MSA proudly serves the Department of Energy (DOE) and partners with DOE’s contractors in the Hanford Site integrator role. Through efficient service delivery, forecasting of cross-contractor needs, alignment and prioritization of resources and resolution for emerging site needs, MSA supports and enables the cleanup mission.
Overview

The Infrastructure and Service Alignment Plan (ISAP) annual report for FY2018 to FY2023 is a high level strategic planning document with highlights of specific plans about each major infrastructure system on the Hanford Site. The scope includes approximately 1,000 existing facilities served by water, sanitary sewer, fire and emergency management, electrical, information technology, fleet services, safeguards and security. Long-term stewardship, training and roads. The document provides a snapshot-in-time summary of a rolling 5-years ahead, within the overall planning context outlined in MSA-GO-MS-54655, Planning Process Description.

The ISAP annual report informs and supports other major planning documents:
- Annual budget
- Real property, facilities, infrastructure summaries in the Five-Year Site Plan annual report
- Sustainability annual report
- Lifecycle cost annual report
- Infrastructure & Services Alignment Plan

The current condition in FY2018, as compared to FY2023 needs, for the Hanford Water System Roadmap illustrates simultaneous changes in several directions, site areas and dimensions. Site population for the water system drops from 6,601 to 5,766 at the same time as the workforce within 200 East Area increases by approximately 1,000 workers. The water demand difference reflects changes in the number of site workers, shifts in work location, nature of the workforce mix and daily water needs including demolition or cleanup field worker at 30 gallons per day compared to an office worker at 15 gallons per day. In addition, within the 200 East area, sanitary (potable) water demand will also increase between FY2018 and FY2023.

The changing nature and demand for mission support recognizing the Hanford Site is not closing yet will experience volume or scope increases in selected areas:
- 200 East Area new plant facilities
- 200 West Area expanded ERDF landfill
- 300 Area redevelopment to host PNNL North Campus
- 600 Area continued large scale aggregate extraction for next 50 years supporting tank waste cleanup program plus completion of the River Corridor Cleanup program
- Non-DOE site user expansions or upgrades at Energy Northwest and LIGO plus BPA and AVISTA utility corridors

As shown on the DFLAW Program 200 East Area page, by FY2023 new structures, equipment and support features will include:
- Ion Exchange Column (IXC) storage pad
- Tank side cesium removal system
- AP Farm change trailer
- Parking lot supporting IXC & cesium removal capability
- W-211 waste transfer line re-route
- AP-106 to AW-106 waste transfer line

The ISAP annual report defines planned infrastructure and mission support investments to avoid unplanned and unbudgeted large expenses stemming from poor physical plant or degraded system conditions. Reinvestments at Hanford are needed to address end-of-life facilities and systems compared to 50 years of tank waste program needs. These include:
- Fleet services shop complex, nine facilities replaced by five facilities ahead including 52,000 gross square feet (GSF) fleet maintenance shop
- Electrical, water utilities & warehouse complex, including 104,605 GSF warehouse, 9,486 GSF shop and 43,700 GSF offices needing upgrade or replace
- Fire station reconfiguration and replacements
- Biological controls support facility replacement
- Fuel station replacement
- HAMMER complex upgrades, betterments and replacements
- Roads with annual needs for pavement management
- Compliance and technology upgrades for fire alarms and fire reporting, water system protection, cyber security and similar system betterments
- Roof and HVAC replacements at regular 15 to 20 year intervals in 800+ active buildings

A few areas are included in other reports in more detail, not in the ISAP annual report
- Occupational Medical contract scope
- Groundwater program using existing facilities with no major infrastructure changes ahead and other similar program contracts
- Disposal sites including US Ecology and IDF

Overall, the ISAP annual report serves as a day-to-day quick reference overview of validated needs and mission support planning decisions of the Department of Energy Hanford cleanup mission. This document is developed with the participation of 250+ contractor and DOE employees each year.
Hanford’s Future: Infrastructure, Cleanup and Beyond

DOE Richland Operations Office (RL) Goals

**Hanford Site**
- Complete Hanford Site electronic medical record and employee job task analysis system replacement activities
- Complete Hanford mission support infrastructure project activities, to ensure needed system reliability and meet future mission needs*
- Develop a land management strategy and plan for future uses of the site consistent with the Comprehensive Land Use Plan (CLUP)*
- Develop a revised Hanford Cultural Resources Management Plan*
- Complete the plan for transition of the Manhattan Project National Park to the Office of Legacy Management**
- Complete air modeling for the Hanford Site*

**River Corridor**
- Remove and transport 50% of the sludge from the K West Basin to T Plant**
- Complete backfill of the 618-10 Burial Ground**
- Complete removal of loose debris from 324 Building C-cell and D-cell in support of the 300-200 Remote Soil Excavation Project**

**Central Plateau**
- Complete Plutonium Finishing Plant (PFP) 236Z demolition**
- Complete PFP 234 5Z demolition**
- Complete Plutonium Uranium Extraction Plant (PUREX) corrective action number 3 and permit modifications to the Hanford Facility Resource Conservation and Recovery Act (RCRA) permit to initiate PUREX Tunnel 2 stabilization**
- Direct tie to mission support contract
- Indirect tie to mission support contract

**Groundwater**
- Treat 2.2 billion gallons of contaminated groundwater
- Reduce the BP-5 groundwater uranium plume by 30%
- Complete deep vadose zone characterization

**Key Infrastructure Projects:**
- Roadway refurbishment of primary access roads to the Central Plateau facilities including Route 4S, 1st Street, and Akron Avenue
- Electrical power pole replacement for improved reliability of power delivery to Central Plateau facilities, including Tank Farms, Waste Encapsulation and Storage Facility (WESF), Central Waste Complex (CWC), Effluent Treatment Facility (ETF), and Canister Storage Building (CSB)
- Direct Feed Low-Activity Waste (DFLAW) infrastructure projects for electrical, water, sanitary sewer and roads

DOE Office of River Protection (ORP) Goals

- Complete construction and startup of the Waste Treatment and Immobilization Plant (WTP) Low-Activity Waste Facility, balance of facilities, and Analytical Laboratory
- Safe nuclear operations and basic operations of the Tank Farms
- Provide cesium removal capability in 200E to support DFLAW
- Continue tank waste retrievals
- Complete the infrastructure required to support DFLAW operations

**Footprint Reduction Plan**

The Hanford footprint reduction plan reduces infrastructure to the 75 square mile limit, by tracking specific projects, activities and initiatives toward one or more outcomes:
- Right-sizing services
- Reducing maintenance
- Restricting access
- Eliminating unused components
- Reducing electrical and water supply to meet demands

**Footprint Reduction Plan Diagram**

- Roadway refurbishment
- Fire station relocation
- Electrical power pole replacement
- Export water system piping upgrades

