

Waste Classification and Transportation: AVAC

Tom Jones
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Together, Building
a Better California



Equal Evaluation of Transportation Options

- 2018 NDCTP included thorough cost estimate of trucking and rail
- 2021 NDCTP will include new barging analysis
- Initiated further barging actions based on Panel input and UCLA risk study
 - Regulator consultations
 - Conducting feasibility & costing studies that include:
 - Needed infrastructure
 - Types of vessels
 - Weather impacts
 - Time optimized shipping
 - Do certain phases generate enough material for barging
 - Cost evaluation



Clean Waste

Metal for Recycle

Concrete/Asphalt for
Recycle

General Construction
Debris for Disposal

Other Regulated

Clean waste is defined as any waste that is not a radioactive waste.

Regulated waste includes any material that is considered hazardous at a Federal or State level.

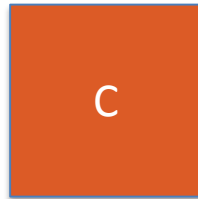
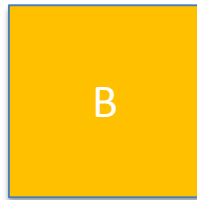
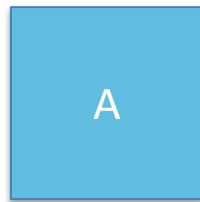
Clean rubble concrete will be used on site to the maximum extent practicable.



Radioactive Waste by Classification

Class A, B, C, GTCC are all Low Level Wastes determined by isotope content and quantity

Low-Activity Radioactive Waste (LARW) exhibits minimum detectable activity and is disposed of at licensed facilities as part of a 10 CFR 20.2002 process



Spent Nuclear Fuel (SNF) is the only high level waste at Diablo Canyon

Industrial Package 1 (IP1) Bag

- Example Shipment: Very low level concrete and asphalt
- Note: IP1 Bag is placed in Intermodal Container



Intermodal Container

- All containers are sealed
- Compatible with barge, rail, truck, or vessel
- Intermodals may contain: Non Radioactive Waste, LARW, Class A
- Contents are transferred to gondola rail car, or
- Intermodal container placed on train car to ultimate destination





