Water Authority's Wastewater System - Permitting, Compliance, Plant and Collection System Operations and Capital Improvements Planning

John Stomp P.E., Chief Operating Officer
Mark Kelly P.E., Compliance Division Manager
Charlie Leder P.E., Plant Division Manager
Mark Holstad, Chief Engineer, Field Division
Bob Strong, P.E., Principal Engineer, WRPE Division

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Wastewater System in 2015

- Southside Water Reclamation Plant
  - Stringent NPDES Permit – new permit Oct 2012
- Wastewater Collection System in 2015
  - Collection System
    - Vacuum System – largest operating system in the U.S.
    - Small lift stations – service to small pockets in valley
    - Small and Large Diameter Concrete
  - Odor Control
    - Vacuum System – largest operating system in the U.S.

Return Flow and Consumptive Use

- CU less than 40k af/year
- Actual percentage has increased to about 60% due to conservation

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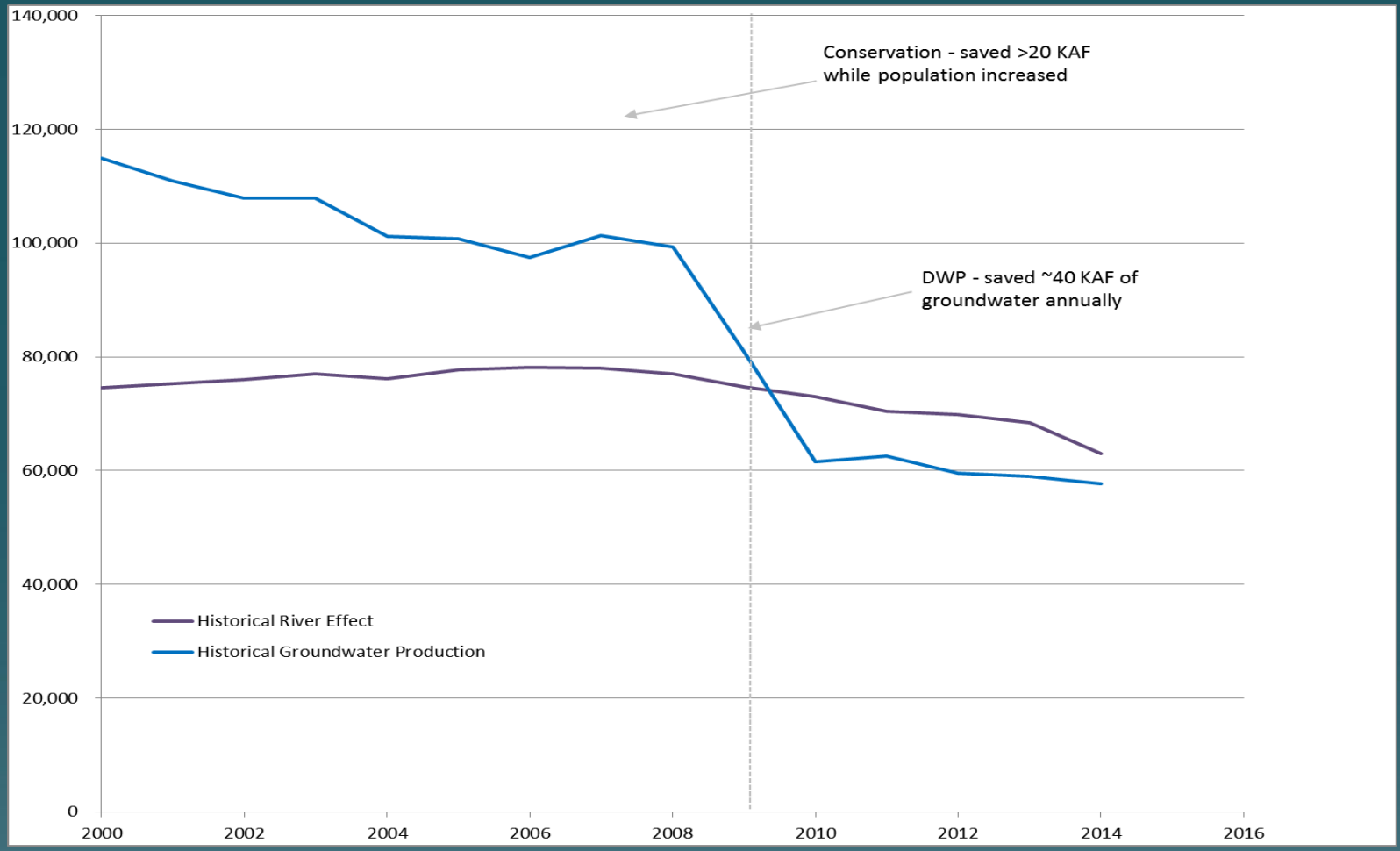
Reduced Depletions on the Rio Grande



