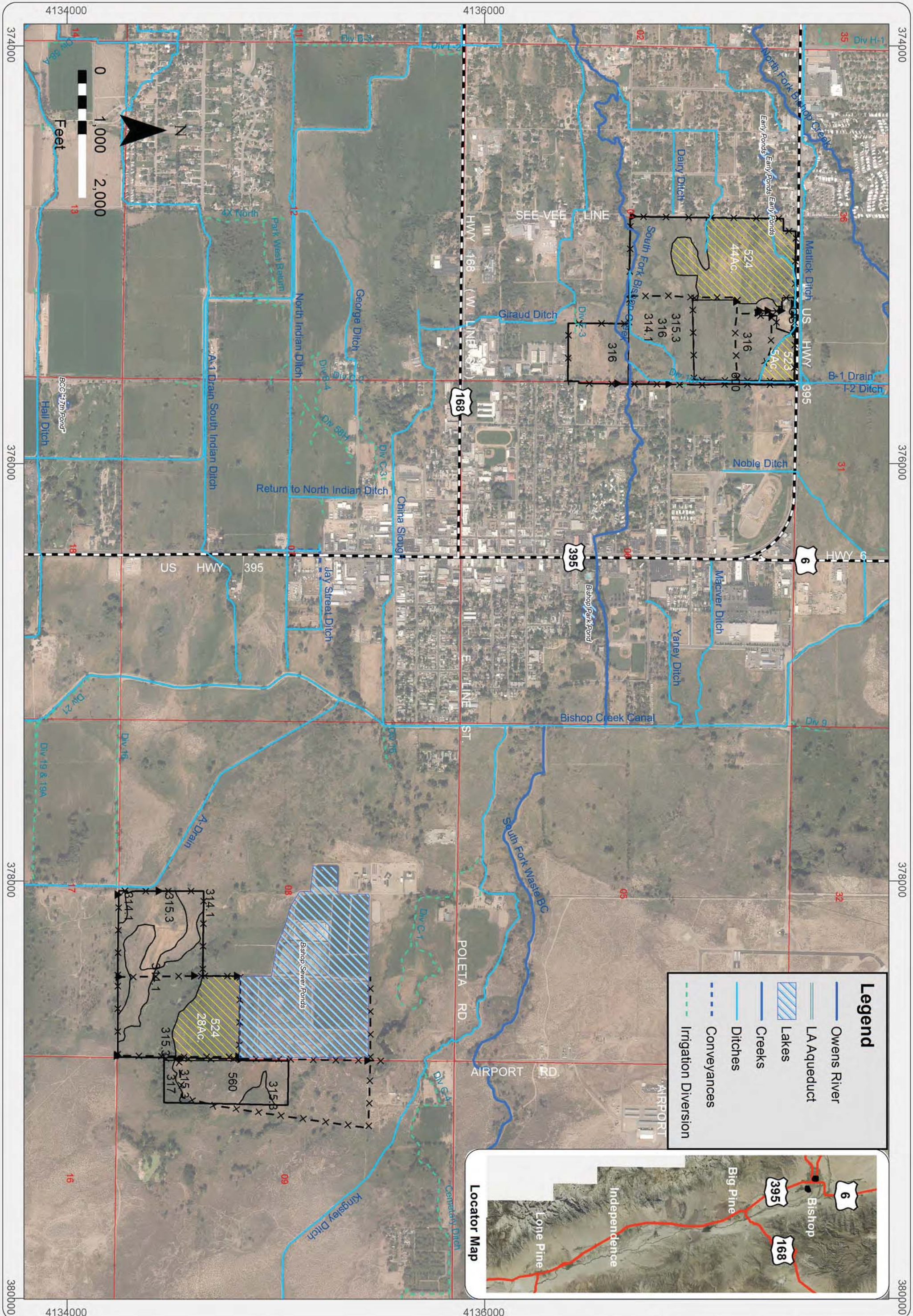


Appendix A: Tier 1 grazing leases



Legend

- Owens River
- LA Aqueduct
- Lakes
- Creeks
- Ditches
- Conveyances
- Irrigation Diversion

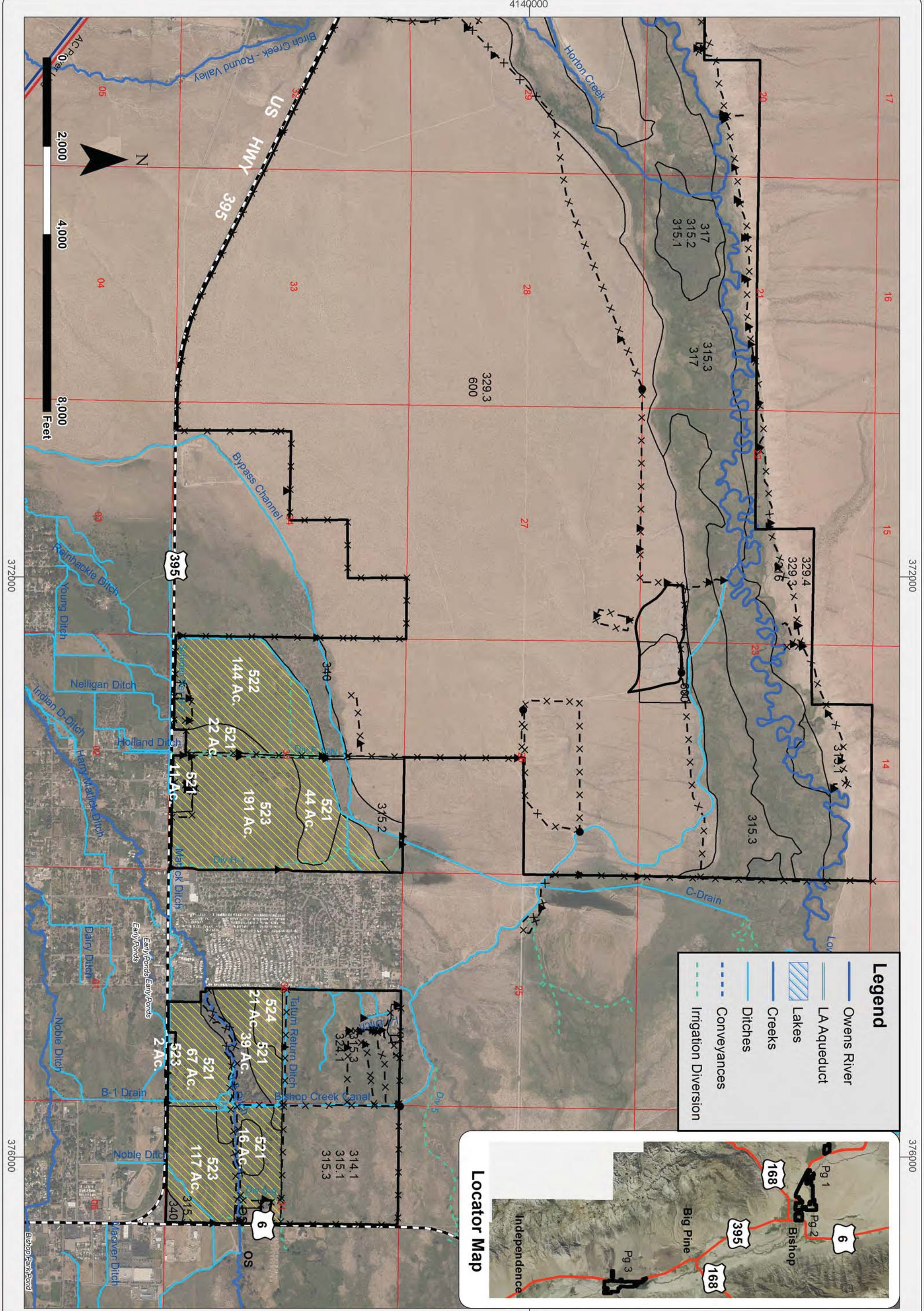


Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
346 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
316 Rush/Saltgrass Meadow	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
317 Tule Marsh Complex	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.1 Saltgrass/Sacaton Meadow/Low	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.2 Saltgrass/Sacaton Meadow/Medium	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
315.3 Saltgrass/Sacaton Meadow/High	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-462
Tatum et al
 329 Ac

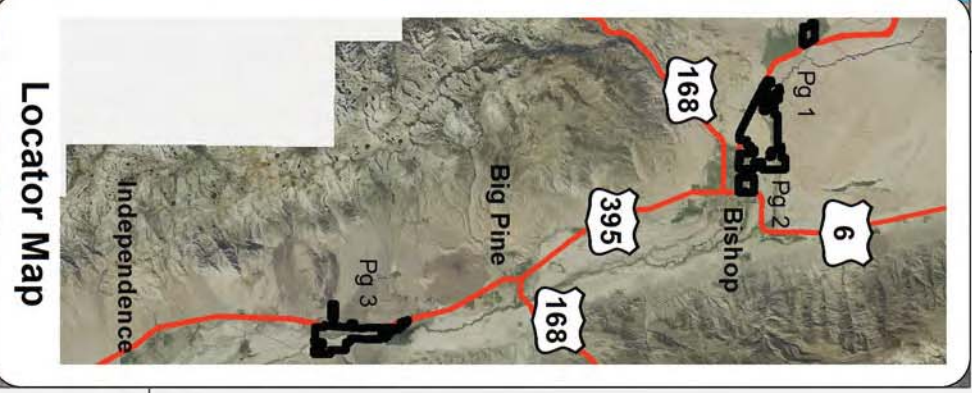
Legend

- AC Power Line
- DC Power Line
- Edison AC Line
- Irrigated Pasture
- Dry Grazing
- Lease Boundary
- Cattle Guards
- Gates
- Fences
- Section Line
- Highway



Legend

- Owens River
- LA Aqueduct
- Lakes
- Creeks
- Ditches
- Conveyances
- Irrigation Diversion

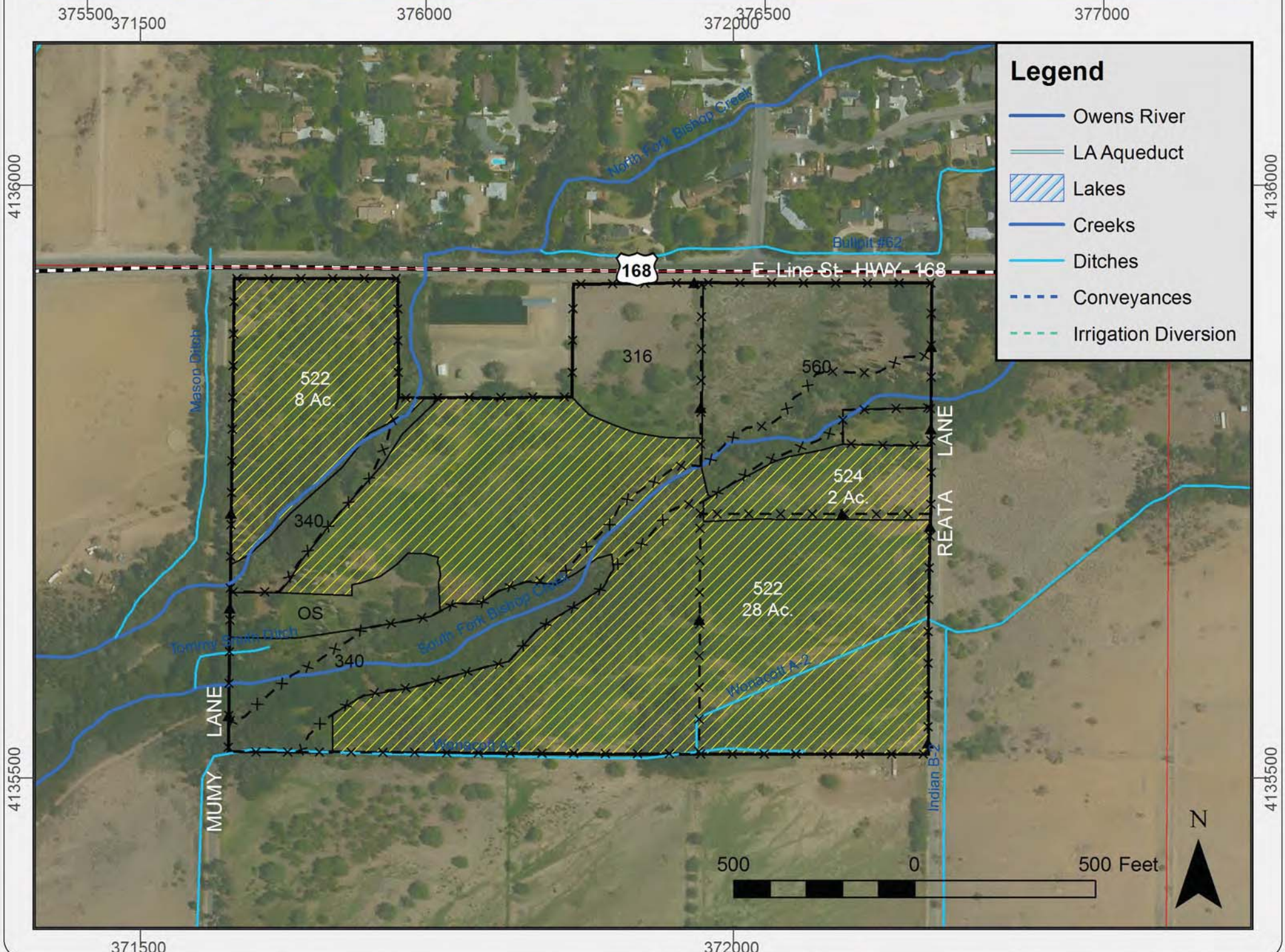
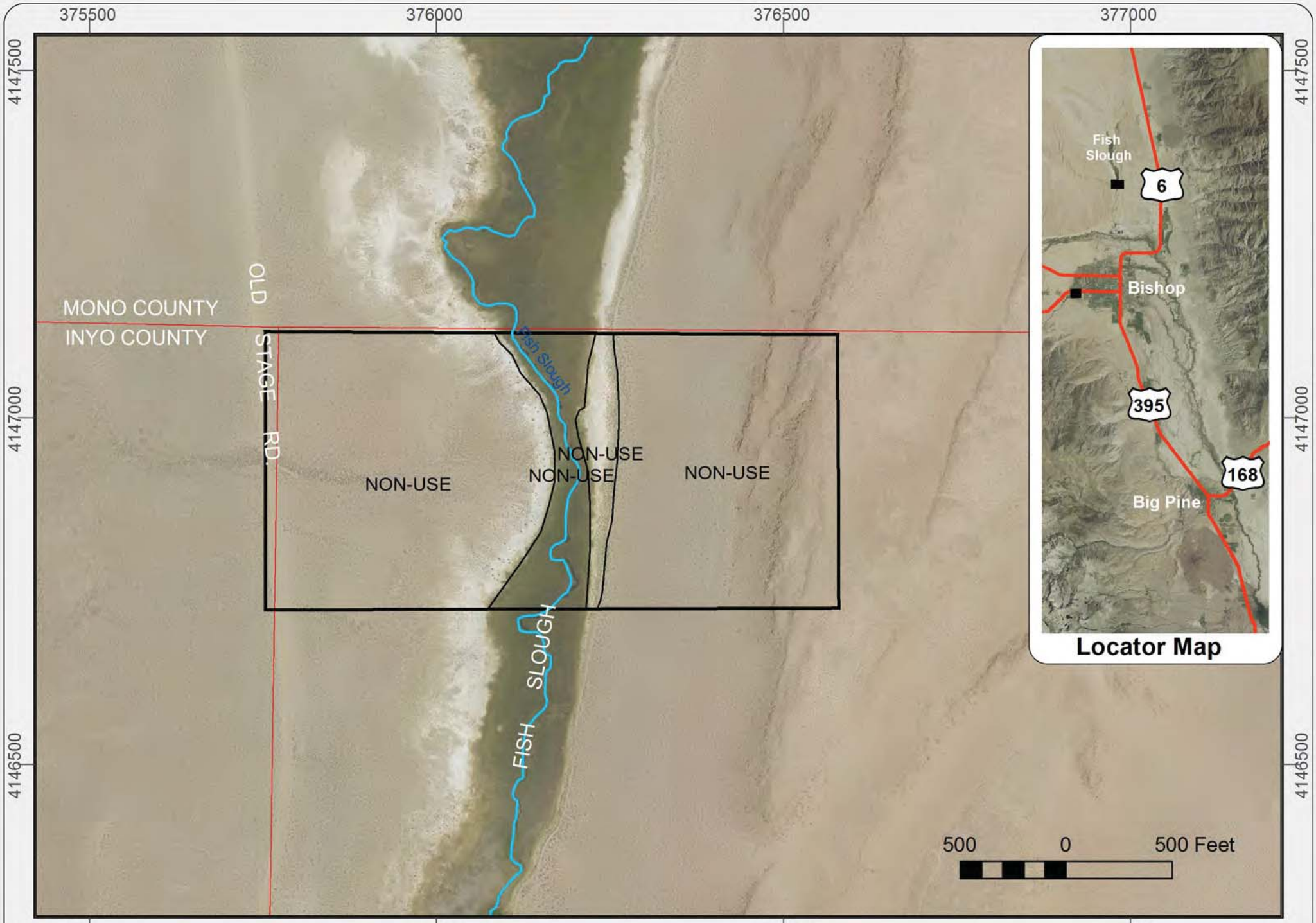


Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
320 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
340 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
316 Rush/Saltgrass Meadow	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
317 Tule Marsh Complex	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.1 Saltgrass/Sacaton Meadow/Low	329.2 Semi-Desert Shrublands/-Grass	160 Slicks	521 Pasture "A"
315.2 Saltgrass/Sacaton Meadow/Medium	329.3 Semi-Desert Shrublands/+Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
315.3 Saltgrass/Sacaton Meadow/High	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-461
ST Ranch
 Page 2 of 3
 10,925 Ac

Legend

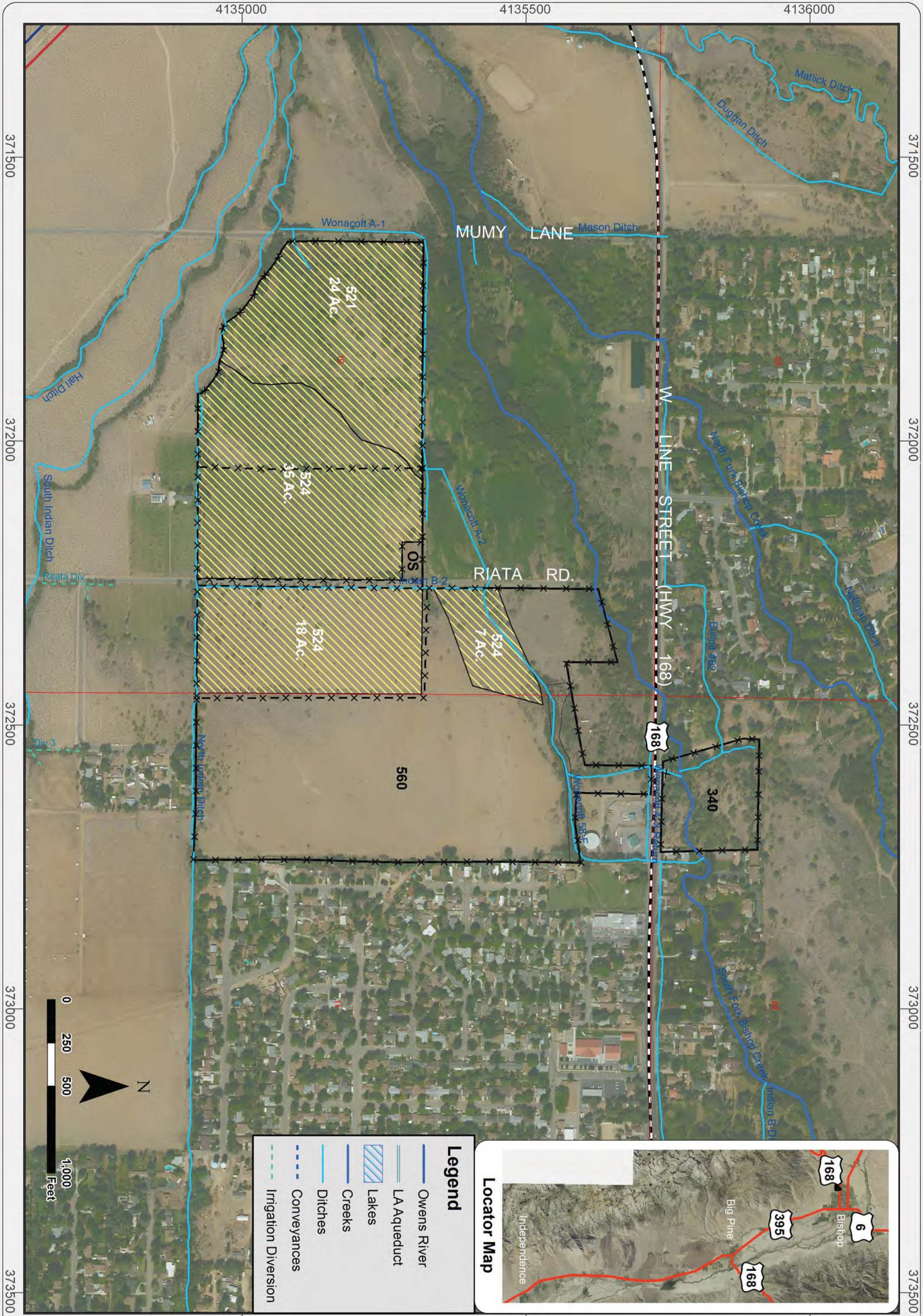
- AC Power Line
- DC Power Line
- Edison AC Line
- Irrigated Pasture
- Dry Grazing
- Lease Boundary
- Cattle Guards
- Gates
- Fences
- Section Line
- Highway



Land Description			
320 Riparian Vegetation	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
316 Rush/Saltgrass Meadow	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Tule Marsh Complex	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Saltgrass/Sacaton Meadow/Low	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Medium	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/High	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

Legend	
● Cattle Guards	AC Power Line
▲ Gates	DC Power Line
✕ Fences	Edison AC Line
— Highway	Irrigated Pasture
— Section Line	Dry Grazing
	Lease Boundary

RLI-453
 Hadelier et al
 139 Ac



Legend

- Owens River
- LA Aqueduct
- Lakes
- Creeks
- Ditches
- Conveyances
- Irrigation Diversion
- Operating Structures
- Irrigated Pasture
- Alfalfa "A"
- Alfalfa "B"
- Alfalfa "C"
- Pasture "A"
- Pasture "B"
- Pasture "C"
- Pasture "D"



Land Description

320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/- Grass/Rabbitbrush	OS Operating Structures
320 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
340 Rush/Saltgrass Meadow	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Tule Marsh Complex	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Saltgrass/Sacaton Meadow/Low	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Medium	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/High	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-413
 Boyd & Oney
 148 Ac

Legend

- AC Power Line
- DC Power Line
- Edison AC Line
- Irrigated Pasture
- Dry Grazing
- Lease Boundary
- Cattle Guards
- Gates
- Fences
- Section Line
- Highway

4136000

4137000

4138000

372000

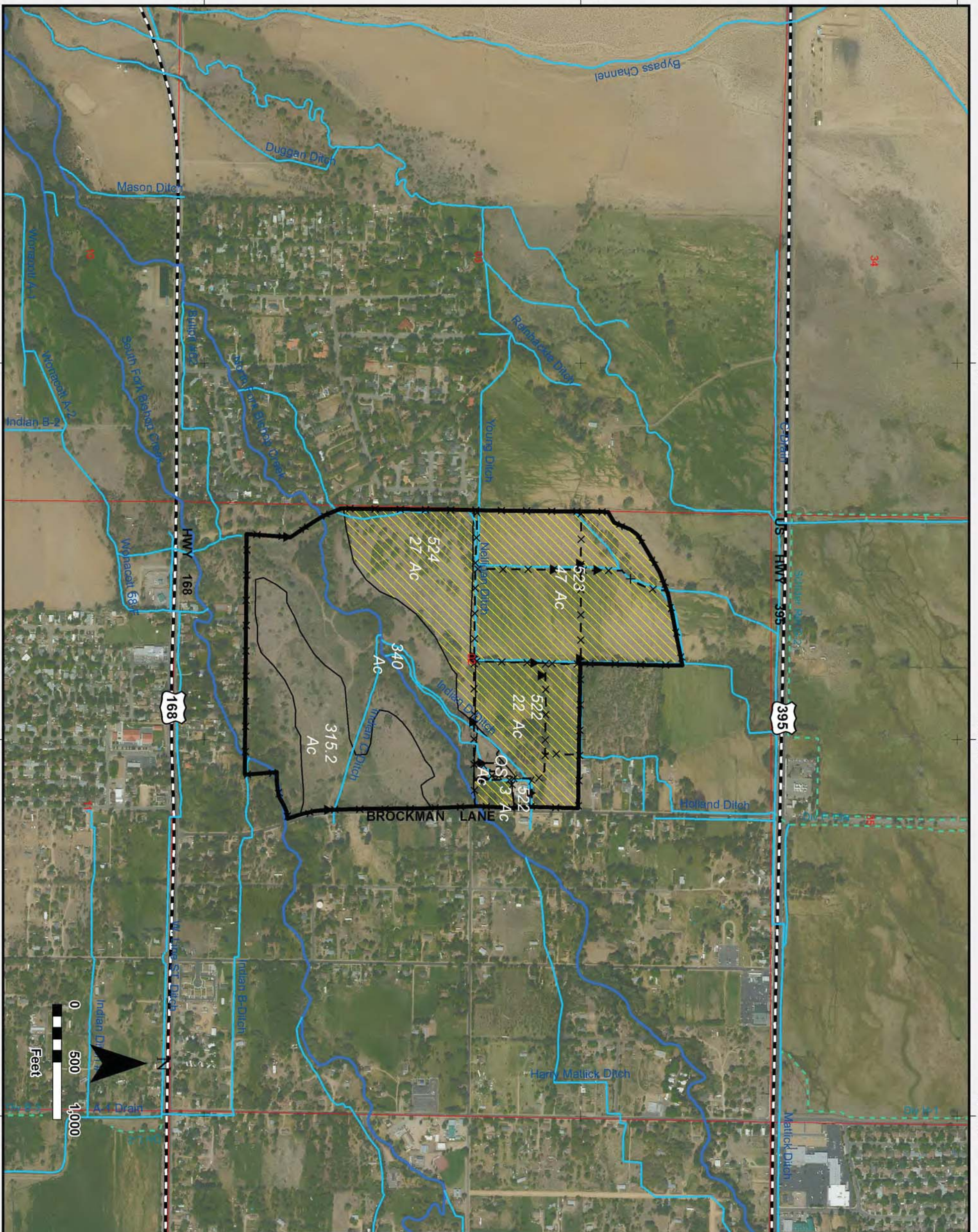
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373000

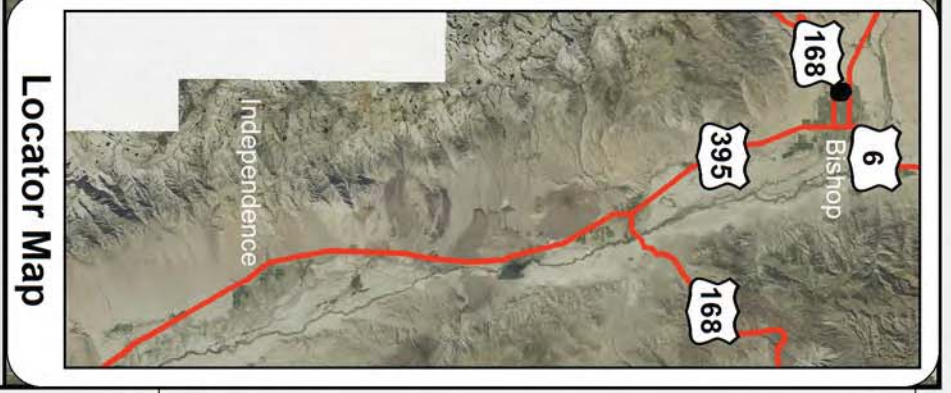
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374000

