# Appendix A

# FBRWS Phase III Project Descriptions Programmatic Environmental Assessment

#### **Introduction**

The Three Affiliated Tribes through the FBRWS has completed the Phase I and Phase II Fort Berthold Reservation rural water system projects and is proposing to expand the FBRWS with the completion of Phase III projects and activities as identified in Appendix C. Phase III projects and activities have three major components; continued build-out of the FBRWS project as identified in the 2021 FBRWS Master Plan, replacement and upgrades to existing facilities and the identification of future FBRWS O&M activities. Future routine O&M activities are identified in Appendix D. Appendix C will cover new FBRWS construction and the replacement and upgrades to existing FBRWS facilities. Reclamation replacement, additions and extraordinary (RAX) maintenance activities are undertaken under the FBRWS O&M program, but they are not considered "routine" O&M activities, so they are not described in Appendix D. However, they are described in Appendix C since they are facility replacement or upgrade activities more closely associated with construction.

Table 1 shows the summarized list of Phase III new construction as well as the replacement and upgrades to existing FBRWS facilities. FBRWS has essentially exhausted the original authorized construction ceiling of \$70 million (Phase II construction) and is now moving on to Phase III of the project where new construction or replacing/upgrading existing project features will primarily be funded from other sources other than DWRA authorized construction funding. Most of the new funding will come from Bipartisan Infrastructure Legislation (BIL) Aging Infrastructure funding with lesser amounts coming from other federal agencies, Reclamation RAX funding, or Three Affiliated Tribes (TAT) contributions. The Three Affiliated Tribes is seeking congressional authorization to increase the FBRWS construction ceiling, so a few high priority projects are identified in the Phase III projects list if the construction ceiling increase does get approved. The projects listed in Table 1 are listed by funding source for convenience. Projects that have already secured funding are obviously more likely to completed than other projects which are still in the planning phase and funding has not been secured.

Project	Segment Location	Type of Project
BIL Aging Infrastructure Projects		
Construct Replacement Mandaree WTP and Increase Capacity of Existing Intakes	Mandaree	Construction & Upgrades
Installation of Backup Power Generators at FBRWS Facilities	Reservation Wide	Construction
Mandaree Intake Landslide Prevention Project	Mandaree	Construction
Mandaree Intake Access Road Improvements Project	Mandaree	Upgrades
Mandaree WTP Intake Slope Tube Protection Project	Mandaree	Repairs
Construct Replacement FBRWS Administration and Maintenance Shop	Four Bears	Construction

Table 1 – FBRWS Phase III Construction, Replacements and Upgrades Project List

Project	Segment Location	Type of Project
Construct Maintenance Storage Building for Four Bears Service Area	Four Bears	Construction
Construct Booster Station and Pipeline to serve the Little Shell Water System	New Town	Construction
Construct Booster Station and Pipeline to serve the White Shield Water	White Shield	Construction
Replace Four Bears WTP and Intake Equipment and Pumps to Increase Capacity to 1,000 gpm	Four Bears	Upgrades
Construct Replacement Dragswolf Ground Storage Tank	Four Bears	Construction
Construct Four Storage Buildings in Service Areas	Mandaree, Parshall- Lucky Mound, Twin Buttes, and White Shield	Construction
EPRWS RAY Maintananca Braiasta		
Replace Primary & Secondary Intake Screens	Four Bears, Mandaree, White Shield, and Twin Buttes	Upgrades
Four Bears West Elevated Storage Tank Recoating Project	Four Bears	Repairs
Demolition of Abandoned Twin Buttes Storage Tanks	Twin Buttes	Demolition
Demolition of Abandoned Old Twin Buttes WTP	Twin Buttes	Demolition
FBRWS Subsequent User and System Improvements Contract		
New Water Service Connections within Existing Distribution System Areas	Reservation Wide	Construction
New Town Emergency Operations Center Water Service Connection	New Town	Construction
Four Bears BIA 2 Subdivision	Four Bears	Construction
Four Bears Casino Hotel Addition	Four Bears	Construction
Bakersfield East Housing Project	Four Bears	Construction
Water Meter Installation Project in West Bakersfield Housing Area	Four Bears	Construction
Cora Oil Pad FBRWS Pipeline Relocation	New Town	Construction
EBRWS Temporary Intake Industrial Water Sales Projects		
Van Hook Bay Temporary Lake Sakakawea Intake	Parshall-Lucky Mound	Temporary Installation
Other Temporary Lake Sakakawea Intakes yet to be Identified	Reservation Wide	Temporary Installation
Indian Health Service Funded FBRWS Projects		Develop
Installation of Community Housing Meters and Distribution Master Meters Reservation-wide	Reservation Wide	Replacement and Repairs
Installation of WTP Disinfection By-Products (DBP) Treatment System Upgrades	Four Bears, Mandaree, Twin Buttes and White Shield	Upgrades
FBRWS Hydrant and Cleanout replacements and Repairs	Reservation Wide	Replacement and Repairs