Gondola Rail Car

- Example Shipment: Gondola Rail Car



Class A Waste Package

- Example Shipment: Filters





Class B / C Waste Package



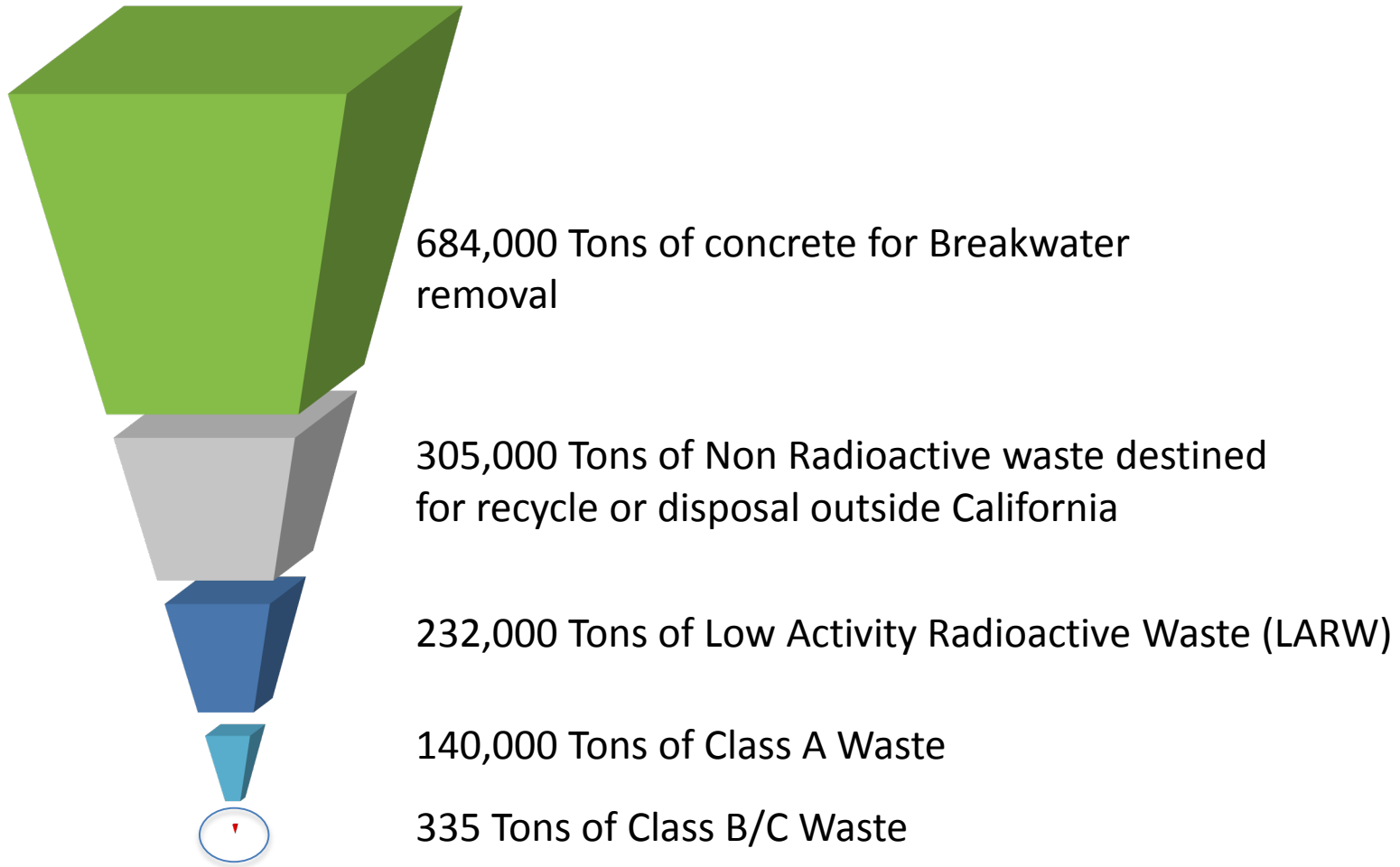