374000



Legend			
	Owens River		Lakes
	LA Aqueduct		Creeks
	Ditches		Conveyances
	Irrigation Diversion		

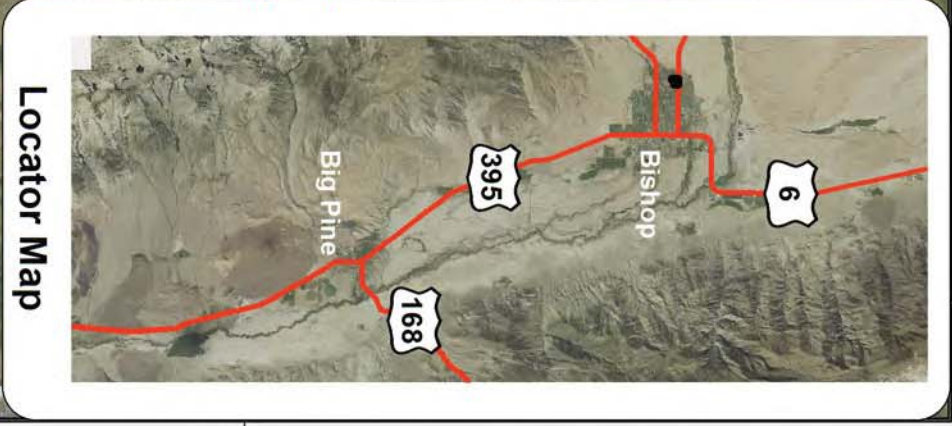
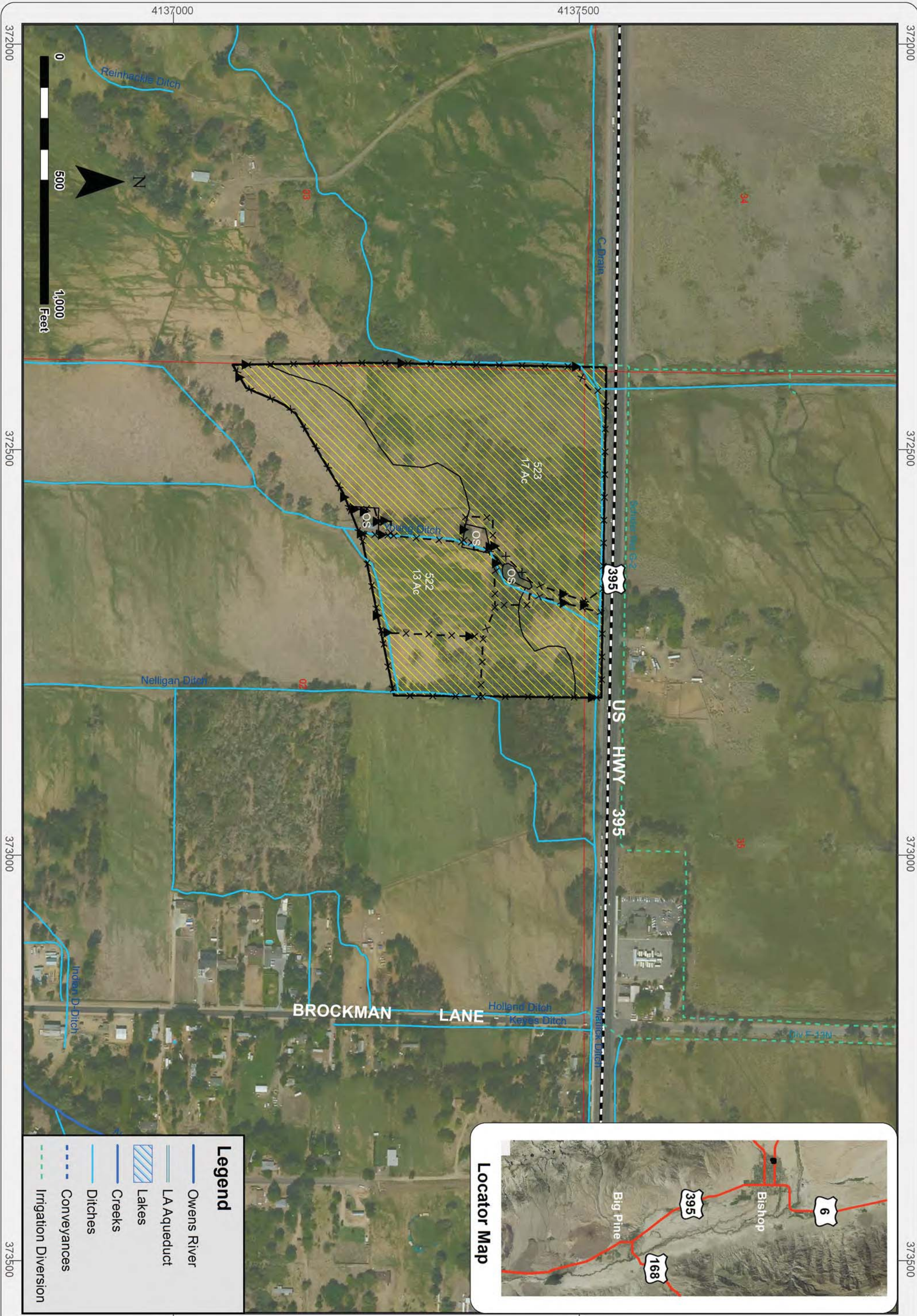


Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
321 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
322 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
323 Rush/Saltgrass Meadow	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
324 Tule Marsh Complex	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
325.1 Saltgrass/Sacaton Meadow/Low	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
325.2 Saltgrass/Sacaton Meadow/Medium	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
325.3 Saltgrass/Sacaton Meadow/High	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
325.4 Saltgrass/Sacaton Meadow/Low	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-401
Aubrey & Moxley et al
 182 Ac

Legend	
	AC Power Line
	DC Power Line
	Edison AC Line
	Irrigated Pasture
	Dry Grazing
	Lease Boundary
	Cattle Guards
	Gates
	Fences
	Section Line
	Highway

Appendix B: Tier 2 grazing leases



Legend

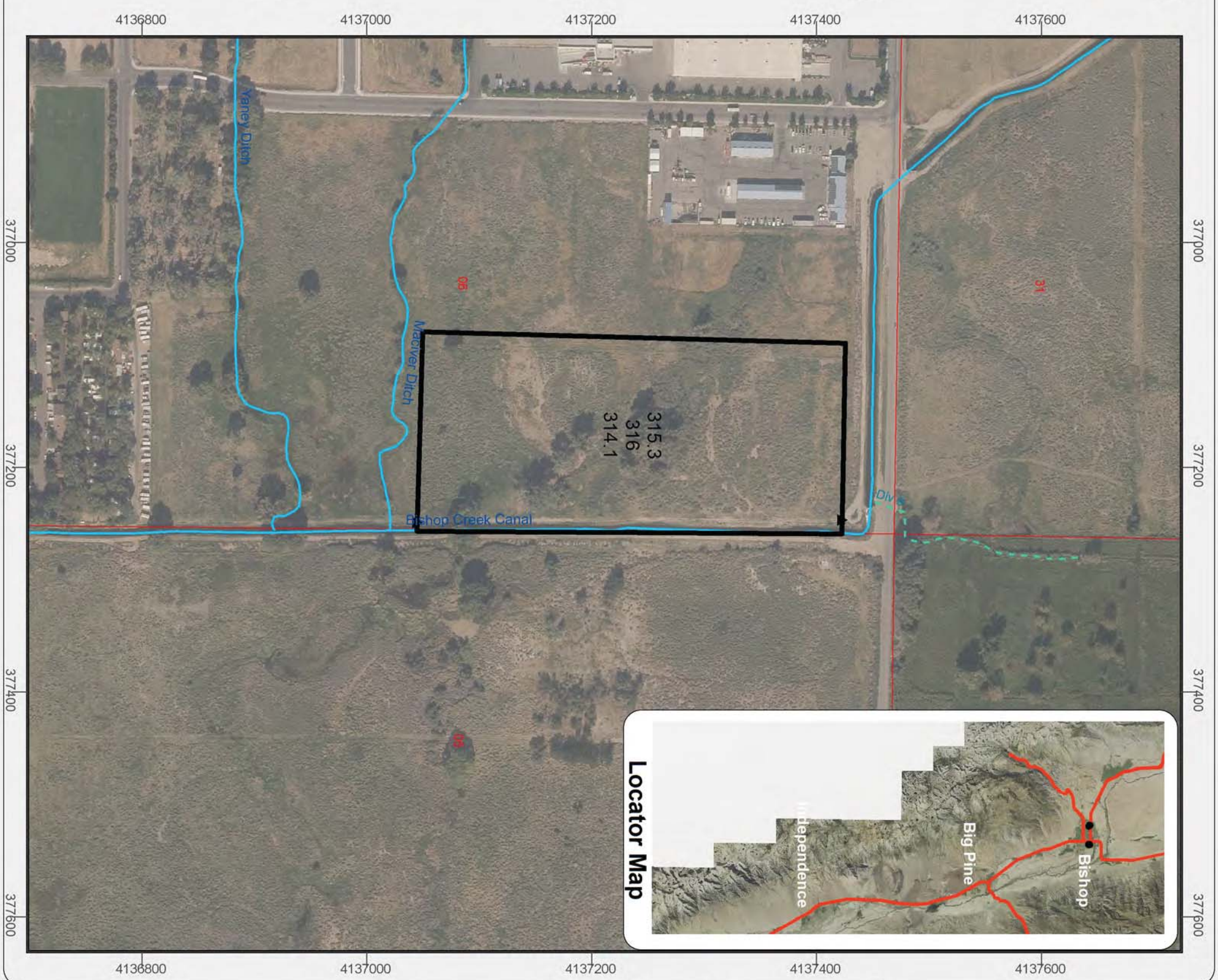
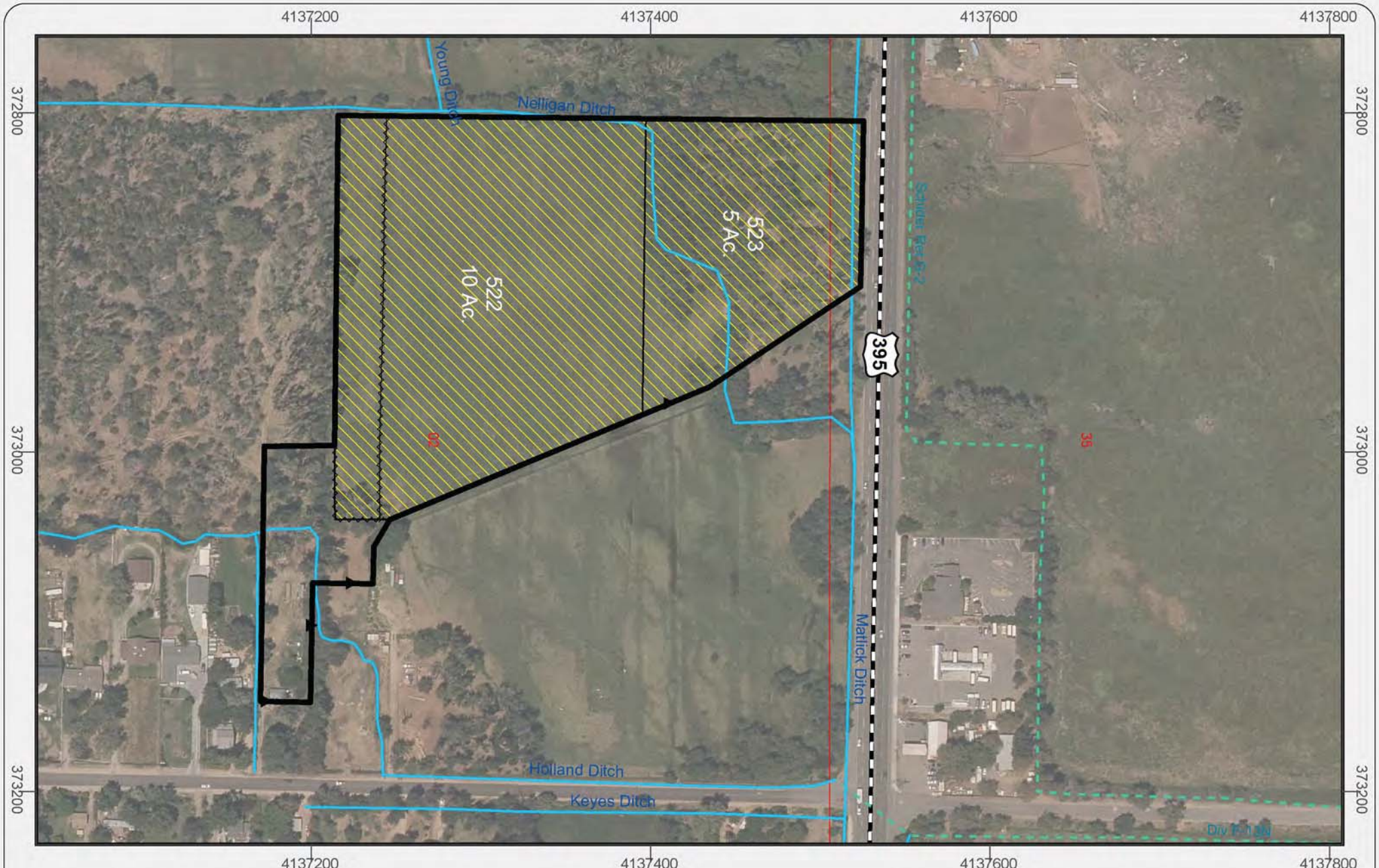
- Owens River
- LA Aqueduct
- Lakes
- Creeks
- Ditches
- Conveyances
- Irrigation Diversion

Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
316 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Tule Marsh Complex	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Saltgrass/Sacaton Meadow/Low	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Medium	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/High	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-435
Johnson, et al
33 Ac

Legend

- AC Power Line
- DC Power Line
- Cattle Guards
- Gates
- Fences
- Section Line
- Highway
- Edison AC Line
- Irrigated Pasture
- Dry Grazing
- Lease Boundary



Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
316 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Tule Marsh Complex	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Saltgrass/Sacaton Meadow/Low	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Medium	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/High	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-494
Berner et al
34 Ac

Legend	
●	Cattle Guards
▲	Gates
X	Fences
—	Section Line
—	Highway
—	AC Power Line
—	DC Power Line
- - -	Edison AC Line
▨	Irrigated Pasture
□	Dry Grazing
▭	Lease Boundary

4134000

4135000

375000

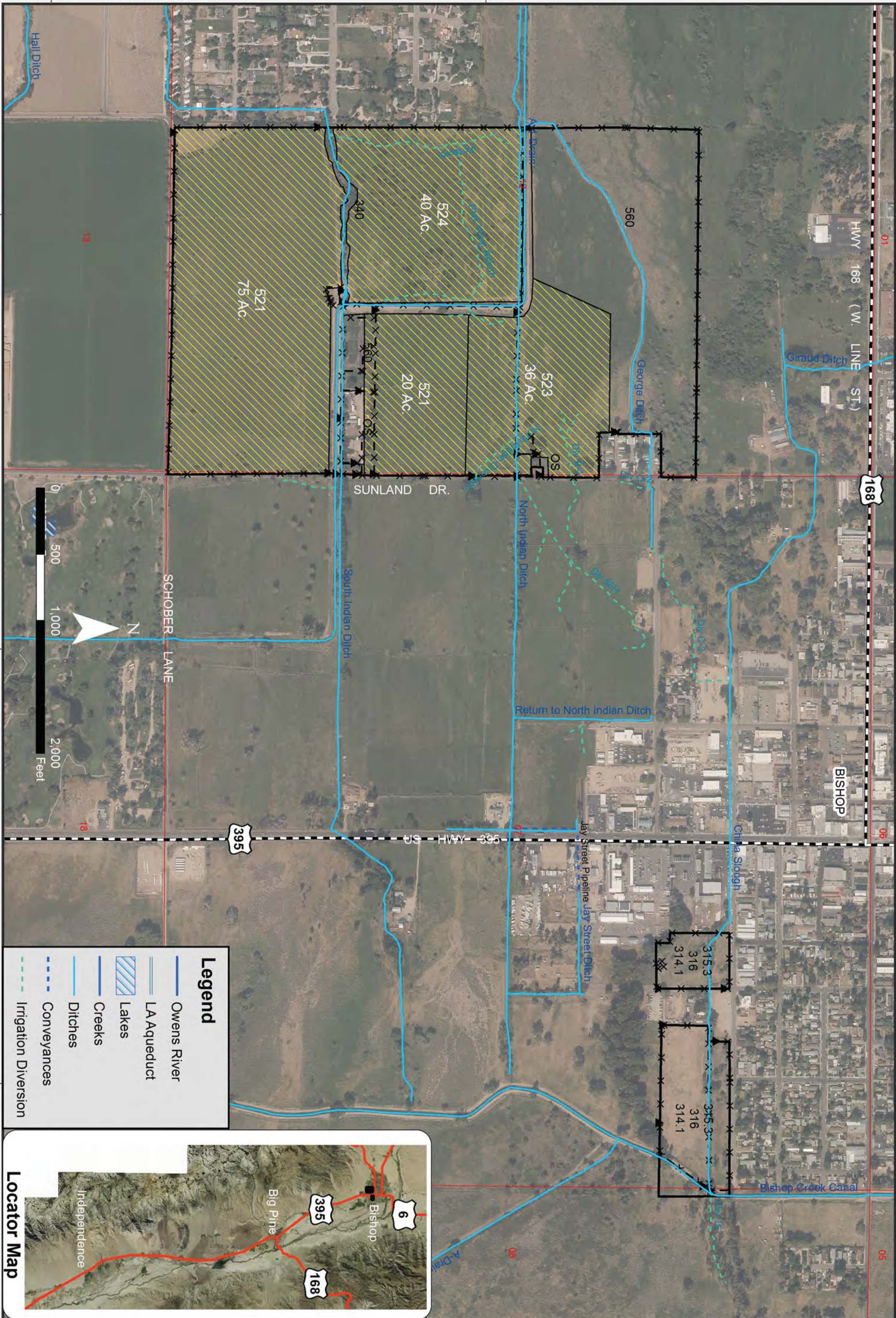
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376000

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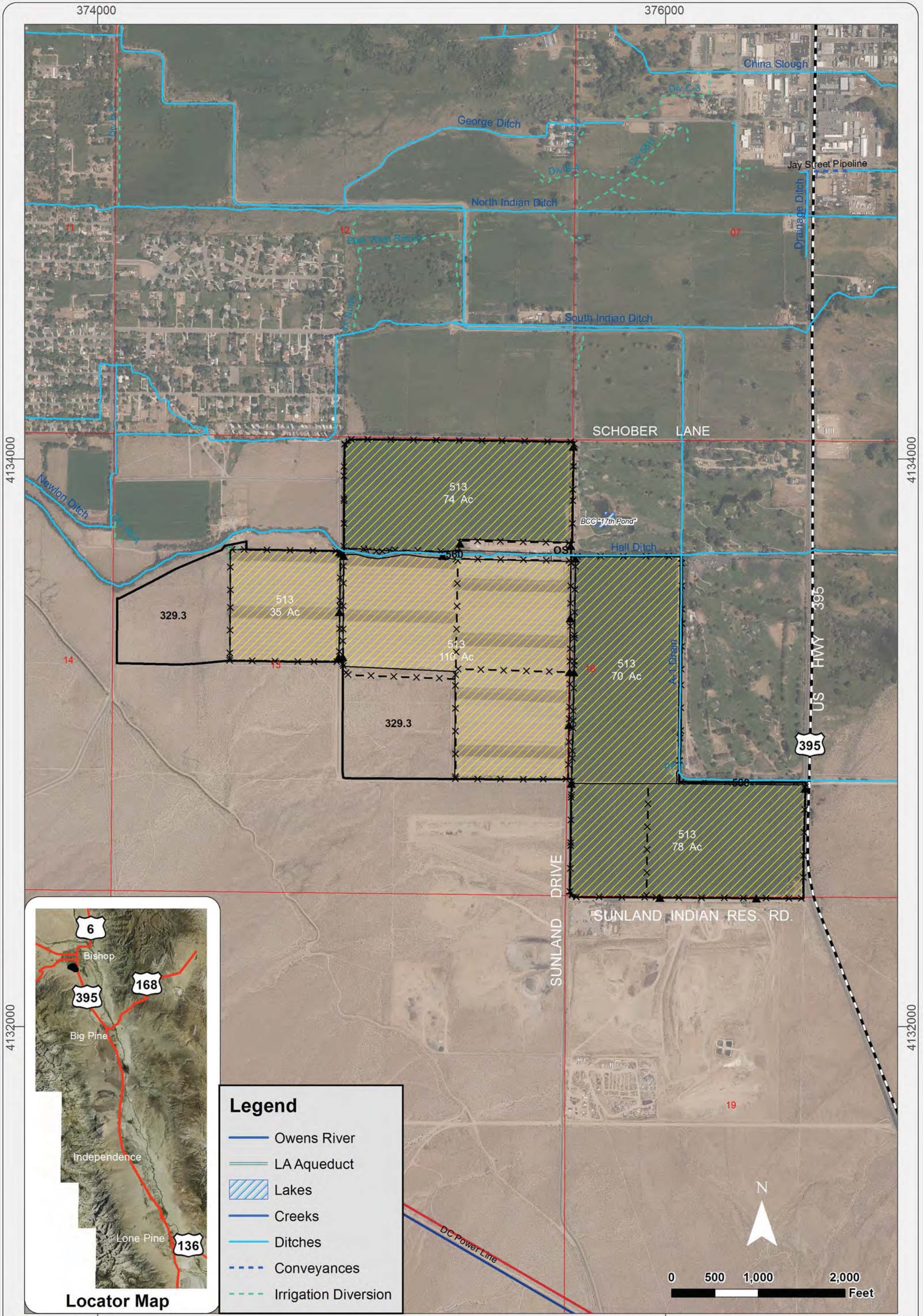
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Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/- Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
316 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Rush/Saltgrass Meadow	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Tule Marsh Complex	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Low	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/Medium	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-500
 Talbot et al
 268 Ac

Legend	
●	Cattle Guards
▲	Gates
X	Fences
—	Section Line
—	Highway
—	AC Power Line
—	DC Power Line
---	Edison AC Line
▨	Irrigated Pasture
□	Dry Grazing
□	Lease Boundary



Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage-/Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
316 Rush/Saltgrass Meadow	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Tule Marsh Complex	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Saltgrass/Sacaton Meadow/Low	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Medium	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/High	329.3 Saltgrass/Sacaton Meadow/+Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

Legend	
● Cattle Guards	— AC Power Line
▲ Gates	— DC Power Line
× Fences	- - - Edison AC Line
— Highway	▨ Irrigated Pasture
— Section Line	□ Dry Grazing
	▭ Lease Boundary

RLI-502
Zack Ranch et al
448 Ac

4134000

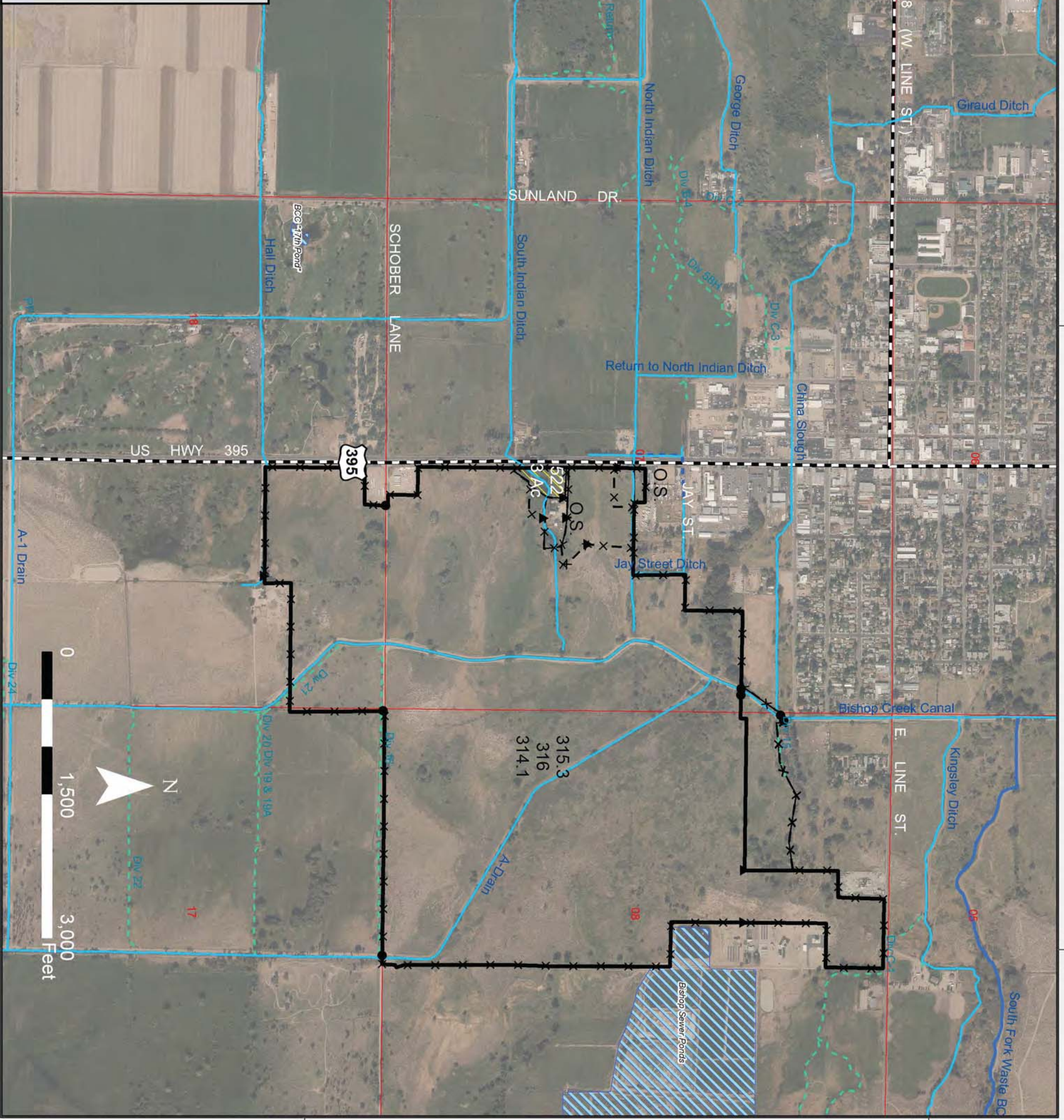
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Locator Map

Legend

- Owens River
- LA Aqueduct
- Lakes
- Creeks
- Ditches
- Conveyances
- Irrigation Diversion



Dry Grazing Cover Type

320	Riparian Vegetation
340	Riparian Meadow
316	Rush/Saltgrass Meadow
317	Tule Marsh Complex
315.1	Saltgrass/Sacaton Meadow/Low
315.2	Saltgrass/Sacaton Meadow/Medium
315.3	Saltgrass/Sacaton Meadow/High
314.1	Rabbit/Nev. Saltbush/Saltgrass/Low

Land Description

314.2	Rabbit/Nev. Saltbush/Saltgrass/Medium
314.3	Rabbit/Nev. Saltbush/Saltgrass/High
324.1	Greasewood/Saltbush/Low
324.2	Greasewood/Saltbush/High
329.1	Semi-Desert Shrublands/+Atriplex
329.2	Semi-Desert Shrublands/+Grass
329.3	Semi-Desert Shrublands/-Grass
329.4	Semi-Desert Shrublands
330.1	Sage/+Grass/Mtn Shrub