**Central Plateau Diagram**

- Roadway refurbishment of primary access roads to the Central Plateau facilities including Route 4S, 1st Street, and Akron Avenue
- Electrical power pole replacement for improved reliability of power delivery to Central Plateau facilities, including Tank Farms, Waste Encapsulation and Storage Facility (WESF), Central Waste Complex (CWC), Effluent Treatment Facility (ETF), and Canister Storage Building (CSB)
- Direct Feed Low-Activity Waste (DFLAW) infrastructure projects for electrical, water, sanitary sewer and roads
Crane and Rigging

Equipment replacement needs to support user based service (UBS):
- Replace two existing 33-ton rough terrain cranes with two 80-ton rough terrain cranes in FY2021 and FY2024.
- Replace two regulated 30-ton rough terrain cranes with two 80-ton rough terrain cranes in FY2024.
- Replace one existing 110-ton truck mount crane with one 150-ton GMK crane in FY2019.
- Replace one existing 80-ton hydraulic truck mount crane with one 80-ton hydraulic truck mount crane in FY2024.
- Replace 50-ton crane with an 80-ton crane for regulated area use in FY2024.
- 50-150 ton replacement cranes to support Tank Farms for 30 to 150 ton existing cranes due to changes in manufacturing technology.

Transportation

- Replace Caterpillar D-8 dozer in FY2024.
- Replace Caterpillar D-6 dozer in FY2024.
- D6 & D8 dozers to support Tank Farms and fire protection.

Equipment Needed for User Based Services: To Ensure Successful Cleanup

- UBS for mission support generate variable demands for a wide range of equipment.
- Replacement timing for equipment is according to guidance from DOE, based on hours of service, safety, condition, age, recommended service life, obsolescence, repair record, parts availability, down time for repairs, criticality of task, advances in technology and efficiency.
- Ongoing monitoring of existing equipment identifies the exact need and timing for replacement.

Fleet Services

- Move out of 400 Area (4722C) and consolidate in 200 East.
- Add new shops with 2 storage structures to replace 9 existing facilities at end of life for major systems (HVAC, pit ventilation, electrical).
- New fleet shop complex will increase efficiency, reduce maintenance cost, ensure capabilities to support ongoing critical activities and also address RL goals to minimize or avoid disruptive impacts to cost and schedule from documented existing facility conditions.
- Replace equipment as part of facility consolidation transition.
- Upgrade or replace fuel station (6291) to support all Hanford cleanup missions and mission support functions, plus visitor, contractor and supplier vehicle needs for fuel.
- Maintain 3,197 fleet size targets for alternative fuel vehicle (AFV) goals:
  - 10% annual increase in AFV fuel.
  - 75% light duty vehicles acquisitions are AFV type.
  - Reduce fuel consumption.
  - 30% GHG emissions by FY2025 compared to FY2014 baseline.

Biological Controls

- Equipment replacement to support sitewide service needs.

Motor Carrier

- Equipment replacement to support UBS needs.

- Current equipment replacement needs for UBS include:
  - Crane & Rigging, due to safety and age.
  - Fleet, due to changing fuel standards.
  - Motor Carrier, due to safety and age.
Services: Mission Support Equipment

Radiological Site Services
- Evaluate 805 Goethals facility for relocation
- Replace radiological control equipment required to support user-based services

Transportation
- Replace Caterpillar D-8 dozer in FY2024
- Replace Caterpillar D-6 dozer in FY2024

Seismic Services
- Upgrade 18 seismic network monitoring stations from analog to digital per 2018 requirements

Cultural and Historic Resources Program
- Maintain and enhance a cultural resource program in compliance with federal and state laws, executive orders, and DOE policies
- Protect and mitigate potential impacts to cultural resources
- Implement procedures and utilize agreements to address mission related projects and actions on the Hanford Site
- Continue consulting party consultations and discussions

Equipment Needed for User Based Services (UBS): To Ensure Successful Cleanup
- All replacement equipment purchases needed for user based services delivery automatically become part of UBS rates in the year ahead after replacement
- UBS for mission support generate variable demands for a wide range of equipment
- Equipment is replaced in accordance with DOE guidance and other safety considerations, including hours of service, condition, age, recommended service life, obsolescence, repair record, parts availability, downtime associated with repairs, criticality of task, and advances in technology and efficiency

Critical radiological equipment and facilities must be replaced to effectively support user-based services:
- Dosimetry hardware & software
- 805 Goethals Radiological Site Services (RSS) facility relocation

Meteorological and climatological services
- Install certified automated weather observation system to provide 24/7 unmanned weather observations
- Complete development of database for all reporting needs and observational data storage
- Develop mobile meteorological towers for short-term deployment in critical areas

Ecological Monitoring and Environmental Surveillance
- Include seeds of native plants that promote the health of pollinators in 90% of mission support contract restoration work
- Evaluate the Hanford Site element occurrence delineations and update Biological Resources Management Plan resource maps
- Migrate ecological monitoring and compliance geographic information into Hanford’s interactive mapping application, HMAPS
- Determine if solar power supply will meet the minimum technical and operational performance criteria for environmental air sampling systems
- Prepare Hanford Site Mitigation Summary Report
Non-Environmental Management (EM) Programs

Laser Interferometer Gravitational-Wave Observatory (LIGO)

The LIGO Scientific Collaboration (LSC) comprises a group of over 1000 scientists from 83 institutions in 15 countries. The goal of the LSC is to use gravitational waves to explore fundamental physics of gravity and to develop the emerging field of gravitation-wave science as a tool for astronomical discovery.

In 2015 LIGO achieved the first ever direct detection of gravitational waves was generated by the coalescence of two large black holes.

Other Non-EM Programs

Non-EM programs at the Hanford Site exist through FY2023 and beyond under three guiding principles:

- Minimize cost or schedule impact to DOE-EM mission
- Significant management distraction to DOE-EM cleanup program
- Clean up after each Non-EM program wraps up is defined by each agreement

- PNSO and PNNL (Battelle) operate RL-owned facilities in the 300 Area served by the City of Richland utilities. EM is responsible for the final disposition of facilities and infrastructure after year 2046.
- Benton Rural Electric Association (REA), City of Richland and Benton Public Utility District (PUD) operate and maintain electrical distribution lines across portions of the Hanford Site serving both DOE-EM and non-EM facilities.
- Bonneville Power Administration (BPA) electric substations and transmission lines, part of the Federal Columbia River Power System, will continue to operate indefinitely. RL will transfer (or wheel) BPA power across the RL-owned 230 kV transmission lines between BPA’s Midway substation and the transmission line tap from BPA’s Ashe substation.
- Columbia Generating Station, commercial nuclear power plant on WNP-2 lease area on 1,085 acres is owned by 28 public utilities and operated by the Energy Northwest agency expected to operate through year 2044.
- US Ecology operates a 100-acre licensed Low Level Waste (LLW) disposal facility accepting waste from nuclear power plants and other commercial facilities in Rocky Mountain and northwestern states.
- US Navy disposes of defueled, decommissioned reactor compartments in the northeast corner of the 200 East Area through year 2050.
- AVISTA has electrical power transmission lines across a portion of the River Corridor through the Hanford Reach National Monument.
- Current and Future Worldwide Gravitational-Wave Detector Locations

End State FY2023:

- B Reactor Roof Replacement & Stabilization – Budgeted at $10 million, roof repairs and replacement are needed immediately to reduce the amount of water accumulating in the B Reactor main structure currently hosting day-use visitors.

