 2 |
| | | ≤ 400 = 1 |
| Proximity to Environmentall | ly Sensitive Are | as (25%) |
| ≤ 250 feet from Ponds, Riv | vers, and Strea | ms = 5 |
| 251 – 500 feet from Ponds, | Rivers, and Stre | eams = 4 |
| 501 – 1,000 feet from isolated | d water bodies (| (ponds) = 3 |
| >1,001 feet from any | y water body = | 1 |

ELMO DAVIS PUND STATION | Separate | Part |





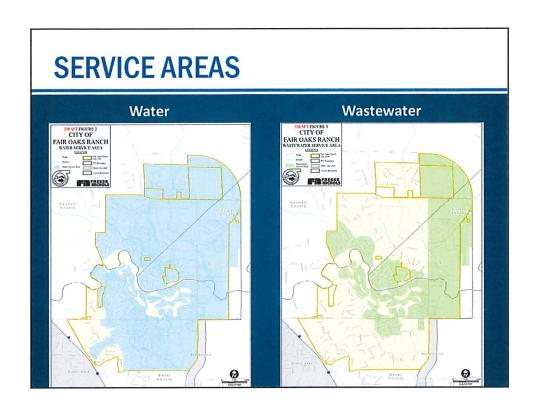


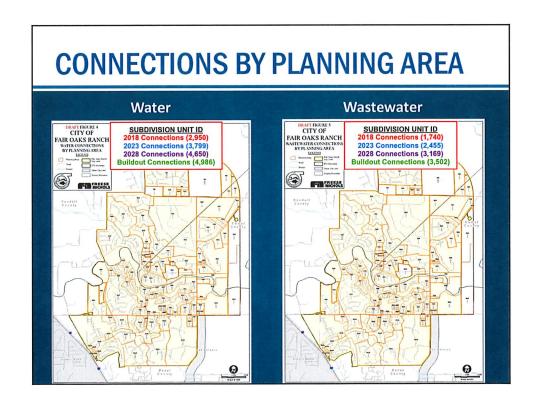
WASTEWATER TREATMENT PLANT

- Limited solids handling
- Site access during rain events
- Need new influent screening structure
- Limited clarifier capacity



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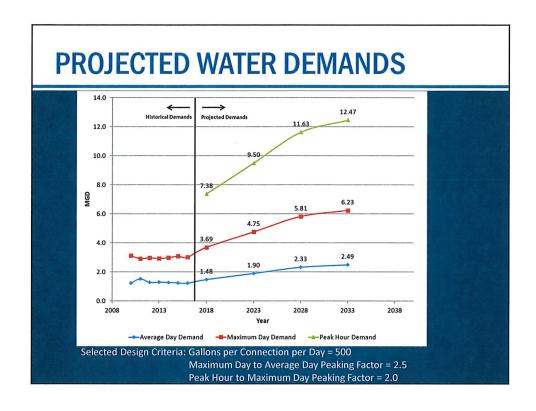




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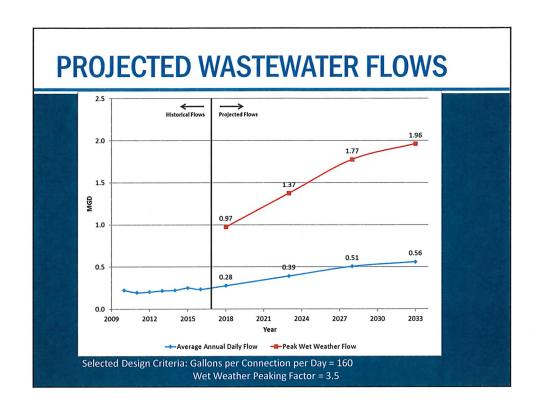
HISTORICAL WATER DEMANDS

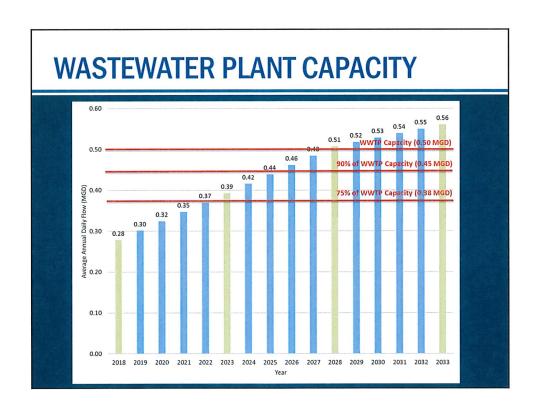
| Year | Water Connections | Average Day Demand (MGD) | Average Day Per Capita Usage (gallons per connection per day) | Maximum | Maximum Day to Average Day Peaking Factor |
|---------|----------------------|--------------------------------|---|---------|---|
| 2010 | 2,409 | 1.23 | 512 | 3.11 | 2.52 |
| 2011 | 2,445 | 1.52 | 623 | 2.91 | 1.91 |
| 2012 | 2,485 | 1.28 | 516 | 2.96 | 2.31 |
| 2013 | 2,534 | 1.30 | 512 | 2.93 | 2.25 |
| 2014 | 2,662 | 1.28 | 480 | 2.98 | 2.33 |
| 2015 | 2,768 | 1.25 | 450 | 3.08 | 2.47 |
| 2016 | 2,838 | 1.23 | 433 | 3.01 | 2.45 |
| Average | - | - | 504 | - | 2.32 |
| Maximum | - | - | 623 | - | 2.52 |



