TRI-CITY REGIONAL SANITARY DISTRICT

WASTEWATER COLLECTION AND TREATMENT SYSTEM

COMMUNITY OUTREACH

OCTOBER 2018

TRSD USDA RCAC PACE


Improving
Quality of Life

BACKGROUND

1980 - 2011

TRSD[1] HISTORY

TRSD MERGER DISTRICTS ATTEMPT PROJECT (COBRE VALLEY SANITARY DISTRICT & PINAL SANITARY DISTRICT)

2011

TRSD ESTABLISHED

USDA-RD[2] FUNDING PROCESS

REGIONAL SOLUTION

COMMUNICATION WITH GLOBE & MIAMI FOR IGA[3]

2012-2018

ENGINEER (PACE) HIRED

QUALIFICATIONS BASED SELECTION PROCESS PER USDA-RD REQUIREMENTS

PRELIMINARY ENGINEERING

DATA GATHERING /EVALUATION OF POSSIBLE ALTERNATIVES

2018

FUNDING RECEIVED

USDA-RD ISSUES LETTER OF CONDITIONS (LOC)

2018

PROJECT PROCEEDS

TRSD PASSES RESOLUTION OF INTENTION (ROI)

[1]TRSD: TRI-CITY REGIONAL SANITARY DISTRICT
[2]USDA-RD: UNITED STATES DEPARTMENT OF AGRICULTURE – RURAL DEVELOPMENT
[3]IGA: INTER-GOVERNMENTAL AGREEMENT

NEED FOR PROJECT

1905 - 1975

CESSPOOLS AS PRIMARY MEANS OF DISPOSAL

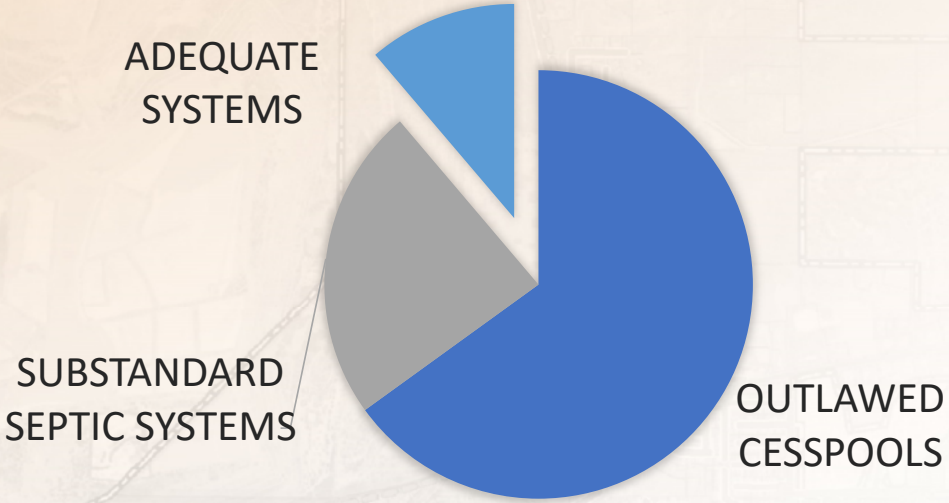
1976

USE OF CESSPOOLS OUTLAWED

2007 – PRESENT

75+ PARCELS WITH FAILED ONSITE SYSTEMS

25+ NOTICES OF VIOLATION (NOV)



89% OF TRSD EXISTING ONSITE SYSTEMS IN VIOLATION

BENEFITS

IMPROVES OVERALL PUBLIC HEALTH AND GROUNDWATER / ENVIRONMENTAL QUALITY

PROTECTS FROM FUTURE ECONOMIC HARDSHIP IN THE EVENT OF ONSITE SYSTEM FAILURE

INCREASES OVERALL PROPERTY VALUES

PROVIDES FLEXIBILITY FOR HOME REFINANCING / SALES / RENOVATIONS

PROMOTES RESTORATION OF ABANDONED PROPERTIES AND FUTURE DEVELOPMENT

FURNISHES COMPLETE SYSTEM AT NO OUT-OF-POCKET, UP-FRONT COSTS TO RESIDENTS

PRELIMINARY ENGINEERING REPORT (PER) PROCESS

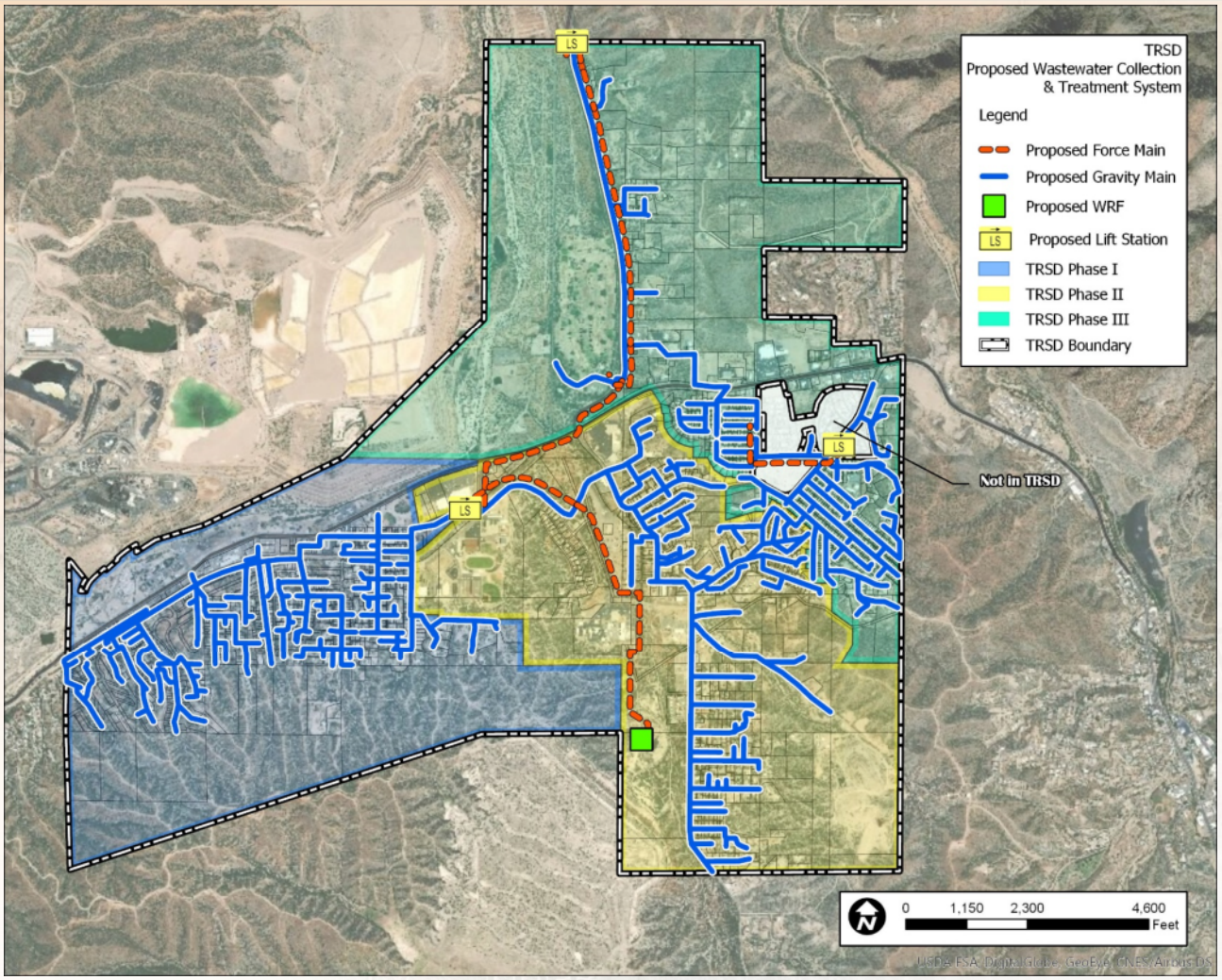
TREATMENT SOLUTION
ALL FLOWS TO MIAMI WRF
ALL FLOWS TO GLOBE WWTP
SPLIT FLOWS (EXISTING AVAILABLE CAPACITY)
SPLIT FLOWS (NATURAL WATERSHED BOUNDARIES)

TRSD WRF
SITE LOCATIONS / LAYOUT CONFIGURATIONS
TREATMENT PROCESS (COST / SIZE / FOOTPRINT)

