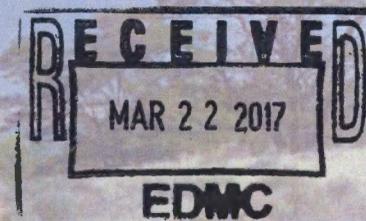


# **Richland Operations Office Briefing for EPA and Ecology**

**FY 2016 Year-End  
FY 2017 Appropriations**

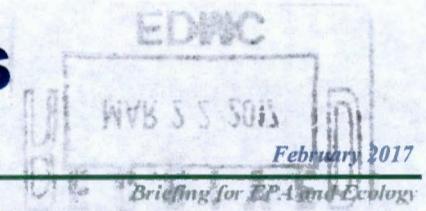


*Tom Teynor, Richland Operations Office  
February 2017*

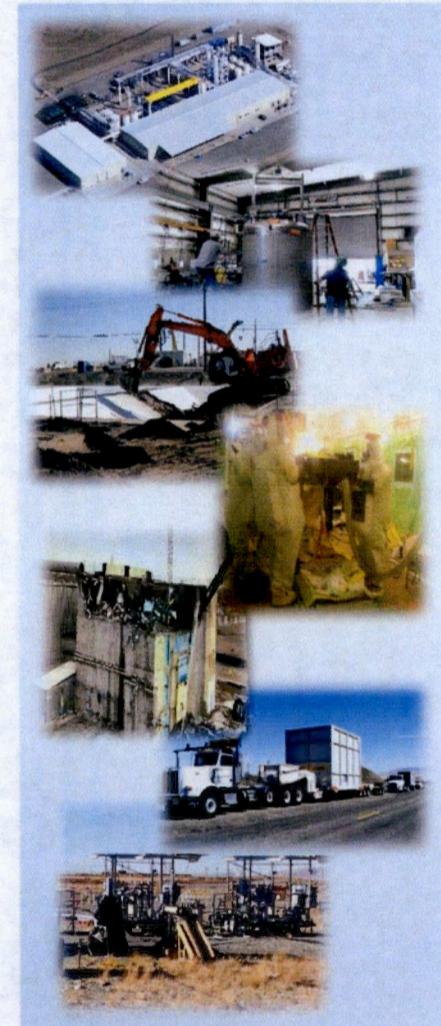


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# Major Cleanup Activities



- Maintain safe, secure and compliant activities, facilities and operations
- Continue Plutonium Finishing Plant (PFP) deactivation, decommissioning and demolition
- Continue groundwater pump-and-treat operations and implement additional groundwater remedies
- Continue River Corridor cleanup
- Continue preparation to move sludge from 100-K Area Basin (K Basin) near the Columbia River to interim storage in the Central Plateau
- Upgrade Waste Encapsulation Storage Facility (WESF) ventilation system
- Support limited repackaging of large transuranic (TRU) containers and waste drums
- Continue to maintain and upgrade Hanford Site Infrastructure



# Richland Prime Contracts

February 2017

Briefing for EPA and Ecology

<b>Plateau Remediation Contract PRC</b> 	<b>Mission Support Contract MSC</b> 
<p>Facility and waste site cleanup, groundwater remediation, waste management</p>	<p>Cost-effective infrastructure and site services to support the cleanup mission</p>
<p>Awarded in 2008 for 5 years, with 5 option years                      Total Contract Value: \$5.8B                      Cost-plus award-fee contract</p>	<p>Awarded in 2009 for 5 years with 2 and 3-year option years                      Total Contract Value: \$3.6B                      Cost-plus award-fee contract</p>
<p><b>HPM Corporation (HPMC) provides occupational medical services to DOE, Hanford contractors</b>                      Awarded in 2012 for 2 years with four 1-year option periods, a hybrid contract that includes firm-fixed price with award fee, cost reimbursement, and Indefinite Delivery Indefinite Quantity (IDIQ) component.                      Total Contract Value: \$99.5M</p>	

# Safety and Health

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- Voluntary Protection Program (VPP) – Star status for all contractors
- Enhanced process for site wide safety standard development and implementation



# RL Profile Project Baseline Summary (PBS)

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(\$ in Thousands)