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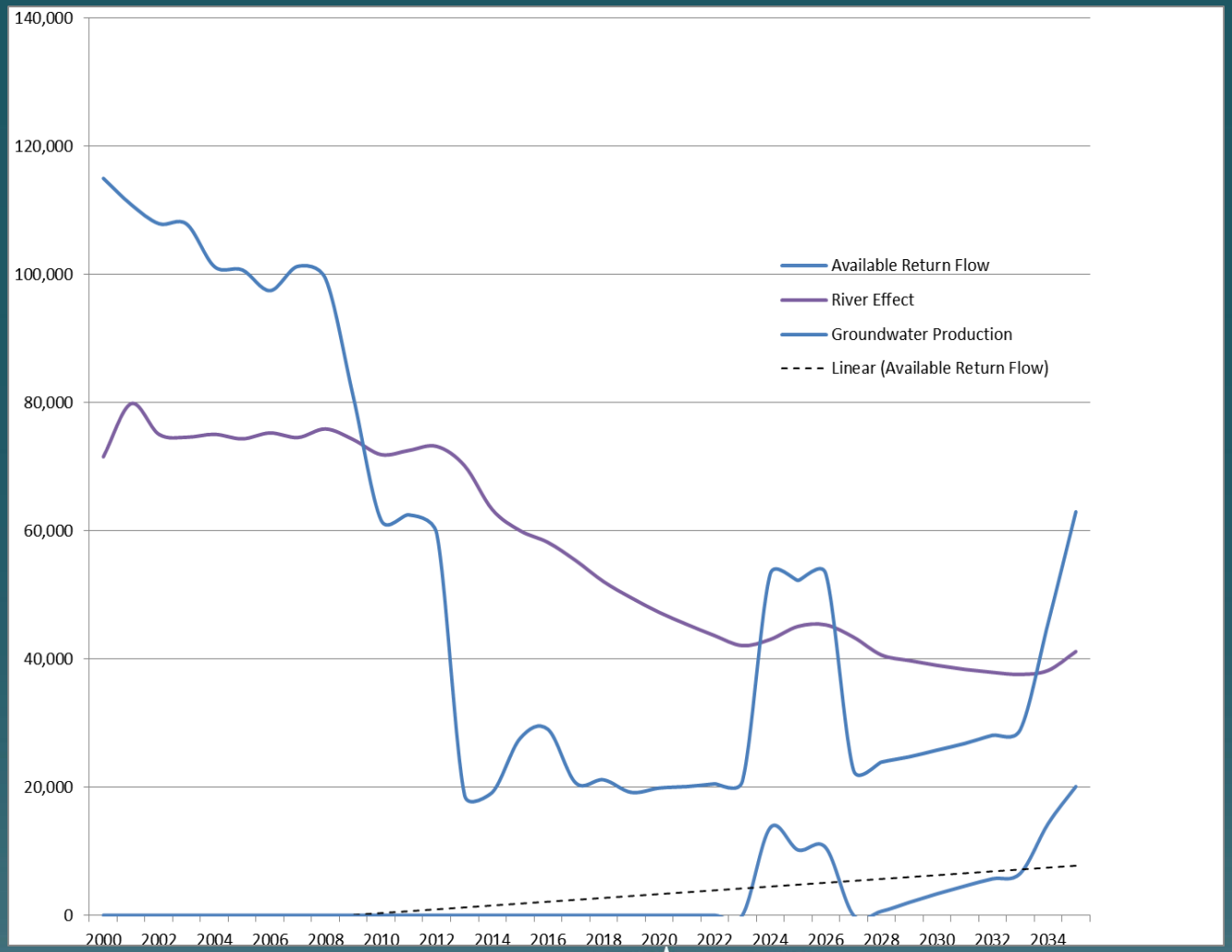
Wastewater System in 2015

- Significantly reduce depletions on Rio Grande
  - Less pumping reduces impacts to river – more return flows available in the future
  - Aquifer rebounding throughout MRG
- Return Flows can be used for other purposes
  - May need to find storage – surface and/or aquifer
  - Large scale ASR program – infiltrate and/or inject
  - Indirect or direct potable reuse
- NMED working on Indirect/Direct Potable Reuse Standards

Future Reduced Depletions and Available Return Flows

- Return flow obligation is less due to reduced pumping – available in the future for other uses



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Clean Water Act Compliance

Mark Kelly, P.E.

Two NPDES Permits

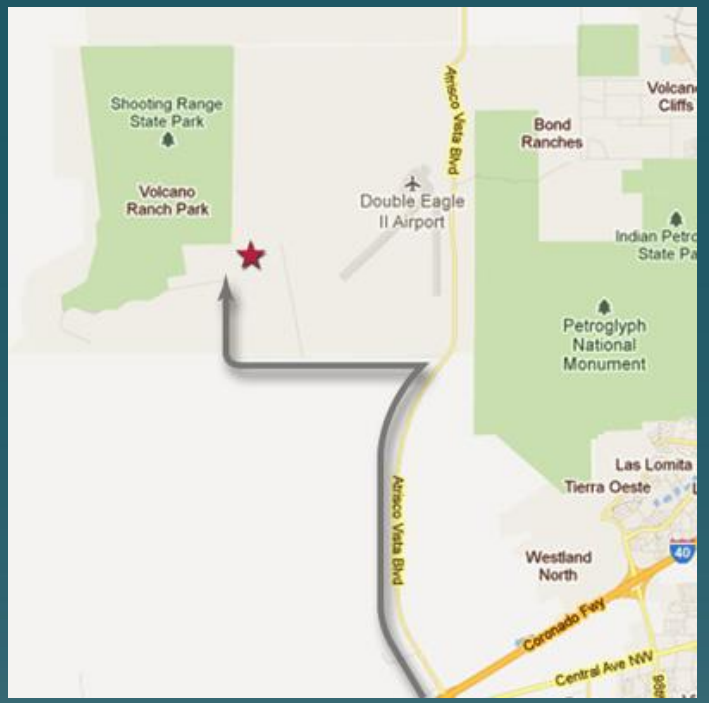
- National Pollutant Discharge Elimination System (NPDES) Permits
  - Plant Discharge – Effluent and Sludge
  - Industrial Stormwater Permit