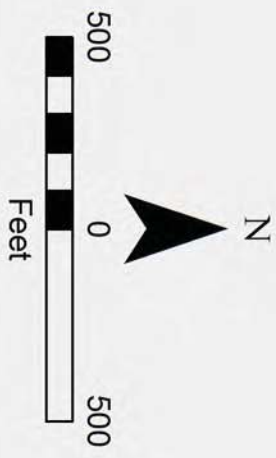
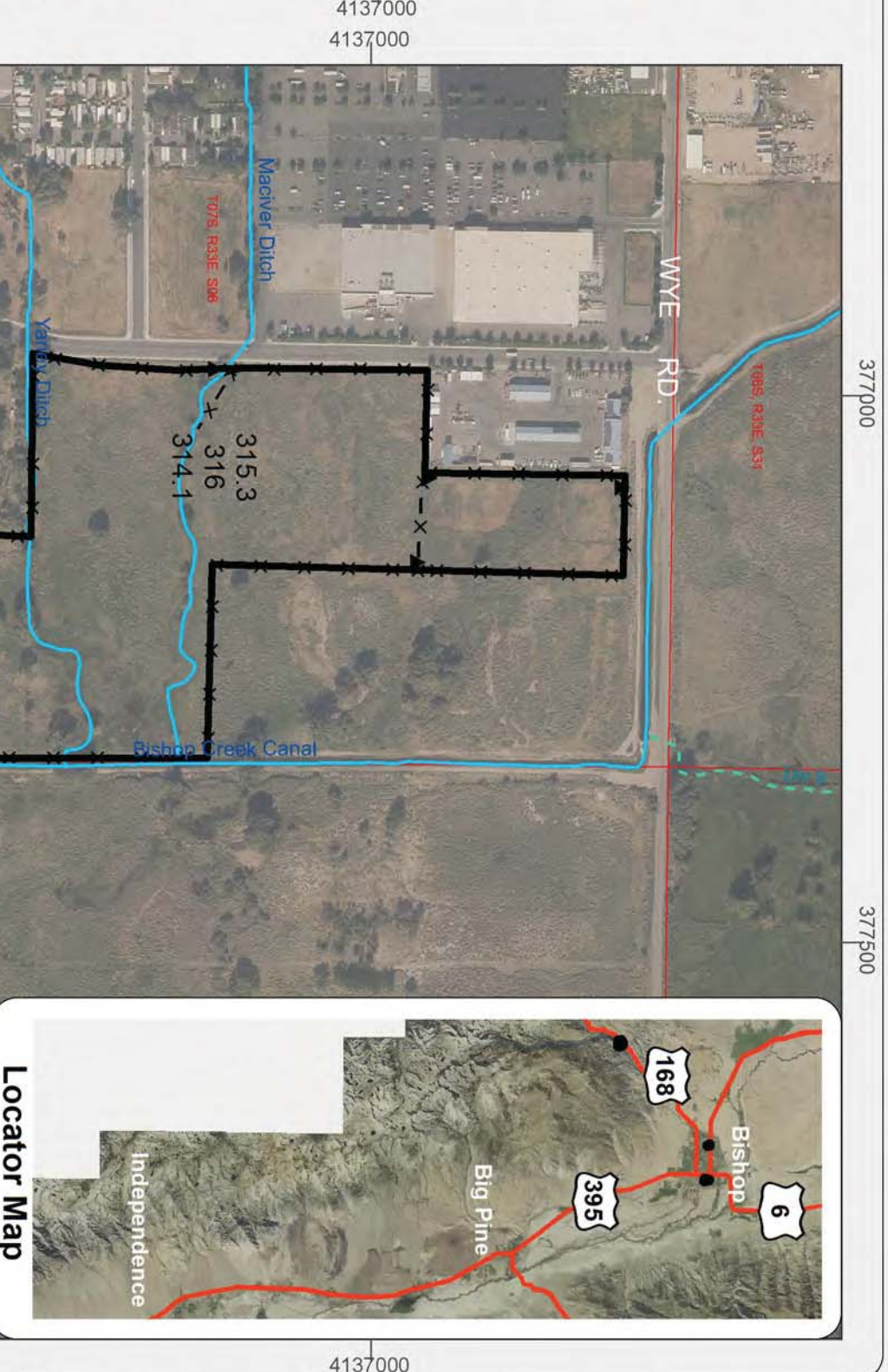
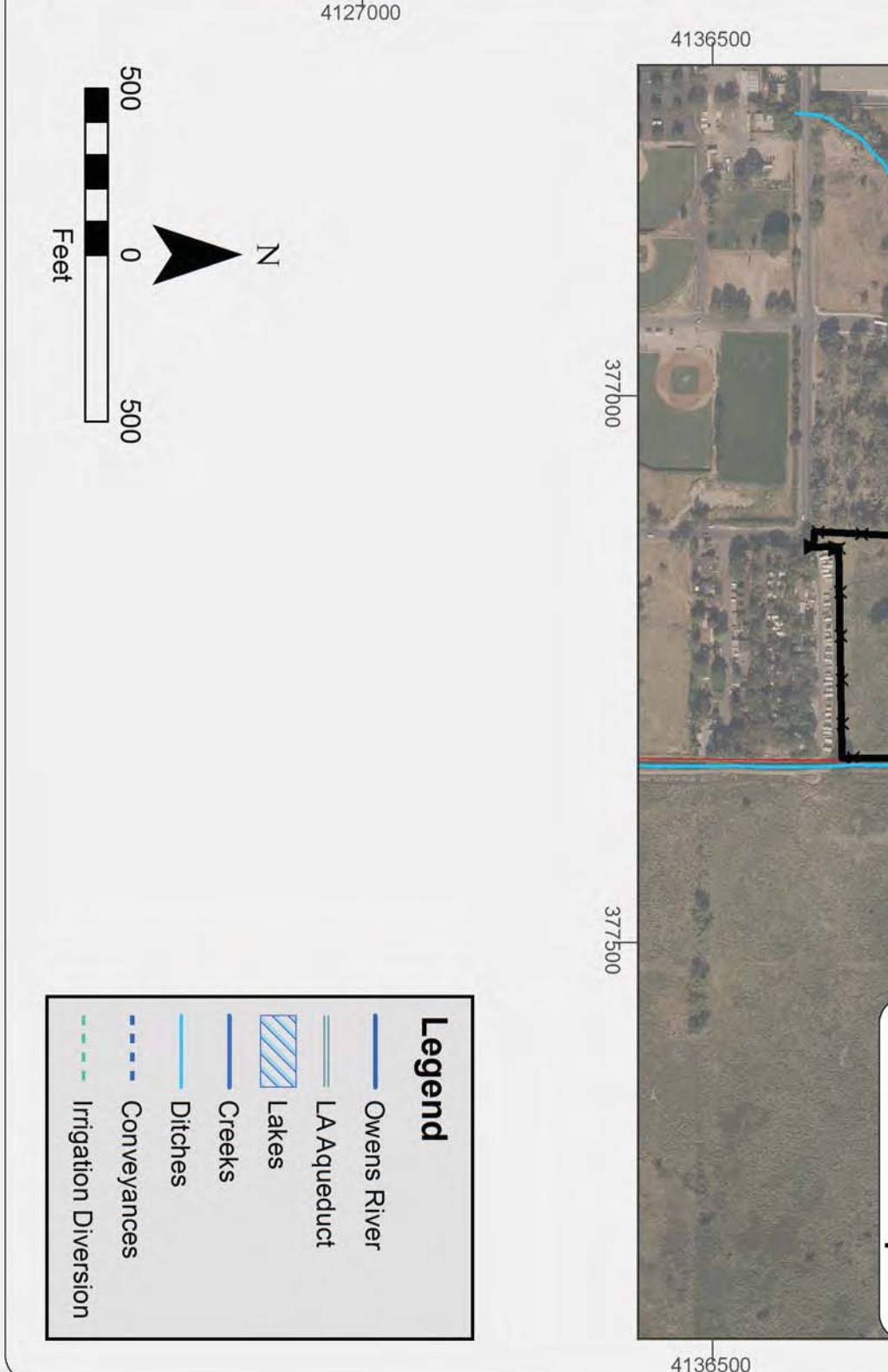
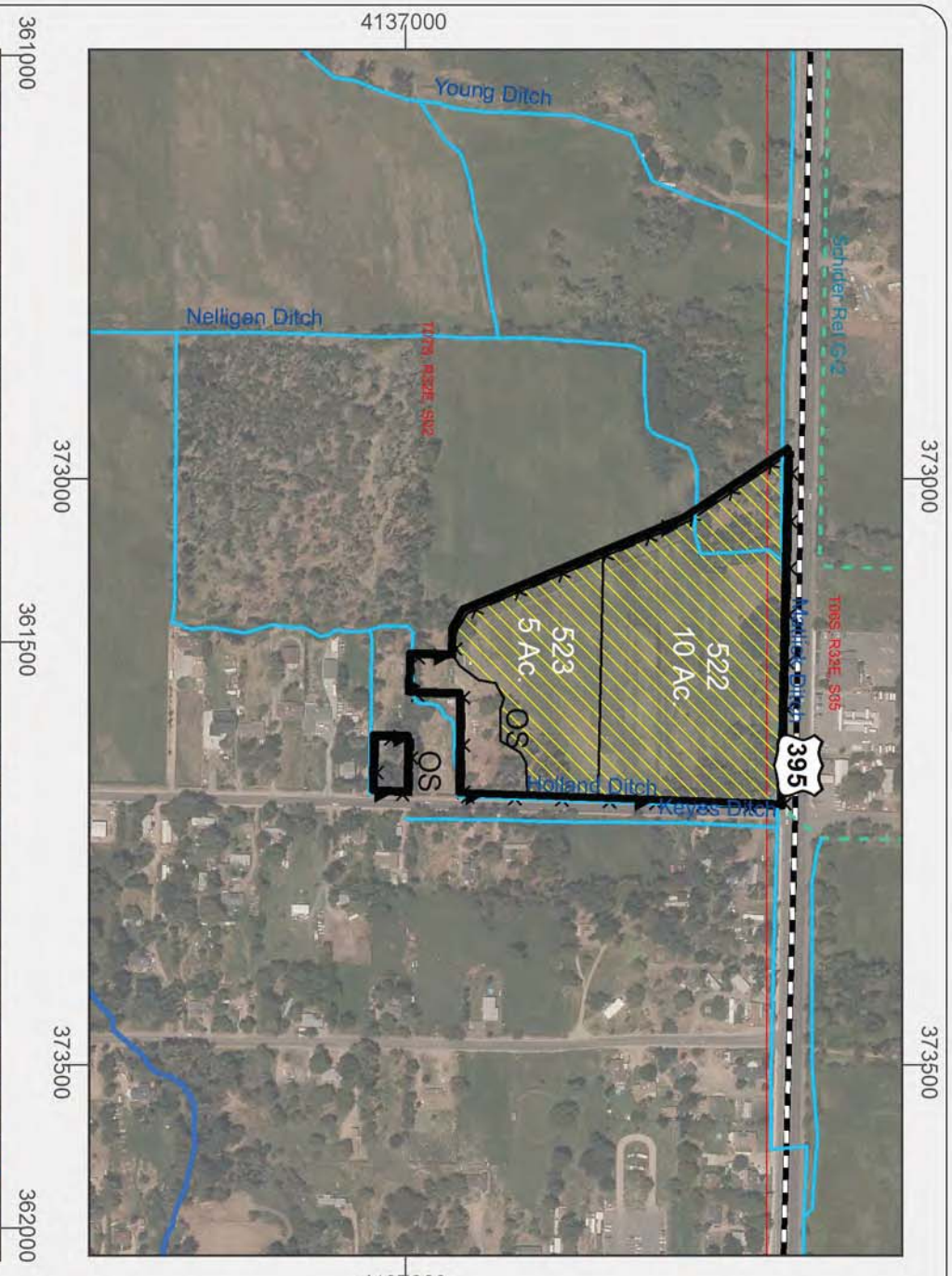
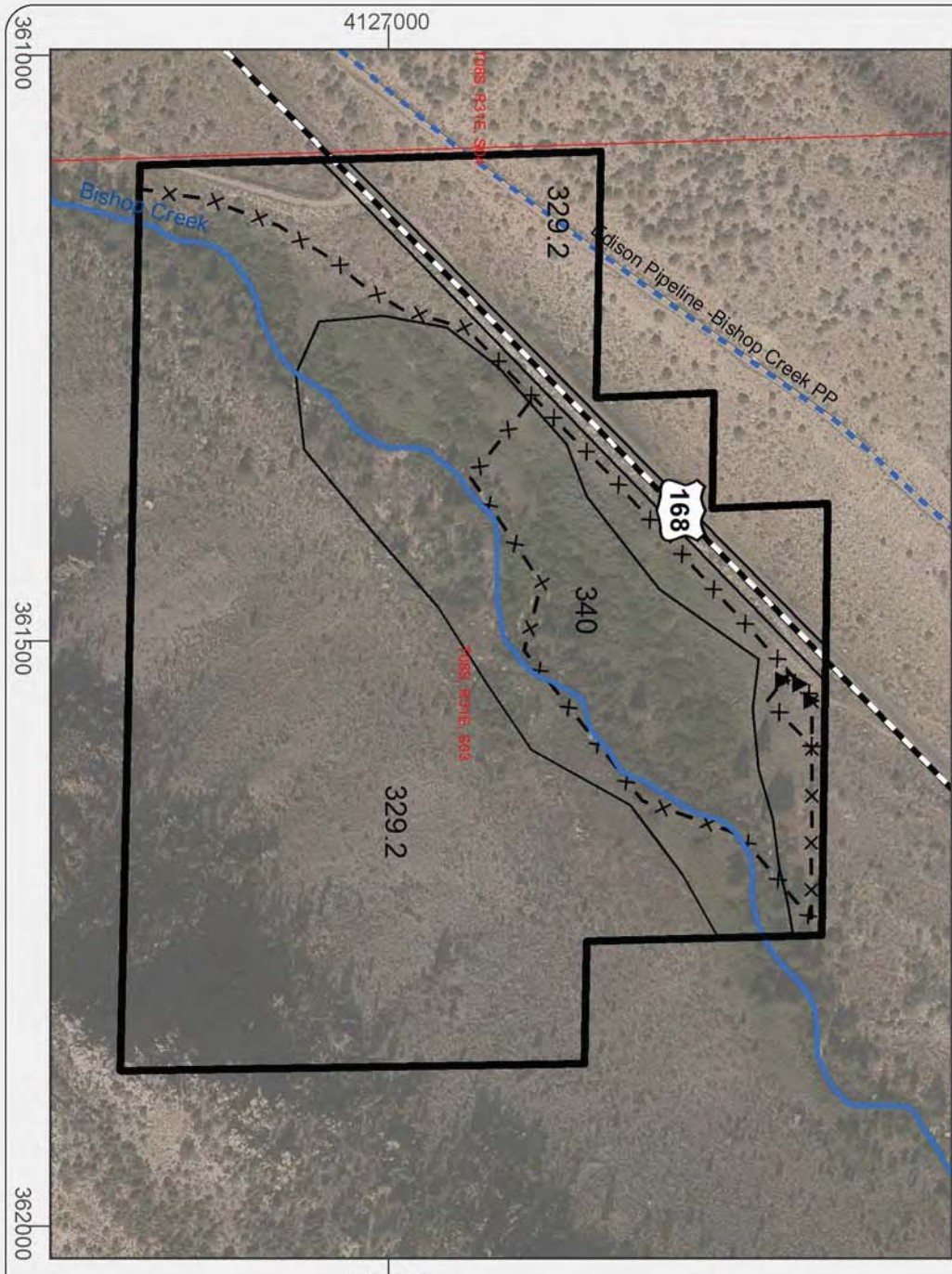
330.2	Sage/-Grass/Rabbitbrush
330.3	Sage/Rabbitbrush
560	Abandoned Land
111	Dry Lakes
112	Barren Ponds
160	Slicks
210	Lakes, Ponds, Reservoirs
600	Urban And Industrial Areas Non-Use