Project	Segment Location	Type of Project
White Shield Air Release Valves Replacement and Repairs	White Shield	Replacement and Repairs
Awa Hu Village Low Pressure Resolution Project	White Shield	Construction
FBRWS Mandaree Sludge Pond Discharge Project	Mandaree	Construction
FBRWS Water Service Line Extensions through IHS MEGA Contract	Reservation Wide	Construction
Projects Constructed under a New FBRWS Construction Ceiling		
Parshall Area 3 & 4 Project	Parshall - Lucky Mound	Construction
White Shield Area 3 & 4 Project	White Shield	Construction
Other Projects in FBRWS Master Plan	Reservation Wide	Construction
Projects Funded by TAT		
Water Main Renovation in White Shield (Old School Area)	White Shield	Construction
Mandaree Community Master Plan	Mandaree	Construction
Twin Buttes Community Master Plan	Twin Buttes	Construction
New Water Storage Reservoir Serving the White Shield Community	White Shield	Construction
New Water Storage Reservoir Serving the Twin Buttes Community	White Shield	Construction
New Water Storage Reservoir Serving the Elbowoods Memorial Health Center Campus	New Town	Construction

## Funded and Approved Bipartisan Infrastructure Legislation (BIL) Aging Infrastructure (AI) Projects

**Construct Replacement Mandaree WTP and Increase Capacity of Existing Intakes** - The existing Mandaree WTP currently operates at near capacity and a future water demand analysis has shown that the capacity of the WTP needs to be increased to 1,000 gpm. An engineering analysis of WTP alternatives was conducted and it was determined that the best alternative was to construct a new WTP. Water demands in the FBRWS Mandaree water service area have increased significantly in the last few years due oil and economic development, population increase and higher associated water use. The existing Mandaree WTP operates at near capacity and the FBRWS has put a moratorium on installing new water connections in the Mandaree area except for domestic connections. Engineering analysis indicates that the Mandaree WTP capacity should be increased from 500 gpm to 1,000 gpm to meet current and future water demands. The existing WTP building is land-locked and expanding the footprint of the building is not an option. The membrane filters have also reached their 10-year service life so new higher capacity membranes are needed. Estimated cost is \$20,100,000

**Installation of Backup Power Generators at FBRWS Facilities** - Installation of 24 Backup Power Generators at FBRWS Facilities that require a backup power source to ensure continued delivery of drinking water to residents of the Fort Berthold reservation during power outages. Backup generators are needed at key FBRWS facilities to assure water system reliability. There are 24 sites/facilities that need backup power sources. The 24 sites include one WTP, four WTP intakes, five booster stations, ten tanks and four other sites. The Backup Generator project has already completed the solicitation process. Estimated cost is \$2,480,000.

**Mandaree Intake Landslide Prevention Project** - The Mandaree intake site had a major landslide event in 2019 and the geotechnical consultant recommended that additional slope protection measures be installed including buried H-pile wall and tie-backs to protect the intake site. FBRW installed landslide protection measures (buried H-piles) prior to the 2019 landslide event which protected the two intake pump buildings but did not protect the raw water transmission lines which were damaged and had to be replaced. This landslide protection project would protect these raw water lines from further damage and portions of the access road if additional landslides would occur. Estimated cost of \$1,000,000

**Mandaree Intake Access Road Improvements Project** - The Mandaree intake site had a major landslide event in 2019 which severely damaged the intake access road to the point that the intake was inaccessible until temporary repairs were completed. This project would construct a new access road assuring proper road grades/ surfacing, road ditches and cross drainage. The Mandaree intake site also needs to complete an additional landslide prevention project to further protect the intake site (see BIL Aging Infrastructure funding application). Ideally, the landslide protection project would be completed prior or in conjunction with the Access Road Improvements Project because the permanent improvements to the access road could be damaged by another landslide without the landslide prevention project being completed. Estimated cost is \$1,130,000.