SWRP Effluent

- Monitoring
  - Daily 24 hr composite sample (Ammonia, TSS, TIN, etc.)
  - Daily Grab sample (pH, DO, E. Coli, Cl-)
  - Weekly Mercury
  - Monthly metals (Cd,
  - Quarterly WET
  - Semi-annual Organics
- Reporting
  - Monthly DMR
  - Exceedances

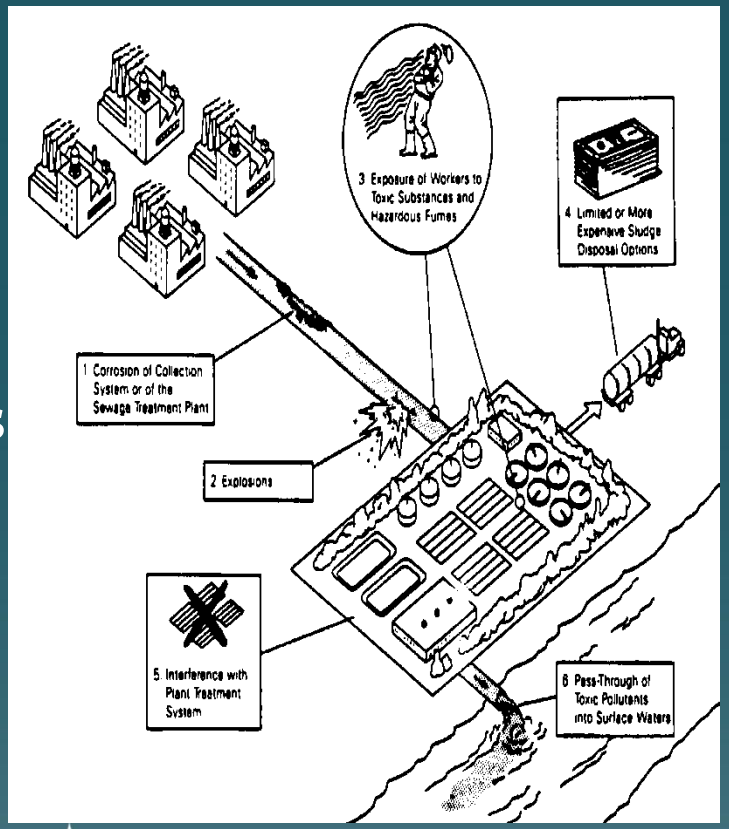
Solids Management

- Disposal Methods
  - Rangeland Application
  - Composting
  - Surface Disposal
- Monitoring
  - Monthly fecal density
  - Bi-Monthly metals
- Reporting
  - Annual DMR
  - Exceedances



Pretreatment

- Sewer Use and Wastewater Control Ordinance
- Industrial Permittees
  - 70 Industries
- Fats, Oils, and Grease
  - 2100 Food Service Establishments
- Dental
  - 230 Dental Offices



Sanitary Sewer Overflows

- Sanitary Sewer Overflows
- SWRP Overflows
  - Notification
  - Reporting
- Remediation

Industrial Stormwater Compliance

- EPA General Permit – Southside Water Reclamation Plant (Industrial Site)
- Quarterly Inspections
- Quarterly Visual Assessment
- Annual E. Coli Monitoring

Wastewater Plant Operation

Charlie Leder, P.E.

SWRP raw material & products

Raw Material

Clean effluent

Power from bio-gas

Compost & bio-solids

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SWRP quick facts

- *At this site since 1962*
- 76 MGD flow capacity (peak month) from service area
- 15 liquid stream processes & 10 solid stream/power generation processes
- 5.6 MW Combined Heat & Power cogeneration system
- 1 MW solar power array

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Recycling that we perform *each day* at SWRP

- Convert 50 Million Gallons (153 acre feet) of raw sewage into clean effluent for discharge
- Re-claim 1 MG of effluent for industrial cooling / irrigation at SWRP and 1 MG of effluent for off-site park & landscape irrigation
- Process 78 tons per day of waste solids from treatment process into stable bio-solids for:
  - Rangeland reclamation
  - Compost for parks & gardens *(also recycles horse bedding, food waste, yard waste, & water treatment sludge too!)*

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"Clean effluent for river discharge or re-use"
How "clean" is clean?

- Standard for "clean" set by EPA, State, & Pueblo of Isleta; Use for livestock watering, warm water fishery, irrigation, public water supply, wildlife habitat and primary contact recreation
- For discharge to river, "clean" means:
  - Ammonia < 1.5 mg/L
  - Total Nitrogen < 14.5 mg/L
  - E. coli < 88 colonies / 100 ml
  - Total Suspended Solids < 30 mg/L
  - Dissolved oxygen ≥ 5 mg/L

- For landscape / park irrigation, "clean" means:
  - Turbidity < 3 NTU
  - Fecal coliform < 5 colonies / 100 ml
  - Measurable chlorine residual

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Other "Green Things" that we do each day at SWRP

- Digesters produce > 800,000 CF per day of methane-rich bio-gas
- Convert bio-gas into 2.2 MW of power and hot water for heating
  - SWRP is 27% energy self-sufficient
  - Recovered hot water used to heat buildings and warm sludge digesters
- Produce 1 MW of power from new photo-voltaic array *(When sun shines)*