Manhattan Project National Historical Park

Current Condition FY2018:

Manhattan Project National Historical Park (MAPR) Foundation Document – National Park Service (NPS) staff and stakeholders prepared the interpretive foundation document to define the range of visitor attraction and focus.

- White Bluffs Bank Stabilization & Restoration – Completed replacement roof, structural members and key components to meet applicable life safety, building code, weatherization and historic preservation guidelines, enabling day use visitors inside the structure.

Activities Include:

- Operate interim visitor center in North Richland, leased until FY2020
- Continue operations policy development and planning for a permanent visitor center including site selection by NPS and DOE Legacy Management
- Access, parking, signage, perimeter definition and site amenities at 5 existing attraction locations for visitor comfort and safety
Over the past eight years, significant progress has been made by Hanford contractors in realizing the 2028 Vision, allowing active cleanup at the Hanford Site to focus on the Central Plateau and the River Protection Project, made up of the 200E and 200W Tank Farms and the Waste Treatment and Immobilization Plant (WTP). The FY2018 Infrastructure and Services Alignment Plan (ISAP) and the 2018 Washington River Protection Solutions (WRPS) Infrastructure Stewardship Plan reflect a changing landscape by outlining future states of infrastructure and the support needed to complete mission requirements. Both plans identify the scope and timing of key activities needed to reach future end states.

The ISAP document works in conjunction with baseline operations and maintenance of the infrastructure to assure that reliable, on time, and cost effective services are provided at the required capacities for Hanford cleanup, to meet the RL Vision FY2028.

WATER: Modernize

**Raw/Export**

Modifications and maintenance to the site export and raw water distribution systems are strongly influenced by the need for reliable raw water delivery to the Central Plateau for fire protection and process cooling water to the River Protection Project facilities (e.g., 242-A Evaporator; TSCR). Long-term projects are also defined for right-sizing the export water system while taking advantage of variable speed pumping technology for energy savings.

- Eliminate the 100D and 100B export water reservoirs and upgrade the pumping system to the Central Plateau
- Refurbish/replace aging raw water supply lines at A Tank Farm, T-Plant and Effluent Treatment Facility (ETF)

**Sanitary**

In addition to the limited production capacity of the sanitary water system on the Central Plateau needed to support the future mission needs of the WTP, the safety and reliability requirements of the drinking water supply are driving several key projects:

- Without increasing the capacity of the current water treatment facility, or constructing a new water treatment facility, MSA Water Utilities may not be able to produce enough sanitary water to support DFLAW operations during peak flows expected by FY2020
- Water system cross connection is top priority to eliminate workarounds:
  - Eliminate the 100D and 100B export water
  - Sizing the export water system while taking advantage of variable speed pumping technology for energy savings
- Water system cross connection is top priority to eliminate workarounds:
  - Implement improvements to the preventative and predictive maintenance program that focuses resources on critical system components needed for continuity of water delivery

HAMMER: Serve

While HAMMER’s future remains rooted in its mission to serve the training needs of Hanford personnel, it is also being driven by business development opportunities with other stakeholders and the need to improve and modernize the training environment to sustain high quality training. Key areas of focus over the next 5–10 years include:

- Establish long-term business partnerships with other federal agencies and support existing agreements with federal and non-federal customers
- Invest in upgrades to curriculum, facilities and technology to improve quality of training

SEWER: Protect

System modifications are predominately influenced by population changes on the Central Plateau, coupled with degraded conditions of several drain fields needed for long-term mission requirements. While short-term mitigation strategies are in place to pump the failing drain fields as needed, long-term projects have been defined to eliminate workarounds:

- Install pumping systems to route septicage from several failing 200E drain fields to the 200W sewer lagoon
- Consolidating the failing 2607-W16 with service system in 200W with the 2607-W16 system
- Developing conceptual strategies and designs for additional sewer consolidations in 200W

ROADS: Right-size

Transformation of the Hanford road system is characterized by completion of the River Corridor cleanup and the focus of resources on the arterial and core roads serving the Central Plateau. This strategy will eliminate maintenance costs associated with a significant portion of the 100 Area roads while establishing restricted access. Key activities include:

- Apply appropriate treatments to roads serving mission needs on the Hanford Site
- 1st St/4th St loop and grout loop to support DFLAW program
- Establish restricted access program for non-maintained roads
- Chip seal repairs to Central Plateau core roads
- 7th St upgrades to support heavy casks to transport the cesium-strontium capsule dry storage cask from Waste Encapsulation Storage Facility (WESF) to a cask pad near the east side of the Canister Storage Building in 200E

SAFEGUARDS and SECURITY/PATROL: Protect

The posture of the site security program will continue to be driven by the need to protect against theft of special nuclear material and unauthorized access to facilities and classified information. While those requirements will remain effectively unchanged over the planning period, land transfers and aging facilities at the Patrol Training Academy (PTA) need to be addressed.

- Replace the weapons clearing trailer
- Upgrade buildings 662 and 662A (Patrol Training Academy classrooms)
- New live fire shoot house

HAMMER:

Serve

While HAMMER’s future remains rooted in its mission to serve the training needs of Hanford personnel, it is also being driven by business development opportunities with other stakeholders and the need to improve and modernize the training environment to sustain high quality training. Key areas of focus over the next 5–10 years include:

- Establish long-term business partnerships with other federal agencies and support existing agreements with federal and non-federal customers
- Invest in upgrades to curriculum, facilities and technology to improve quality of training
Reliable Service and Needed Capacity for Reduced Cost at Hanford

FIRE/EMERGENCY SERVICES: Protect
The emergency services planning horizon is driven by changes in site demographics and aging facilities and systems.