OS	Operating Structures
511	Irrigated Pasture - Alfalfa "A"
512	Irrigated Pasture - Alfalfa "B"
513	Irrigated Pasture - Alfalfa "C"
521	Pasture "A"
522	Pasture "B"
523	Pasture "C"
524	Pasture "D"

RLI-487
Giacomini et al
 681 Ac

Legend

- AC Power Line
- DC Power Line
- Edison AC Line
- Irrigated Pasture
- Dry Grazing
- Lease Boundary
- Cattle Guards
- Gates
- Fences
- Section Line
- Highway



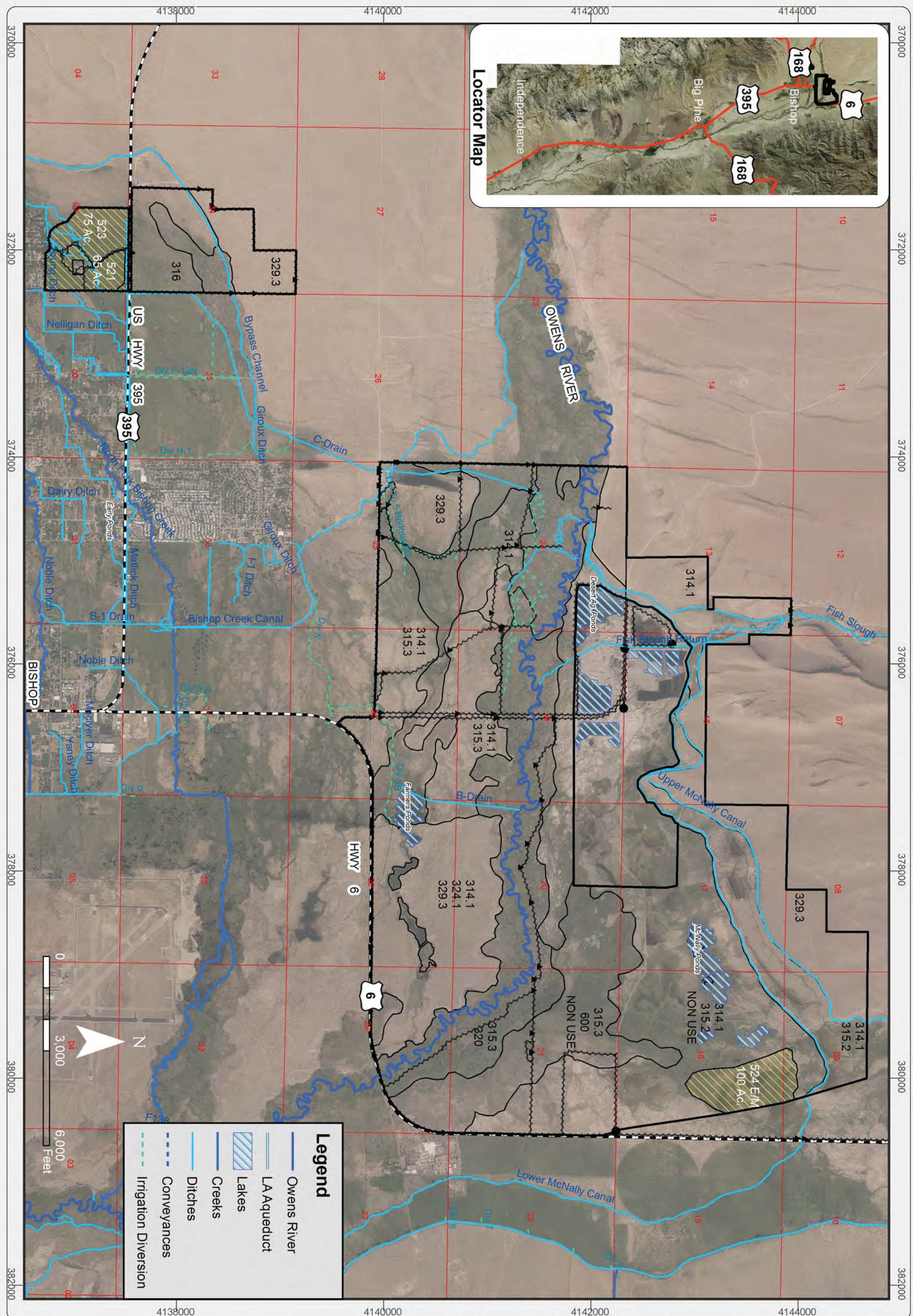
Legend	
	Owens River
	LA Aqueduct
	Lakes
	Creeks
	Ditches
	Conveyances
	Irrigation Diversion



Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/-Grass/Rabbitbrush	OS Operating Structures
340 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
316 Rush/Saltgrass Meadow	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
317 Tule Marsh Complex	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
315.1 Saltgrass/Sacaton Meadow/Low	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.2 Saltgrass/Sacaton Meadow/Medium	329.2 Semi-Desert Shrublands/-Grass	160 Slicks	521 Pasture "A"
315.3 Saltgrass/Sacaton Meadow/High	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-460
Greg Allen
 144 Ac

Legend	
	AC Power Line
	DC Power Line
	Edison AC Line
	Irrigated Pasture
	Dry Grazing
	Lease Boundary
	Cattle Guards
	Gates
	Fences
	Section Line
	Highway



Legend

- Owens River
- LA Aqueduct
- Lakes
- Creeks
- Ditches
- Conveyances
- Irrigation Diversion

Land Description			
320 Dry Grazing Cover Type	314.2 Rabbit/Nev. Saltbush/Saltgrass/Medium	330.2 Sage/Grass/Rabbitbrush	OS Operating Structures
320 Riparian Vegetation	314.3 Rabbit/Nev. Saltbush/Saltgrass/High	330.3 Sage/Rabbitbrush	Irrigated Pasture
340 Riparian Vegetation	324.1 Greasewood/Saltbush/Low	560 Abandoned Land	511 Alfalfa "A"
316 Rush/Saltgrass Meadow	324.2 Greasewood/Saltbush/High	111 Dry Lakes	512 Alfalfa "B"
317 Tule Marsh Complex	329.1 Semi-Desert Shrublands/+Atriplex	112 Barren Ponds	513 Alfalfa "C"
315.1 Saltgrass/Sacaton Meadow/Low	329.2 Semi-Desert Shrublands/+Grass	160 Slicks	521 Pasture "A"
315.2 Saltgrass/Sacaton Meadow/Medium	329.3 Semi-Desert Shrublands/-Grass	210 Lakes, Ponds, Reservoirs	522 Pasture "B"
315.3 Saltgrass/Sacaton Meadow/High	329.4 Semi-Desert Shrublands	600 Urban And Industrial Areas	523 Pasture "C"
314.1 Rabbit/Nev. Saltbush/Saltgrass/Low	330.1 Sage/+Grass/Mtn Shrub	Non-Use	524 Pasture "D"

RLI-492

Lacey Livestock

5,563 Ac

Legend

- AC Power Line
- DC Power Line
- Edison AC Line
- Irrigated Pasture
- Dry Grazing
- Lease Boundary
- Cattle Guards
- Gates
- Fences
- Section Line
- Highway

Appendix C: Updated LADWP maps (2022)



BUILDING A STRONGER L.A.

Eric Garcetti, Mayor

Board of Commissioners
Cynthia McClain-Hill, President
Susana Reyes, Vice President
Jill Banks Barad
Mia Lehrer
Nicole Neeman Brady
Yvette L. Furr, Acting Secretary

Martin L. Adams, General Manager and Chief Engineer

February 1, 2022

Daniel Sussman
Senior Environmental Scientist
Chief, Planning and Assessment Unit
Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd., South Lake Tahoe, CA 96150

Attention: Mr. Ed Hancock

Dear Mr. Sussman:

Subject: LADWP Updated Resource Maps Indicating Mowing and Fencing

As discussed at the meeting held between LADWP and the Lahontan Regional Board on January 28, 2022, the Los Angeles Department of Water and Power (LADWP) respectfully submits the updated resource maps which include the various areas LADWP has implemented Best Management Practices (BMPs) such as fencing and mowing, within the Bishop Creek Watershed (see Enclosure 1). Also included on the attached maps is the linear footage of all fencing LADWP has implemented and the acreage LADWP has mowed. Further, the maps indicate all ditches and creeks in the area of BMP implementation. This submittal includes the first of two action items from the January 28th meeting, in which LADWP agreed to provide updated resource maps. LADWP has requested the information to satisfy the second action item, where LADWP agreed to provide additional information in regards to funding, man-hours, and timing of BMP implementation, and expects to receive it by no later than Friday, February 4, 2022. Once it receives this information, LADWP will compile and forward it to the Regional Board.

Should you have any questions, please feel free to reach out to Mr. Victor Ventura of the Wastewater Quality and Compliance Group at (213) 367-1339 or myself at (213) 367-0436.

Sincerely,

Katherine Rubin
Manager, Air and Wastewater Quality and Compliance

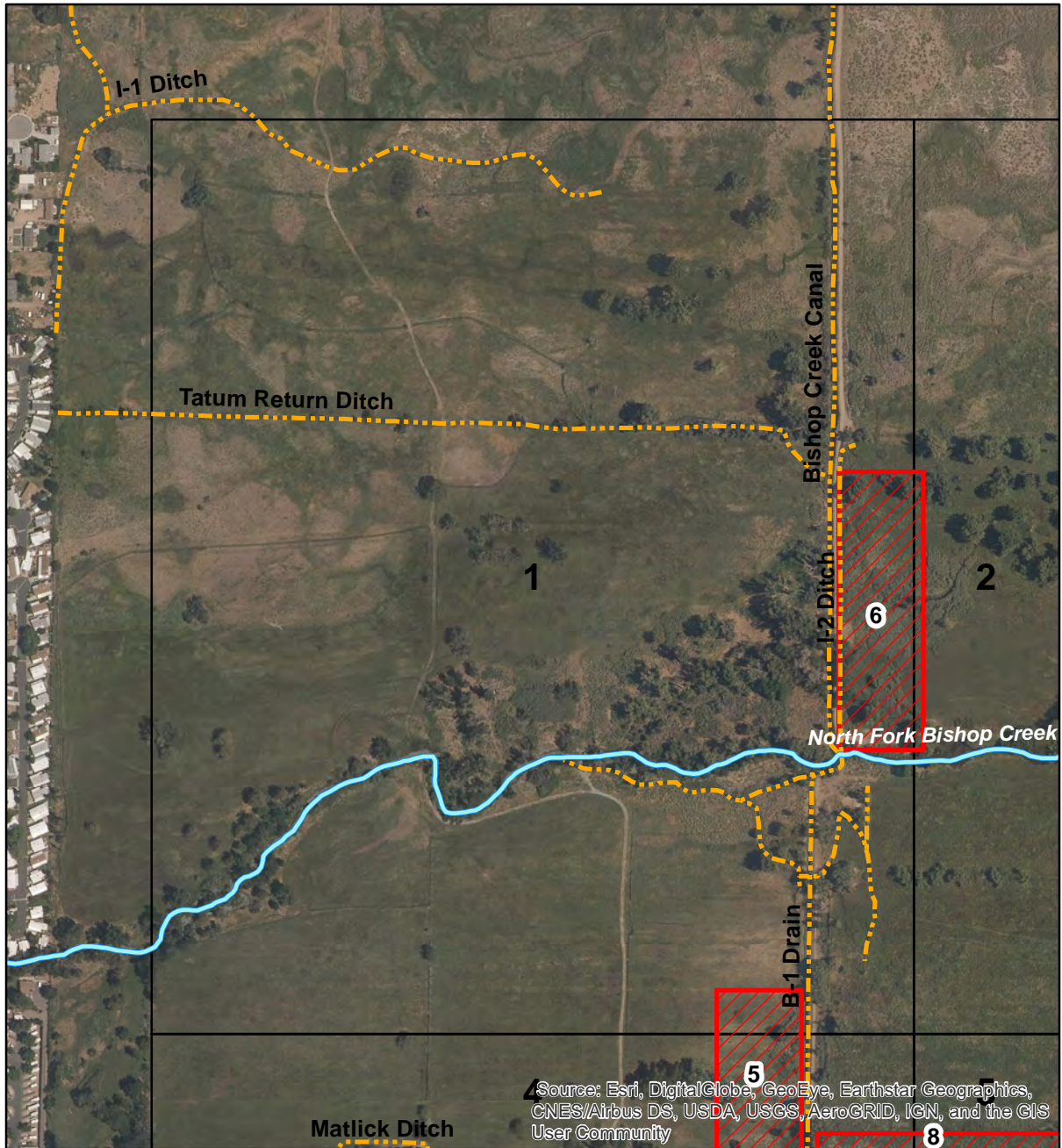
VV:

c/enc: Mr. Ed Hancock, Lahontan Regional Water Quality Control Board
Mr. Eric Tillemans, LADWP
Ms. Lori Gillem, LADWP
Mr. Victor Ventura, LADWP