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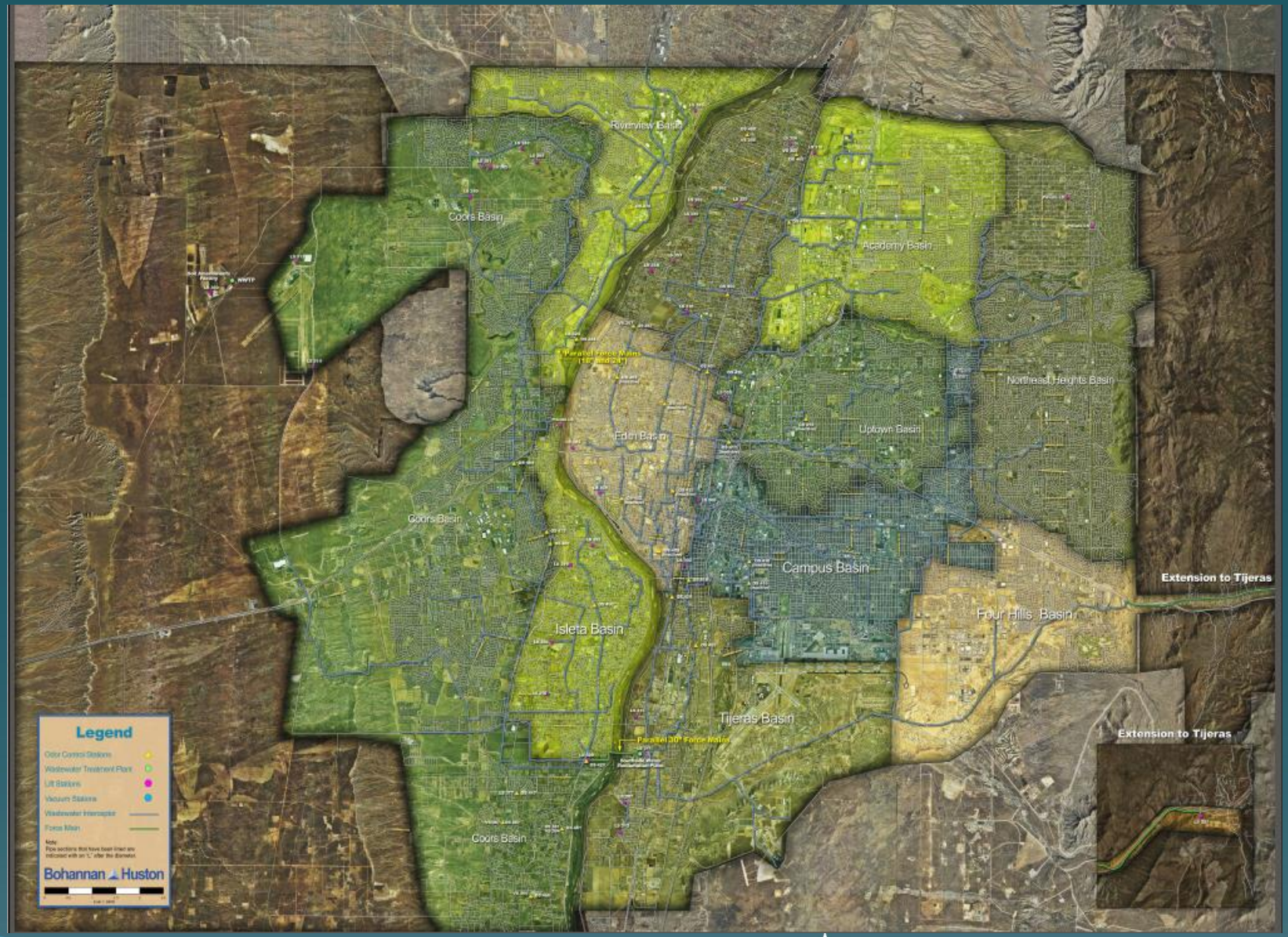