PBS	PBS Title	FY 2016 President's Budget	FY 2016 Enacted	FY 2017 President's Budget	* FY 2017 Planned Work
RL-0011	NM Stabilization and Disposition - PFP	148,661	148,661	72,000	
RL-0012	SNF Stabilization and Disposition	81,192	81,192	58,014	
RL-0012	15-D-401 Containerized Sludge Line Item	77,016	77,016	11,486	
RL-0013	Solid Waste Stabilization and Disposition - 200 Area	150,691	150,691	104,400	
RL-0030	Soil and Water Remediation - Groundwater/Vadose Zone	174,619	174,619	139,904	
RL-0201	Hanford Site Wide Services			246,551	
RL-0202	General Plant Projects (GPP)			8,949	
<b>Subtotal</b>	<b>Central Plateau Remediation</b>	<b>632,179</b>	<b>632,179</b>	<b>641,304</b>	<b>671,304</b>
RL-0040	Nuclear Facility D&D - Remainder of Hanford	88,874	88,874	41,000	
RL-0041	Nuclear Facility D&D - River Corridor Closure Project	108,083	181,836	28,755	
<b>Subtotal</b>	<b>River Corridor and Other Cleanup Operations</b>	<b>196,957</b>	<b>270,710</b>	<b>69,755</b>	<b>143,755</b>
RL-0020	Safeguards and Security	67,601	65,501	72,000	72,000
RL-0042	Nuclear Facility D&D - Fast Flux Test Facility Project	2,562	2,562	2,240	2,240
RL-0100	Richland Community and Regulatory Support	14,701	19,701	14,701	24,701
<b>Total</b>	<b>Richland Field Office Funding Summary</b>	<b>\$914,000</b>	<b>\$990,653</b>	<b>\$800,000</b>	<b>\$914,000</b>



\*FY 2017 Planned work based on RL Execution Integrated Priority List.

# Site-Wide Services

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***Prior to FY 2017, site-wide services were prorated across the Project Baseline Summaries (PBSs). Starting in FY 2017, Richland is funding these services entirely from a dedicated PBS (RL-0201).***

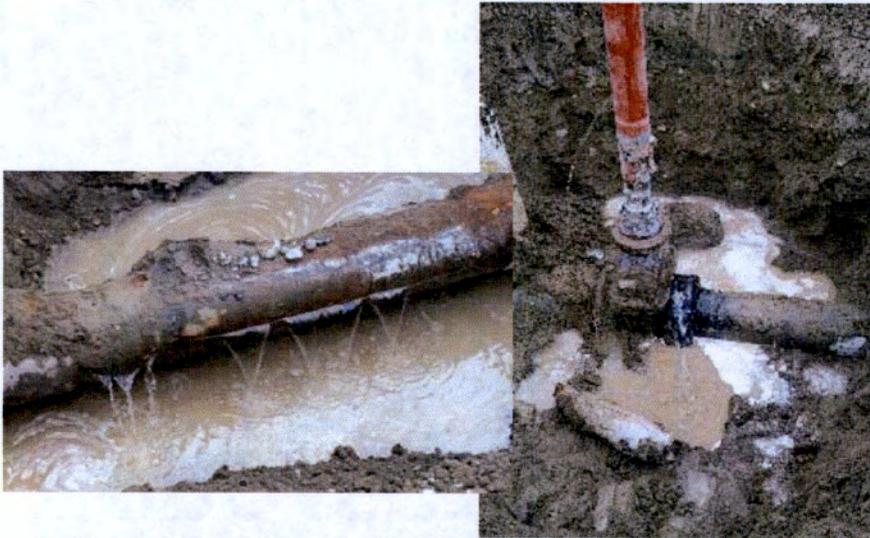


Provide site-wide services for day-to-day operations to include, but not be limited to, general utilities and fire department

# Infrastructure

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Briefing for EPA and Ecology



## ***Water Systems***

- Over 100 miles of buried pipe
- Over 900 million gallons of water to be used annually

## ***Electrical Utilities***

- 200+ miles of transmission and distribution lines
- 6,000+ power poles
- Loads will triple with Waste Treatment Plant

## ***Emergency Services and Immobilization Systems***

- Radio Fire Alarm Reporting is essential to the safety and security of facilities and employee welfare

## ***Information Technology***

- Legacy applications to be updated
- Cyber security improvements

## ***Roads***

- Over 7,600 passenger vehicles (daily average)
- 350+ lane miles of roads
- 900 trips by heavy trucks (daily average)

*RL Budget Overview*

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# PROJECT WORK – RIVER CORRIDOR