**Mandaree WTP Intake Slope Tube Protection Project** - A major landslide event at the Mandaree WTP intake site in the fall of 2019 caused significant damage to the rip rap that protects the three intake slope tubes. Temporary repairs to the rip rap were made after the landslide event to prevent slope tubes from ice and freezing damage in the upcoming winter. Further damage has since been caused by wave action during record high Lake Sakakawea water levels. The project would provide permanent repairs to the intake slope tube cover including installation of cover material (insulation from freezing), geotechnical material, gravel bedding and rip rap. Mandaree WTP Intake Slope Tube Protection Project could be broken into two phases if some BIL funding flexibility is needed. The first phase would be the purchase and delivery of rip rap material to the intake site from an out-of-state source. The second phase would be the installation of steel-piles and intake slope tube protective cover (earthen cover material, geotechnical material, gravel bedding and rip rap). The project will require a Corps of Engineer permit which typically takes 9-months to process. Therefore, the project would not start until 2024. Estimates cost is \$4,590,000.

**Construct Replacement FBRWS Administration and Maintenance Shop Building** - The current FBRWS office and shop building in Four Bears is inadequate in size and the current location (middle of Tribal Headquarters area) does not allow room to expand that building or the yard area to store equipment and O&M repair parts. The best solution is to abandon the current building and build a new building out of town in a more rural area with adequate space. The FBRWS current office and maintenance shop building located in Four Bears was built over 20 years ago and only has office space for about six staff, one shop bay and no indoor storage for equipment and spare pipe/parts. FBRW currently has a dozen staff who work out of the Four Bears office. They also have inadequate indoor shop space to store and maintain vehicles and heavy equipment. All replacement pipe and parts are stored outside. The current office and maintenance shop building is land-locked and has no space to expand so the construction of a new building on a new building site is the best alternative. Estimated cost is \$8,630,000.

**Construct Maintenance Storage Building for Four Bears Service Area** - FBRW does not have a maintenance storage building located adjacent to the existing WTP in Four Bears water service area on the reservation. This storage building is needed to store repair parts and equipment out of the weather. The FBRWS currently stores pipe, replacement parts, fueled equipment, chemicals, and fuel in WTPs because no other storage is available. The storage of these types of items in a WTP is a known potential contamination risk and needs to be addressed. The limited floor space in WTPs may also be needed to expand treatment process equipment rather than be used for storage in the future. Estimated cost is \$1,770,000.

**Construct Booster Station and Pipeline to serve the Little Shell Water System** - The FBRWS for economic reasons wants to serve the Little Shell area on the reservation from the Parshall Regional WTP. A booster station and pipeline would need to be constructed so the Parshall Regional WTP can hydraulically serve the Little Shell water system. The FBRWS has six separate water service areas; four service areas are served by FBRWS WTPs and two service areas are served from purchased water. FBRWS currently buys water from the city of New Town to serve the Little Shell service area. The cost of this water has increased dramatically in recent years so TAT and the FBRWS have started negotiating with the city of Parshall to purchase the city owned Parshall Regional WTP and use that source to serve the Little Shell service area. An economic analysis confirms that FBRWS purchasing the Regional WTP and serving the Little Shell water system will save the FBRWS project significant future construction and O&M costs. A booster station and pipeline would need to be constructed so the Regional WTP can hydraulically serve the Little Shell water system. Estimated cost is \$1,750,000.