HISTORICAL WASTEWATER FLOWS

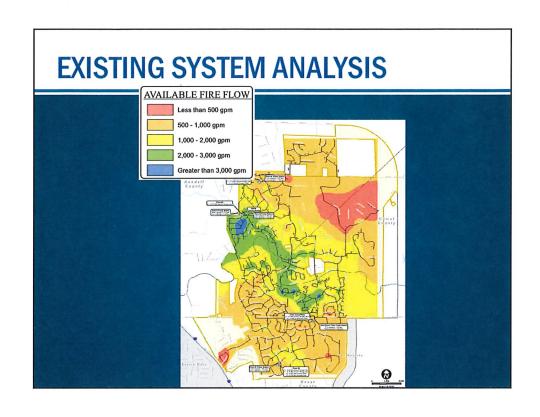
| Year | Wastewater Connections | Average Annual Daily Flow (gpd) | Average Annual Daily Flow (MGD) | Average Per Capita |
|---------|---------------------------|--|--|--------------------------|
| 2010 | 1,369 | 223,772 | 0.22 | 163 |
| 2011 | 1,395 | 195,970 | 0.20 | 140 |
| 2012 | 1,436 | 204,573 | 0.20 | 142 |
| 2013 | 1,463 | 218,143 | 0.22 | 149 |
| 2014 | 1,552 | 224,129 | 0.22 | 144 |
| 2015 | 1,635 | 251,682 | 0.25 | 154 |
| 2016 | 1,696 | 235,597 | 0.24 | 139 |
| Average | - | - | - | 148 |
| Maximum | - | - | - | 163 |

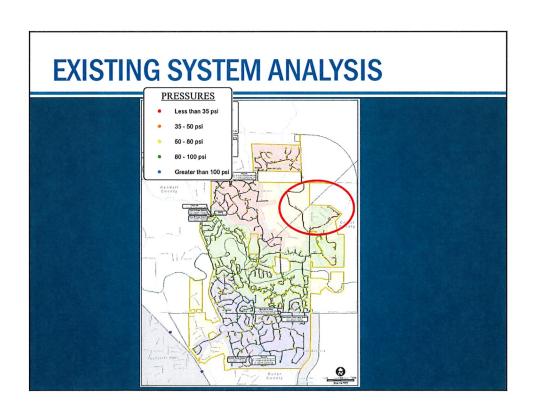




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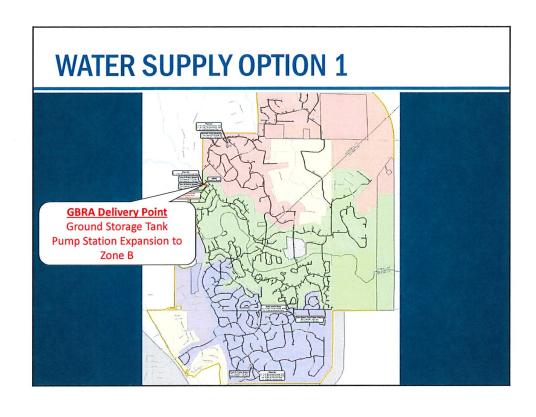
MODEL UPDATE AND CALIBRATION City of Fair Oaks Ranch Printer Secret Location 7, 1998 Color box Let 1933 July 1, 2917 Total City of Fair Oaks Ranch Printer Record Location 9, 2043 Printers Lieu 1935 Any 2, 293 Total Tota

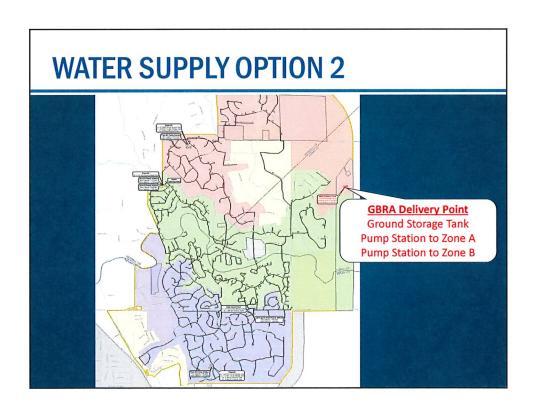


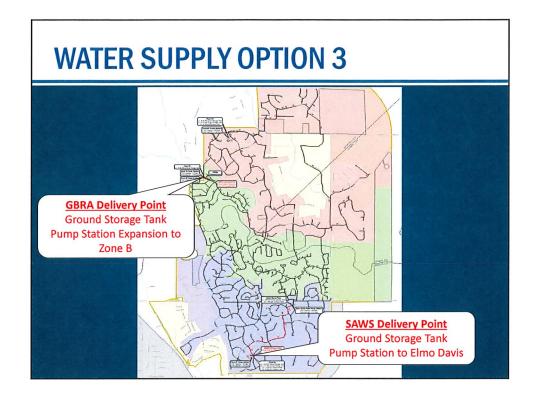


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Option 1: Additional Supply at Existing GBRA Delivery Point Delivery Point Option 2: Additional Supply at New GBRA Delivery Point Point Option 3: Water Supply from SAWS







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NEXT STEPS

- Future System Analysis
- CIP Development
- Master Plan Report