Spent Nuclear Fuel and GTCC Package



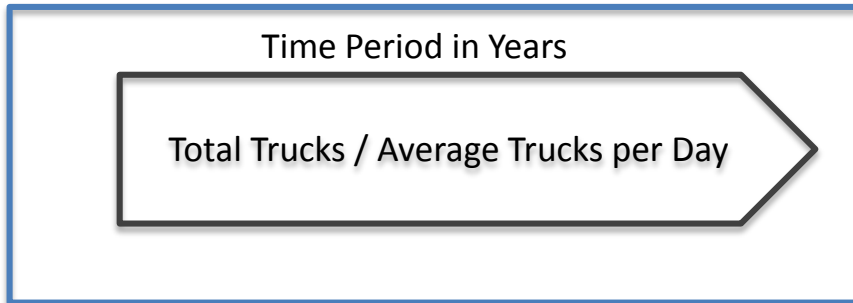
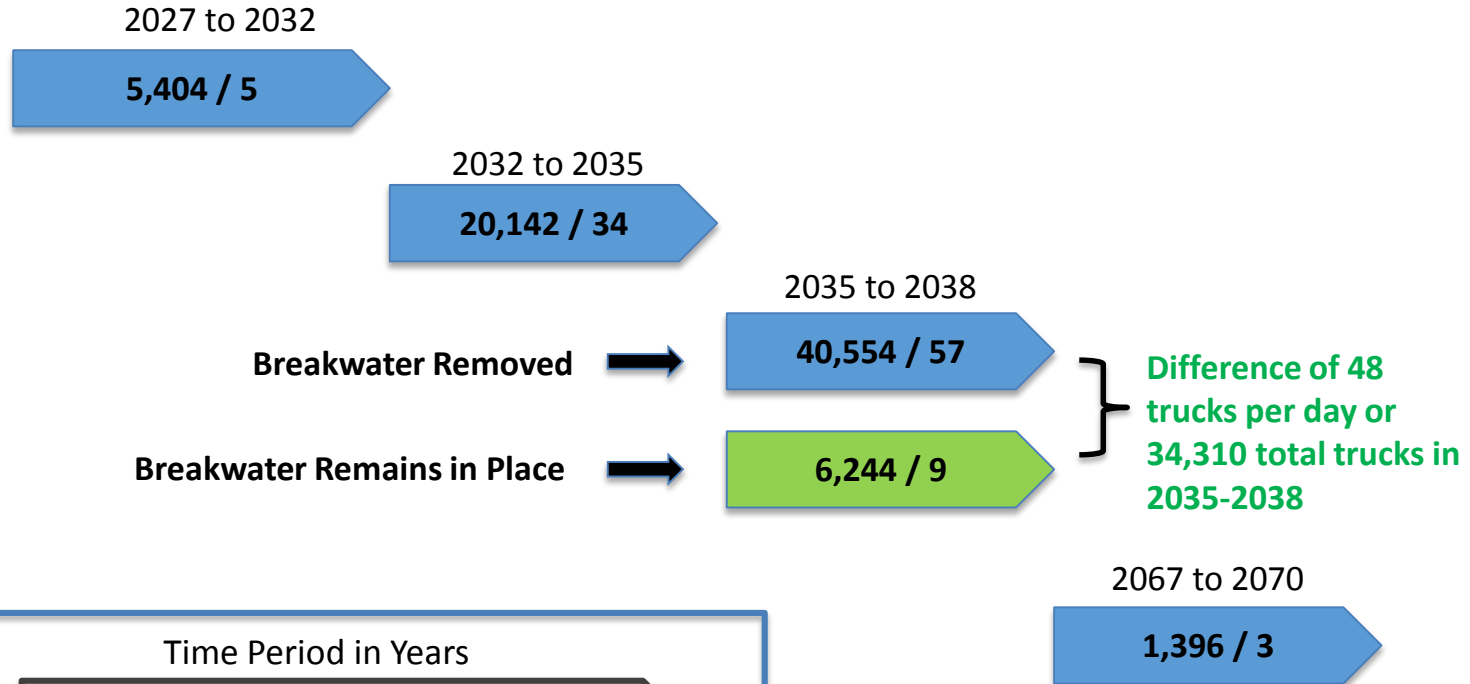


How Much Material Removed ?