**Construct Booster Station and Pipeline to serve the White Shield Water System** - The FBRWS for economic reasons wants to serve the White Shield area on the reservation from the Parshall Regional WTP. A booster station and pipeline would need to be constructed so the Parshall Regional WTP can hydraulically serve the White Shield water system. FBRWS currently serves the White Shield service area from the White Shield WTP. The WTP is over 20 years old and needs significant renovations and has inadequate water treatment capacity to serve the future needs of the White Shield service area. An economic analysis confirms that FBRWS purchasing the Parshall Regional WTP from the city of Parshall and serving the White Shield service area from the that WTP will save the FBRWS project significant future construction and O&M costs. TAT and the FBRWS have started negotiating with the city of Parshall to purchase the city owned Parshall Regional WTP. A booster station and pipeline would need to be constructed so the Regional WTP can hydraulically serve the White Shield water system. Estimated cost is \$850,000.

**Replace Four Bears WTP and Intake Equipment and Pumps to Increase Capacity to 1,000 gpm** -The existing Four Bears WTP operates at near capacity and engineering analysis indicates that the WTP capacity should be increased 1,000 gpm to meet future water demands. The existing Four Bears WTP operates at near capacity and water demands in the FBRWS Four Bears water service area have increased significantly in the last few years due to oil industry driven economic growth. An engineering analysis indicates that the WTP capacity should be increased to 1,000 gpm to meet future water demands. The WTPs current membrane filters are over 10-years old and have reached their service life so replacing the membranes with higher capacity units would increase the WTP capacity to 1,000 gpm. The WTP high service pumps and intake submersible pumps would also need to be upgraded to 1,000 gpm. Estimated cost is \$1,500,000. **Construct Replacement Four Bears Ground Storage Tank** - The existing Dragswolf ground storage tank is inadequate in size (300,000 gallons) to meet the Four Bears service area future water demands in terms of volume (emergency storage) and height (water system pressure requirements). The tank was also damaged in a windstorm so permanent repairs are needed, so given the existing deficiencies of the tank, replacing the existing tank with a new hydraulically higher tank with 500,000 gallons of storage is the best alternative. The existing Dragswolf ground storage tank was damaged in a windstorm in which a portion of the tank roof was tore off. FBRWS performed temporary repairs (reattached damaged roof panels) to the tank, but permanent repairs (replacing roof panels) were not made given that the tank was undersized and hydraulically inadequate to serve future water needs in the Four Bears water service area. The existing Dragswolf tank also had access road issues so construction of a replacement tank at a new site would also resolve the tank access issues. Estimated cost is \$3,500,000.

**Construct Storage Buildings at Mandaree, Parshall-Lucky Mound, Twin Buttes, and White Shield Service Areas** - FBRW does not have maintenance storage buildings strategically located in these four water system service areas on the reservation. These storage buildings are needed to store repair parts and equipment out of the weather in these areas of the reservation which also reduces response time during emergencies. The FBRWS currently stores pipe, replacement parts, fueled equipment, chemicals, and fuel in WTPs because no other storage is available. The storage of these types of items in a WTP is a known potential contamination risk and needs to be addressed. The limited floor space in WTPs may also be needed to expand treatment process equipment rather than be used for storage in the future. Estimated cost is \$7,080,000.

## FBRWS Replacements, Additions and Extraordinary (RAX) Maintenance Projects

**Replace Primary & Secondary Intake Screens at Four Bears, Mandaree, White Shield, Twin Buttes** - Existing WTP intake screens have exceeded their expected service life and need to be replaced. Estimated cost of work is \$285,000.

**Four Bears West Elevated Storage Tank Recoating Project** - A recent EPA Sanitary Survey and a 2020 FBRWS storage tank inspections report revealed that the Four Bears West Elevation Storage Tank has significant coating issues which need to be repaired before it affects the structural (corrosion) integrity of the tank. The work would involve removing the existing tank interior coating system by sandblasting and recoating the tank interior. Estimated cost of the work is \$430,000.

**Demolition of Abandoned Twin Buttes Storage Tanks** – The Twin Buttes community on the Fort Berthold reservation has two existing 20,000-gallon fiberglass water storage tanks which are buried on a hill above the community. These tanks were replaced by a 206,000-gallon above ground welded steel standpipe storage tank in 2008 and were subsequently put out of service by the FBRWS. The two tanks are no longer needed and pose a potential health and safety liability to the FBRWS so should be removed and the tank site restored.