- Upgrade the Hanford emergency siren system
- Migrate to a central dispatching emergency response system
- Radio Fire Alarm Reporting (RFAR) and Fire Alarm Control Units (FACU) projects have been combined under one project L-905 for 21 top priority locations as a new strategy by plant forces to address aging and obsolete equipment
- Upgrade Station 92 (between 200E and 200W) and construct new vehicle storage building to consolidate personnel and equipment from the 100 Area and 300 Area stations
- Construct new fire station in 200E to support WTP operations and maintain existing 400 Area fire station in “closed-but-ready” status until 300 Area cleanup is completed

FACILITIES: Modernize
The transformation of facilities across the site is being driven by multiple factors including demographic shifts, energy savings initiatives, facility aging, and consolidation. With facilities aging, routine building maintenance will be supplemented to address significant roof and HVAC replacements. Other key projects include:

- Relocation of Biological Controls and Fire Systems Maintenance into new or repurposed facilities
- Consolidation of warehousing activities
- Upgrade HVAC and roof systems at several general purpose facilities
- Upgrade and reconfigure existing 200E Tank Farm facilities

FLEET: Right-Size
The existing fleet services facilities are not capable of supporting operations for the next 40 years of mission support. Replacement will be required near-term to meet several immediate needs:

- Installation of electric vehicle charging stations in 200E to support electric vehicle fleet expansion
- Renovation of the 200E Vehicle Fleet Maintenance Shop (271E)
- Move out of the 400 Area (4722C)
- Consolidate in 200E Area and add two new shops and two storage structures
- Eliminate overcrowding in work bays at 2711 and 273E
- 6291 fuel station upgrade or replacement

INFORMATION TECHNOLOGY (IT): Integrate
IT infrastructure continues to be fueled by technology advances and the need for more accessibility of electronic information across organizations supporting the Hanford mission. Cyber security threats and capacity are also driving changes in the IT arena over the next decade. Key activities include:

- Upgrades to network hardware to address cyber security requirements and new internet protocols
- Consolidation from 34 to 9 IT facilities to shrink the footprint, improving service delivery and reducing operating costs
- Leveraging Hanford federal cloud-hosted applications for Hanford contractors as well as across the Emergency Management complex to maximize use of DOE investments
- Deploy thin client workstations to lower life cycle costs, reduce power consumption, advance solutions delivery and strengthen cyber security posture
- Continue expansion and commercialization of broadband wireless services to support mobilization of workforce leveraging mobile device technology platforms
- Develop strategies to support future WTP IT needs

ELECTRICAL: Transform
The Hanford electrical distribution system will continue to shrink in response to cleanup completion, while customer requirements on the Central Plateau will drive system upgrades for capacity and reliability. Projects and programs to support these changes include:

- Address 230 kV line vulnerabilities to ensure service to the entire site cleanup mission, including WTP, Tank Farms, groundwater and cesium removal capability in 200E
- Execute a prioritized program to replace the site’s aging power poles and reroute/replace distribution lines to assure continued high availability of power to operating facilities
- Deactivate the A9 substation as 100K Area cleanup is completed
- Upgrade or replace 2101M
**DFLAW Roadmap**

**200 East Area**

### Current Condition

- Cesium removal capability to support Direct Feed Low-Activity Waste (DFLAW) is under development.
- Constructed facilities not yet transitioned into FIMS database.
- Balance of Facilities (BOF) in place to support DFLAW.
- Water, sewer, electrical and road projects are defined for next five years ahead.

### End States 2023

- LAW facility commissioning completed.
- Cesium removal capability in operation.
- Utility projects to support DFLAW completed.
- Milestone in FY2023 for integrated water system testing requires water projects to be completed projects to support DFLAW completed.
- Required projects are completed by DFLAW driver dates:
  - L-859 tie to WTP pre-cold commissioning management assessment (forecast May 2021)
  - L-897 tie to WTP LAW water runs 1W14613 (forecast Sept. 2020)
  - L-850 project is tied to L-897 projects
- Risk reduction and enhancements projects have no specific startup driver.
- Risk reduction projects will benefit from completing prior to DFLAW operations at full throughput by FY2023.

**DFLAW Definitions**

- **DFLAW Required**
  - L-859, Rebuild 1st Street, Canton Ave. to IDF entrance
  - L-897, 200 Area water treatment plant
  - L-850, Replace 200W 1.1M gallon sanitary water tank pre cold commissioning
- **DFLAW Risk Reduction**
  - L-612, 230k V transmission system reconditioning and sustainability repairs
  - L-357, Replace 12 inch potable water line to 222-S Lab
  - L-853, 200E sewer flow equalization facility – construction
  - L-854, 200E sewer consolidation – construction
- **DFLAW Enhancements**
  - L-861, Single-circuit distribution pole replacement
  - L-849, Repair 200E 1.1M gallon potable water tanks
  - L-859, 12 inch potable water line to WTP
  - L-839, 8 inch Water Line 2101M Loop

**DFLAW Roadmap**

- **Critical DFLAW milestone for water and road reliability projects**
  - Test Loss of Power
  - Water Run Test

**DFLAW Operational Facilities**

- BOF = Balance of Facilities
- LAW = Analytical Laboratory
- DFLAW = Direct Feed Low-Activity Waste
- EMF = Effluent Management Facility

**Major Actions/Decisions**

<table>
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<th>DFLAW Required</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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**DFLAW Risk Reduction Projects**

- **Critical DFLAW milestone for water and road reliability projects**
  - Test Loss of Power
  - Water Run Test

**DFLAW Enhancements Projects**

- Services and infrastructure in support of DFLAW operations mission duration. Not in DFLAW Program Integrated Schedule.
Safeguards and Security Roadmap

2018 CURRENT CONDITION

- Population served: 10,806
- Continue to maintain emphasis on protection of nuclear materials
- Ensure appropriate levels of security for unauthorized access, acts of sabotage, theft or loss of classified matter and government property
- Patrol Training Academy (PTA) general facility concerns including: the lunchroom, classrooms 662 and 662A and need to relocate Range 10
- Rattlesnake Barricade is operating at reduced hours

END STATES 2023

- Population served: 8,970
- Continued protection of special nuclear material
- Patrol barricades and patrol operations center will remain in service
- Be prepared for enhanced badging service.
- Badge delivery for drivers will be 24/7/365 by mission support contractor similar to the level of service by the current BNI security subcontractor

Project Descriptions

- S-245, New live fire shoot house
- S-216, Provide access control barriers to the firing range complex
- S-244, PTA Replace weapons cleaning trailer (MO 222)
- S-xy, Pave PTA parking lot

Major Actions/Decisions

- HSPD-12 Enhanced badging services to support DFLAW at Wye Barricade

18 Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
**Current Condition**

- Population served: 8,230
- Site population has moved from the outer areas to the Central Plateau
- Fire and emergency response equipment in good to excellent condition excluding ambulances 91, 92, and 93. These are past National Fire Protection Association (NFPA) lifespan standards
- Radio Fire Alarm and Reporting (RFAR) system obsolete, replacement parts are no longer manufactured and DOE handbook needs to be revised
- Existing 400 Area fire station is ready but unstaffed and closed

**End States 2023**

- Population served: 7,797
- Consolidated operations fire station on the Central Plateau including upgrades to station 92 for additional storage options
- New southeastern area fire station in operation in 400 Area
- The planned closure date of Station 93 is intended to be fully matched with DOE planning for 300 and 400 Area fire service coverage
- 100 Area fire station closure
- RFAR system replaced (transmitters)

**Project Description (Continued)**

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**Major Actions/Decisions**

- Close 100 Area Station 91 - Building 609
- Close 300 Area Station 93 - Building 3709A
- Consolidated operations fire station on Central Plateau
- EF36, Fire Engine Pumper Truck, 1,500 gallon tank TBD
- EF37, Replace Type 3 Wildland Apparatus (DOE# 3860)
- EF38, Replace Type 3 Wildland Apparatus (DOE# 3861)
- EF39, Ambulance