Truck Trips for Waste Removal Timeline



Historical Barging to DCPP

- New Steam Generators delivered to Diablo Canyon Marina in 2007





Where Clean Material is Going

Metal for Recycle

Concrete/Asphalt for Recycle

General Construction Debris for Disposal

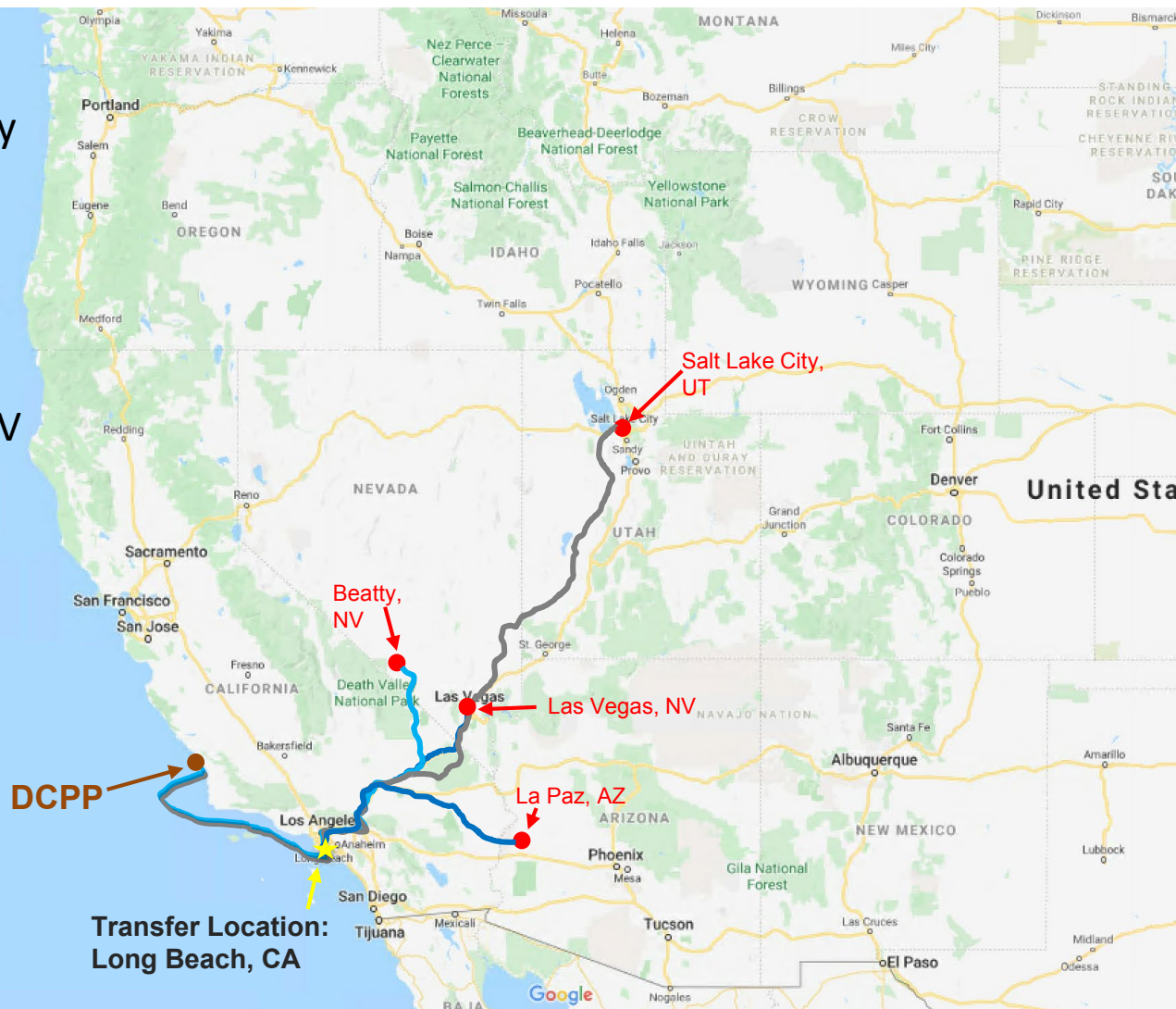