U.S. DEPARTMENT OF  
**ENERGY**

# River Corridor – RL-0012

February 2017

Briefing for EPA and Ecology

## Accomplishments in FY 2016

### K West Reactor Basin Closure, RL-0012

- Operated and maintained K Basin, a Category 2 nuclear facility, and associated structures in a safe and compliant manner and supported required surveillance and maintenance activities
- Continued T Plant modifications to prepare for receipt and storage of sludge
- Completed cold commissioning of Engineered Container Retrieval and Transfer System (ECRTS) at the Maintenance and Storage Facility (MASF) (mock-up facility)

### Sludge Removal Project Line Item, RL-0012

- Completed ECRTS procurements
- Continued in-basin and basin annex equipment installations
- Continued Sludge Transport and Storage Container (STSC) procurements



Sludge transport and storage container procurement



Sand filter skids staged at MASF

# River Corridor – RL-0012

February 2017

Briefing for EPA and Ecology

## Planned Accomplishments in FY 2017

### K West Reactor Basin Closure, RL-0012

- Continue to operate and maintain K Basin, a Category 2 nuclear facility, and associated structures in a safe and compliant manner and support required surveillance and maintenance activities
- Complete T Plant modifications to prepare for receipt and storage of sludge

### Sludge Removal Project Line Item, RL-0012

- Complete TPA Milestone M-016-177 (Complete 105-KW sludge transfer equipment installation)
- Complete K-Basin pre-operational acceptance testing (KPAT) for Engineered Container Retrieval and Transfer System (ECRTS)

*Engineered container retrieval and transfer system production and equipment*



# River Corridor – RL-0041

February 2017

Briefing for EPA and Ecology

## Accomplishments in FY 2016

### Nuclear Facility D&D – River Corridor Closure Project, RL-0041

- Completed Tri-Party Agreement (TPA) Milestones M-016-149 (completed interim response action for 36 100-IU-2/6 waste sites), M-016-161 (completed interim response action for 29 100D/H Area waste sites and decommission 147-D) and M-089-06 (submitted permit modification to incorporate approved 324 closure plan and establish schedule)
- Completed augering of 618-10 burial ground vertical pipe units (VPUs) and initiated retrieval of waste from VPUs
- Continued design for remediation of waste site 300-296 (under 324 Building)
- Disposed of 560,490 tons of wastes in the Environmental Restoration Disposal Facility (ERDF) in support of Hanford Site cleanup operations
- Completed transition of work scope from River Corridor Closure Contract to CH2M HILL Plateau Remediation Company
- Completed remediation of four waste sites in the 100-K Reactor Area



Aerial photo of 100-D Reactor Area



Augering vertical pipe units in 618-10 Burial Ground

# River Corridor – RL-0041

February 2017

Briefing for EPA and Ecology

## Planned Accomplishments in FY 2017

### Nuclear Facility D&D – River Corridor Closure Project, RL-0041

- Complete TPA Milestones M-016-00A (complete all response actions for 100 Areas except groundwater and 100-K) and M-016-164 (complete 100-N interim response actions and close 100-N ancillary facilities)
- Complete excavation of 618-10 Burial Ground trenches and retrieval of remaining 94 VPUs
- Complete excavation of waste sites 316-4 and 600-63
- Complete final design for remediation of waste site under 324 Building (300-296) and proceed with equipment procurements
- Complete construction of the mockup facility for the 300-296 waste site remediation
- Initiate cleanout of the 324 radiochemical engineering cell airlock
- Operate the ERDF in support of Hanford Site cleanup operations



Excavating trenches in 618-10 Burial Ground

*RL Budget Overview*

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# PROJECT WORK – CENTRAL PLATEAU



# Plutonium Finishing Plant – RL-0011

February 2017

Briefing for EPA and Ecology

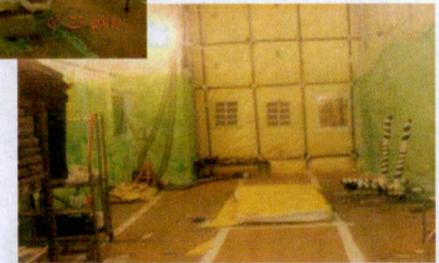
## Accomplishments in FY 2016

### Plutonium Finishing Plant, RL-0011

- Provided safe and essential services to manage industrial, radiological and nuclear hazards during the D&D of the PFP systems, facilities, and structures
- Completed size-reduction, packaging, removal and shipping of the last high hazard glovebox (HA-9A)
- Implemented documented safety analysis allowing open air demolition
- Completed demolition of ancillary facilities including 2727-Z and 2729-Z
- Removed and dispositioned glove boxes HC-4, HC-6, Hood 166-1 and associated pencil tanks