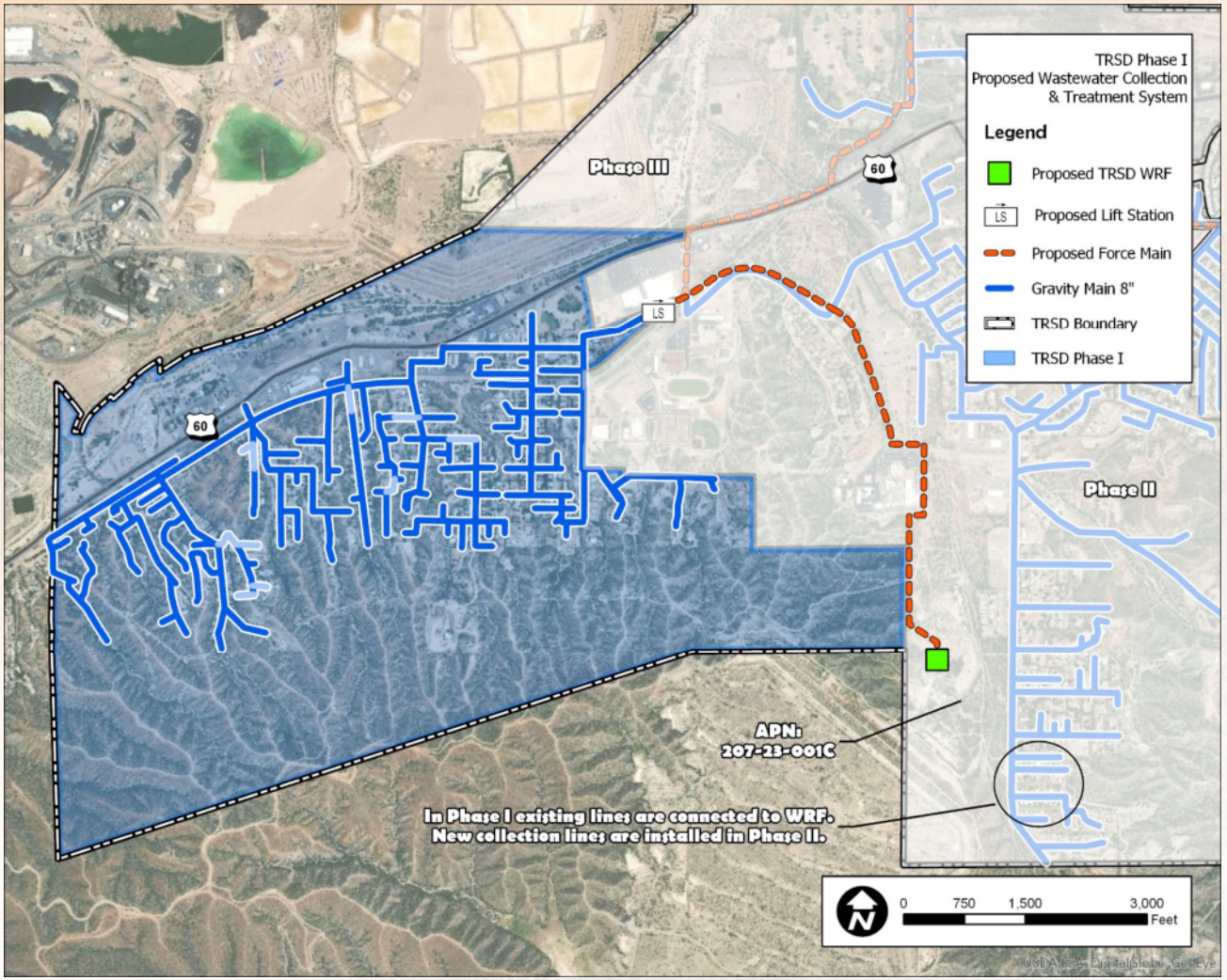
COLLECTION SYSTEM
LAYOUTS (GEOGRAPHIC ELEVATIONS / ENVIRONMENTAL AVOIDANCE AREAS)
GRAVITY VS. STEP SYSTEM

