Fremont County

Mack's Inn

Wastewater Treatment Plant

Presentation for:

Henry's Fork Watershed Council

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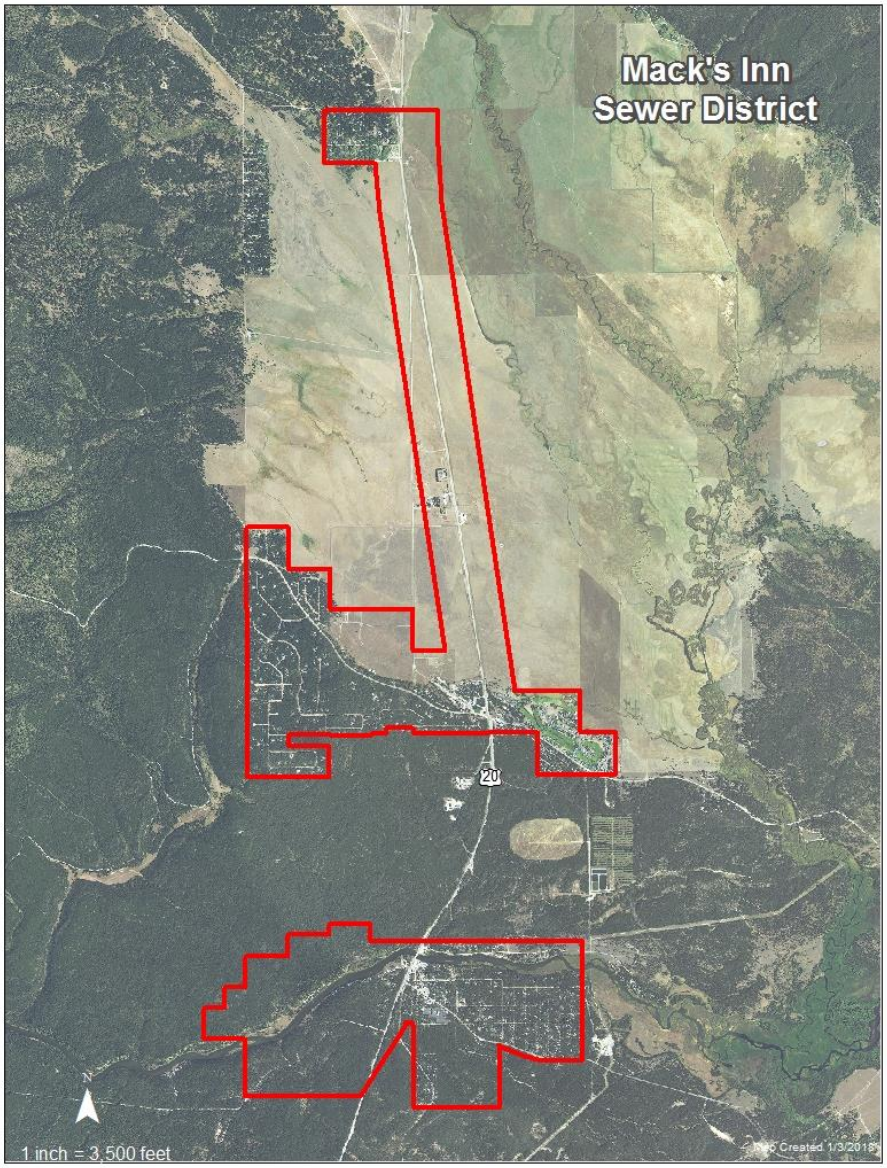
Mack’s Inn Sewer Service Area



Mack's Inn System

- Facility Planning Study 1975
- System constructed in 1981, upgraded in 1988
  - Capacity of design
    - Design Summer Flow
      - **Average 175,500 gpd = .27 cfs**
      - Peak 421,300 gpd = .65 cfs
    - Current Summer Flow
      - **Average 184,000 gpd = .28 cfs**
      - Peak 271,000 gpd = .42 cfs
    - Planning period Flow
      - Average 277,000 gpd = .66 cfs
      - Peak 432,000 gpd = 1.03 cfs

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Mack's Inn System

- Facility Planning Study 1975
- System constructed in 1981, upgraded in 1988
  - Capacity of design
    - Design Summer Loading
      - **Average 334 lbs/day**
      - Peak 1236 lbs/day
    - Current Summer Loading
      - **Average 1175 lbs/day**
      - Peak 3056 lbs/day
    - Planning period
      - Average 1642 lbs/day
      - Peak 4875 lbs/day

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Mack's Inn System

- Collection System
  - 33 pump stations
  - ~10 Miles of force main
  - Miles of gravity line
- Treatment
  - Lagoon
- Disposal
  - Effluent to land application and snowfluent
  - 0.5 cfs for projected planning period