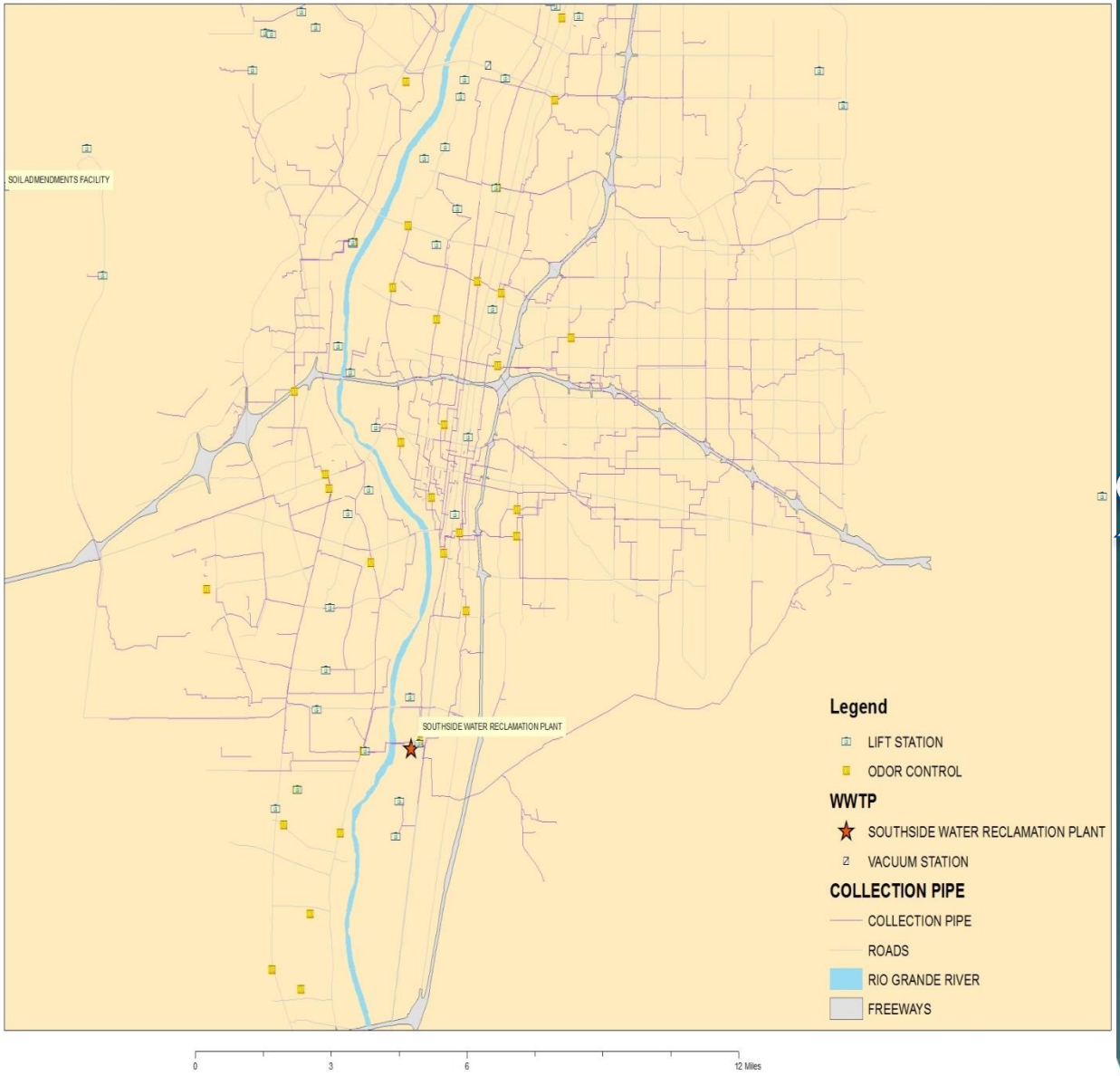
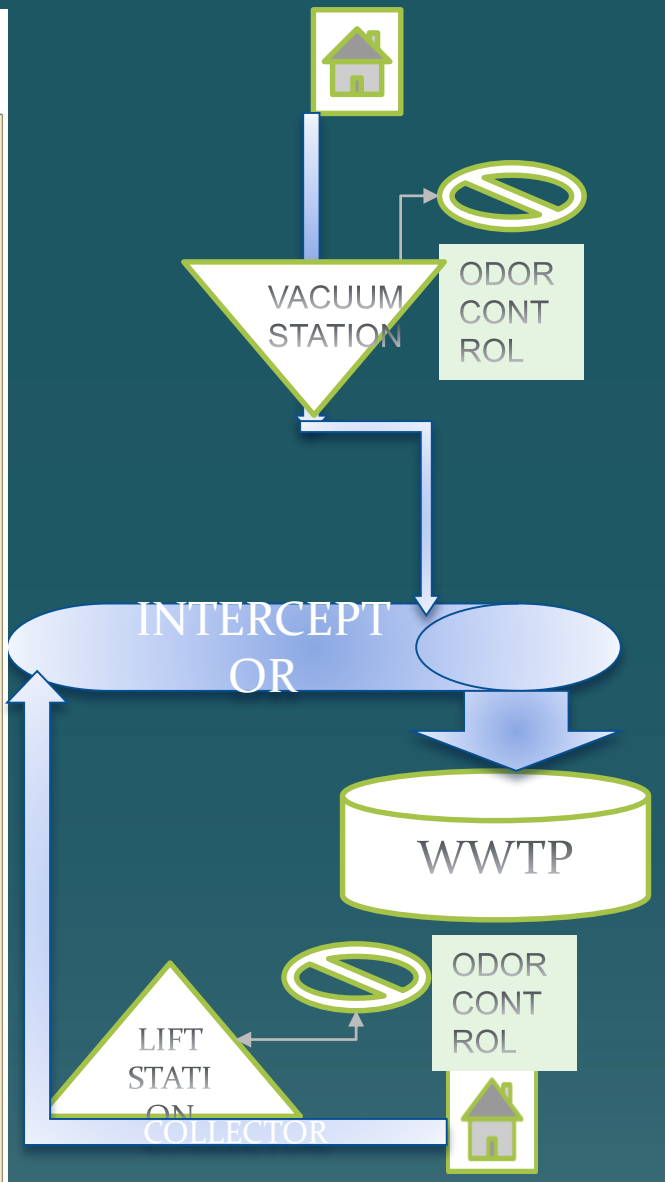
Wastewater Collections Operation