LIFT STATION
SITE LOCATIONS / LAYOUT CONFIGURATIONS
FLOODPLAIN

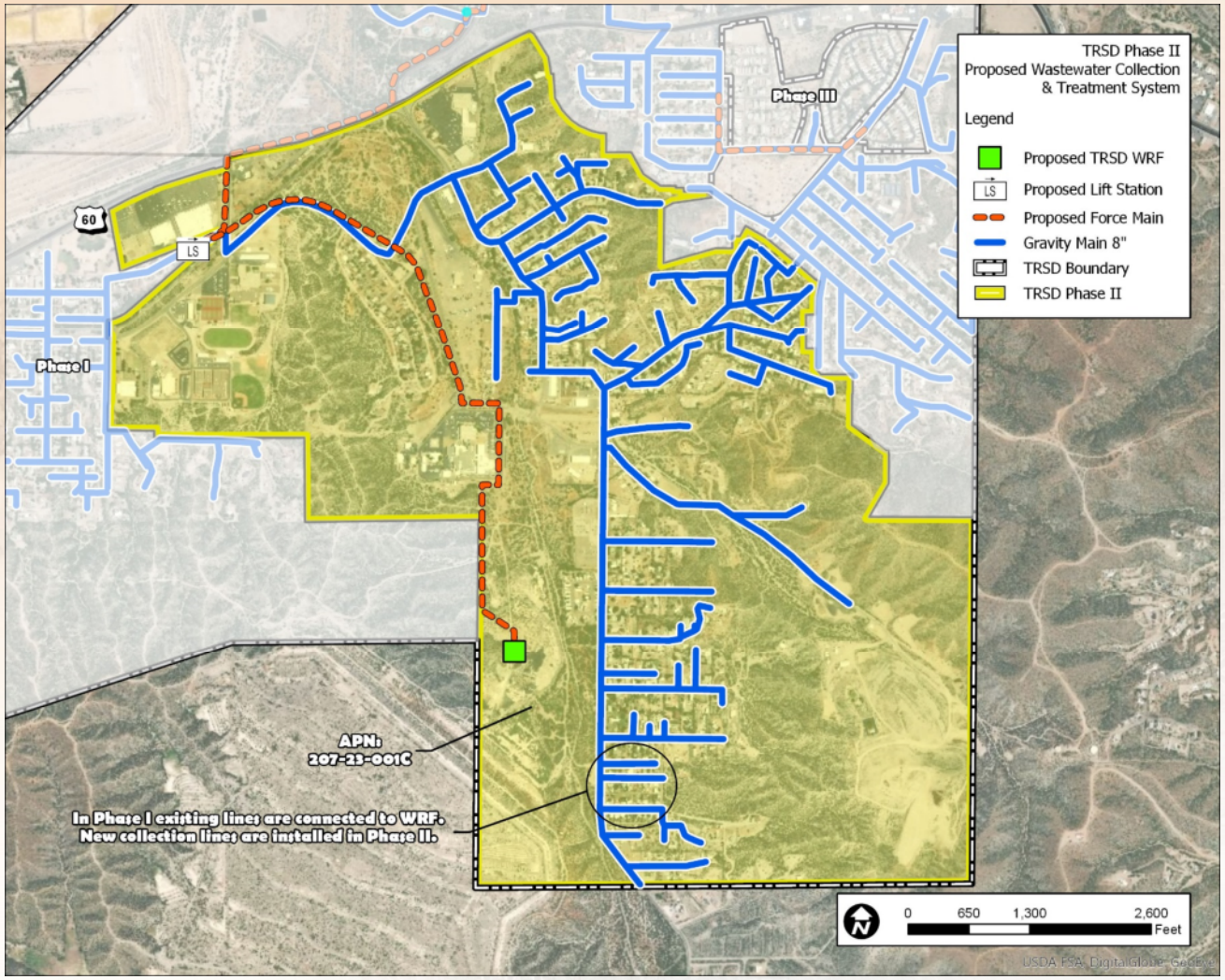
PROJECT PHASING



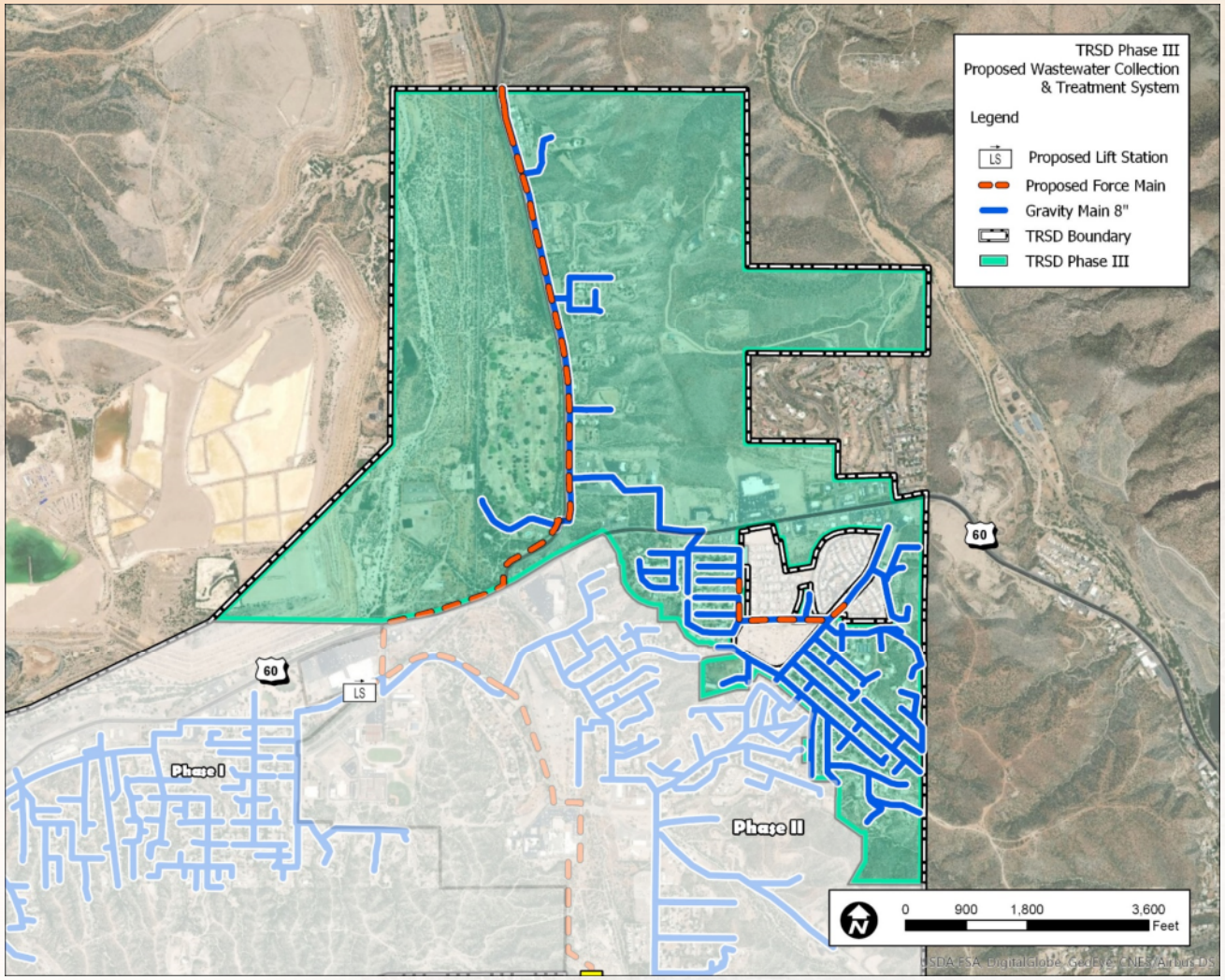
PHASE I


TRSD Phase I
Proposed Wastewater Collection
& Treatment System
Legend
Proposed TRSD WRF
LS
Proposed Lift Station
Proposed Force Main
Gravity Main 8"
TRSD Boundary
TRSD Phase I
Phase III
Phase II
60
LS
APN:
207-23-001C
In Phase I existing lines are connected to WRF.
New collection lines are installed in Phase II.
0
750
1,500
3,000
Feet

PHASE II

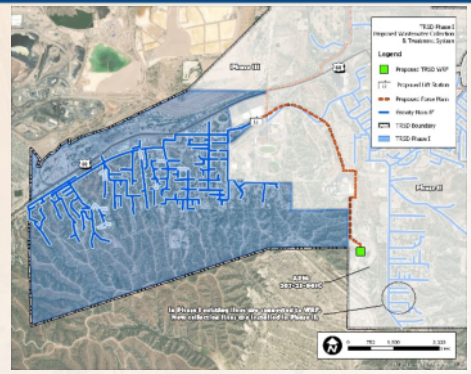

TRSD Phase II
Proposed Wastewater Collection
& Treatment System
Legend
Proposed TRSD WRF
Proposed Lift Station
Proposed Force Main
Gravity Main 8"
TRSD Boundary
TRSD Phase II
Phase III
Phase I
60
LS
APN:
207-23-001C
In Phase I exitting lines are connected to WRF.
New collection lines are installed in Phase II.
0
650
1,300
2,600
Feet
USDA FSA DigitalGlobe GeoEye

PHASE III


TRSD Phase III
Proposed Wastewater Collection
& Treatment System
Legend
LS
Proposed Lift Station
Proposed Force Main
Gravity Main 8"
TRSD Boundary
TRSD Phase III
60
60
LS
Phase I
Phase II
0
900
1,800
3,600
Feet
USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS

PHASE I

EQUIVALENT DWELLING UNIT (EDU) ASSESSMENT



OCCUPIED

"PARCELS WITH FRONTAGE"
(PARCELS THAT HAVE AT LEAST ONE EDU AND ARE ADJACENT TO OR WITHIN 300 FT OF THE PROPOSED PIPELINE)

"PARCELS WITHOUT FRONTAGE"
(PARCELS THAT HAVE AT LEAST ONE EDU AND ARE ADJACENT TO OR WITHIN 300 FT OF THE PROPOSED PIPELINE)

"RIGHT-OF-WAY (ROW) PARCEL"
(PARCELS THAT WILL BE REQUESTED TO GRANT ROW FOR OTHER PARCELS WITHOUT FRONTAGE TO RECEIVE SERVICE)

"DEPENDENT ON ROW PARCEL"
(PARCELS THAT REQUIRE OTHER PARCELS TO GRANT ROW TO RECEIVE SERVICE)

RESIDENTIAL
1 EDU

COMMERCIAL
7.5 EDU/ACRE

INDUSTRIAL
3.75 EDU/ACRE

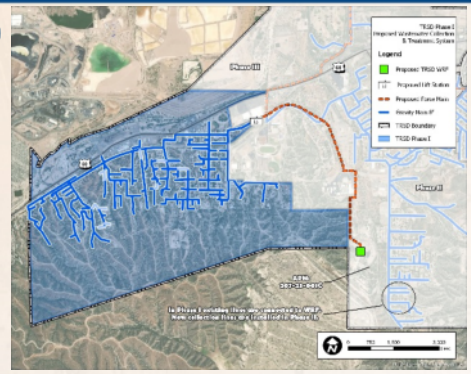
VACANT

UNINHIBITED PARCELS WITHIN THE BOUNDARY THAT ARE ADJACENT TO OR WITHIN 300 FT OF THE PROPOSED COLLECTION LINE. MAY BE A ROW PARCEL OR DEPENDENT ON ROW PARCEL.

RESIDENTIAL
<0.33 ACRE = 1 EDU
>0.33 ACRE = 3.75 EDU/ACRE

PHASE I

EQUIVALENT DWELLING UNIT (EDU) ASSESSMENT (CONTINUED)



FLOW TYPE	FLOW CAPACITY GALLONS PER DAY (GPD)	EDU
RESIDENTIAL	141,050	806
COMMERCIAL/INDUSTRIAL/OTHER	99,400	568
TOTAL	**240,450[1]**	**1,374**

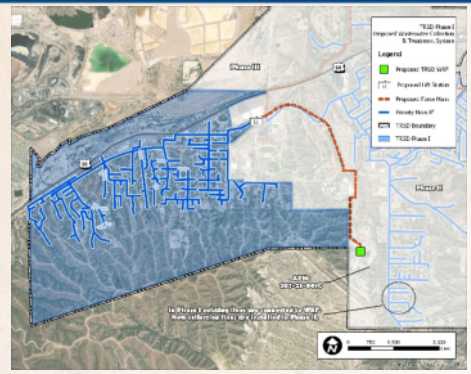
PARCEL TYPE	FLOW CAPACITY (GPD)	EDU
VACANT WITH FRONTAGE	36,750	210
VACANT WITHOUT FRONTAGE	22,750	130
TOTAL	**59,500[1]**	**340**