**Demolition of Abandoned Old Twin Buttes WTP** – FBRW constructed a new Twin Buttes WTP in 2020 and subsequentially abandoned the old Twin Buttes WTP. The old WTP is no longer needed and poses health and safety liabilities for the FBRWS so needs to be demolished.

Demolition of the old Twin Buttes WTP includes disposal of the WTP equipment and any remaining contents of the building, teardown of the building (including foundation and buried concrete clearwell) and hauling all materials off site to an approved disposal facility. Also remove sludge from the waste ponds and dispose sludge off-site to an approved disposal facility. Existing onsite buried pipelines will be cut and capped as necessary and abandoned in place. Reclaim WTP building and sludge ponds by backfilling to original ground level, topsoiling and seeding as necessary.

## FBRWS Projects using the Subsequent User and System Improvements Contract

The Subsequent User and System Improvements (SU&SI) Contract generally has two purposes: the installation of water service connections and upgrades and additions to existing water system distribution systems, particularly in tribal communities. The subsequent user portion of the SU&SI contract includes the installation of additional water service connections in areas where the FBRWS distribution system has already been constructed. FBRWS has several hundred water service connection applicants which connections would be installed under this contract. These water service connections generally include tapping the nearest distribution pipeline, the installation of a pipeline ranging in length from a few hundred feet to a couple of miles, a meter pit/meter as the point of delivery and pipeline from the meter to the water service applicants house, business, or other facility. Some water service connections are also for livestock watering, so hydrants are installed as the end point of use. The location of these individual water service connects will be throughout the reservation in the vicinity of the FBRWS distribution pipelines. This SU&SI work also includes acquiring easements and any NEPA or NHPA related work prior to construction. Some of these connections will be installed by an Indian Health Service (IHS) contract which is funded by an IHS program to provide water and septic systems to Native American owned homes. Given that the FBRWS has reach its DWRA construction ceiling, other connections will be funded by either TAT or the water service connection applicant.

The system Improvements portion of the SU&SI contract includes all other water system distribution work including the replacement and relocation of existing pipelines and installing new pipelines generally located in the existing reservation communities or new housing areas. The SU&SI contract is used for water system improvements generally under \$500,000. Projects over \$500,000 are competitively bid out as separate construction contracts. The work also includes the installation of water system related appurtenances like fire hydrants, flushing valves, air-relief valves, control valves and master meters. The following are currently planned projects which will use the SU&SI contract to install water system infrastructure. Given that the FBRWS has reach its DWRA construction ceiling, water system work within in tribal communities or housing areas will be funded by TAT. FBRWS pipeline relocations at the request of private companies will be pay by the requesting entity.

**New Town Emergency Operations Center Water Service Connection** – Installation of 2,050 feet of 8-inch PVC to provide a water service connection to the New Town Emergency Operations Center which north of the City of New Town. Water service connection includes Type 2 Master meter.

**Four Bears BIA 2 Subdivision** – The new Four Bears BIA 2 Subdivision is located 3 miles west of Four Bears just south of the intersection of Highway 23 and BIA 2. Four Bears Segment Is planning for 23 lots in the BIA 2 Subdivision with each housing unit requiring a water service connection. The existing FBRWS 3-inch PVC water line will be replaced by a 4-inch PVC water

line to accommodate the subdivision water usage needs. The project will include the installation of approximately 4,000 feet of 4-inch PVC pipeline, water service lines and curb stops for the 23 homes including meter pits with meters.

**Four Bears Casino Hotel Addition** – TAT is planning to construct a seven-story addition to the existing Four Bears Casino. This work will also include the demolition of some of the existing hotel to make room for the seven-story addition while other parts of the casino will be rehabilitated. The casino has several FBRWS water service connections which will need to be relocated and resized depending on casino complex water demands and flow requirements.

**Bakersfield East Housing Project** - The new Bakersfield East Housing Projects is located in Four Bears just east of the existing Bakersfield West housing area. Four Bears Segment Is planning for approximately 20 homes which will require a water system to service the planned homes. The water system will include a yet to be determined amount of 4-inch PVC pipe, approximately 20 curb stops, water service lines, and meters pits with meters.