Other Regulated

Salt Lake City

Las Vegas, NV

La Paz, Az

Beatty, NV



Proposed routes if barging were used



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Metal for Recycle

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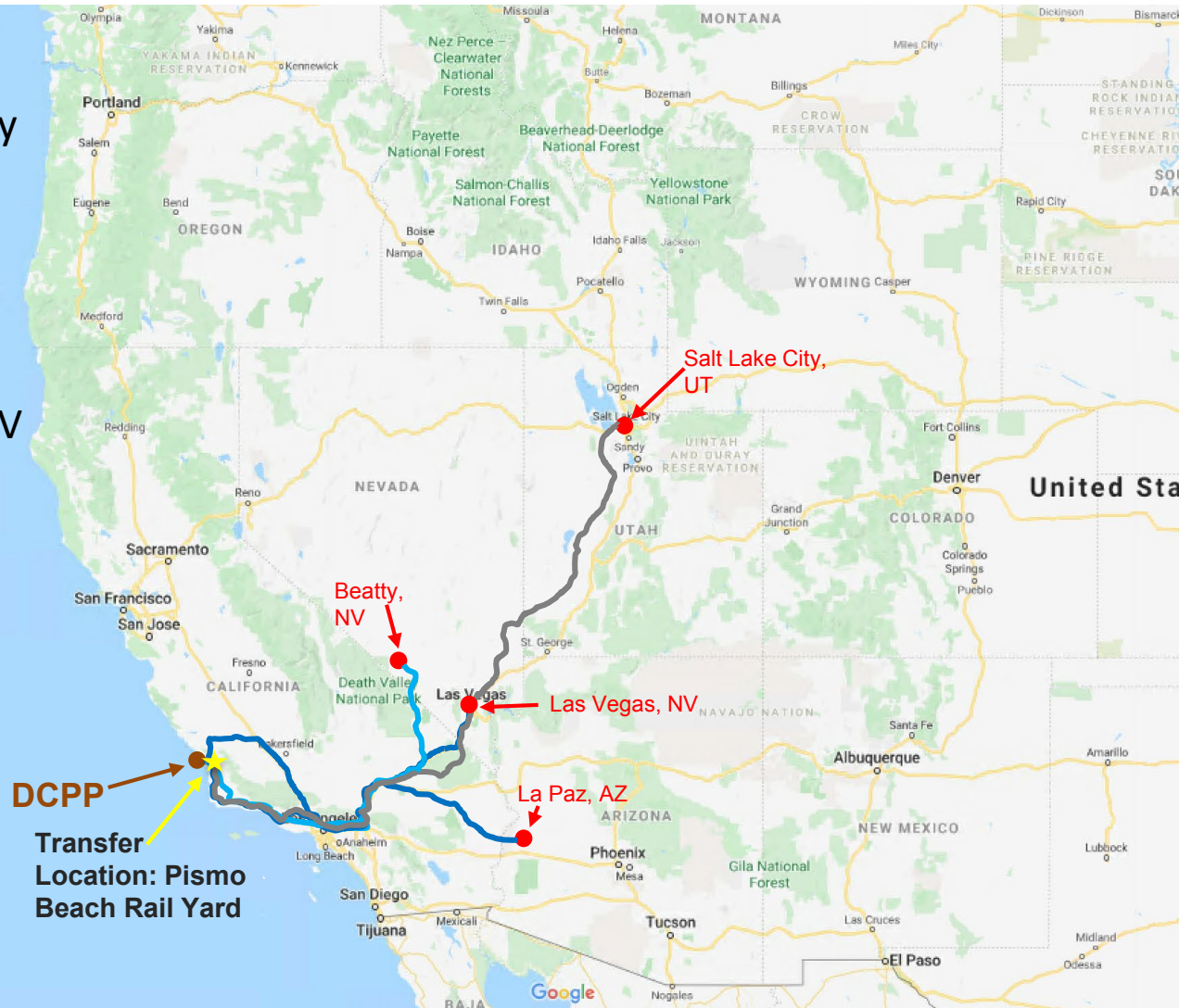
Other Regulated

