

# 2014 System Plan, Revision 7— Selected Cases

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# System Plan, Revision 7

- Purpose:
  - To describe the disposition of all tank waste managed by ORP and the completion of the treatment mission.*
- Governed by Milestone M-062-40
- 5 cases selected
- System Plan, rev. 7 modeling results due Oct. 31, 2014

# Expectations

- Model activity and operations from present to out years
- Evaluate process to be Consent Decree compliant
- Identify areas of improvement
- Determine need for double shell tank space

# Cases Selected by Ecology

<b>Case 1*</b>	Consent Decree Compliant
<b>Case 2*</b>	Direct Feed Low-Activity Waste and Direct Feed High-Level Waste Flow sheet
<b>Case 3</b>	Contingency Case for Waste Treatment and Immobilization Plant Startup Uncertainty
<b>Case 4</b>	Leaking Tanks
<b>Case 5</b>	Consequences of Limited Funding
<p>* An additional sensitivity case has been selected which includes a minor analysis of a variation to the primary case. Use of the enhanced glass model will be evaluated.</p>	

# Case 1:

## Consent Decree Compliant

- Questions to be answered:
  - What does it take to meet requirements?
    - Complete C Tank Farm retrievals by 9/30/2014
    - Complete retrieval from 9 additional single shell tanks by 9/30/2022
    - Complete retrieval of all single shell tanks by 2040
    - Complete vitrification of HLW and LAW tank wastes by 2047
- Features:
  - Hanford Tank Waste Operations Simulator model improvements (carried through all cases)
  - Expecting double-shell sludge waste level rise acceptable
  - All WTP facilities available to meet Consent Decree dates