Water Meter Installation Project in West Bakersfield Housing Area – The West Bakersfield housing area located in the Four Bears Segment includes approximately 20 homes which are not metered and don't have backflow prevention devices installed on their water service connections. Water service connections without backflow prevention pose a serious water contamination risk to the water system which could result in serious water quality health risks. FBRW will install meter pits with meters and backflow protection on each West Bakersfield Housing Area water service connection.

**Cora Oil Pad FBRWS Pipeline Relocation** - Marathon Oil Company is expanding their Cora oil pad located in the New Town Segment and has requested that FBRWS relocate an existing 2-inch PVC pipeline. The work will include installing 1,860 feet of 2-inch PVC pipeline around the expanded oil pad and abandoning in place the existing pipeline.

## FBRWS Temporary Intake Industrial Water Sales Projects

The TAT and FBRW has developed several temporary Lake Sakakawea intake sites with the primary purpose of selling raw water to the oil industry. TAT will continue to develop other industrial water intake sites located adjacent to oil well development areas on the reservation as long as oil development (well drilling and fracking) continues on the reservation. A temporary intake site typically includes one to three diesel-power trailer-mounted pumps located in close proximity to the water below the 1854 elevation (mean sea level) which is the limits of the US Army Corps of Engineers jurisdictional responsibility. Each pump has an intake screen located in the lake with a pipeline connected to the pump. The intake screens are designed to meet US Army Corps of Engineers and US Fish and Wildlife Service requirements for screen spacing and entrance velocity criteria to protect fish. TAT/FBRW will use lay-flat hose to convey water from the pump up out of the lake area to an existing temporary storage reservoir or additional lay-flat hose transmission line. There may be an existing unimproved (two-wheeled track) road/trail to access the temporary intake site. Depending on the condition of that road/trail, additional improvements may be needed to provide reliable access to the intake site. Each intake site will need a US Army Corps of Engineers 404 permit and easement so TAT/FBRW can use and occupy the intake site.

**Deep Water Bay Temporary Lake Sakakawea Intake** – This temporary intake site withdraws water out of Lake Sakakawea in the Deep Water Bay area in the Parshall – Lucky-Mound Segment. There is an existing two-wheel trail that will provide access to the intake site. Lake Sakakawea water will be conveyed via lay-flat hose to a temporary ground storage tank and then conveyed to oil industry points of end use.

#### Indian Health Service Funded FBRWS Projects

Installation of Community Housing Meters and Distribution Master Meters Reservation-wide – This project would Install meters at unmetered community housing that are indirectly served by the FBRWS on the Fort Berthold reservation. Unmetered houses are primarily located in the communities of Four Bears, Mandaree, Twin Buttes and White Shield. The project would also include a few rural subdivisions with unmetered homes. The IHS policy is to only provide funding for homes occupied by Native Americans so these metering project does not cover nonnative homes and commercial entities regardless of ownership. The FBRWS actively started construction in the late 1990s focusing early projects on water treatment capacity to service water demands in existing Fort Berthold tribal communities which had unmetered water service connections to the existing homes, tribal facilities, and other entities. These unmetered connections under this project would now be metered by installing meter pits outside of the house, business or facility. The project would also include installing master meters at strategic locations in the existing FBRWS distribution system to enhance water accounting, locating water system leaks, identifying unauthorized connections and excessive use. The project is included as four separate subprojects on the IHS Sanitary Deficiency System (SDS) list for future funding. Estimated cost is \$15,545,000.

**FBRWS Four Bears, Mandaree Twin Buttes and White Shield WTP Disinfection By-Products (DBP) Treatment System Upgrades** – The IHS through a grant with the EPA Drinking Water Program is funding DBP studies at the four FBRWS WTPs to determine the best treatment methods for reducing DBP formation in the water system which is an existing known health concern and regulated by the EPA. Once the best DBP reduction technology is identified, WTP projects will be developed to modify each existing FBRWS WTP to accommodate the new equipment. This could involve major WTP building additions and associated water piping changes. The project is included as four separate DBP projects on the IHS SDS list for future funding as shown below.