REASONABLE GROWTH

VACANT PARCELS TOTAL FLOW ESTIMATE (GPD)	59,500
TOTAL FLOW ESTIMATE (GPD)	240,450
ESTIMATED GROWTH	25%

PHASE I

ALTERNATIVES CONSIDERED



1 NO ACTION

2 ALL FLOWS TO MIAMI WRF[1]

3 ALL FLOWS TO NEW TRSD WRF

NO ACTION =

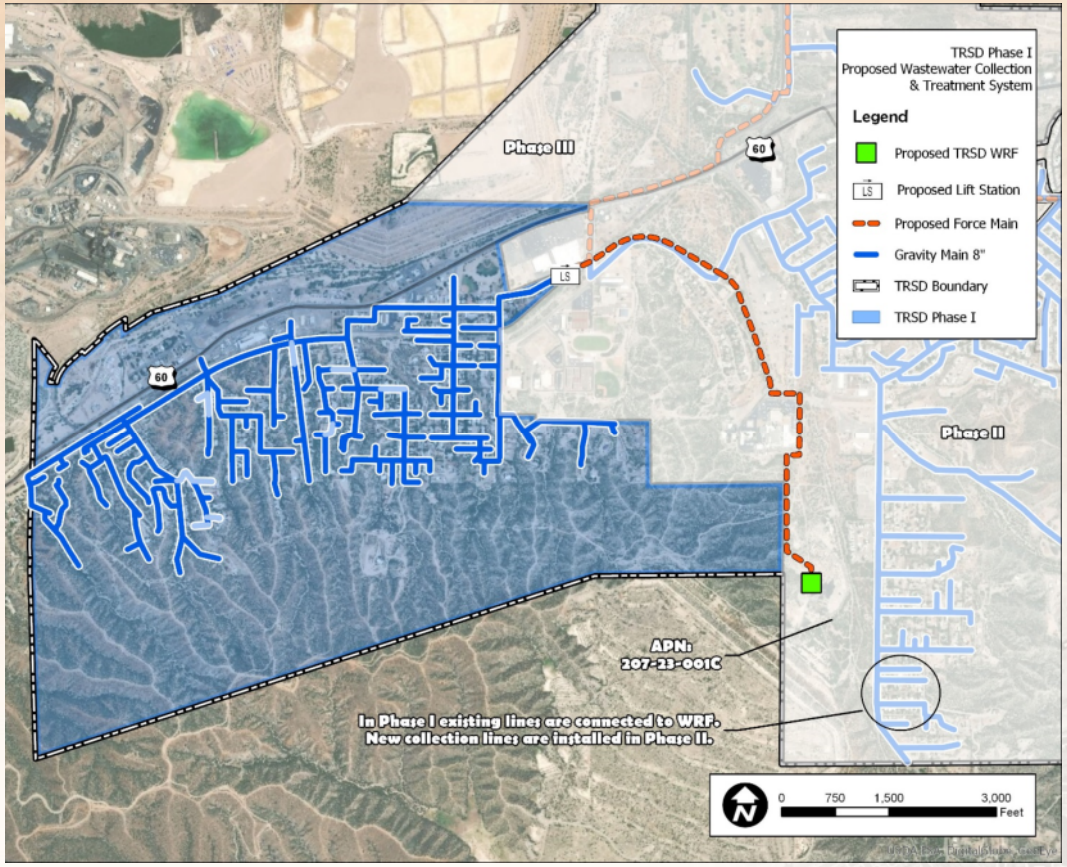
- FACILITIES CONTINUE TO DETERIORATE
- INCREASED POTENTIAL FOR EXISTING CESSPOOLS AN SEPTIC TANK OVERFLOWS AND TANK FAILURES
- POLLUTES ENVIRONMENT
- INCREASED POTENTIAL FOR ILLNESSES THREATENING PUBLIC HEALTH
- PROPERTIES COULD BE RED-TAGGED
- INDIVIDUAL PROPERTY OWNER ADDRESSES DEFICIENCIES WITH UP-FRONT / OUT-OF-POCKET COSTS