Procurement or Design = ● / Construction = ●
Emergency Management Roadmap

**2018 CURRENT CONDITION**

- Population served: 14,260
- Emergency Management Program and capabilities in place to support cleanup mission
- Emergency Management Program maintained to respond effectively and efficiently to emergencies so appropriate measures are taken to protect workers, the public, and the environment
- 24/7 Hanford Emergency Operations Center (EOC) and shift office maintained in a state of readiness for emergency operations and to support sitewide occurrence reporting
- Coordination with other Hanford contractors to ensure emergencies are promptly recognized, categorized, and classified with required reporting and notifications made

**2023 END STATES**

- Population served: 12,386
- EOC remains at the federal building and in operation for overall Hanford response
- Continued work with information management on the Hanford Site Emergency Alerting System upgrades and footprint
- WTP incorporated into Emergency Management facility/program plans by FY2020

**Project Descriptions**

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<thead>
<tr>
<th>Project Description</th>
<th>2018</th>
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<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Note &amp; Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>ET56, EP, HDF, &amp; Patrol Zetron console upgrade</td>
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</table>

Design = ■ / Construction = ●

**Major Actions/Decisions**

<table>
<thead>
<tr>
<th>Action</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Note &amp; Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumption made that Energy Northwest will maintain sirens for Columbia Generating Station through FY2020</td>
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<tr>
<td>Update Emergency Management Plan</td>
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<tr>
<td>Update EPZs in 200E &amp; 200W for cold commissioning</td>
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<tr>
<td>Practice WTP EP site exercise</td>
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</tbody>
</table>

22 Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
Transportation Roadmap

2018 CURRENT CONDITION

- Population served: 8,230
- Average daily trips entire site average weekday = 10,000
- Single occupancy vehicles 88.5%
- 3 buses
- Open primary roads = 380 lane miles
- Open secondary roads = 292 lane miles
- Tertiary roads = 432 lane miles
- 9.4 miles of restricted routes in past 3 years
- Route 3, 4S, 11A and 2S are critical to support cesium and strontium transfer, WESF to dry storage
- Existing active roads are critical to hauling requirements for Hanford cleanup including DFLAW tank side cesium removal, K-Basin sludge, 242-A, 222-S, tank farms, WTP, T-Plant, ground water and mission support
- FY2018 restricted routes included 2 miles
taken out of service for footprint reduction

2022 ROAD CATEGORIES

- Mission Critical Roads
- Important Tour Routes
- Barricades

2023 END STATES

- Population served: 7,797
- Average daily trips entire site average weekday = 5,022
- Single occupancy vehicles 86%
- 3 buses
- Cesium and strontium transfer in 200E: Existing 1,006 small units will be placed into 16 casks for transport across 200E from WESF vicinity to the pad site near the existing Canister Storage Building. Major steps include cask design, removal from cooling fluid, and pad construction for casks prior to transport. The transfer is planned for late FY2022 continuing to FY2023
- Existing active roads are critical to hauling requirements for Hanford cleanup including DFLAW Tank Side cesium removal, K-Basin sludge, 242-A, 222-S, Tank Farms, WTP, T-Plant, ground water and mission support
- Route 3, 4S & 2S are critical to support cesium and strontium transfer

ROAD CATEGORIES

Primary
Open and Paved
Restricted

Secondary
Open and Paved
Restricted

Tertiary
Restricted

Design = Construction =

Project Descriptions

- L-878, Rebuild 1st Street, Canton Avenue to IDF entrance (DFLAW Essential)
- L-400, Chip seal Route 3 and Route 3W (Route 11A to Route 3)
- L-880, Route 10 chip seal
- L-892, Rebuild Route 6 (Avenue to PR 24)
- L-879, Overlay Cypress Street (Route 4S to GW Way Extension)
- L-872, Rebuild II Avenue Route 1 to Route 6
- L-534, Overlay interior 200E roads
- L-519, Overlay interior 200W roads
- L-523, Chip seal 200W interior roads
- L-533, Chip seal interior 200E roads
- L-861, Chip seal route 4N (Route 11A to Route 1)
- L-875, Chip seal route 11A from 240 to MP 5.14 (CS26a)

Project Descriptions (Continued)

- L-865, Chip seal 200E roads (Averill, Buffalo, 7th, 4th St, Loop)
- L-884, Reconstruct 10th Street and Cooper Avenue
- L-873, Chip seal GW Way extension (CS22a)
- L-476, Chip seal Route 40 (CS33a)
- L-860, Chip seal 200E roads (Averill, Anahim, Albany, WTP Loop Road)
- L-886, Route 2 overlay with fabric
- L-400, Rebuild Route 11A, Route 2S to MP 5.14
- L-876, New 6088 building parking lot (52a)
- L-897, Overlay Route 6 (PR 24 to 3P 240)

Major Actions/Decisions

- Cesium and Strontium Transfer in 200E
- LAW Container transporter route from WTP LAW to IDF
Electrical Roadmap

2018

Population served: 6,696
Peak demand: 31.2 MW
Nominal capacity: 117 MW
Extend 200E 13.8kV line ~ 8Mi
L-789 has been funded with developed scope in FY16 to address long-term needs including L-860
Defined 3 new projects during FY18 Master Plan updates
Substation A6 feeding WTP DFLAW

Population served: 5,879
100 & 200 Areas served from 151KE (A9) & 251W (A8) substations:
Peak demand: 59 MW
Nominal capacity: 110 MW
WTP in 200E is served by A6 substation
Downsize 300 Area and remove remaining loads from RL distribution system
Downsize other areas—isolate distribution as loads are no longer needed
Bonneville Power Administration (BPA) to bypass 230kV system with new circuit
Execute long-term strategy for 451B per study results to divest 451B

Project Descriptions

<table>
<thead>
<tr>
<th>Project</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Alpha</th>
<th>Budget</th>
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<tbody>
<tr>
<td>L-612, 230kV Transmission system reconditioning and sustainability repairs (DFLAW Risk Reduction) BAP</td>
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<tr>
<td>L-612, 230kV Transmission system reconditioning and sustainability repairs (DFLAW Risk Reduction) BPA</td>
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<tr>
<td>L-789, Distribution system refurbishments</td>
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<td>L-815, Upgrade transmission/distribution access roads</td>
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<td>L-911, MRI Transfer Trip upgrades</td>
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<td>L-988, 100 Area mission critical distribution feeder replacement</td>
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<td>L-989, Upgrade 230kV</td>
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<td>L-720, Outdoor lighting enhancement</td>
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<tr>
<td>L-781, Single-circuit distribution pole replacement (BPA) Enhancement</td>
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<td>L-792, Advanced electrical metering</td>
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<tr>
<td>L-796, 2050F 4th wire installation</td>
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<tr>
<td>L-782, 2400kA to 13.8kV electrical conversion</td>
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<td>L-787, 2154 Storage shed replacement</td>
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</tbody>
</table>