- 1. Four Bears estimated cost \$3,585,000
- 2. Mandaree estimated cost \$11,990,000
- 3. Twin Buttes estimated cost \$3,805,000
- 4. White Shield estimated cost \$4,070,000

**FBRWS Hydrant and Cleanout Repairs** - FBRW has completed an inventory of the existing FBRWS hydrants and cleanouts and identified several hydrants and cleanouts which need to be replaced or repaired. The hydrants and cleanouts need to be operational because they are used for the reservation-wide flushing program to address water quality compliance issues. The hydrants may also be used to fight fires although the capacity of individual hydrants varies (based on rural water system design constraints) and may have limited fire-fighting capability based on local distribution hydraulic characteristics. The current cost estimate is based on an IHS project engineering report (PER) with an estimated cost of \$2,745,000.

White Shield Air Release Valves Repairs/Replacement – The FBRWS White Shield Segment service area has several air-release valves that need to be replaced or repaired along the main transmissions lines in the system. These in-operatable air release valves reduce the capacity of service area transmission lines due to entrapped air in the pipeline. This project would restore the pipeline capacity as originally designed. This project is the current IHS SDS List and prioritized as a Tier II project with an estimated cost of \$185,000.

**Awa Hu Village Low Pressure Resolution Project** – The Awa Hu Village housing area is located three miles south of the White Shield community. The housing area has low water pressure issues with pressures well below the FBRWS standard of 45 pounds per square inch (psi). The project would construct a booster station to increase pressure to the dozen-plus existing homes in the housing area. This project will be added to the IHS SDS list with the hope for funding in the future.

**FBRWS Mandaree Sludge Pond Discharge Project** – The existing FBRWS Mandaree WTP is having difficulty in meeting the EPA regulated discharge permit requirements and IHS has identified a project to modify the sludge ponds so FBRWS can meet the EPA discharge permit requirements. However, FBRWS is building a new WTP at a different location, so this project may not be needed. The project is included on the IHS SDS list for future funding. Estimated cost is \$1,431,000.

**FBRWS Water Service Line Extensions through IHS MEGA Contract** – The IHS currently has a program for providing water service to houses occupied by Native Americans. The program up to recently had a maximum funding level of \$50,000 per connection but in FY2023 that limit may go as high as \$120,000. Regardless of the funding limit, at times the cost of providing water service to houses occupied by Native American exceeds the IHS limit and the purpose of the "Water Service Line Extension" program is to provide an additional funding source so these homes could be served. The project includes four separate sub-projects for the Four Bears, Mandaree Twin Buttes, and Mountrail County Area service areas of the reservation and are included in the IHS SDS list for future funding as shown below.

- 1. Four Bears estimated cost \$1,685,000
- 2. Mandaree estimated cost \$4.675,000
- 3. Twin Buttes estimated cost \$845,000
- 4. Mountrail County Area estimated cost \$2,335,000

## FBRWS Projects Constructed under a New FBRWS Construction Ceiling Authorization

The FBRWS will exhaust its remaining construction ceiling in 2025 and the recently updated FBRWS 2021 Master Plans indicates that continued expansion of the FBRWS is needed to meet the future (2050) water needs of the Fort Berthold reservation. The Three Affiliated Tribes is currently seeking federal funding sources to expand the FBRWS as described in the 2021 Master Plan. One option being pursued is an amendment to the Dakota Water Resources Act (DWRA) to raise the FBRWS construction ceiling. TAT is also pursuing other FBRWS funding options. The following projects are likely to be the highest priority projects once the FBRWS construction ceiling is increased.

**Parshall Area 3 & 4 Project** - This project includes the construction of a pipeline distribution system in the eastern portion of the Parshall – Lucky Mount Segment on the reservation as shown in **Figure 1** (green lines). The project includes the construction of approximately 468,000 linear feet (89 miles) of pipeline ranging from 1-inch to 8-inch in diameter. There are approximately 87 metered water service connections that will be added through the construction of this project. The distribution system will also include fire hydrants, flushing valves, air-relief valves, control valves and master meters. The estimated cost of the project is \$8,500,000 in 2021 dollars.