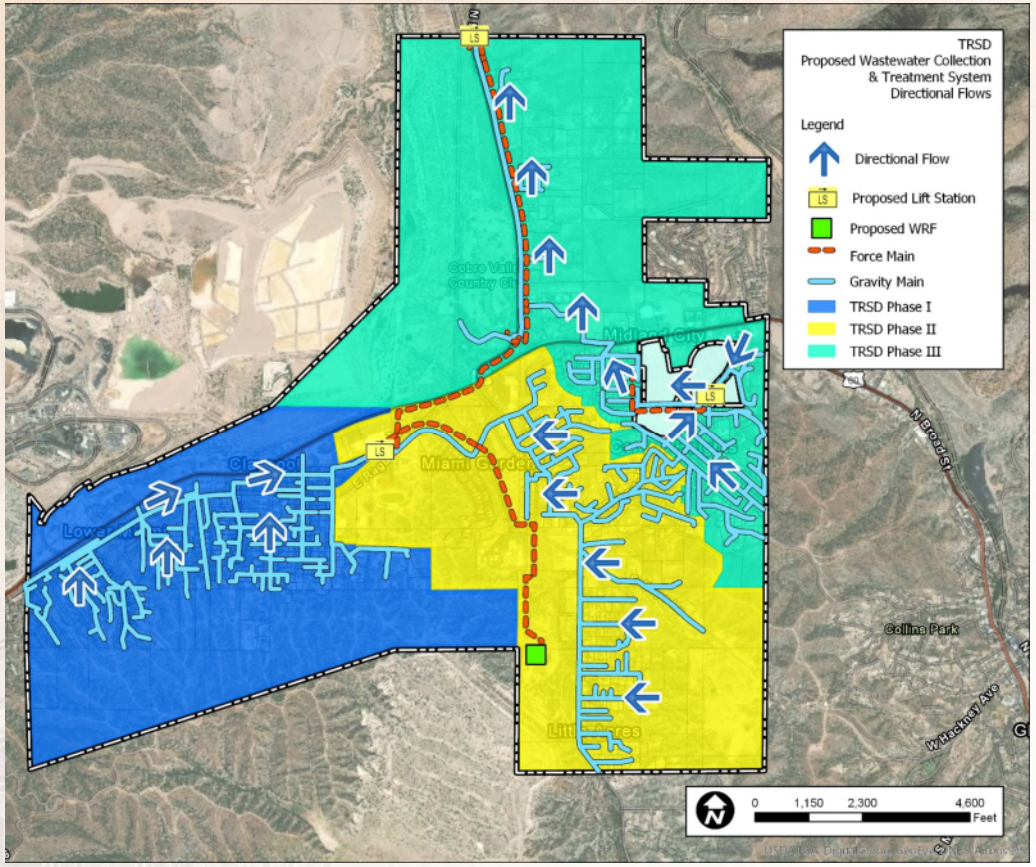
NO ACTION = NOT AN OPTION FOR TRSD

[1]*WRF: WATER RECLAMATION FACILITY*

PHASE I

DIRECTIONAL FLOWS

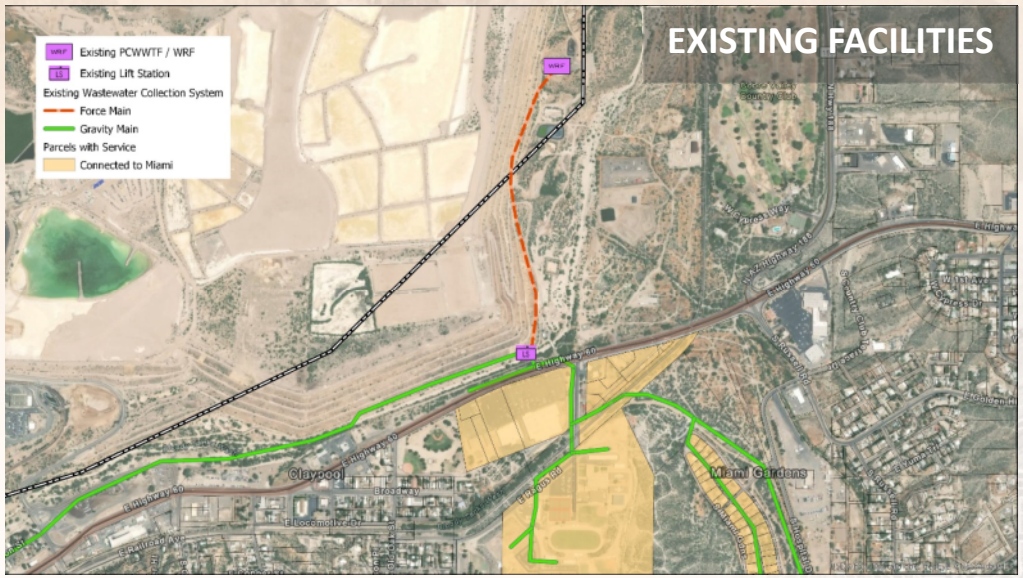


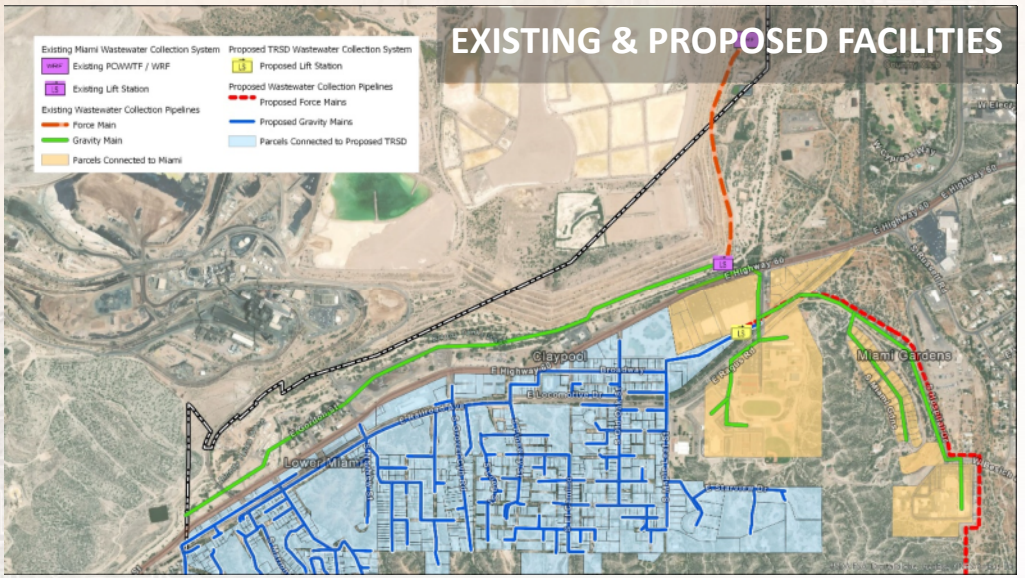


PHASE I - NEW TRSD WRF VS. MIAMI WRF

COMPARING ALTERNATIVES: COLLECTION LINES & LIFT STATIONS

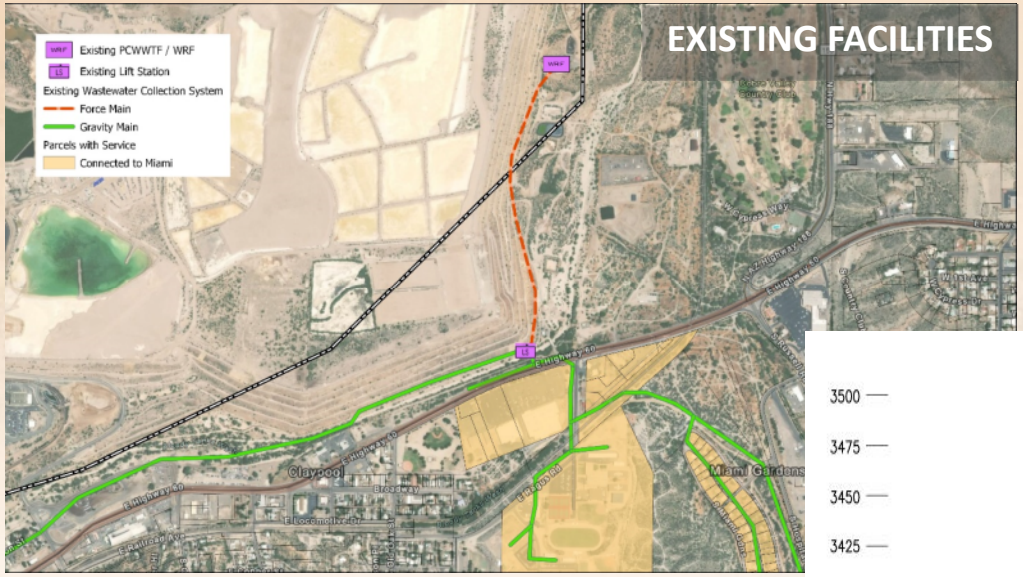
	NEW TRSD WRF	MIAMI WRF	NOTES
GRAVITY MAINS	57,855	57,855	• SAME PIPELINE
FORCE MAINS	7,500	7,500	• MIAMI - NOT ENOUGH CAPACITY FOR TRSD FLOWS
LIFT STATIONS	3	3	• MIAMI - NOT ENOUGH CAPACITY FOR TRSD FLOWS • ADVANTAGE FOR MEASURING FLOWS • USDA-RD 500 YEAR STORM CRITICAL FACILITIES

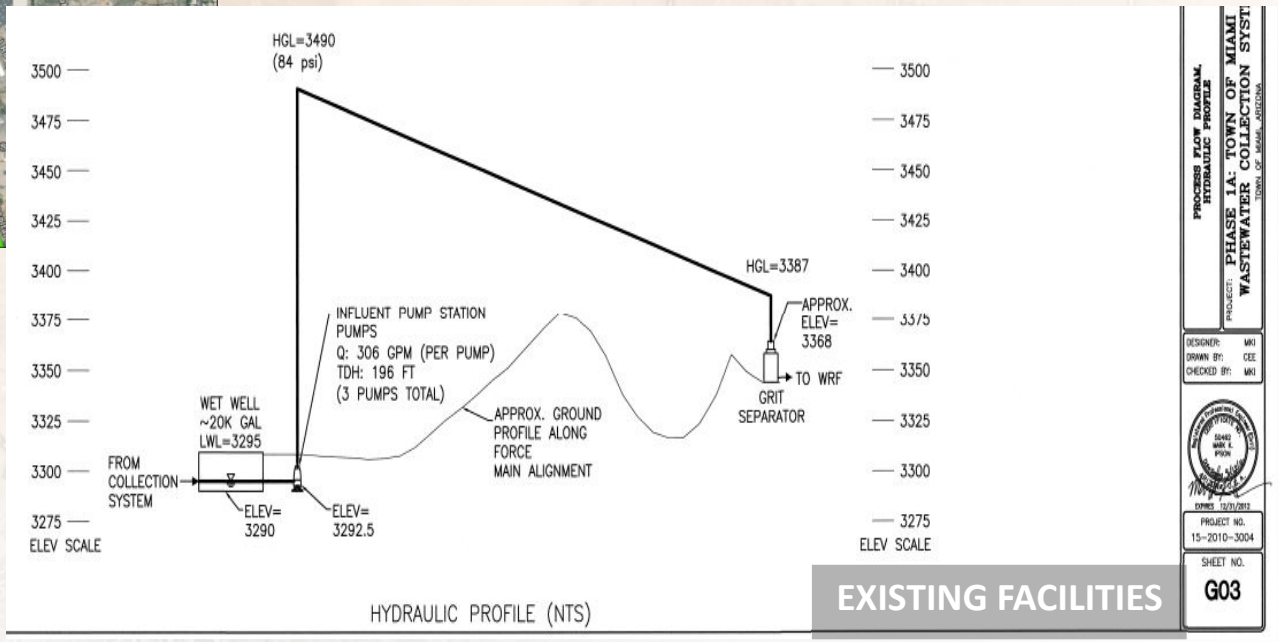




PHASE I - NEW TRSD WRF VS. MIAMI WRF

COMPARING ALTERNATIVES: COLLECTION LINES & LIFT STATIONS (CONTINUED)