ENCLOSURE 1

UPDATED MAPS INDICATING
FENCING AND MOWING

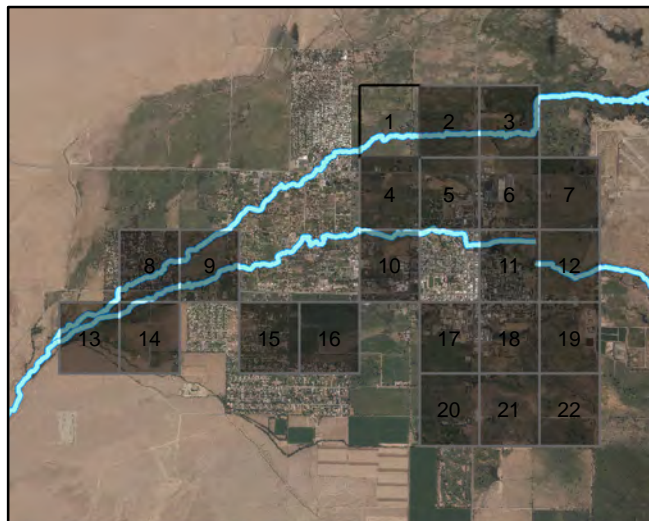
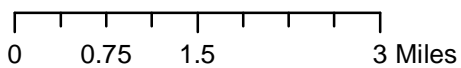
Mowed Areas in the Bishop Creek Drainage



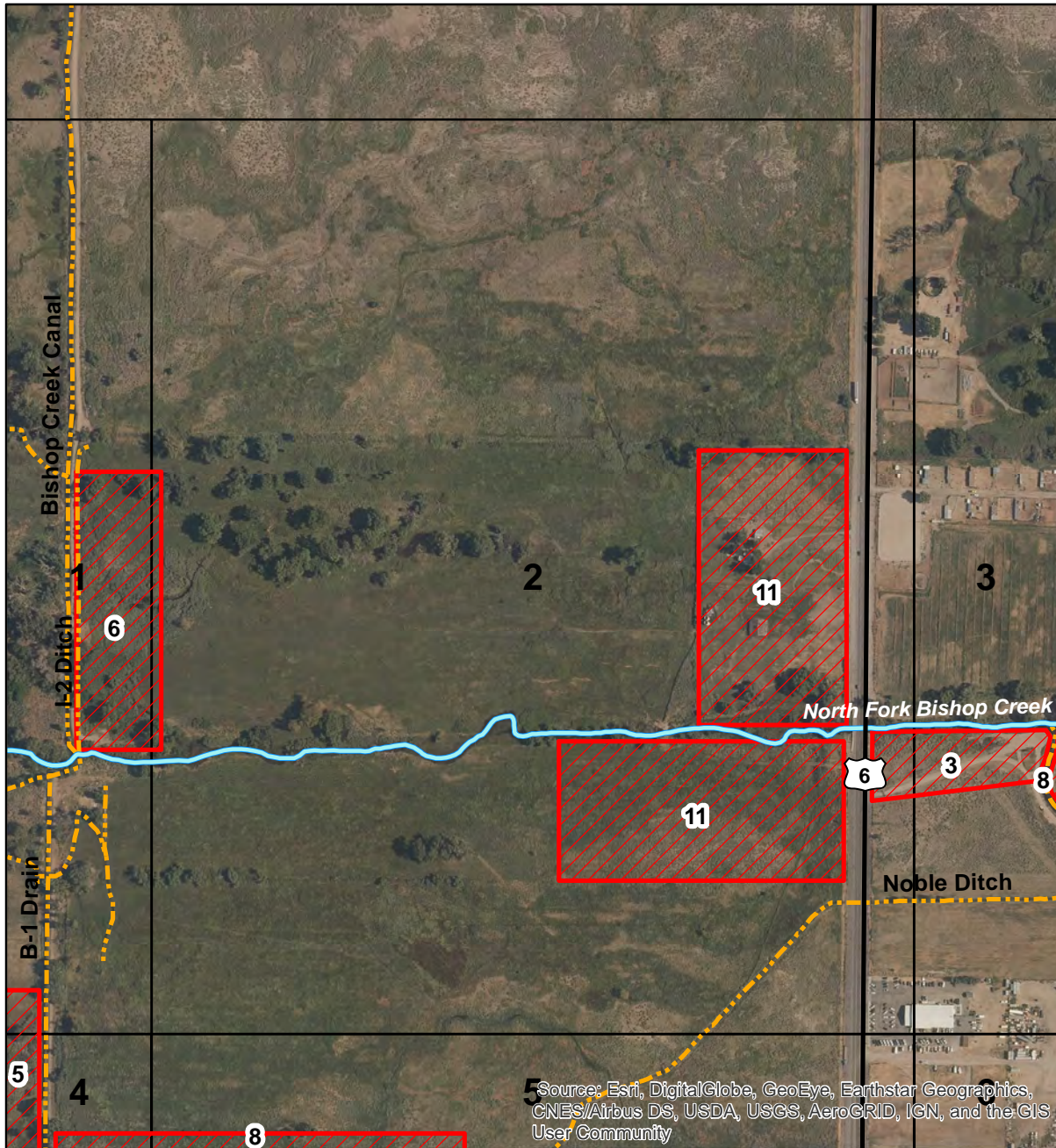
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Page 1 of 22

-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



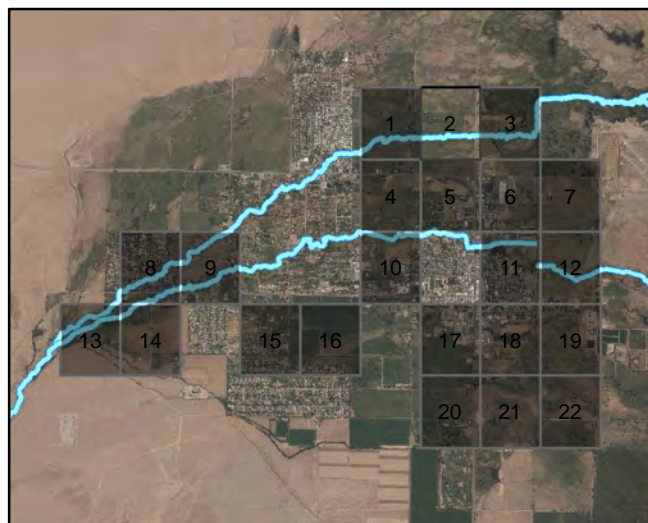
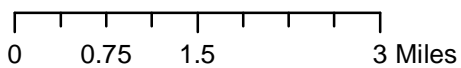
Mowed Areas in the Bishop Creek Drainage



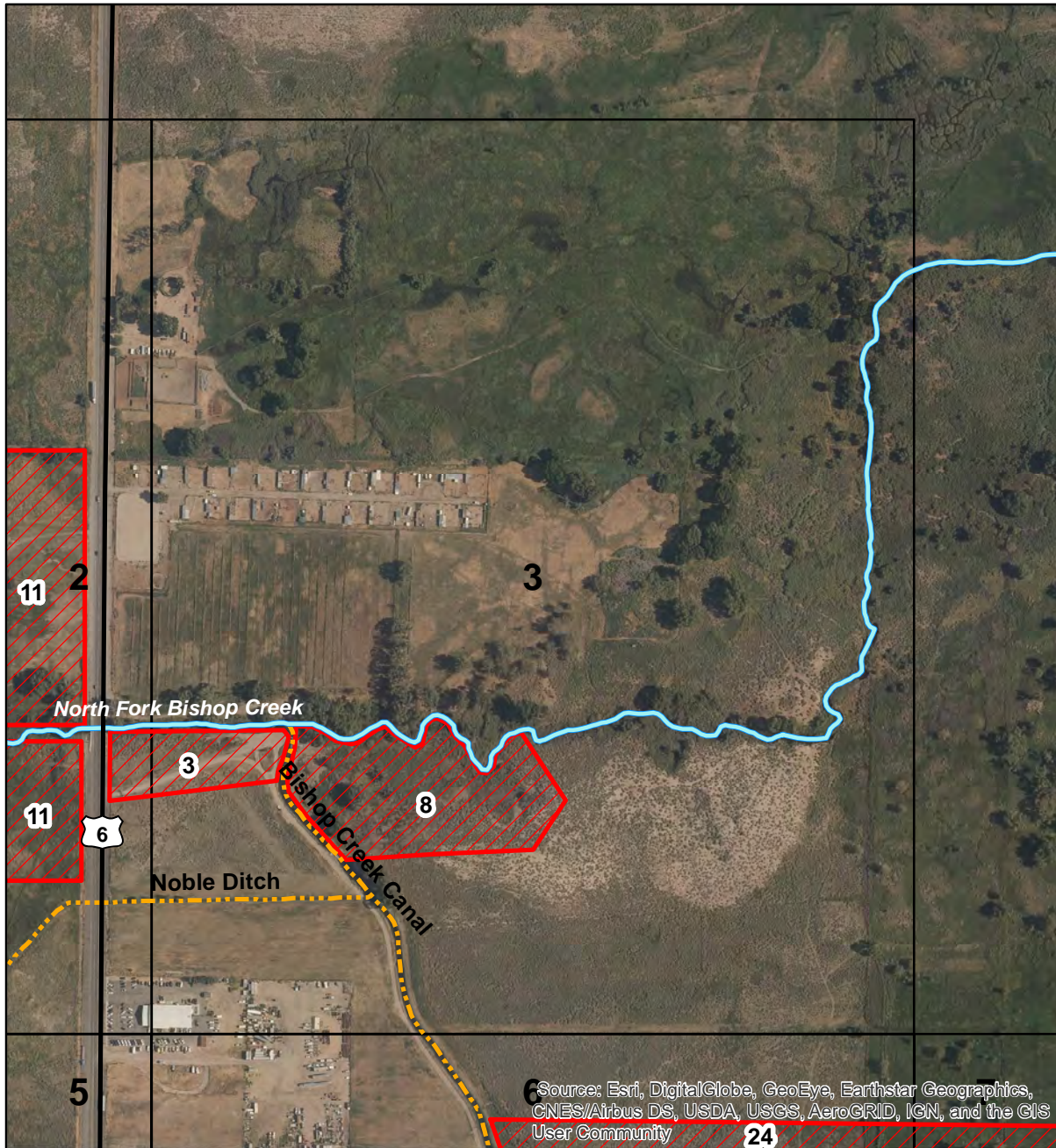
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



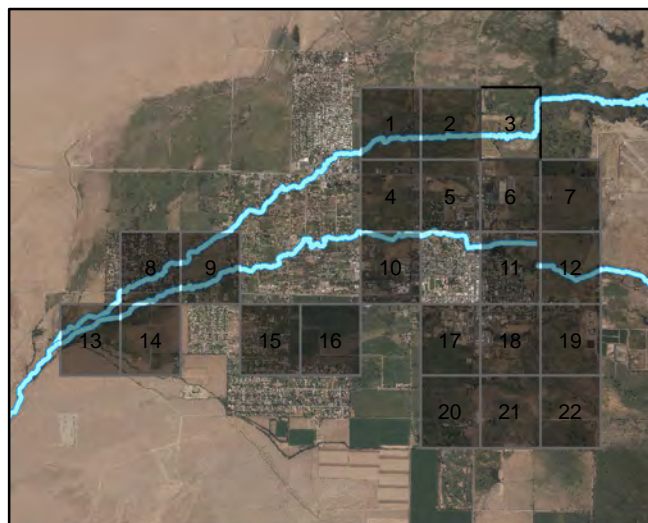
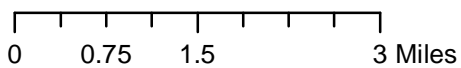
Mowed Areas in the Bishop Creek Drainage