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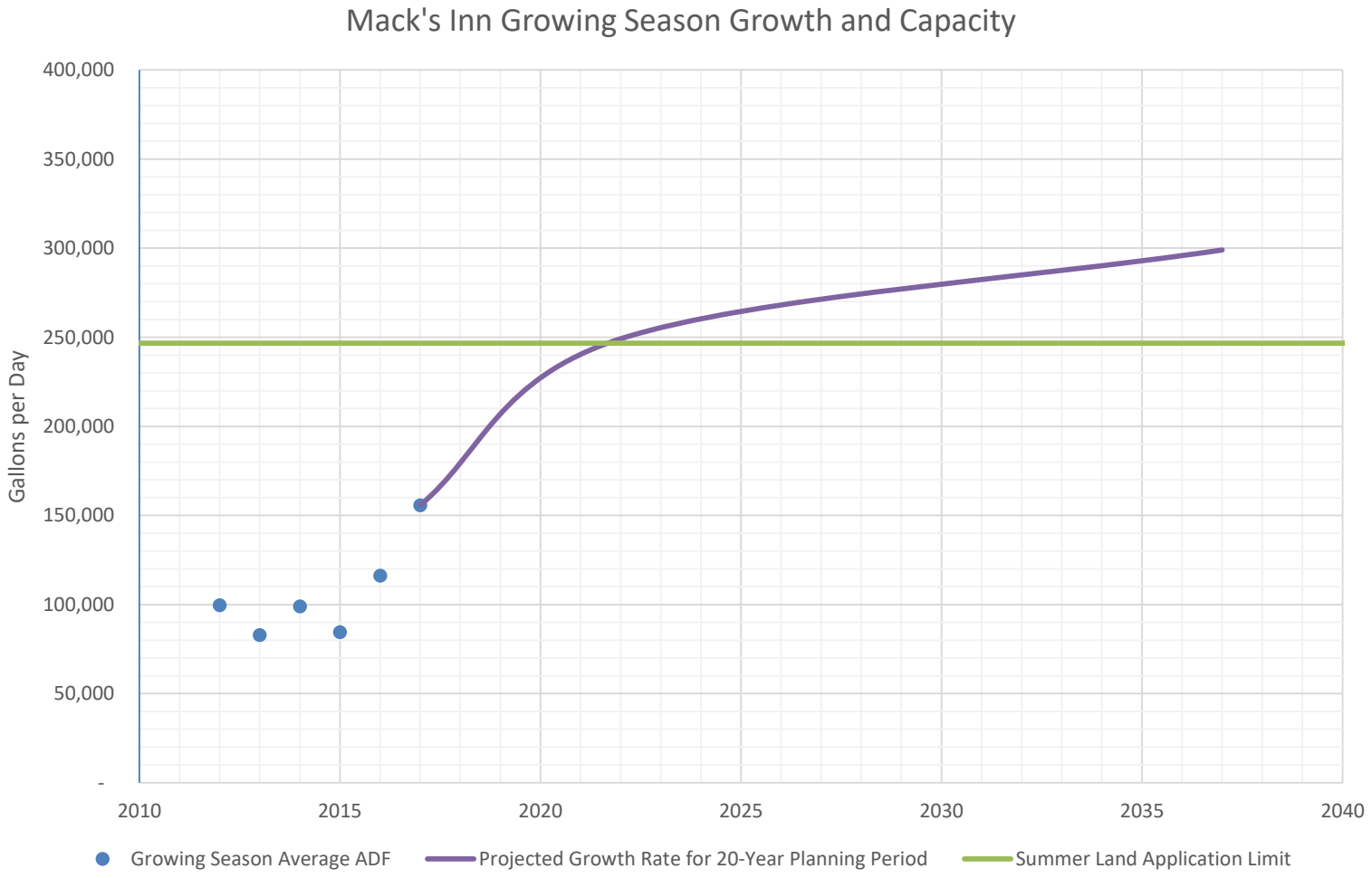
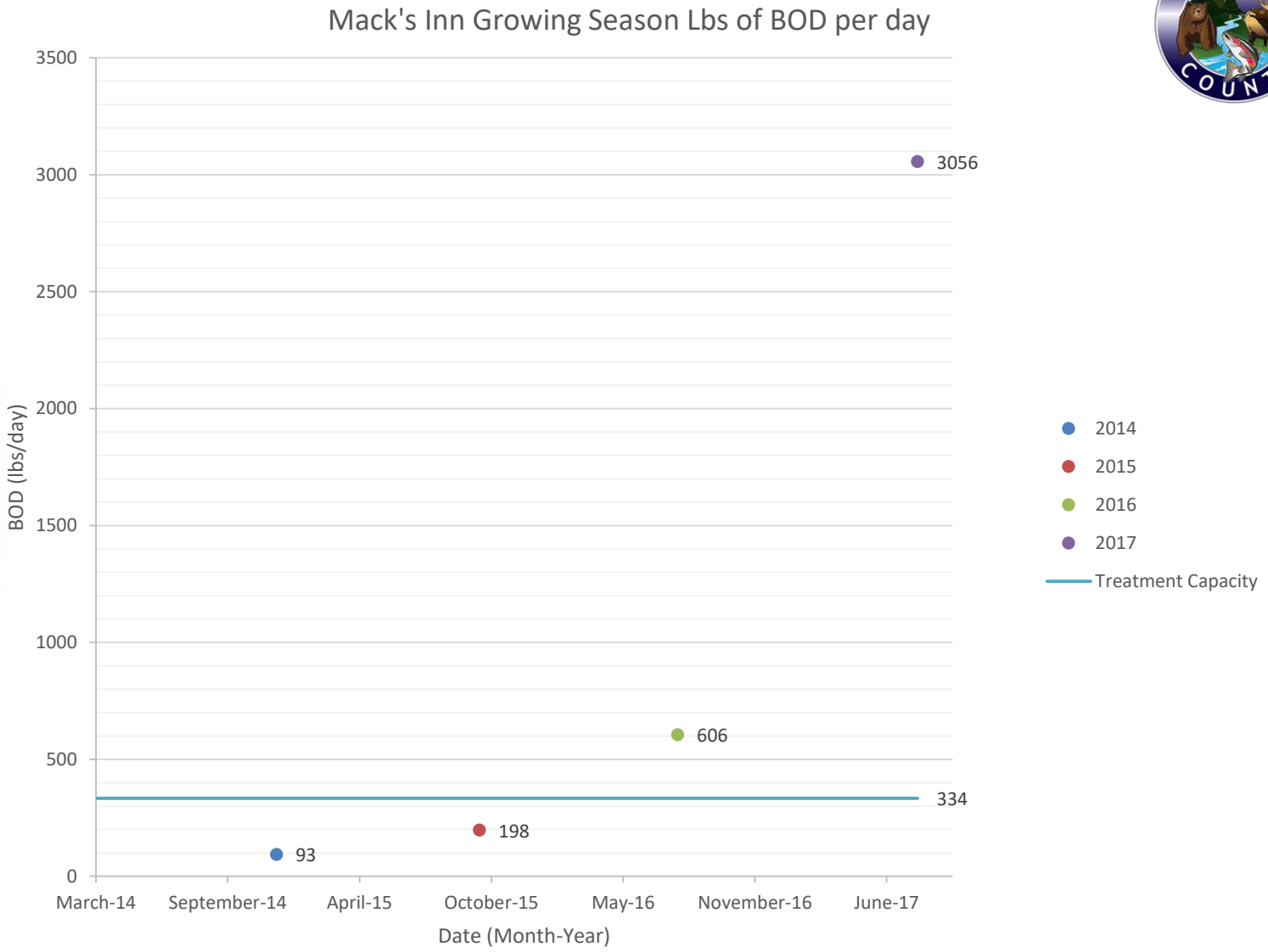