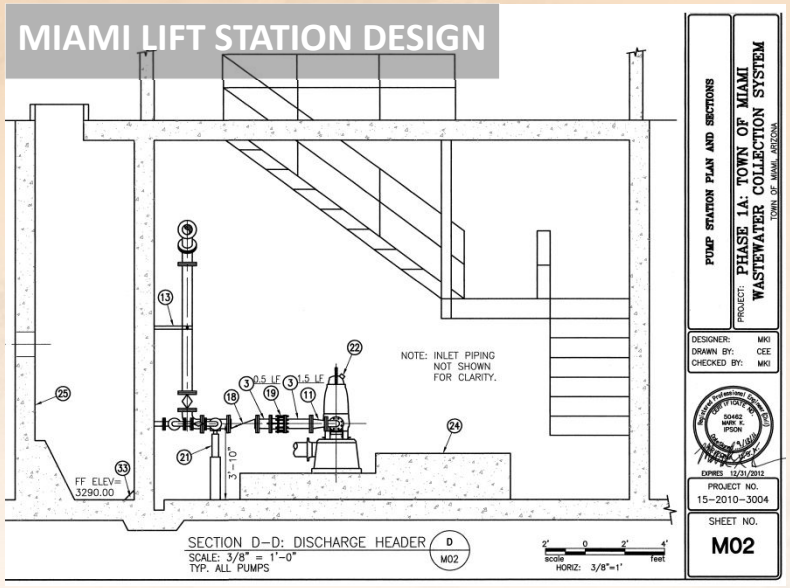




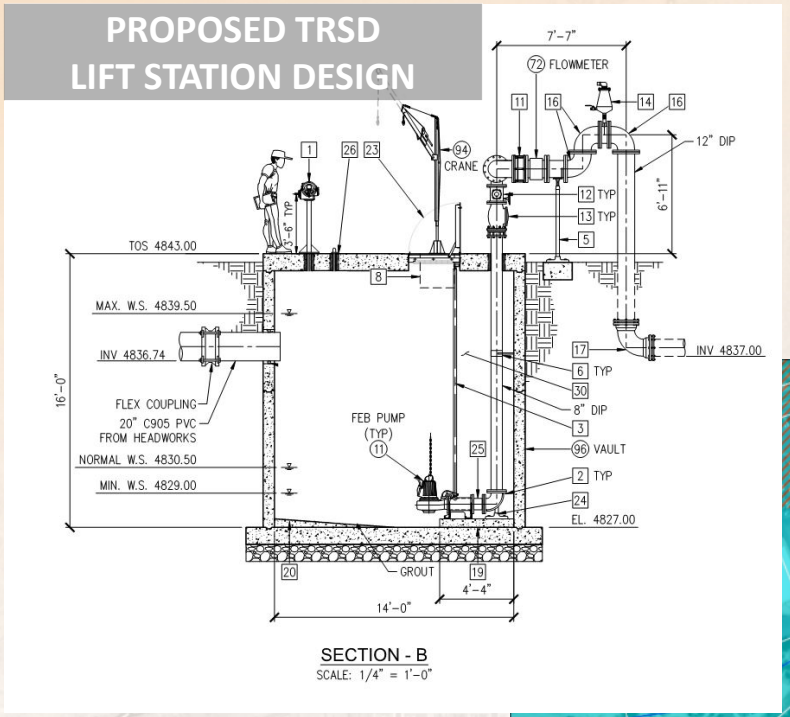
PHASE I - NEW TRSD WRF VS. MIAMI WRF

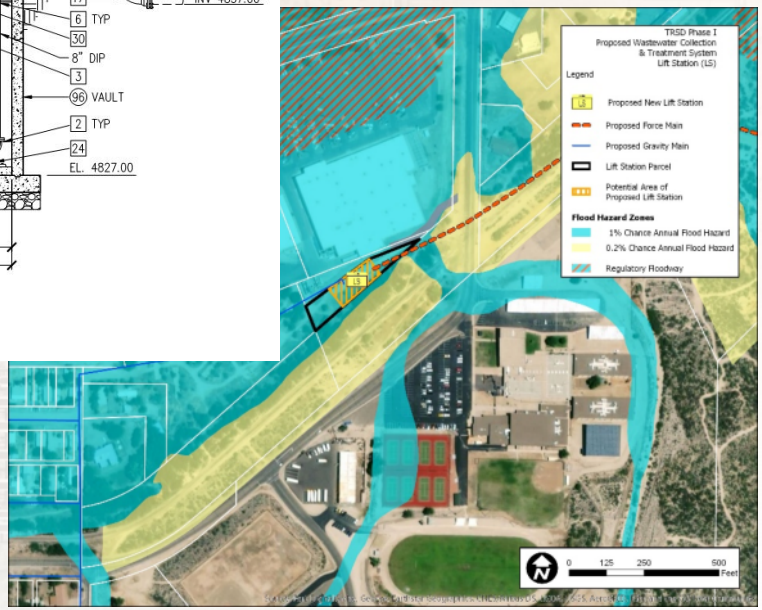
COMPARING ALTERNATIVES: COLLECTION LINES & LIFT STATIONS (CONTINUED)

MIAMI LIFT STATION DESIGN



PROPOSED TRSD LIFT STATION DESIGN





PHASE I - NEW TRSD WRF VS. MIAMI WRF

COMPARING ALTERNATIVES: TREATMENT

	NEW TRSD WRF	MIAMI WRF	NOTES
WRF CONSTRUCTION	NEW CONSTRUCTION	IMPROVEMENTS	• NOT ENOUGH INITIAL CAPACITY TO TREAT ALL PHASE I FLOWS • ACTUAL CONDITIONS UNKNOWN
EFFLUENT QUALITY	CLASS A+	CLASS A+	
CAPACITY BUY-IN	NONE	225,050 GALLONS	• ONE TIME PURCHASE APPROXIMATELY $1.2MILLION
O&M[1] RESERVE	NONE	2 MONTHS	• UP FRONT PAYMENT FOR O&M

OTHER CONSIDERATIONS

MIAMI ACTUAL O&M COSTS UNKNOWN

- ANALYSIS IS BASED SOLELY ON AN ENGINEERS ESTIMATE OF O&M COST

IGA TERM NEGOTIATION NOT SUCCESSFUL

- 60+ MEETINGS, MOSTLY WITH MIAMI
- TRSD TERMS NOT APPROPRIATELY CONSIDERED
- INABILITY TO GAIN UNDERSTANDING OF TRSD CUSTOMER FUTURE RATES (RAISED RATES AT LEAST TWICE SINCE XXXX)

[1]*O&M: OPERATIONS & MAINTENANCE*

PHASE I - NEW TRSD WRF VS. MIAMI WRF

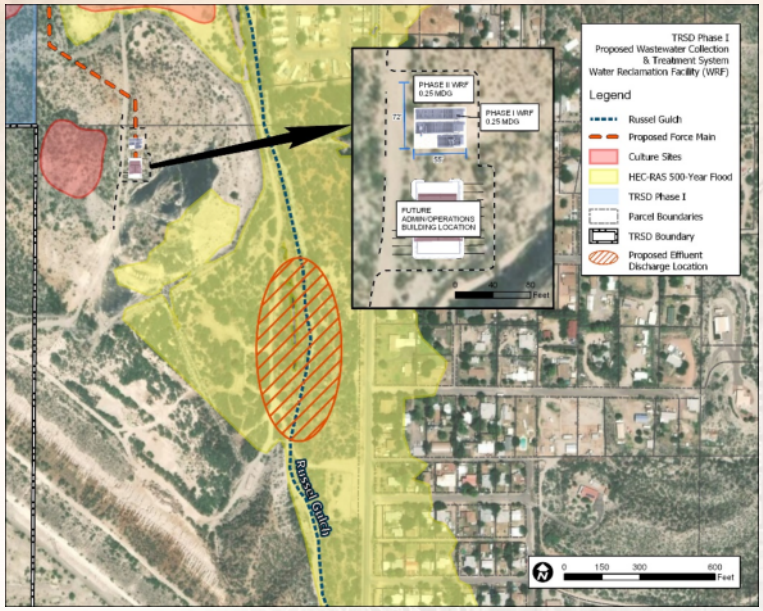
COMPARING ALTERNATIVES: TREATMENT (CONTINUED)

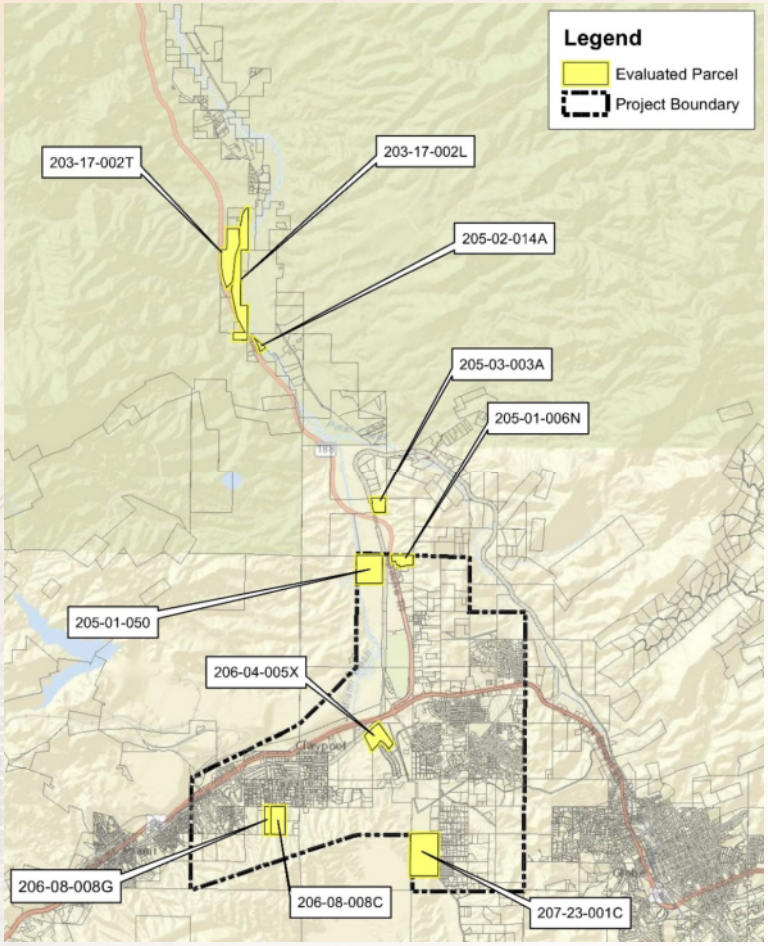
CONSIDERATIONS FOR TRSD WRF PROCESS SELECTION

- SITE LOCATIONS
- LAYOUT CONFIGURATIONS
- TREATMENT PROCESS (COST / SIZE / FOOTPRINT)

TOTAL PRESENT WORTH COMPARISON

SBR
$11,611,406
EAAS
$11,080,519
CSR
$11,334,294
MBR
$10,692,213





[1]*SBR:* SEQUENCING BATCH REACTORS
[2]*EAAS:* EXTENDED AERATION ACTIVATE SLUDGE
[3]*CSR:* CONTINUOUSLY SEQUENCING REACTOR
[4]*MBR:* MEMBRANE BIOREACTOR

PHASE I - NEW TRSD WRF VS. MIAMI WRF

COMPARING ALTERNATIVES: PROJECT COSTS

LIFE CYCLE COSTS (OVER 20 YEARS)