Workers remove the final pieces of glove box HA-9A



Workers prepared wall openings to allow the removal of HC-4, HC-6, 166-1 hood



# Plutonium Finishing Plant – RL-0011

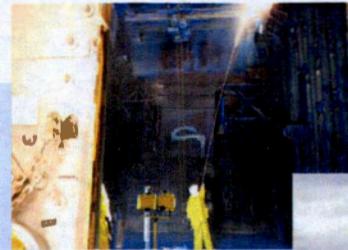
February 2017

Briefing for EPA and Ecology

## Planned Accomplishments in FY 2017

### Plutonium Finishing Plant, RL-0011

- Provide safe and essential services to manage industrial, radiological and nuclear hazards during the D&D of the PFP systems, facilities, and structures
- Continue to prepare for demolition of the above-grade portions of PFP facilities (234-5Z and 291-Z)
- Demolish all four primary facilities (236-Z, 242-Z, 291-Z, and 234-5Z) to slab-on-grade along with remaining ancillary facilities/structures
- Sample/characterize the slabs for buildings 236-Z and 242-Z in preparation for slab removal
- Transfer PFP site to a surveillance and maintenance mode



Final preparations for demolition of 236-Z



Demolition of 236-Z and 242-Z began in early November 2016



# Solid and Liquid Waste Management – RL-0013

February 2017

Briefing for EPA and Ecology

## Accomplishments in FY 2016

### Solid Waste Stabilization and Disposition, RL-0013

- Continued operation of waste treatment and compliant storage facilities (Central Waste Complex, solid waste base operations, mixed waste disposal trenches, Integrated Disposal Facility, T Plant, WESF and ERDF interface)
- Completed WESF K3 stabilization and ventilation upgrade
- Completed construction of ERDF leachate transfer line to 200 West Pump-and-Treat Facility
- Awarded design/fabrication contract for cesium/strontium (Cs/Sr) capsules storage casks
- Completed actions in the Ecology Agreed Order
- Performed shipments of large containers of TRU-mixed waste to Perma-Fix Northwest to repackage suspect TRU waste (280 m<sup>3</sup> for TPA Milestone M-091-47B)



Shipment of large package of transuranic waste to Perma-Fix Northwest

# Solid and Liquid Waste Management – RL-0013

February 2017

Briefing for EPA and Ecology

## *Planned Accomplishments in FY 2017*

### **Solid Waste Stabilization and Disposition, RL-0013**

- Provide base operations to support safe and compliant storage of special nuclear fuel and Cs/Sr capsules
- Complete grouting cells at WESF
- Operate waste treatment and compliant storage facilities (Central Waste Complex, solid waste base operations, mixed waste disposal trenches, Integrated Disposal Facility, T Plant, WESF and ERDF interface)
- Complete conceptual design for Cs/Sr capsules dry storage project
- Continue to repackage drums of radioactive/hazardous waste and large boxes at Perma-Fix Northwest (280 m<sup>3</sup> for the TPA Milestone M-091-47C)
- Prepare target milestones for transuranic waste retrieval for TPA Milestone M-091-52, including facility upgrades or modifications

# Groundwater – RL-0030

February 2017

Briefing for EPA and Ecology

## Accomplishments in FY 2016

### Soil and Water Remediation – Groundwater, RL-0030

- Continued integration of site-wide groundwater and vadose zone cleanup activities; groundwater contamination monitoring; and operations, maintenance, and necessary modifications of existing remediation systems
  - Initiated new uranium treatment at 200 West Pump-and-Treat Facility in accordance with the 200-UP-1 Record of Decision
  - Initiated operations of 200 East Area groundwater treatment at 200 West Pump-and-Treatment Facility
  - Expanded treatment capabilities at 200 West Pump-and-Treatment Facility by 20 percent
  - Expanded the 200 East Area transient perched water system to remove highly contaminated uranium
  - Initiated ERDF leachate treatment at 200 West Pump-and-Treatment Facility
  - Continued operation of the River Corridor and Central Plateau Area pump-and-treat facilities, treating 2.2 billion gallons of contaminated groundwater and removing over 90 tons of contaminants (completing 20 years of carbon tetrachloride soil remediation)
  - Continued to meet well drilling commitments for TPA Milestone M-024