Mark Holstad, P.E.


Rainview Basin
Coors Basin
Academy Basin
Northeast Heights Basin
Uptown Basin
Eden Basin
Coors Basin
Campus Basin
Extension to Tijeras
Four Hills Basin
Isleta Basin
Tijeras Basin
Extension to Tijeras
Coors Basin
Legend
Bohannan Huston

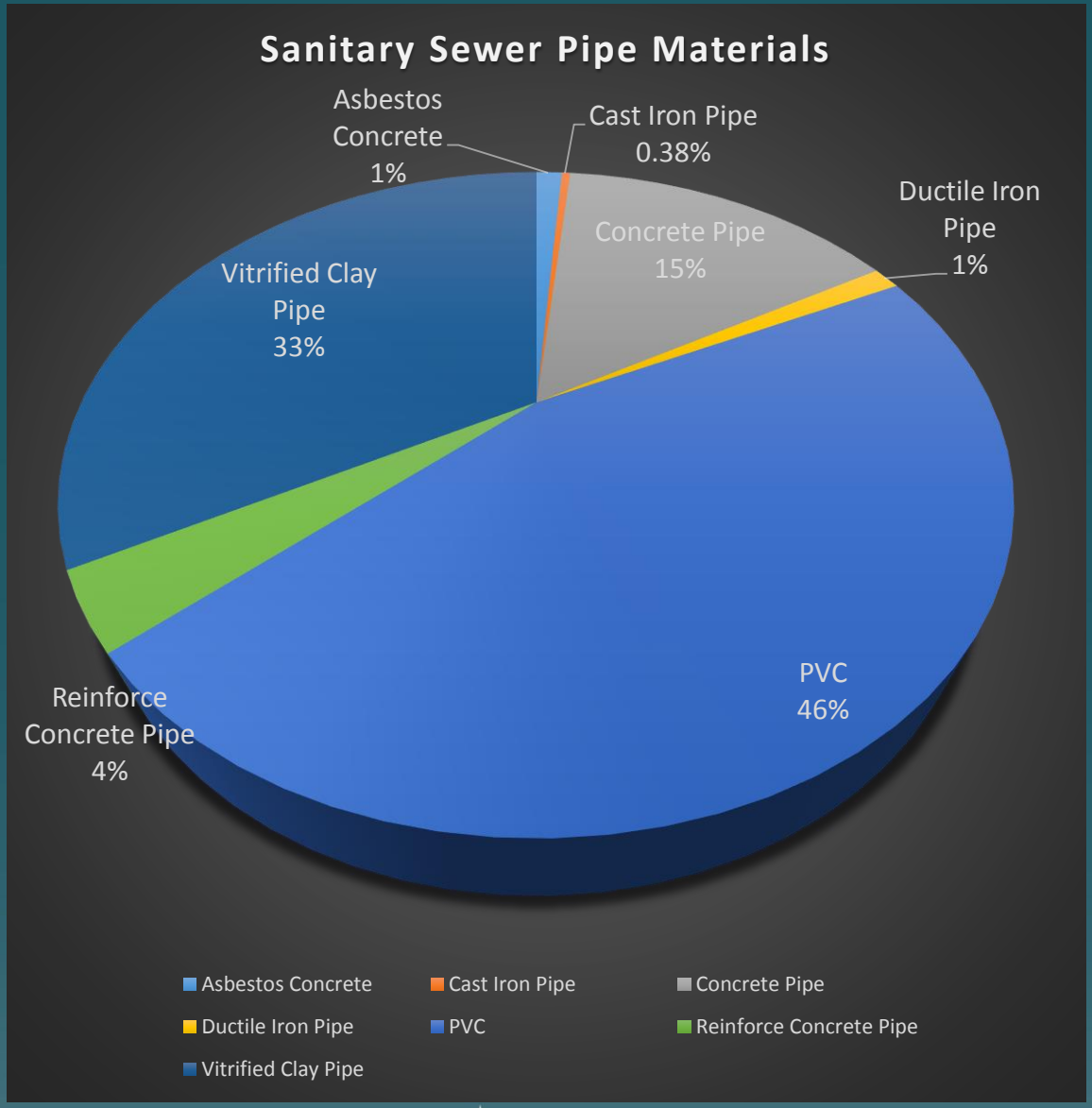
ABCWUA SANITARY SEWER INFRASTRUCTURE

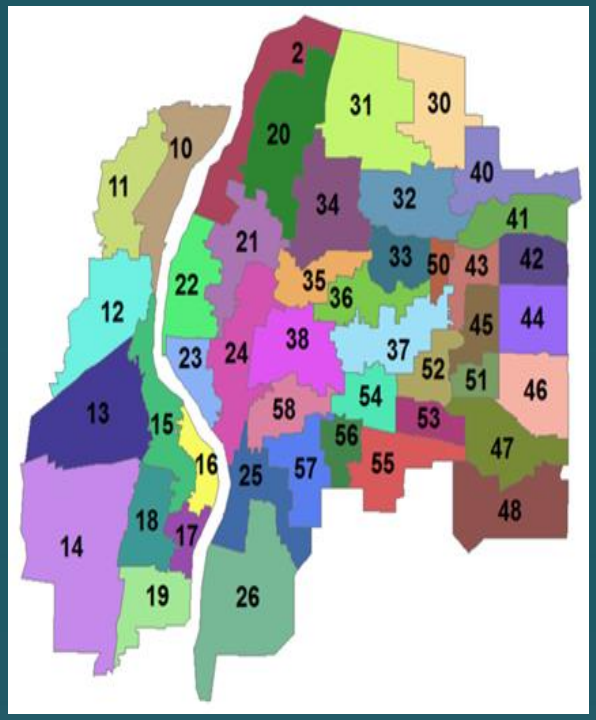




SAS Pipe Inventory

Sanitary Sewer Pipe	2328	miles
Collection Lines	2021	miles
Interceptors	307	miles
avg age of collection system	~30	years old

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Wastewater Collection System Capital Improvement Planning

Bob Strong, P.E.