Major Actions/Decisions

Complete electrical master plan update
Electrical supply to TSCR / waste feed delivery (WFD)
Electrical supply to LAWPS
100 Area, service from service substation A9
400 Area, substation 451B disposition (date TBD)

BPA Midway Bus 1
Power Generation

Substation A6 feeding WTP DFLAW

BPA Midway Bus 2
Power Generation

Major Programs
- RL Owned Substation
- BPA Owned Substation
- Demolished/Transferred
- RL Owned 1200A/230kV Line
- RL Owned 800A/230kV Line
- RL Owned Distribution
- BPA Owned 115 or BPA 230kV
- Bypass 230kV Line
- Energy Northwest Columbia Generating Station

Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
Water Roadmap: Export, Raw, and Potable

### 2018 CURRENT CONDITION

- Population served: 6,601
- Completed cross connection compliance study report
- Completed plateau improvements to 200E and 200W raw water operations
- Sizing water tank and new water treatment plant

### Project Descriptions

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-430</td>
<td>8&quot; Water line (2101M) Loop (DFLAW Priority)</td>
</tr>
<tr>
<td>L-431</td>
<td>Mortar line 8&quot; potable water line along 20th St to water plant main (1950)</td>
</tr>
<tr>
<td>L-425</td>
<td>Shift 1-Plant fire water supply</td>
</tr>
<tr>
<td>L-438</td>
<td>Water feeds to 6608 facility and reservoirs</td>
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</tbody>
</table>

### Project Descriptions (Continued)

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-849</td>
<td>Repair 200E 1.1M gallon potable water tanks (DFLAW Required)</td>
</tr>
<tr>
<td>L-781</td>
<td>181D Vertical turbine pumps, header, instrumentation, commission (Design/procurement &amp; Const.)</td>
</tr>
<tr>
<td>L-826</td>
<td>181B Vertical turbine pumps, header, instrumentation, commission</td>
</tr>
<tr>
<td>L-851</td>
<td>Design and install 24&quot; EW pipe to replace 42&quot; pipe in 100D</td>
</tr>
<tr>
<td>L-852</td>
<td>Design and install 24&quot; EW pipe to replace 42&quot; pipe in 100E</td>
</tr>
<tr>
<td>L-839</td>
<td>12&quot; Potable water loop line to WTP (DFLAW Enhancement)</td>
</tr>
<tr>
<td>L-388</td>
<td>10&quot; B Plant potable water lines</td>
</tr>
<tr>
<td>L-352</td>
<td>Refurbished 20 inch raw water line near A Tank Farm</td>
</tr>
<tr>
<td>L-342</td>
<td>Mortar line 24&quot; 1310 meters (Old PUREX feed raw - 1952)</td>
</tr>
<tr>
<td>L-420</td>
<td>Mortar line 8/10&quot; potable water WRAP Loop - cap (1960)</td>
</tr>
</tbody>
</table>

### Major Actions/Decisions

- Tracer study to increase 283W filter plant output to 1950 gal/min
- Water supply to cesium removal capability in 200E

### END STATES 2023

- Population served: 5,766
- Eliminate 182D reservoir
- Variable speed drives for export water pumps for energy savings
- Support DFLAW operations
- New 200 Area water treatment facility operational
- Raw water intertie between 200W and 200E is completed for fire protection.
- Global air gap completed for cross connection compliance with Safe Drinking Water Act and State of Washington requirements
- Completed potable water air gaps at multiple severe hazard facilities
- Peak demand of 2,018 gpm sanitary water needed for DFLAW operations will be met with construction of new Central Plateau Water Treatment Facility

28 Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
Sanitary Sewer Roadmap

### 2018 CURRENT CONDITION

- Population served: 4,901
- 300 Area system transfer to PNSO by start of FY2018 according to RL/PNSO agreement
- 200W evaporative lagoon in operation
  - Capacity: 55,000 gallons/day
- All waste water received at 200W evaporative lagoon is pumped from holding tanks and hauled by trucks
  - Approximately 10,000 gallons/day
- Continued operations of existing septic systems
  - Drain fields = 29
  - Holding tanks = 13

### 2023 END STATES

- Population served: 4,820
- Demand in FY2023: 49,179 gal/day met by ground and central system*
- 200E sewer consolidation includes:
  - Removal of 8 existing drain fields
  - Add 8 lift stations with 5 miles of force main to 200W Evaporative Sewer Lagoon facility for treatment
  - Continue to study 200W consolidation as a phased program of projects due to aging systems
  - Excludes WTP and Balance of Facilities complex loads

#### Project Descriptions

<table>
<thead>
<tr>
<th>Project</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Out &amp; Bound</th>
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</thead>
<tbody>
<tr>
<td>L-853, 200 E sewer flow equalization facility – Construction</td>
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<td>L-854, 200 E sewer consolidation – Construction (DFLAW risk reduction)</td>
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<tr>
<td>L-838, Water feeds to 6608 facility and reservoirs (DFLAW risk reduction)</td>
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</tbody>
</table>

**Note:**
- Design = ✓
- Construction = •

### Major Actions/Decisions

Sanitary sewer master plan update

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*Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018*
Information Technology Roadmap

**2018 CURRENT CONDITION**

- Population served: 7,794
- Telecommunication buildings under utilized because legacy telephone system is not removed
- Not all site contractors are leveraging the Hanford Local Area Network (HLAN)
- End user organization migration to hosted desktop has declined
- Emergency notification systems need to be modernized
- The demand for wireless technology in the field is growing
- End user demands for data storage exceeded capacity
- Legacy business management applications are 19 years old and need to be modernized
- IT & business governance is not adequate for merging industry changes of digital business
- Cyber risks are increasing with sophisticated threats and increasing number of devices attached to networks
- Comprehensive change management needs to be increased to better manage devices connected to network

**END STATES 2023**

- Population served: 8,512
- Increase “record material” automation with business processes and electronic storage
- Awareness campaign regularly educates end-users with cyber compliance and how-to training
- Hanford end-user can move anywhere, anytime without moving IT desktop equipment
- Field forces access applications to receive, process, and document completed work at the job site from anywhere on the Central Plateau
- 25% of Hanford Data Center infrastructure is from cloud provider
- IT services are acquired through service catalog at predefined rates
- Hanford Site maintains 96% minimum of procured electronic assets to meet Electronic Product Environmental Assessment Tool (EPEAT) Gold requirements
- Site IT governance and investments are managed across contractors
- Minimal impact to business processes when major network transport or data center applications fail
- 30% of site IT assets are owned by the government, 30% are owned by end users through a stipend/billing your own device policy, and 40% purchased as cloud services
- Legacy application are modernized to site standards with 25% offered under a software-as-a-service delivery model
- 85% of Hanford end-users access IT resources through a hosted desktop
- Cyber security tools are modern, and trained IT staff are using them to identify and mitigate cyber threats
- All devices connected to the network are registered