# Groundwater – RL-0030

February 2017

Briefing for EPA and Ecology

## Accomplishments in FY 2016

### Soil and Water Remediation – Groundwater, RL-0030

- Continued progress towards obtaining final remediation Records of Decision for the River Corridor and Central Plateau
  - Completed remedial investigation of the orchard lands on the River Corridor (100-OL-1)
  - Completed ROD implementation activities for the first of two stages of the 300 Area uranium sequestration and well drilling for 100-F/IU monitoring



300 Area uranium sequestration skids

# Groundwater – RL-0030

February 2017

Briefing for EPA and Ecology

## Planned Accomplishments in FY 2017

### Soil and Water Remediation – Groundwater, RL-0030

- Continue integration of site-wide groundwater and vadose zone cleanup activities; groundwater contamination monitoring; and operations, maintenance and necessary modifications of existing remediation systems
- Continue operation of River Corridor and Central Plateau Area pump-and-treat facilities for treatment of at least 2.2 billion gallons of contaminated groundwater (removing uranium, carbon tetrachloride, nitrates, hexavalent chromium and technetium-99)
- Continue to meet well drilling commitments  
TPA Milestone M-024



200 West Pump-and-Treat Facility

# Groundwater – RL-0030

February 2017

Briefing for EPA and Ecology

## *Planned Accomplishments in FY 2017*

### **Soil and Water Remediation – Groundwater, RL-0030**

- Continue progress towards obtaining final remediation Records of Decision for the River Corridor and Central Plateau
  - Prepare and submit Remedial Investigation Report Draft A for the orchard lands on the River Corridor (100-OL-1)
  - Obtain the Record of Decision for 100-D/H Areas
  - Prepare and submit 100-BC-5 Remedial Investigation Feasibility Study & Proposed Plan Draft A
- Continue Record of Decision implementation activities for the final stage of the 300 Area uranium sequestration

# Deactivation and Demolition – RL-0040

February 2017

Briefing for EPA and Ecology

## Accomplishments in FY 2016

### Nuclear Facility D&D for the Remainder of Hanford, RL-0040

- Completed surveillance and maintenance activities to ensure safety for inactive waste sites and surplus facilities on the Central Plateau
- Completed demolition of five structures (radiological buildings 207A, 2710S, and 2718) and industrial facilities (2711S and 275EA)
- Continued canyon facility risk mitigation activities
- Completed 90 percent design for REDOX roof replacement
- Completed removal of REDOX Pu nitrate bags
- Continued progress on the canyon stabilization documents and annual documented safety analysis updates
- Obtained approval of the Remedial Design/Removal Action Work Plan for soil waste sites containing plutonium which implements the approved Record of Decision
- RL-directed services for enhanced site integration (occupational medicine, land conveyance, energy savings/alternative fuels and stakeholder involvement)
- Provided HAMMER facilities/programs for safety and health training
- Completed site infrastructure upgrades, replacements and repairs
- Expanded electrical utility and sewer system upgrades
- Accelerated facility, roads, electrical, water and wastewater system repairs
- Completed additional infrastructure maintenance backlog activities



Demolition of 207A South Retention Basin



D4 of 2710S before and after

# Deactivation and Demolition – RL-0040

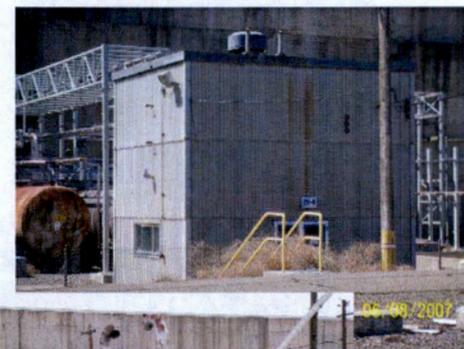
February 2017

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## Planned Accomplishments in FY 2017

### Nuclear Facility D&D for the Remainder of Hanford, RL-0040

- Continue surveillance and maintenance activities to ensure safety for inactive waste sites and surplus facilities on the Central Plateau
- Complete demolition of three B Plant ancillary buildings
- Continue canyon facility risk mitigation activities
  - Complete REDOX roof replacement construction
  - Initiate REDOX North Sample Gallery and REDOX silo clean out
  - Continue development of required CERCLA documentation