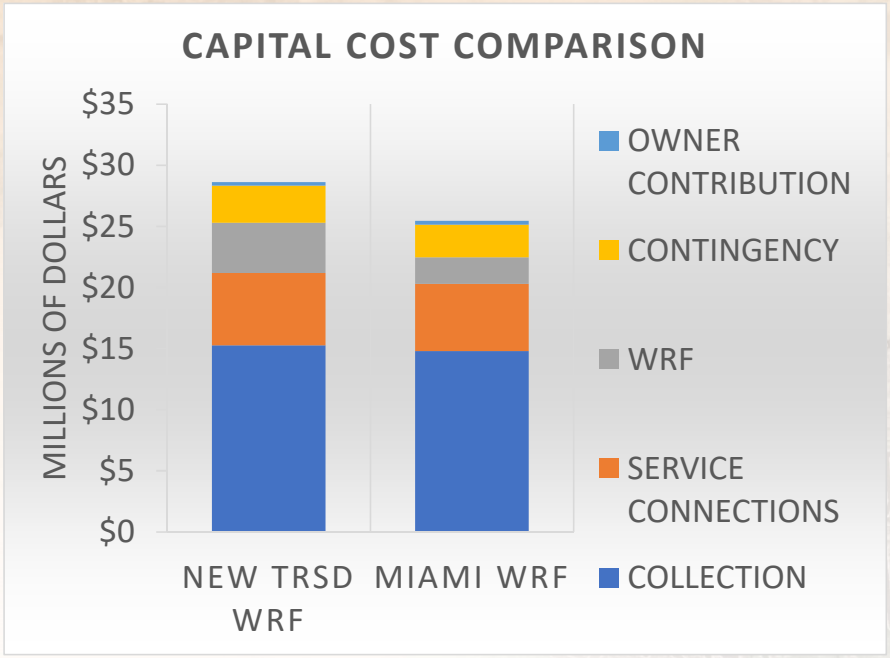
- CAPITAL COSTS
- OPERATIONS & MAINTENANCE (O&M)
- SHORT-LIVED ASSET RESERVE (SLAR)
- SALVAGE VALUE

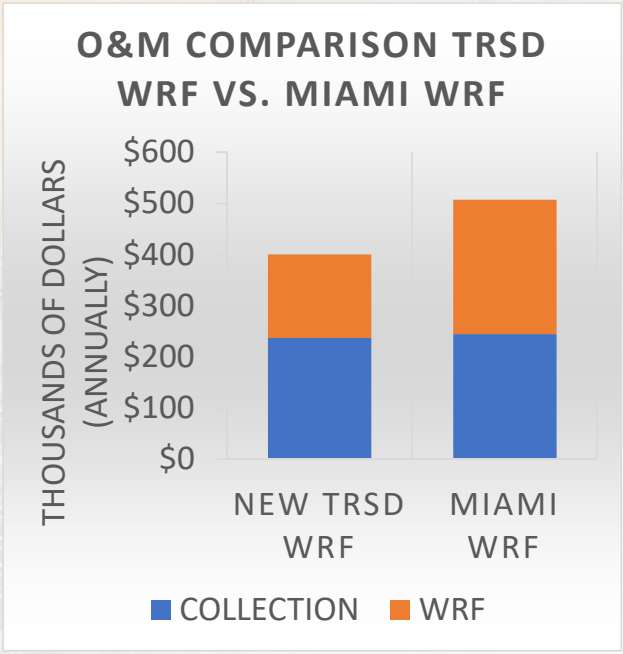
MIAMI WRF
$27,687,000

VS.

SELECTED ALTERNATIVE

NEW TRSD WRF
$26,549,000





PHASE I - NEW TRSD WRF VS. MIAMI WRF

COMPARING ALTERNATIVES: ADDITIONAL VALUE ENGINEERING

TREATMENT COSTS

AN ADDITIONAL LOOK AT TREATMENT COMPARISON FOR DIRECT CONSTRUCTION & NON-CONSTRUCTION FOR PHASES I & II WAS ANALYZED (ASSUMING THAT WHERE EVER PHASE I FLOWS WERE SENT, THEN PHASE II WILL FOLLOW TO SAME LOCATION). THE RESULTS SHOWED A $2.3 MILLION SAVINGS TAKING FLOWS TO THE NEW TRSD WRF.

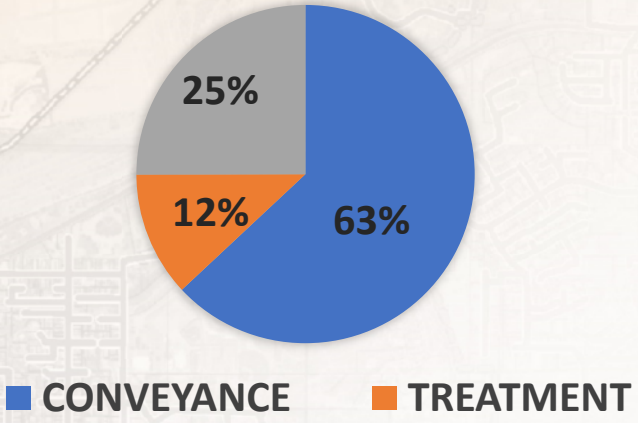
O&M COSTS

SIMILARLY, THE O&M COSTS WERE ANALYZED WITH THE SAME ASSUMPTIONS AND RESULTS INDICATED THAT TRSD CUSTOMER RATES WOULD BE AN ADDITIONAL $10.00/EDU MORE PER MONTH IF FLOWS WERE SENT TO MIAMI.

NOTE

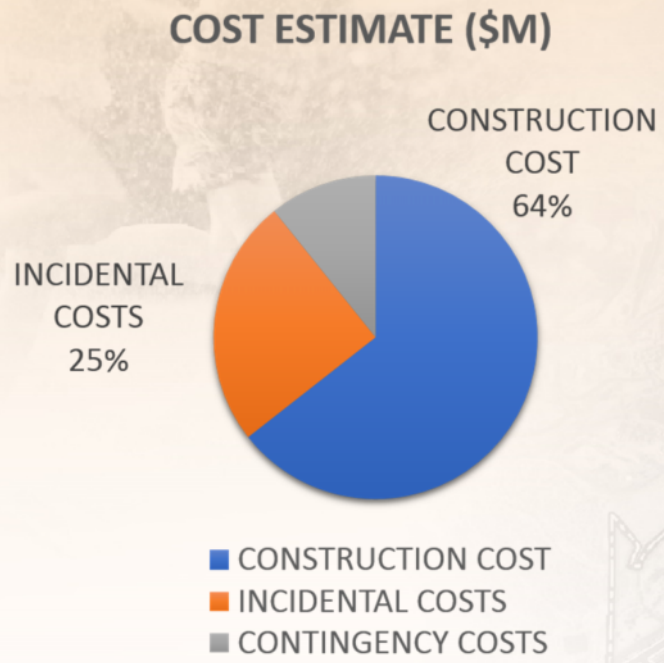
88% OF TOTAL PROJECT COSTS ARE PIPES IN THE GROUND

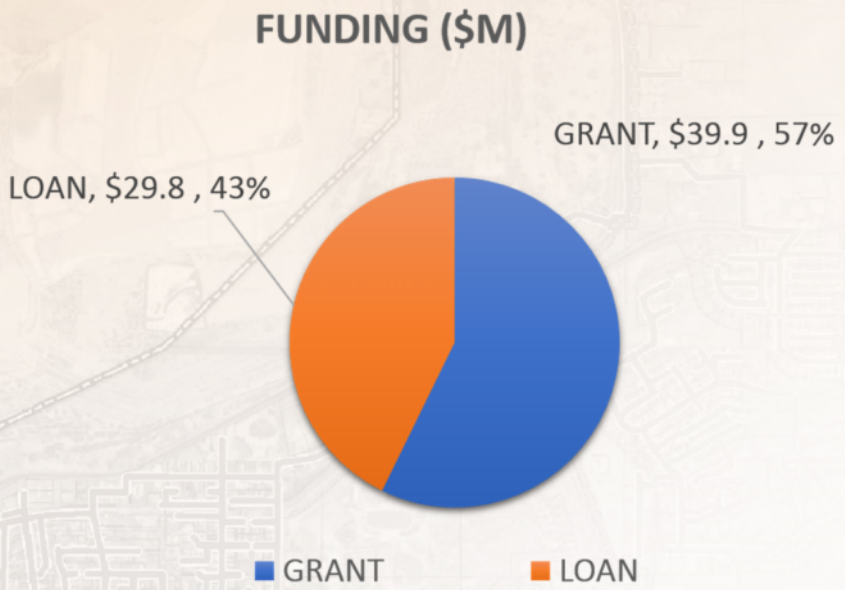
PROJECT COST BY CATEGORY (ALL PHASES)



TOTAL PROJECT COST ESTIMATE AND FUNDING

TOTAL COST ESTIMATE	*PHASE I*	*PHASE II*	*PHASE III*
$69,755,000	$28,230,000	$20,482,000	$21,043,000





PHASE I - NEW TRSD WRF

USDA-RD FUNDING

WOULD TRSD RECEIVE 80% GRANT IF FLOWS WERE SENT TO MIAMI OR GLOBE?