**Project Descriptions**

- L-913, Replace De-militarized Zone (DMZ)/Cold Fusion
- Install HVAC replacement equipment in 1220 and 7220 nodes
- UPS Battery refresh ◆
- Eliminate 700 Area data center (Secondary) facility
- Eliminate 300 Area data center (Primary) facility (Replaced L-764)
- Transition, expand & refresh broadband wireless
- HSEAS Hardware/software refresh & upgrade (Replaced L-817)
- L-919, Emergency radio upgrade/refresh
- L-819, High capacity fiber optic (300 Area - Central Plateau)
- ET50, (distribution layer) HLAN network refresh
- ET57B, HLAN Network Upgrade IPv6
- ET51, Refresh access layer HLAN network switches

**Major Actions/Decisions**

- L-917, Vacate Gable Mountain
- Comprehensive change management integrated with IT assets
- Transition Hanford end users to MS Office 365 commercial service
- Increase hybrid cloud information storage usage and capacity
- Commercial radio re-compete
- Environmental Assessment Tool (EPEAT) Gold谥</doc>
Biological Controls & Aggregate System Roadmap

2018 CURRENT CONDITION

- 313 Sq. miles managed by DOE RL
- Biological controls enables treating up to 10,000 acres per year for Integrated Vegetation Management (IVM) treatment.
- Implement the Industrial Mineral and Conservation Plan

END STATES 2023

- 75 square miles of the Central Plateau is the primary focus of operations at the site
- Biological controls operational scenario enables permitted capacity to treat up to 34,000 acres/year for IVM requirements
- Complete borrow pit planning activities for barrier and cover materials needed to support closure of the Hanford Site

Project Descriptions

<table>
<thead>
<tr>
<th>Borrow Pit management program for active pit areas</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024 &amp; Beyond</th>
</tr>
</thead>
</table>

Major Actions/Decisions

<table>
<thead>
<tr>
<th>Initiate NEPA review for barrier and cover materials</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024 &amp; Beyond</th>
</tr>
</thead>
</table>

34 Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
Population served: 8,203

The Hanford Site is approximately 313 square miles in size. DOE manages approximately 300 square miles and USFWS manages the rest (under agreement with DOE).

Maintain integrated land management (municipal planning) process

Preserve and provide safe public access to the Manhattan Project National Historical Park facilities and lands

Population served: 7,767

75 square miles of the Central Plateau is the primary focus of operations

Integrated land management process implemented sitewide

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**Project Descriptions**

<table>
<thead>
<tr>
<th>Project</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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<td>Design</td>
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<td>Construction</td>
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**Major Actions/Decisions**

- Consent decrees & Tri-Party Agreement modifications
- Support development of the Manhattan Project National Historical Park at Hanford

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36 Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
Long-term Stewardship (LTS) Program Roadmap

**2018 CURRENT CONDITION**

- Transition of all River Corridor segments to the LTS program is complete, with the exception of areas where cleanup continues (e.g. 100-K SSE area)
- Post-cleanup surveillance and maintenance of institutional and physical controls for transitional areas continues in accordance with applicable requirements
- 6 of the 9 reactors have been cocooned in safe storage enclosures (SSE) for interim storage. The 105KE and 105KW reactors are scheduled for LTS transition by FY2021
- Continue with transitions to LTS of 105-KE and 105-KW areas as cleanup activities are completed through FY2022

**END STATES 2023**

- Continue Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) five-year reviews
- Maintain 8 SSE reactors
- Perform required institutional control assessments
- Perform required surveillance and maintenance activities on waste sites in LTS program
- Planning for potential future transitions to LTS
- Right-size power supply to 100 Area SSE, as appropriate

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### Project Descriptions

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<th>2018</th>
<th>2019</th>
<th>2020</th>
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### Major Actions/Decisions

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<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>5 Year CERCLA review</td>
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<td>Transition 100K SSE Area</td>
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<td>Future transition planning</td>
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<td>10 Year inspection of SSEs</td>
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*Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018*
Facilities Roadmap

2018 CURRENT CONDITION

- 16,089 total Hanford Site workforce (including site tenants)
- Total of 786 active facilities (buildings and MOs) including leased office and warehouse space
- 37 leased facilities (office and storage)
- 270 general purpose facilities (office, shop and storage)
- 38 facilities scheduled for D&D through FY2023 (based on Facilities Information Systems estimated disposition dates)
- 7,110 office population served (preliminary 2018 projection – Hanford mission support only)
- Target occupancy rate of 85% for general purpose office facilities

Project Descriptions

- L-896 Repair / replace 6266 roof (replaces WSCF project A-018)
- L-798, 2101M HVAC replacement
- L-796, Key facilities roof replacements
- L-797, Key facilities HVAC replacements
- L-300 Roof and HVAC replacements
- L-894, Various facilities roof replacements
- L-915, Various facility HVAC replacements
- L-996, General purpose facilities (GPP) and 018
- L-572, Fire system maintenance consolidation
- L-644, Conduct biological control facility conceptual design report / definitive design & construction
- L-645, MO414 Equipment parking and staging area
- L-920, IHES sop modification
- L-756, Upgrade barricade standby generators
- L-572, Fire system maintenance consolidation
- L-915, Various facility HVAC replacements
- L-996, General purpose facilities (GPP) and 018
- L-572, Fire system maintenance consolidation
- L-644, Conduct biological control facility conceptual design report / definitive design & construction
- L-645, MO414 Equipment parking and staging area
- L-920, IHES sop modification
- L-756, Upgrade barricade standby generators
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- L-915, Various facility HVAC replacements
- L-996, General purpose facilities (GPP) and 018
- L-572, Fire system maintenance consolidation
- L-644, Conduct biological control facility conceptual design report / definitive design & construction
- L-645, MO414 Equipment parking and staging area
- L-920, IHES sop modification
- L-756, Upgrade barricade standby generators

Major Actions/Decisions

- Office facilities planning support for new administration building Tank Operating Contract
- Facility master plan update
- 2101M Replacement study
- 2721E HVAC upgrade study
- 222 S Area storm water management system upgrades

Notes:
1. See Fire Roadmap for L-888, L-906, L-905.
2. See Fleet Service Roadmap for several projects.