Complete demolition of three structures

# Safeguards and Security – RL-0020

February 2017

Briefing for EPA and Ecology

## ***Accomplishments in FY 2016***

### **Safeguards and Security, RL-0020**

- Maintained safe and mission essential safeguards and security (SAS) programs at the Hanford Site, including protection of Category 1 special nuclear material
- Maintained appropriate and compliant SAS programs including protection program management, emergency response, physical security, information protection, protective force, personnel security, cyber security and nuclear material control and accountability for RL and ORP
- Launched major cyber security initiative to move Hanford network authentication from Level 3 to Level 4 (the highest practical remote network authentication assurance)

## ***Planned Accomplishments in FY 2017***

### **Safeguards and Security, RL-0020**

- Complete upgrading Hanford's network cyber security position to level of assurance 4 multi-factor authentication as mandated by Office of Management and Budget in 2016
- Maintain safe and mission essential SAS programs at the Hanford Site, including protection of Category 1 special nuclear material
- Maintain appropriate and compliant SAS programs including protection program management, emergency response, physical security, information protection, protective force, personnel security, cyber security and nuclear material control and accountability for RL and ORP

# Fast Flux Test Facility– RL-0042

February 2017

Briefing for EPA and Ecology

## *Accomplishments in FY 2016*

### **Nuclear Facility D&D Fast Flux Test Facility, RL-0042**

- Supported long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities
  - Support is required until the residual and bulk sodium is dispositioned and facility deactivation and decommissioning is resumed

## *Planned Accomplishments in FY 2017*

### **Nuclear Facility D&D Fast Flux Test Facility, RL-0042**

- Support long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities
  - Support is required until the residual and bulk sodium is dispositioned and facility deactivation and decommissioning is resumed

# Hanford Site Support – RL-0100

February 2017

Briefing for EPA and Ecology

## ***Accomplishments in FY 2016 and Planned Accomplishments in FY 2017***

### **Community and Regulatory Support (RL-0100)**

- Support the Washington and Oregon emergency preparedness programs, Washington State Department of Health oversight and other activities related to Hanford cleanup
- Support the Washington State Department of Ecology RCRA Mixed Waste Program; Washington State Department of Health's air emissions monitoring; Payment in Lieu of Taxes for Grant, Benton, and Franklin Counties; Hanford Advisory Board and miscellaneous permits and fees

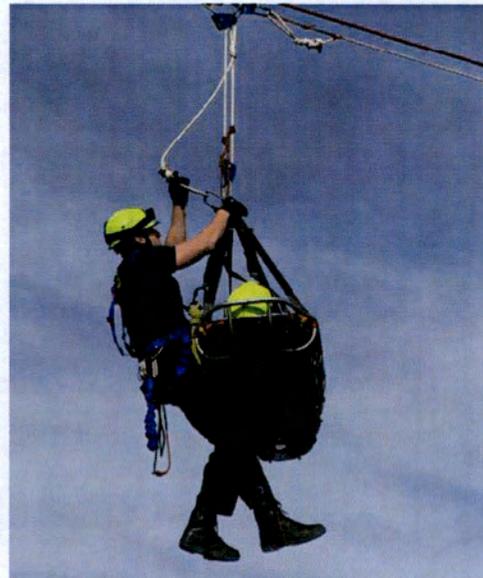
# Site-Wide Services – RL-0201

February 2017

Briefing for EPA and Ecology

## *FY 2016 and FY 2017 Planned Accomplishments*

- Provide site-wide services for day-to-day operations and cleanup support
- Fund RL-direct services including but not limited to site integration, tribal commitments and emergency preparedness
- Support infrastructure upgrades and site maintenance