Mack's Inn Growing Season Growth and Capacity
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Gallons per Day
2010
2015
2020
2025
2030
2035
2040
Growing Season Average ADF
Projected Growth Rate for 20-Year Planning Period
Summer Land Application Limit

“We do not want to continue to expand the sewer plant into the future. We would like to see the County have a well thought out long term plan and support a treatment plant to treat the sewage so it can be discharged into the groundwater or river.”

Liz Davy

District Ranger

Forest Service


Mack's Inn Growing Season Lbs of BOD per day
3500
3000
2500
2000
1500
1000
500
0
BOD (lbs/day)
March-14
September-14
April-15
October-15
May-16
November-16
June-17
Date (Month-Year)
3056
606
334
198
93
2014
2015
2016
2017
Treatment Capacity

Summary

- Flows increase avg. 12% over 5 years
- Plant loading increase avg. 240% over 5 years
  - Suggests increased use; More people
- Treatment is out of capacity
- Will run out of disposal capacity before service obligation is met

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Disposal Options

- River Discharge
  - More stringent treatment requirements

Treatment Options

- Mechanical Treatment
  - More efficient for less space than lagoons
  - Less capital cost compared to lagoon expansion/upgrade
  - Consistent ammonia treatment
  - Customized nutrient removal

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Evaluated Treatment Options

- Upgrades to lagoons with subsurface trickling filtration
- Extended aeration process (oxidation ditch)
- Sequencing batch reactor
- Integrated fixed film bioreactor
- Membrane bioreactor

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