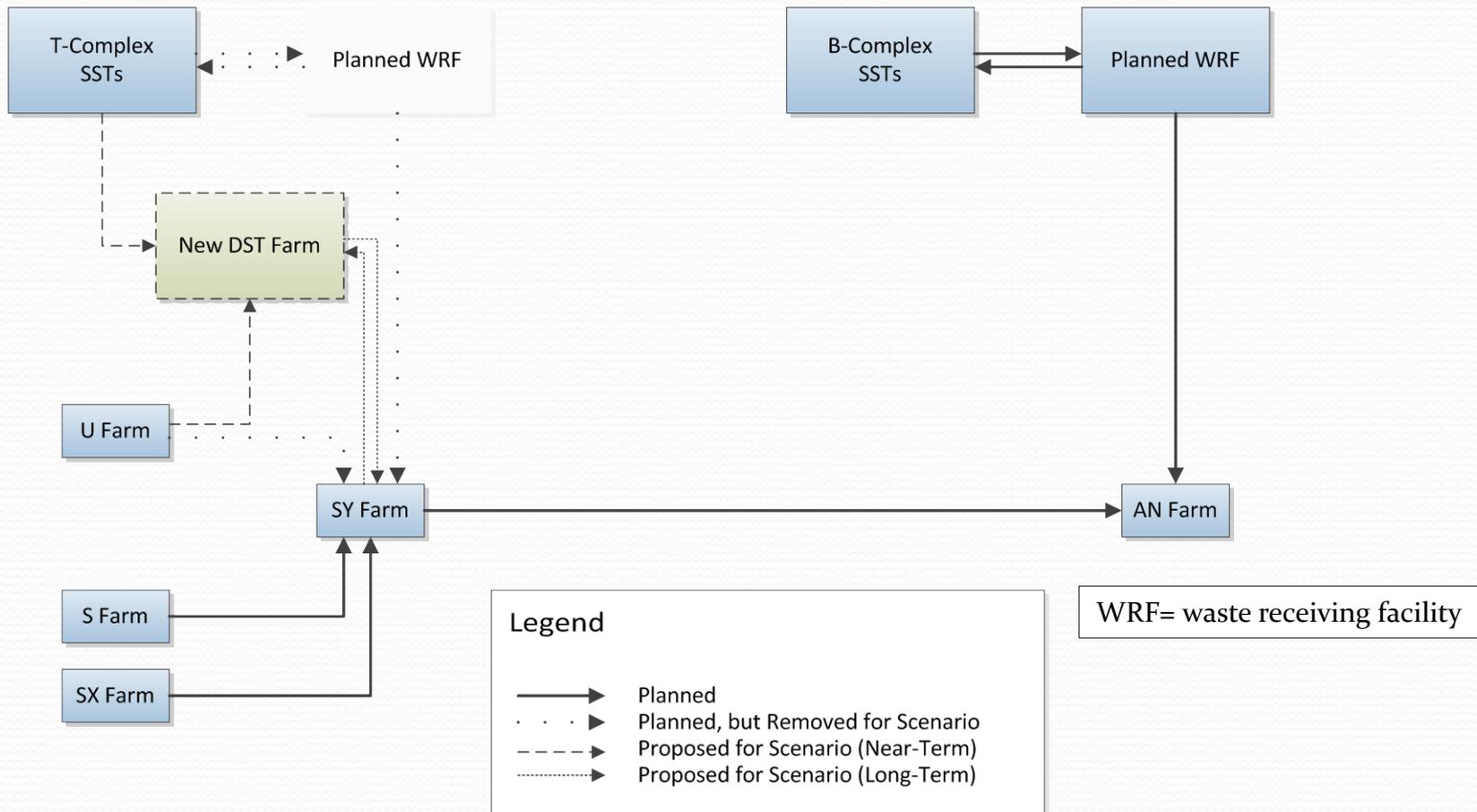
# Case 2: Direct Feed LAW & HLW

- Questions to be answered:
  - What is impact on throughput when bypassing WTP pretreatment facility?
  - What is efficiency and effectiveness of the Interim Pretreatment System?
  - What is impact of enhanced glass model?
- Features:
  - Direct Feed LAW starts hot commissioning in 2022
  - Interim Pretreatment System is on time to meet hot commissioning of WTP LAW
  - Direct feed HLW starts hot commissioning in 2025
  - New Tank Waste Characterization and Staging capability is in place to meet hot commissioning of WTP HLW

# Case 3: Contingency Case for WTP Startup Uncertainty

- Questions to be answered:
  - What is number of new double shell tanks needed in 200 West Area to support single shell tank retrievals if WTP not fully operational until 2033?
  - What will be total number of tanks and timing of construction to complete single shell tank waste retrieval by 2040?
- Features:
  - Direct Feed LAW radioactive operations start 2027
  - Direct Feed HLW radioactive operations start 2030
  - Complete single shell tank retrievals by 2040