# General Plant Projects – RL-0202

February 2017

Briefing for EPA and Ecology

## *FY 2016 and FY 2017 Planned Accomplishments*

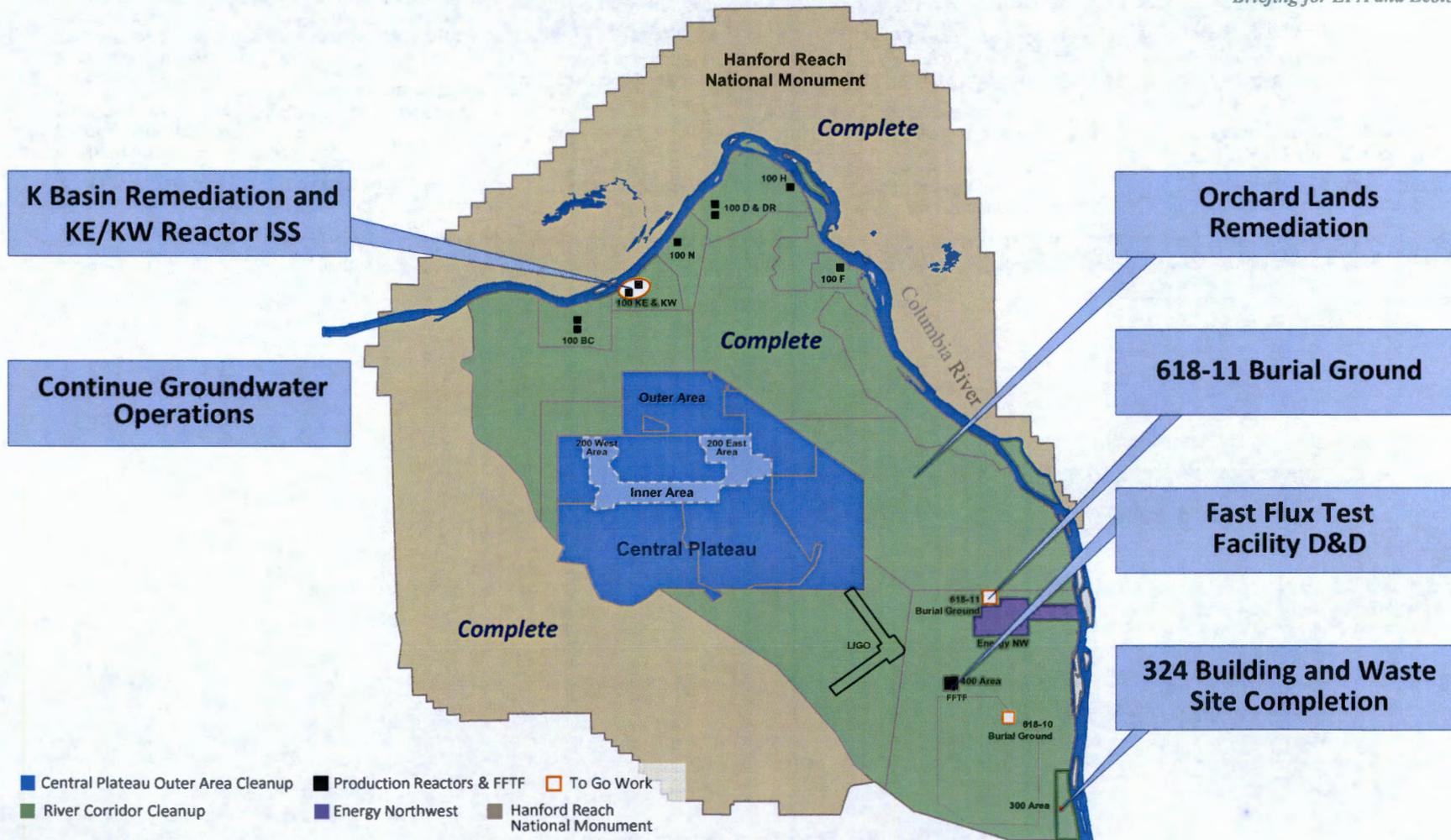
- Support general plant projects for infrastructure upgrades and site maintenance