END STATES 2023

- 15,272 projected total Hanford Site workforce (including tenants)
- 784 active facilities (buildings and MOs) including leased office and warehouse space
- Over 270 active general purpose facilities (office, shop and warehouse)
- Approximately 38 facilities demolished (the majority around PTP in the 200W Area)
- WTP facilities supporting DFLAW operations including Analytical Laboratory, Balance of Facilities, and Low-Activity Waste Facility
- Tank Farm office support facility
- 6,145 projected office population served
- Target occupancy rate of 90% for general purpose office facilities

40 Project years are based on Reliability Project Investment Portfolio List version 4th Qtr. 2018
Fleet Services Roadmap

2018 CURRENT CONDITION

- Population served: 10,320
- 3,197 vehicle and equipment items with 46% Alternative Fuel Vehicles (AFV - E85, hybrid & electric)
- 1,500 licensed truck and light duty vehicles; 62% AFV
- 3 buses
- 15.42 acre fleet complex in 200E, and 1 building in 400 Area
- 3 major facilities in overcrowded fair to poor condition, with 22 work bays for fleet service, parts, administration and operations, supported by 50% temporary and 50% permanent storage structures
- 6291 fuel station upgrade or replacement needed based on fueling equipment failure, facility age and obsolete components causing refueling outages in second half FY2017
- 55 FTE staff

Population served: 8,489
- 3,200 vehicles and equipment items with 46% AFV, primarily trucks, light duty and non-road equipment items
- 1,500 licensed vehicles are 62% AFV
- Number of buses required to support the DOE mission
- 16 acre consolidated fleet complex in 200E
- Completed consolidated new fleet shop complex within 200E
- Relocated body and paint shop from 4722C to 273E
- No facilities in 400 Area to meet footprint reduction goal
- 3 major facilities in fair to excellent condition with 30 work bays for fleet service, parts, administration and configured for WTP, DFLAW, Tank Operations Contract and River Corridor Cleanup completion needs
- Consolidated needs supported by 2 permanent storage structures to replace 30 conex units
- 60 FTE staff target size

Project Descriptions

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<td>L-907, Fleet complex site development</td>
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<td>L-908, Truck / automotive shop and storage structure</td>
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<td>L-909, Heavy equipment shop and storage structure</td>
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<tr>
<td>L-910, 27E renovation, HVAC replacement &amp; spray paint booth</td>
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<td>L-811, 2711EA &amp; 27E Fire barrier welding areas ^</td>
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<td>L-813, Conex pads - 211ED and 21302 tents. ^</td>
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<td>L-773, Electrical vehicle charging station for 2750E facility</td>
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<td>L-xx, 273E NPDES Storm water compliance</td>
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Highlighted labels indicate existing fleet facilities.

Major Actions/Decisions

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<td>Design consolidated fleet complex to replace 210ED, 211ED, 2711ED, 2711AE, 2711EA, 2711E &amp; 473E</td>
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<td>Upgrade or replace 6291 fuel station</td>
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<td>Permanent storage building #1 replaces 16 conex units (new complex)</td>
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<tr>
<td>Permanent storage building #2 replaces 14 conex units (new complex)</td>
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<td>Design</td>
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</tbody>
</table>

Highlighted labels indicate existing fleet facilities.

*Atlanta Ave. is restricted status between 3rd St. and 4th St.
HAMMER Roadmap

2018 CURRENT CONDITION

- DOE Voluntary Protection Program (VPP) Star Status (since 2002), embodying strong commitment to safety and health in operations and training activities. HAMMER has proudly maintained Star Status to date.
- Population served: 11,715.
- Site size: 88 acres plus 60 acres for future development.
- Safety training for workers and emergency responders who protect and safeguard the works and the environment. HAMMER provides training facilities, curriculum, and training services to federal, contractor, and sub-contractor employees in support of Hanford Site mission.
- National and regional training asset that serves other DOE, federal, state, and regional needs including disaster recovery, emergency response, transportation, fire protection, law enforcement, and military readiness.
- State-of-the-art instructional tools, such as interactive smart boards and tablets.
- Student numbers have significantly increased since 2014 resulting in a shortage of classrooms and practical training areas.
- Expertise and experience to help offsite customers and HAMMER’s national partnerships:
  - HAMMER and the Pacific Northwest National Laboratory (PNNL) are working together to deliver domestic and international border security training sponsored or funded by the Department of State and Homeland Security.
  - HAMMER and the Department of Transportation (DOT) are collaborating to develop and deliver training for first responders dealing with rail incidents involving hazardous materials.
  - HAMMER and the DOE Office of Infrastructure Security & Energy Restoration are working to train and deploy personnel for natural disaster responses.
- Working with ORP to explore training opportunities for future operations.

Project Description*

- Replace HVAC units in MO259 and MO260.
- Replace burn prop computer / sensors.
- Replace boilers in Al Alm building.
- Rebuild breathing air compressor.
- Rebuild three air handlers in Al Alm and administrative buildings.
- Replace two chillers in Al Alm building.
- Upgrade HVAC ATU controls.
- Replace boilers in administrative buildings.
- Rebuild air handling systems in Al Alm and administrative buildings.
- Rebuild breathing air compressor.
- Replace boilers in administration building.
- Replace boilers in Al Alm building.
- Construct Class A burn prop.
- Construct HAMMER auditorium.

CURRENT CONDITION END STATES 2023

- Population served: 12,390.
- Continue to support evolving Hanford Site cleanup training requirements.
- Preparation for this scope should be on a as needed basis as determined by the user.
- Maintain agile posture to support continued student days between 2018 and 2023 as the Hanford Site cleanup projects evolve and in anticipation of the start-up of WTP.
- Expand and strengthen HAMMER’s national programs and relationships:
  - Further solidify HAMMER’s role as a key asset in our nation’s ability to respond to incidents affecting the energy infrastructure.
  - Work with the DOT to foster development and delivery of major DOT safety courses.
  - Align HAMMER resources to support PNNL as they grow their domestic and international programs.
- Office space meets demands of instructor and support staff due to changing mission / training, needs and Hanford staff turnover.
- Props and classrooms identified and provided for changing mission training needs.

Project Descriptions (Continued)

- Replace HVAC units in MO259 and MO260.
- Upgrade HVAC ATU controls.
- Replace burn prop computer / sensors.
- Replace boilers in Al Alm building.
- Rebuild air handling systems in Al Alm and administrative buildings.
- Rebuild breathing air compressor.
- Replace boilers in administration building.
- Replace boilers in Al Alm building.
- Construct Class A burn prop.
- Construct HAMMER auditorium.

Major Actions/Decisions

Expanding training opportunities for future operations.

Population served: 12,390
- Continue to support evolving Hanford Site cleanup training requirements.
- Preparation for this scope should be on a as needed basis as determined by the user.
- Maintain agile posture to support continued student days between 2018 and 2023 as the Hanford Site cleanup projects evolve and in anticipation of the start-up of WTP.
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- Office space meets demands of instructor and support staff due to changing mission / training, needs and Hanford staff turnover.
- Props and classrooms identified and provided for changing mission training needs.

TRAINING FOCUS

- Nuclear Operations
- Cleanup

1988-2023
Mission Forward

Hanford is nationally recognized for:

- A culture of safe and secure operations
- Clean energy and environmental compliance
- Leadership and management excellence
- Changing the course of world history by helping usher in the atomic age

Infrastructure and site-wide services are:

- Provided at significantly reduced cost and with improved customer service for the mission
- Services aligned with contractor requirements, with no shortage or excess
- Modernized to support the world’s largest radioactive waste treatment plant

The Hanford Site “end state” demonstrates:

- A mutual vision among stakeholders, regulators, community, tribal nations and Department of Energy
- Strategic progress in Tri-Party Agreement milestones and cleanup projects
- Post-cleanup land use and economic diversification consistent with the comprehensive land use plan