NO.

IF FLOWS WERE SENT TO MIAMI, TRSD WOULD SEE A SAVINGS ON THE LOAN, AND THEREBY A SAVINGS IN THE CUSTOMER RATES?

NO. BASED ON THE WAY USDA-RD APPROACHED FUNDING THE PROJECT, THE LOAN AMOUNT WOULD NOT CHANGE, BUT THE GRANT FUNDING WOULD BE REDUCED BY ANY DIFFERENCE IN COST

RATE CALCULATIONS & SCHEDULE

HOW DO WE KNOW THE WASTEWATER PLANT COST ESTIMATE IS ADEQUATE?

ESTIMATED MONTHLY RATE PORTION AMOUNTS

COST DESCRIPTION	PHASE I	PHASE II	PHASE III
ANNUAL DEBT PAYMENT*	$483,000	$387,000	$396,000
O&M ADMINISTRATION**	$262,374	$284,950	$295,450
O&M OPERATIONS**	$107,850	$124,300	$147,050

*PHASE I ANNUAL DEBT PAYMENT AMOUNT FROM USDA-RD LOC

**CUMULATIVE BY PHASE

MONTHLY COST PER EDU BY PHASE

RATE ITEM	AMOUNT/FACTOR	PHASE I	PHASE II	PHASE III
ANNUAL DEBT PAYMENT	$483,000	$32	$0	$0
MONTHLY DEBT PAYMENT EDUS	1,244			
ANNUAL O&M ADMIN.*	$262,374	$7	$7	$7
O&M ADMIN. EDUS	3,313			
ANNUAL O&M OPERATIONS	$107,850	$8	$0	$0
ANNUAL O&M OPERATIONS EDUS	1,139			
TOTAL MONTHLY PAYMENT AFTER PHASE I COMPLETION		$47	$7	$7
TOTAL MONTHLY PAYMENT AFTER PHASE II COMPLETION		$43	$43	$7
TOTAL MONTHLY PAYMENT AFTER PHASE III COMPLETION		$47	$47	$47

*AD-VALOREM TAX ASSESSED TO TOTAL PROJECT EDUS

COMPLETION PROJECTIONS & RATE IMPLEMENTATION

2021

2023

2026

FREQUENTLY ANSWERED QUESTION (FAQ)

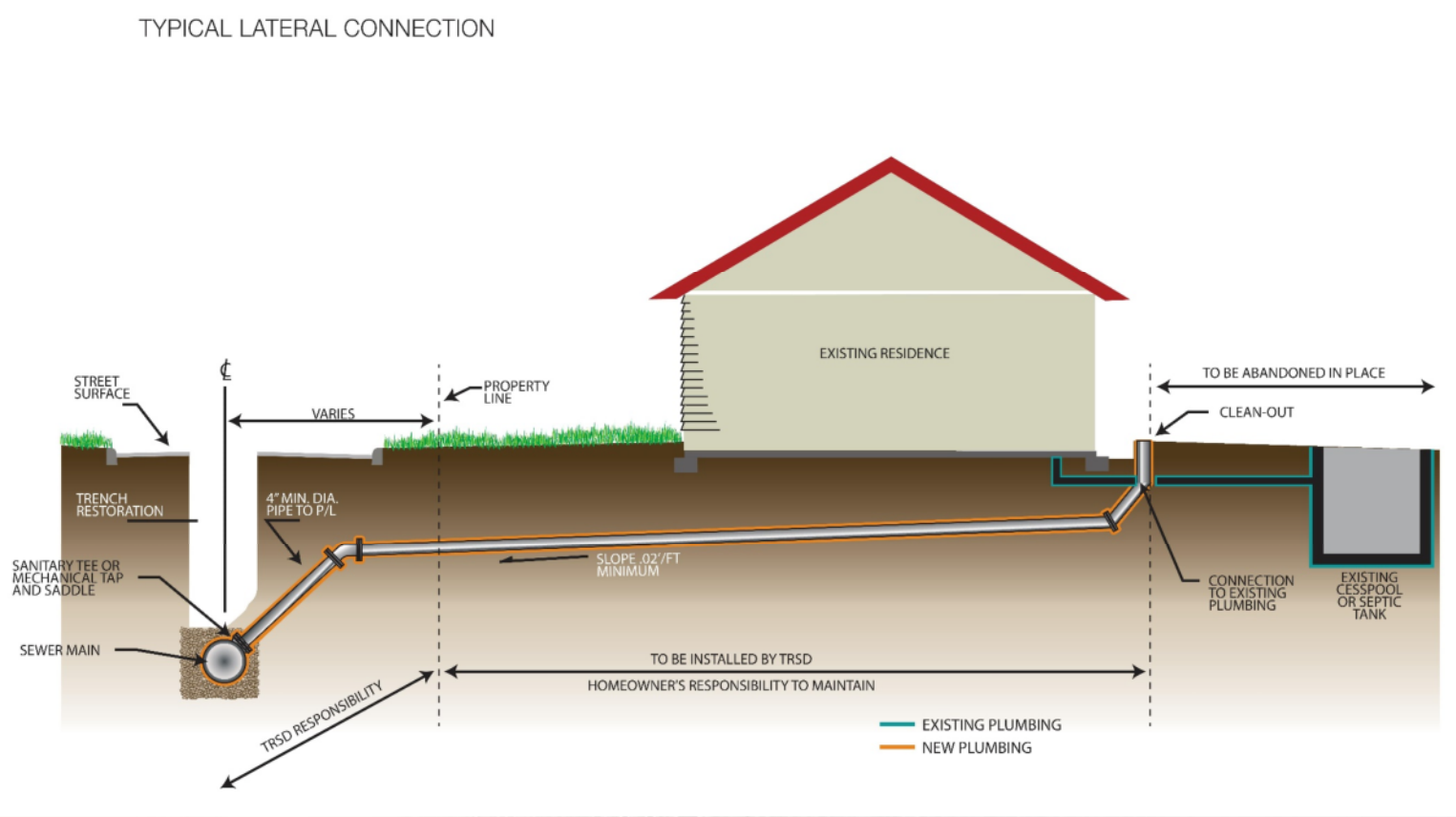
HOW DO WE KNOW THE WASTEWATER PLANT COST ESTIMATE IS ADEQUATE?

1. PACE HAS WORKED ON SEVEN DIFFERENT TREATMENT FACILITIES THROUGHOUT RURAL AZ AND UNDERSTAND COST
2. COST ESTIMATE WAS REVIEWED IN DETAIL BY THE USDA-RD ENGINEER
3. CONFIRMED COST WITH A CONTRACTOR IN CALIFORNIA THAT IS INSTALLING A 250K GPD PLANT
4. EVEN IF THE COST ARE OFF 10 TO 20 % WILL NOT EFFECT THE LIFE CYCLE COST OVERALL RESULTS

FREQUENTLY ANSWERED QUESTION (FAQ)

WHAT WORK WILL BE COMPLETED AT THE RESIDENCES?

100% GRANT FUNDED



FREQUENTLY ANSWERED QUESTION (FAQ)

WHAT IS THE WRF GOING TO LOOK LIKE?

VIEW THE ANIMATION

FREQUENTLY ANSWERED QUESTION (FAQ)

WHAT ARE THE RISKS ASSOCIATED WITH NOT PROCEEDING?

1. 6 YEAR PLANNING EFFORT MAY NEED TO RESTART
2. LOSE FUNDING
3. HOMES CAN BE RED TAGGED (UNINHABITABLE)
4. 300-400 HOMES ALREADY ABANDONED DUE TO RED-TAG (PER JAKE GARRETT AT GILA COUNTY)
5. SIGNIFICANT UP-FRONT OUT-OF-POCKET COSTS FOR RESIDENTS FOR REPLACING/REPAIRING SYSTEMS
6. NOT FEASIBLE FOR MANY TO GET INTO COMPLIANCE WITHOUT REGIONAL WASTEWATER SYSTEM

FREQUENTLY ANSWERED QUESTION (FAQ)

WILL I HAVE TO PAY IF I AM NOT IN A SERVICE AREA?

1. **WHO IS IMPACTED?**

   THOSE THAT THE LINE IS WITHIN APPROXIMATELY 300 LF OF THE PIPELINE

FREQUENTLY ANSWERED QUESTION (FAQ)

WHAT IS THE TRSD BOARD ASKING?

SUPPORT FROM TRSD RESIDENTS AND BUSINESS TO ACQUIRE DEBT IN THE AMOUNT OF $32 MILLION TO COMPLETE THIS WASTEWATER COLLECTION AND TREATMENT PROJECT.