Interceptor Collapse on Grape

KAFB 48” Interceptor Rehab

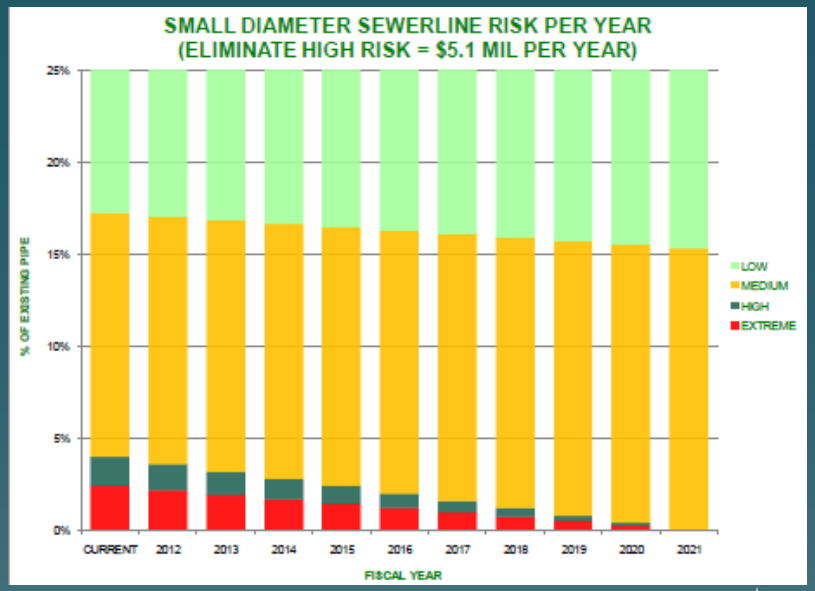
Line Replacement Under BNSFRR

Small Diameter Collectors

The ABCWUA has in excess of 2,114 miles of small diameter sewer pipe (4” to 12”):

Unlined Concrete Pipe – 14% or 296 miles (only 40-yr life and High Risk)
Vitrified Clay Pipe – 32% or 677 miles
PVC – 46% or 972 miles in good condition! – 100 yrs.

Current Budget is $1M for an expected 2.5 miles of planned rehab
10-year Plan Target: $7M to rehab 17.5 miles per year.



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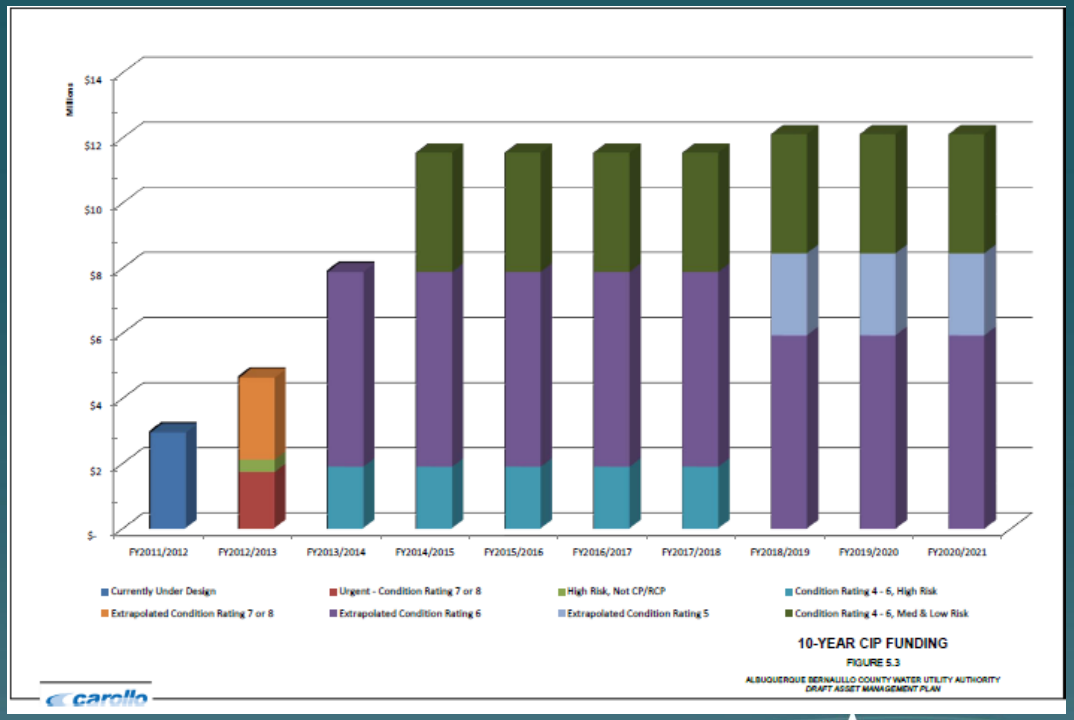
Interceptor Sewer Lines

The ABCWUA has in excess of 254 miles of large diameter sewer pipe (15” to 78”):
Reinforced Concrete Pipe – 47% or 118 miles (High Risk)
Other (AC, CP, DIP, VCP, ect) – 22% or 57 miles
PVC and Fiberglass Pipe – 31% or 79 miles in good condition!
10-year Plan Target: $11M to rehab 10.7 miles per year of High Risk lines