# Case 3: Simplified Diagram of Proposed New Double Shell Tank Farm



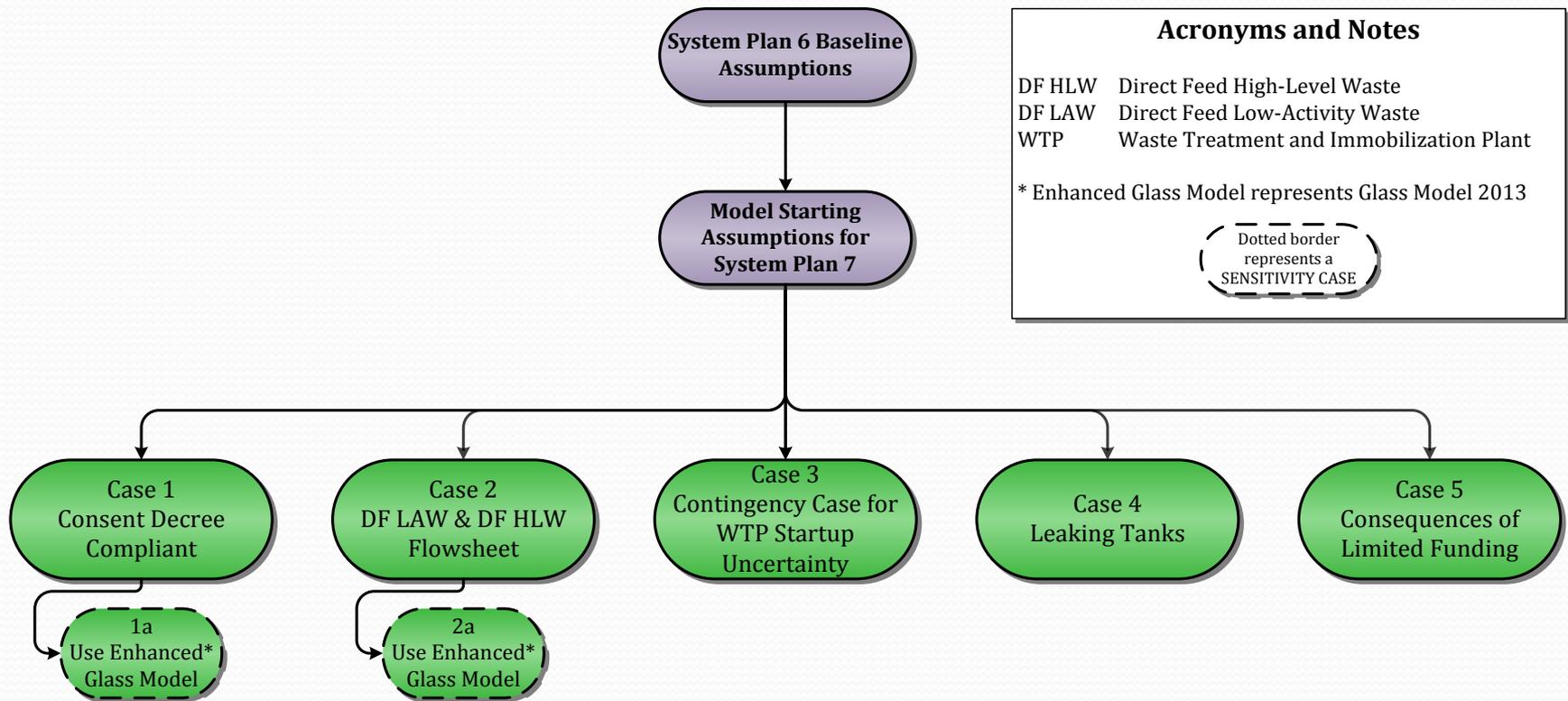
# Case 4: Leaking Tanks

- Question to be answered:
  - What is impact of emergent leaking tanks which will require immediate, unplanned waste retrieval?
- Features:
  - 5 leaking single shell tanks are identified and retrieved, or surface barrier installed, before 2022
  - 1 double shell tank becomes unfit for use every 4 years starting in 2016
  - Starting in 2022, and every 5 years thereafter, 1 single shell tank confirmed as leaking and needs immediate waste retrieval
  - Not greater than 25% retrieval efficiency

# Case 5: Consequences of Limited Funding

- Question to be answered:
  - What is impact of limited funding on mission metrics?
- Features:
  - Complete all single shell tank waste retrievals by 2040
  - Assume 12 years (2014-2025) funding:
    - 2014 = \$1,085M (\$460M for tank farms + \$625M for WTP)
    - 2015-2025 = \$1,135M (\$510M for tank farms + \$625M for WTP)
    - 2026-2030 -- funding ramp up not > 10%/year
    - 2031 and beyond – funding provided as needed to complete activities

# Relationship of Cases



# Schedule-Based Success Criteria

Metric	Success Criteria	Milestone Number
Complete 241-C Tank Farm Retrievals	9/30/2014	B-1
Start Five Additional Single Shell Tank Retrievals	12/31/2017	B-3
Close Waste Management Area C	6/30/2019	M-045-83
Complete Nine Additional Single Shell Tank Retrievals	9/30/2022	B-4
Complete all Single Shell Tank Retrievals	12/31/2040	M-045-70
Close all Single Shell Tanks	1/31/2043	M-045-00
Treat all Tank Waste	12/31/2047	M-062-00
Close all Double Shell Tanks	9/30/2052	M-42-00A