Salt Lake City

Las Vegas, NV

La Paz, Az

Beatty, NV



Proposed routes if direct truck or truck/rail were used



Where the Radioactive Waste is Going

GTCC

DC ISFSI

Class B

C

WCS, TX

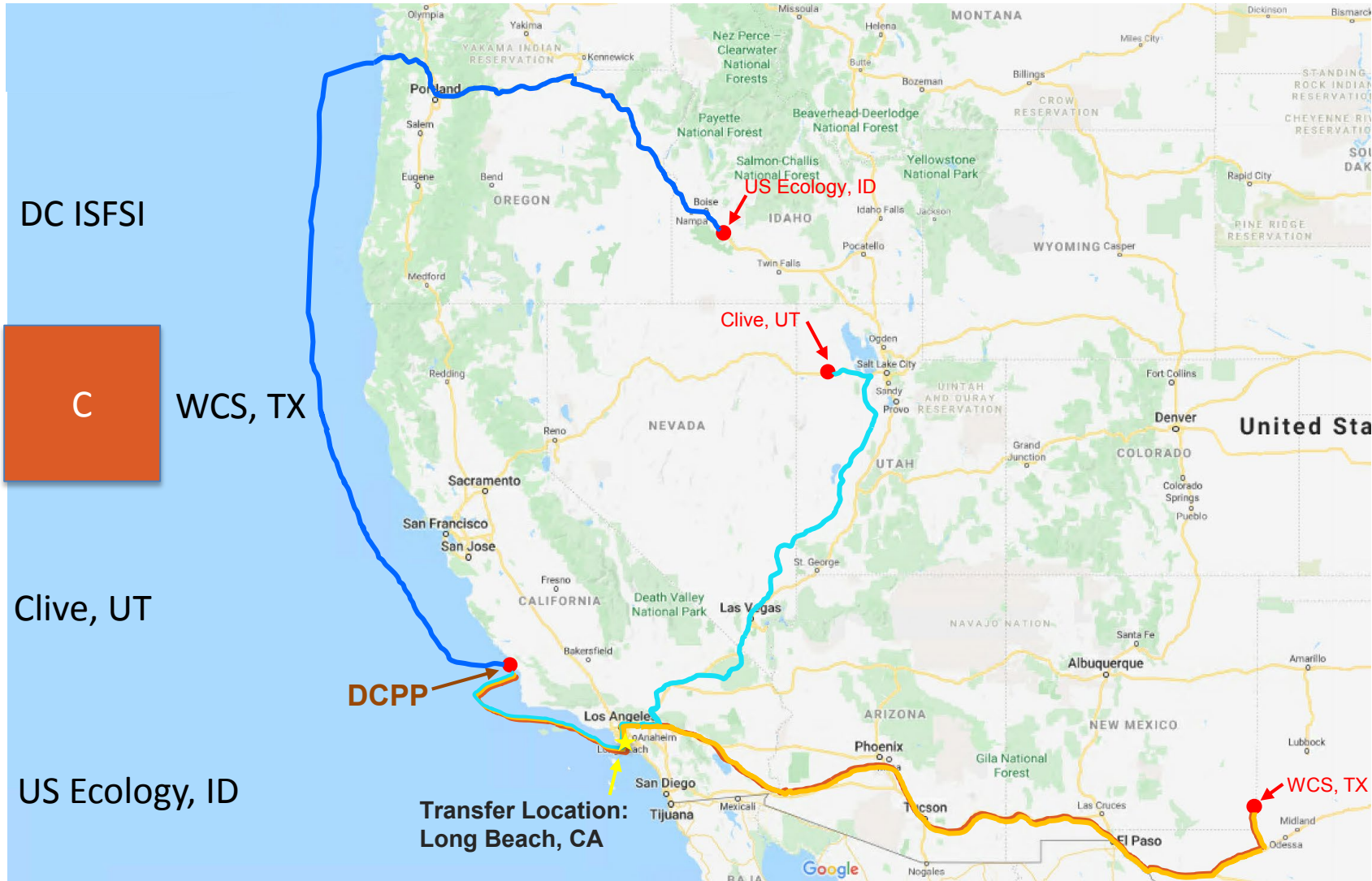
Class A

Clive, UT

LARW

US Ecology, ID

Transfer Location:
Long Beach, CA



Proposed routes if barging were used



Where the Radioactive Waste is Going

GTCC

DC ISFSI

Class B

C

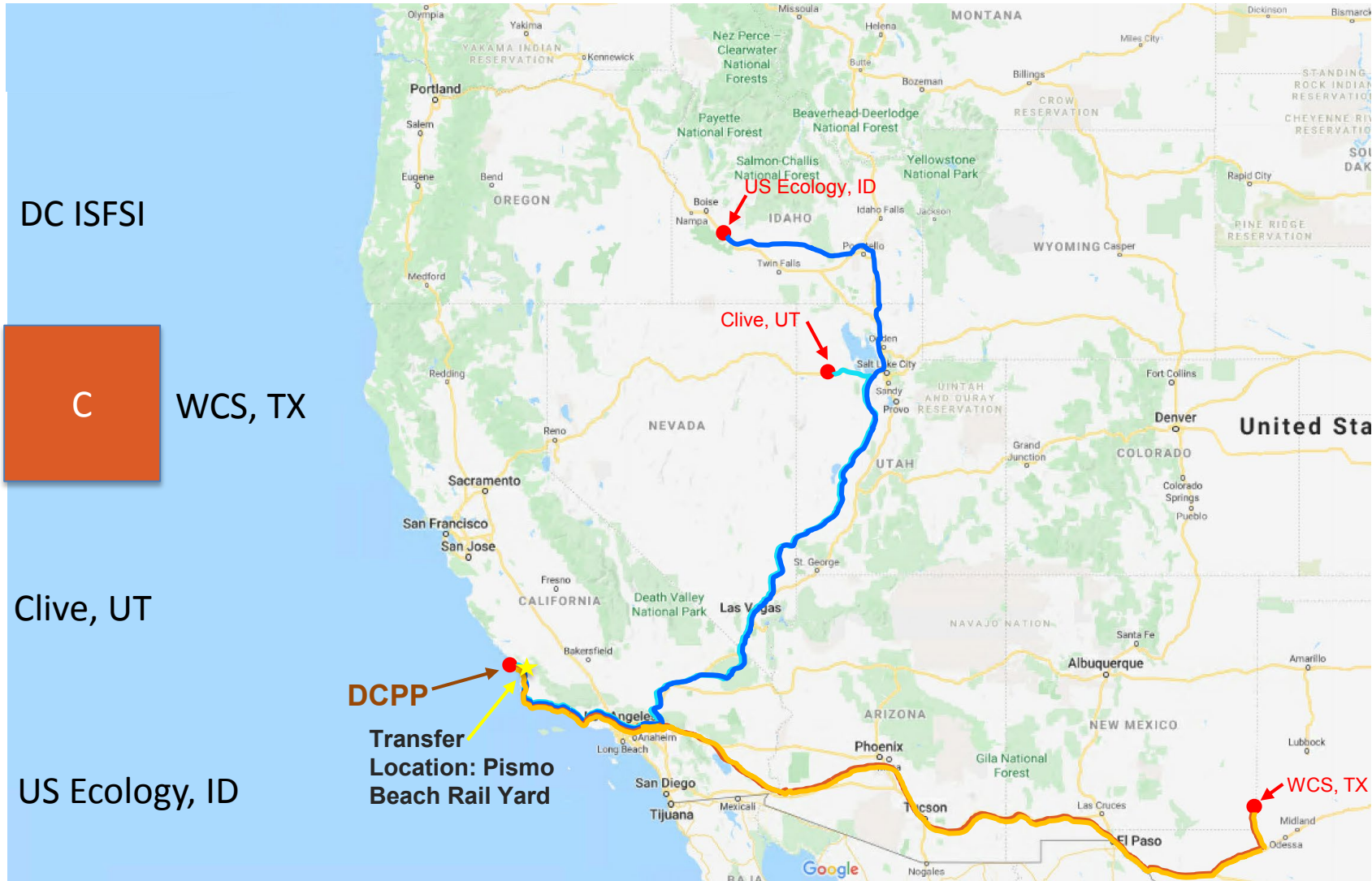
WCS, TX

Class A

Clive, UT

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Proposed routes if direct truck or truck/rail were used



Regulation

- 10 CFR 61.55 defines waste classifications:
 - <https://www.nrc.gov/reading-rm/doc-collections/cfr/part061/part061-0055.html>
- 10 CFR 61.56 defines the physical characteristics of waste (Example: Liquid content):
 - <https://www.nrc.gov/reading-rm/doc-collections/cfr/part061/part061-0056.html>
- Dose limits associated with the transportation of waste are defined in 49 CFR 173.441
 - <https://www.govinfo.gov/content/pkg/CFR-2014-title49-vol2/pdf/CFR-2014-title49-vol2-sec173-441.pdf>



Questions ?

Accident Data by Mode

- Barging is being evaluated for transporting some materials to lower truck trips and add carrying capacity.

.00000125 Accident/mile



.0000185 Accident/mile



.00000698 Accident/mile



Carry 150 to 180 X
times more than truck

Carry 200X times more
than truck