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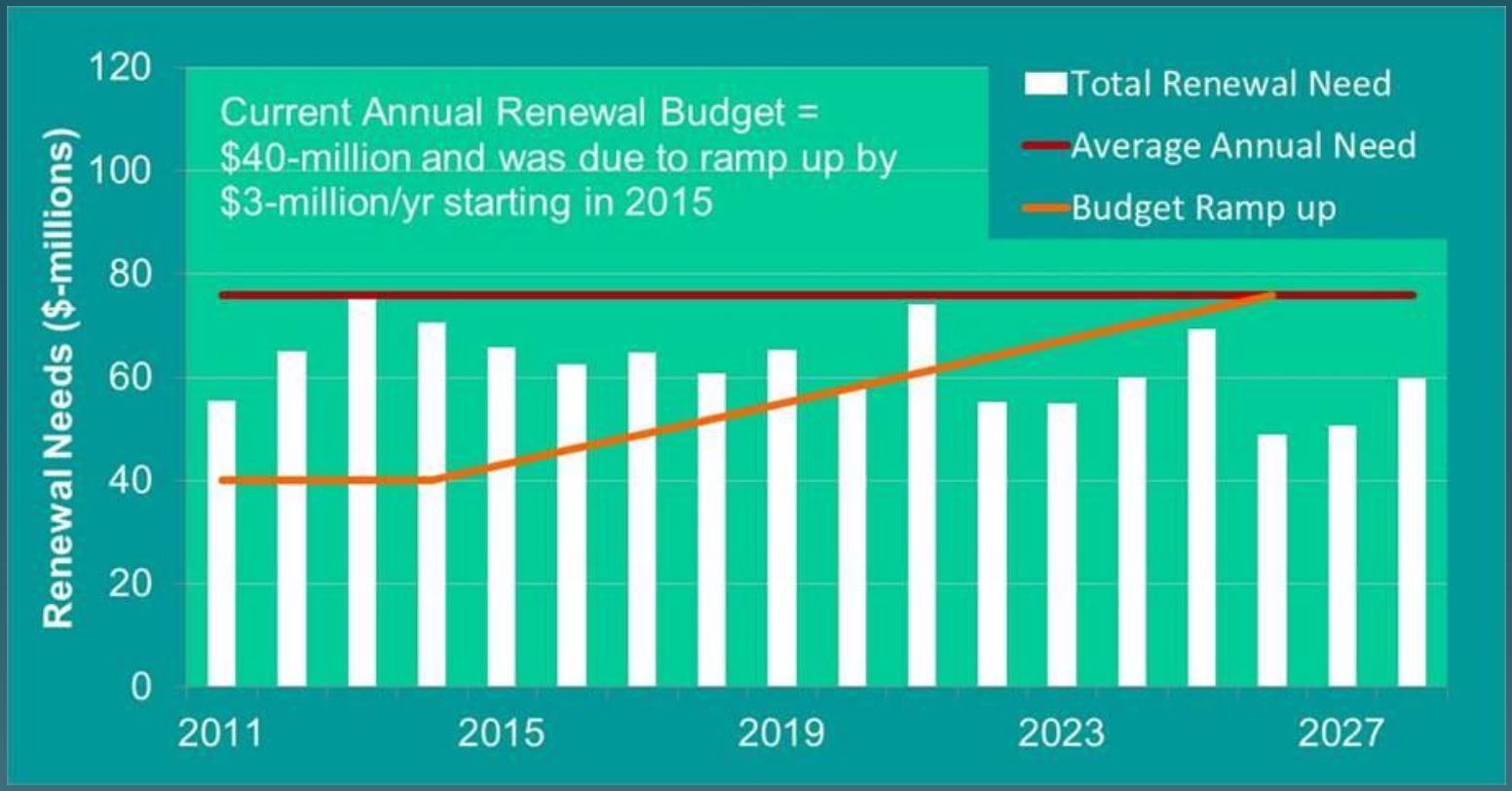
Per Asset Management Plans:

Sewer Line Rehab Spending needs to increase from $5M to $18.5M/yr
Rehab needs to increase from 6.6 miles to 20 miles per year
Planned Rehab Projects replace more infrastructure/$ than Emergencies



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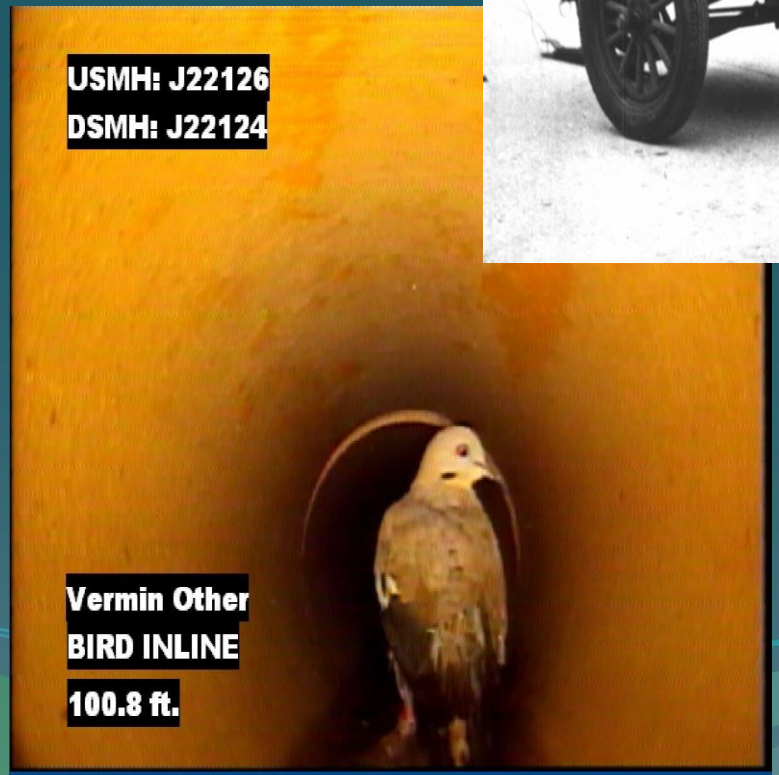
Questions?



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