Figure 1 – Parshall Area 3 & 4 and White Shield Area 3 & 4

White Shield Area 3 & 4 Project - This project includes the construction of a pipeline distribution system in the eastern portion of the White Shield Segment on the reservation as shown in Figure 1 (red lines). The project includes the construction of approximately 474,000 linear feet (90 miles) of pipeline ranging from 1-inch to 6-inch in diameter. There are approximately 91 metered water service connections that will be added through the construction of this project. The distribution system will also include fire hydrants, flushing valves, air-relief valves, control valves and master meters. The estimated cost of the project is \$7,765,000 in 2021 dollars.

## Fort Berthold Reservation Segments Projects Funded by TAT

**Water Main Renovation in White Shield (Old School Area)** - The water main and water service connections in the old BIA school area in the community of White Shield needs to be replaced due to numerous pipeline leaks. The work would include replacing approximately 4,000 linear feet of pipe ranging in size from 1- inch to 8-inch in diameter, installation of about 25 meters/meter pits, and several isolation valves and hydrants. Estimated cost is \$4,000,000.

Mandaree Community Master Plan – The Fort Berthold reservation West Segment hired an architectural and engineering consultant to develop a master plan for the community of Mandaree. The master plan identifies 25 potential community improvements including a community center, medical facility, 150 new houses, water park, rodeo and horse track facility, RV park, emergency service center and other commercial establishments. The master plan further identifies the utilities that must be built prior to constructing community improvements including roads, water, sewer, stormwater, and electrical services. The new water related infrastructure would likely be constructed in cooperation with FBRW using the SU&SI contract and funded by the Segment. The work would include adding new distribution pipelines or upsizing existing pipelines in the community in addition to water service connections to 25 potential community improvement facilities. The Mandaree Community master plan did not provide an estimated budget for the water system related improvements.

**Twin Buttes Community Master Plan** - The Fort Berthold reservation South Segment has developed a Twin Buttes Master Plan for the community of Twin Buttes. The master plan identifies several community improvements projects which have already been completed and receive water from FBRW including a clinic, rodeo and horse track facility, and RV park. There are also plans to add additional community improvements in the future which will require the installation of new water distribution pipelines.

**New Water Storage Reservoir Serving the White Shield Community** – The East Segment (White Shield) on the reservation has identified the need for an additional water storage tank to assure the White Shield community has adequate fire flow capacity. The tank will be located about a mile north of the Highway 1804 in the White Shield community, but the style and size of the tank has not been determined.

**New Water Storage Reservoir Serving the Twin Buttes Community** - The South Segment (Twin Buttes) on the reservation has identified the need for an additional water storage tank to assure the Twin Buttes community has adequate water storage and fire flow capacity. The tank will be located in the Twin Buttes community, but the style and size of the tank and exact location has not been determined.

**New Water Storage Reservoir Serving the Elbowoods Memorial Health Center Campus** – TAT has identified the need for an water storage tank at the Elbowoods Memorial Health Center Campus near the City of New Town to assure medical campus has adequate water storage and fire flow capacity. The tank will be located in the northeast part of the campus, but the style and size of the tank has not been determined.

#### Use of PEA in Acquiring Future FBRWS Rights-of-Way and Easements

Rights-of-way and easements are required to construction FBRWS features including pipelines, water storage tanks, booster stations, valve vaults, etc. FBRW generally acquires easements on three types of land ownership, fee (private ownership), tribally owned and tribal allotted lands. The Bureau of Indian Affairs (BIA) administers the process for acquiring easements on tribally owned and tribal allotted lands. Entities seeking easements must prepare an easement application package and submit that package to the BIA for their review and eventual recording the easement. The BIA requires a NEPA document to be included in application packages to demonstrate that the activity which needs the easement meets NEPA and cultural resources regulatory requirements. The proposed PEA will be used to satisfy the BIA NEPA document easement application package requirement for new construction.

FBRW also is missing easements on land in which FBRWS features (primarily pipelines) have been already constructed. FBRW is working in coordination with the BIA to acquire these missing easements by submitting after-the-fact easement application packages for these missing easements. The proposed PEA will also be used to satisfy the BIA NEPA document easement application package requirement for these missing easements.