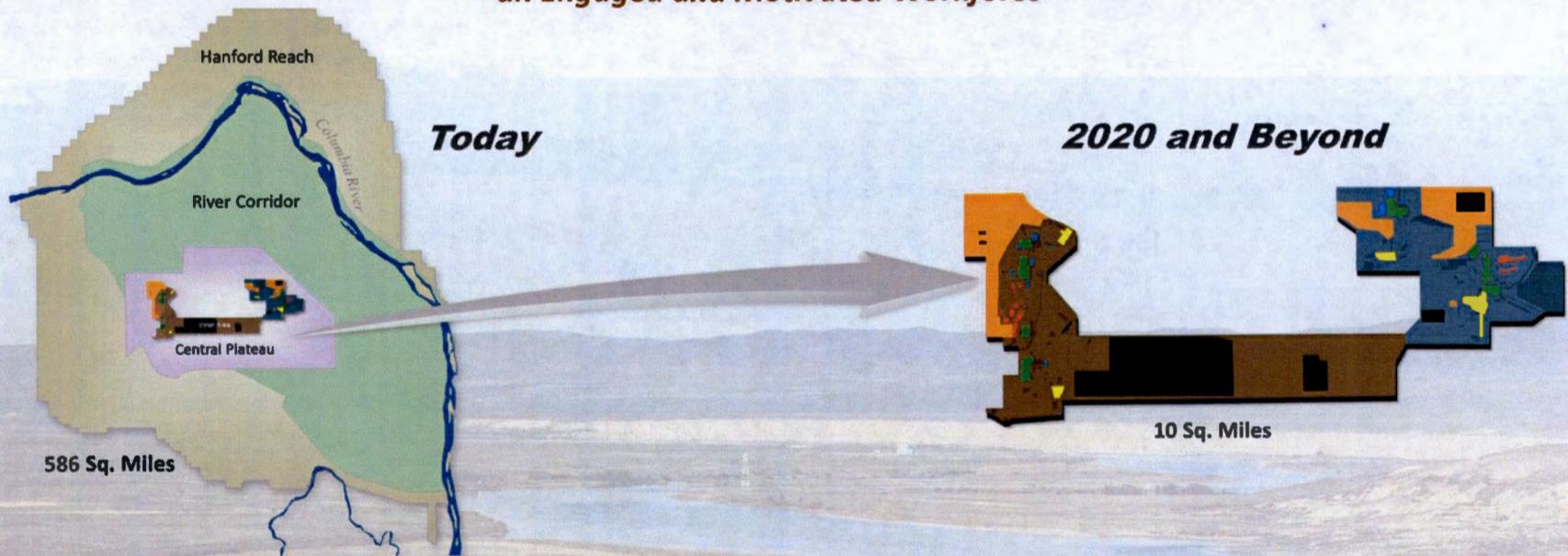


# River Corridor Remaining Workscope

February 2017

Briefing for EPA and Ecology





*Key Accomplishments Completed by:*

CY 2017	CY 2018	CY 2019
<ul style="list-style-type: none"> <li>PPF Demolished to Slab on Grade</li> <li>Manhattan Project National Park Transition Plan Completed</li> <li>Protocols for Open and Transparent Access and Use of Remediated Lands Established</li> </ul>	<ul style="list-style-type: none"> <li>River Corridor Orchard Lands Remedial Investigation Report Completed</li> <li>618-10 Burial Ground and Associated Waste Sites Completed</li> <li>Initiate Characterization of the Central Plateau 200-WA-1 Operable Unit</li> <li>Manhattan Project National Park Transition Plan Implementation Initiated</li> </ul>	<ul style="list-style-type: none"> <li>River Corridor Capital Asset Project Completed</li> <li>All (6) River Corridor Records of Decision Completed</li> <li>All River Corridor Remedial Actions (except 618-11 and K Area) Completed</li> <li>All River Corridor Groundwater Remedial Actions Implemented</li> <li>Remote Excavation of Waste Site under 324 Building Completed and Demolition Initiated</li> <li>K Area Sludge Removal Capital Asset Project Completed</li> </ul>
		<ul style="list-style-type: none"> <li>K Area Sludge Transferred to T Plant for Storage, Treatment, and Disposal</li> <li>Cleanup of K Reactor Area Initiated</li> <li>Cesium/Strontium Capsules Storage Area and WESF Modifications Initiated</li> <li>All Central Plateau Groundwater Records of Decision Completed and Treatment Capacity Increased to 1.3 Billion Gallons a Year</li> <li>Key Infrastructure Projects Completed and Remaining Essential Infrastructure Projects Prioritized</li> </ul>
		<ul style="list-style-type: none"> <li>Hanford Site RCRA Permit Finalized and Signed</li> <li>All Signed Tribal MOA Commitments Completed</li> <li>New Cleanup Contracts Awarded and Contract Transition Completed</li> <li>Partial Natural Resources Damage Assessment Settlements Initiated</li> <li>Collaboration, Coordination and Communications with ORP improved</li> </ul>

Based on Funding Profile of ~\$900M