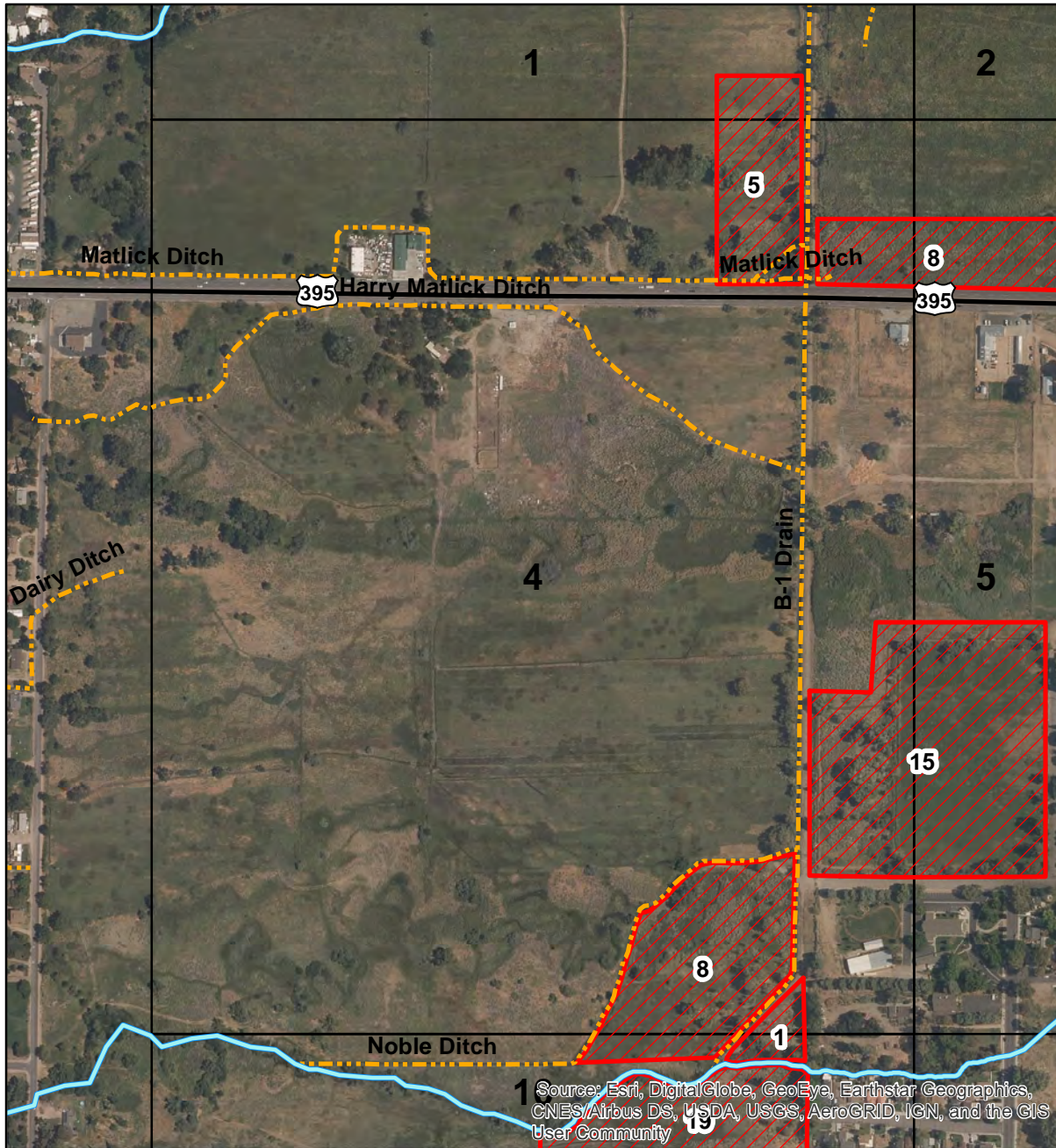
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



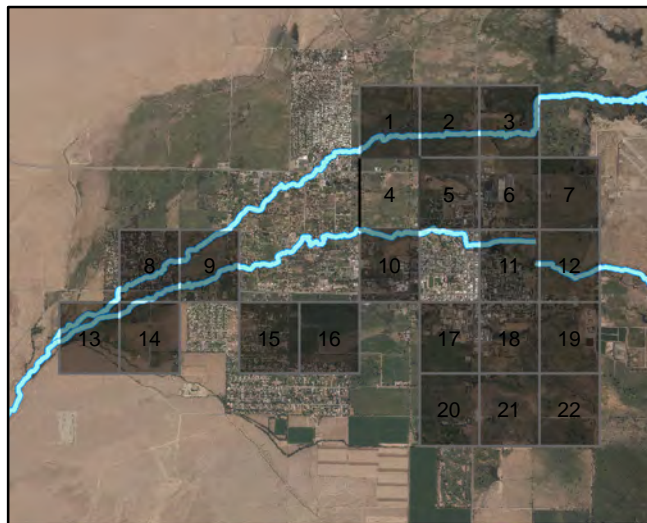
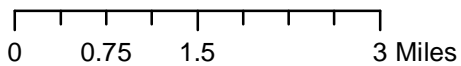
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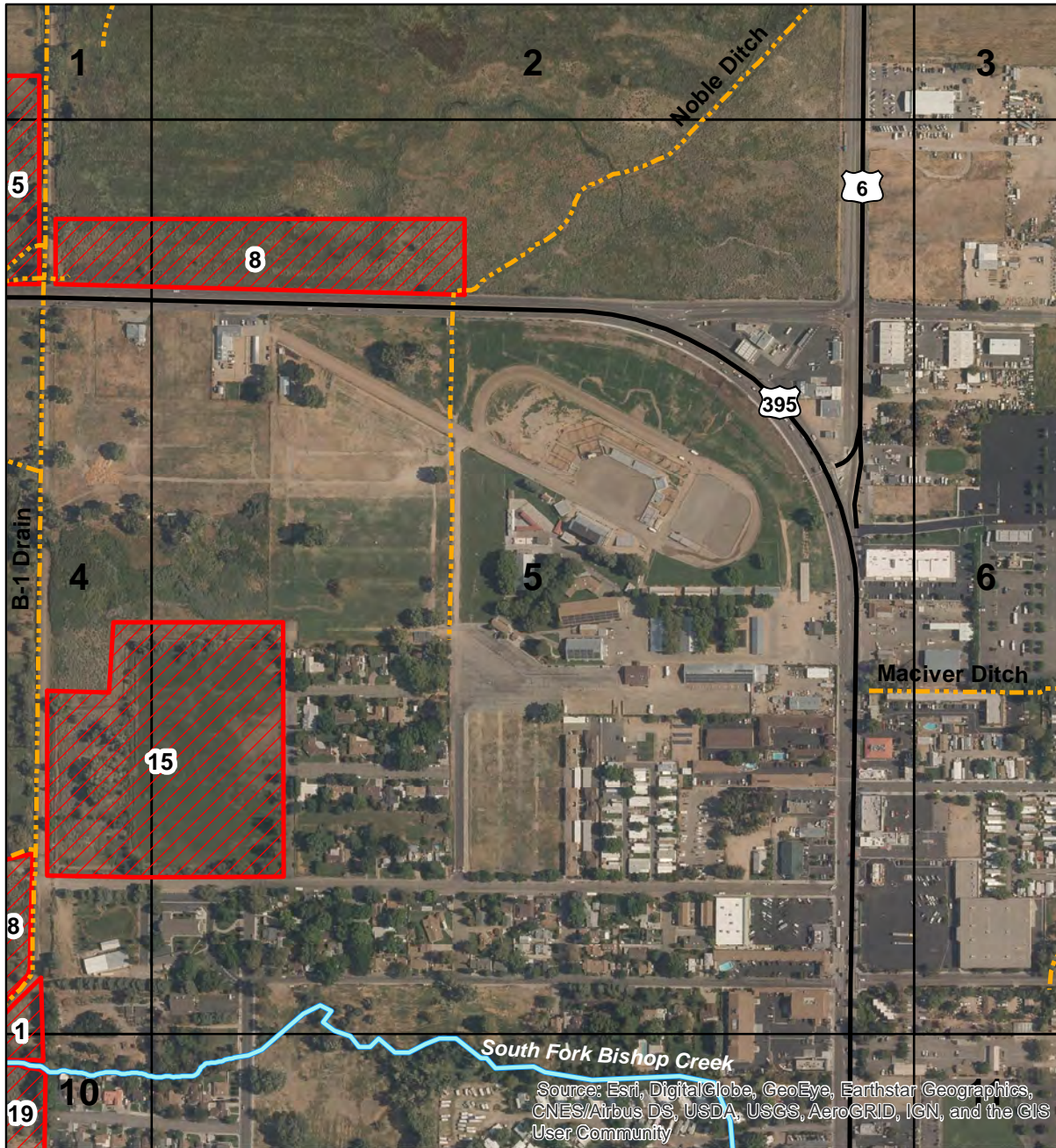
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



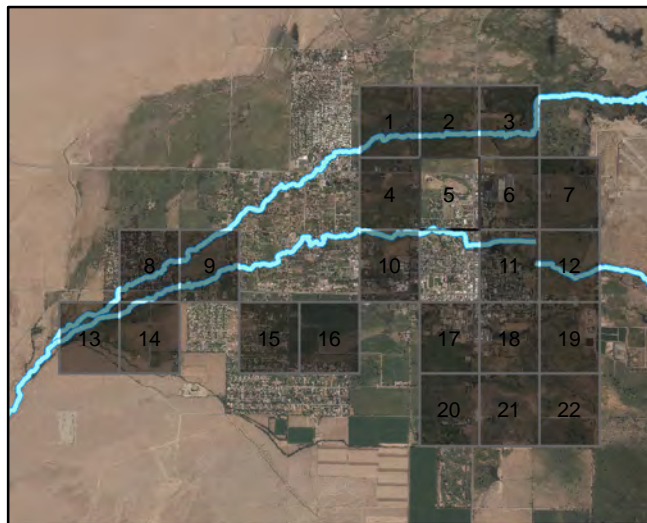
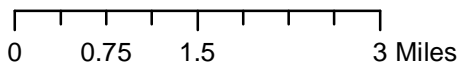
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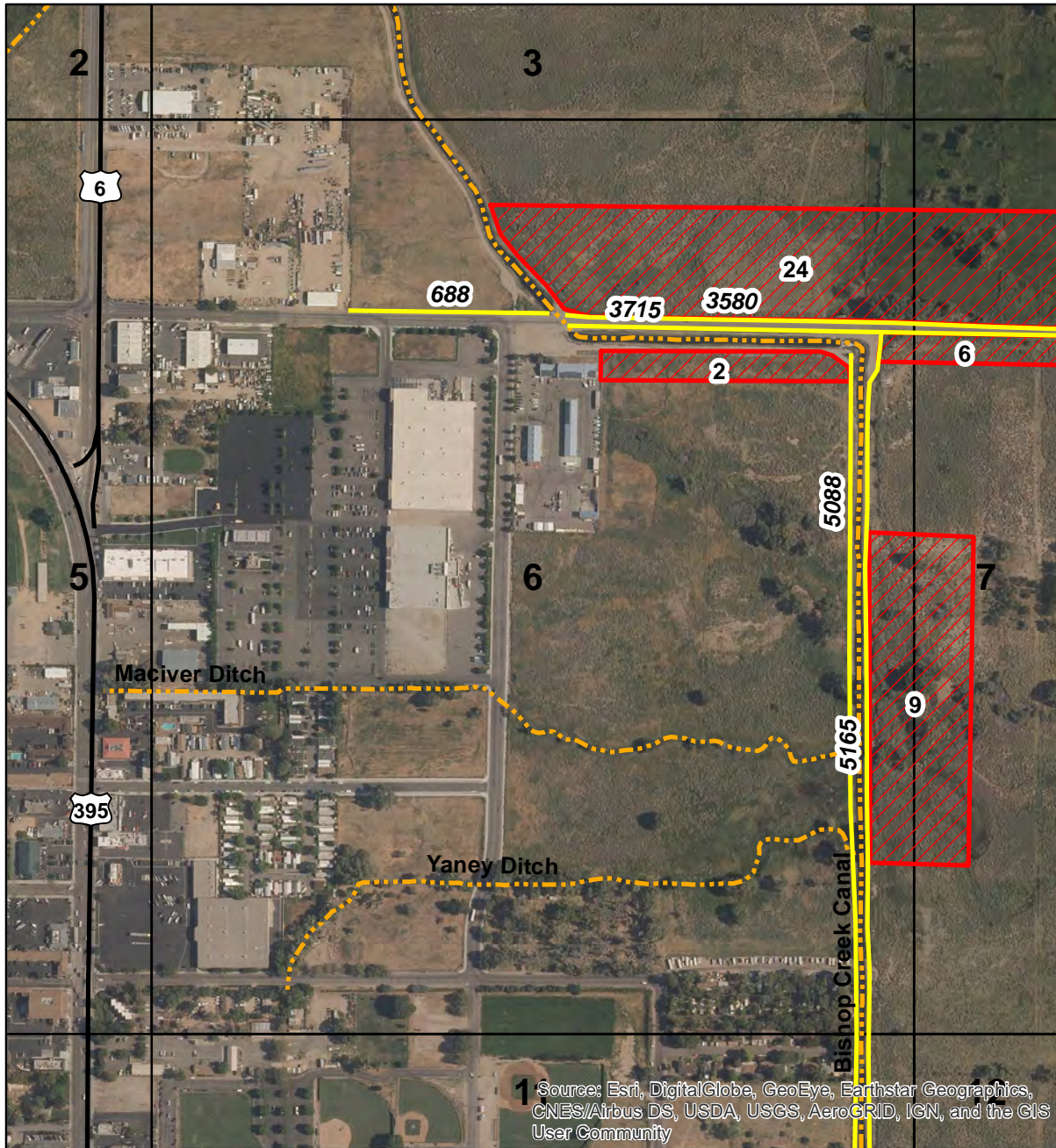
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



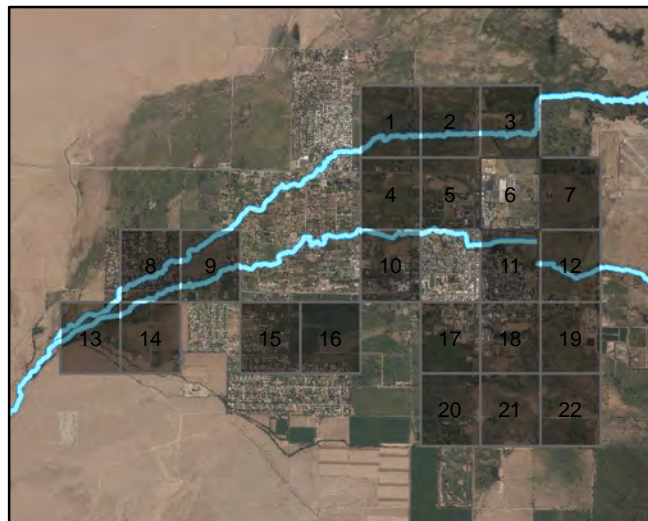
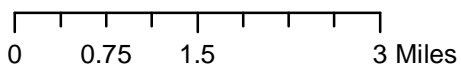
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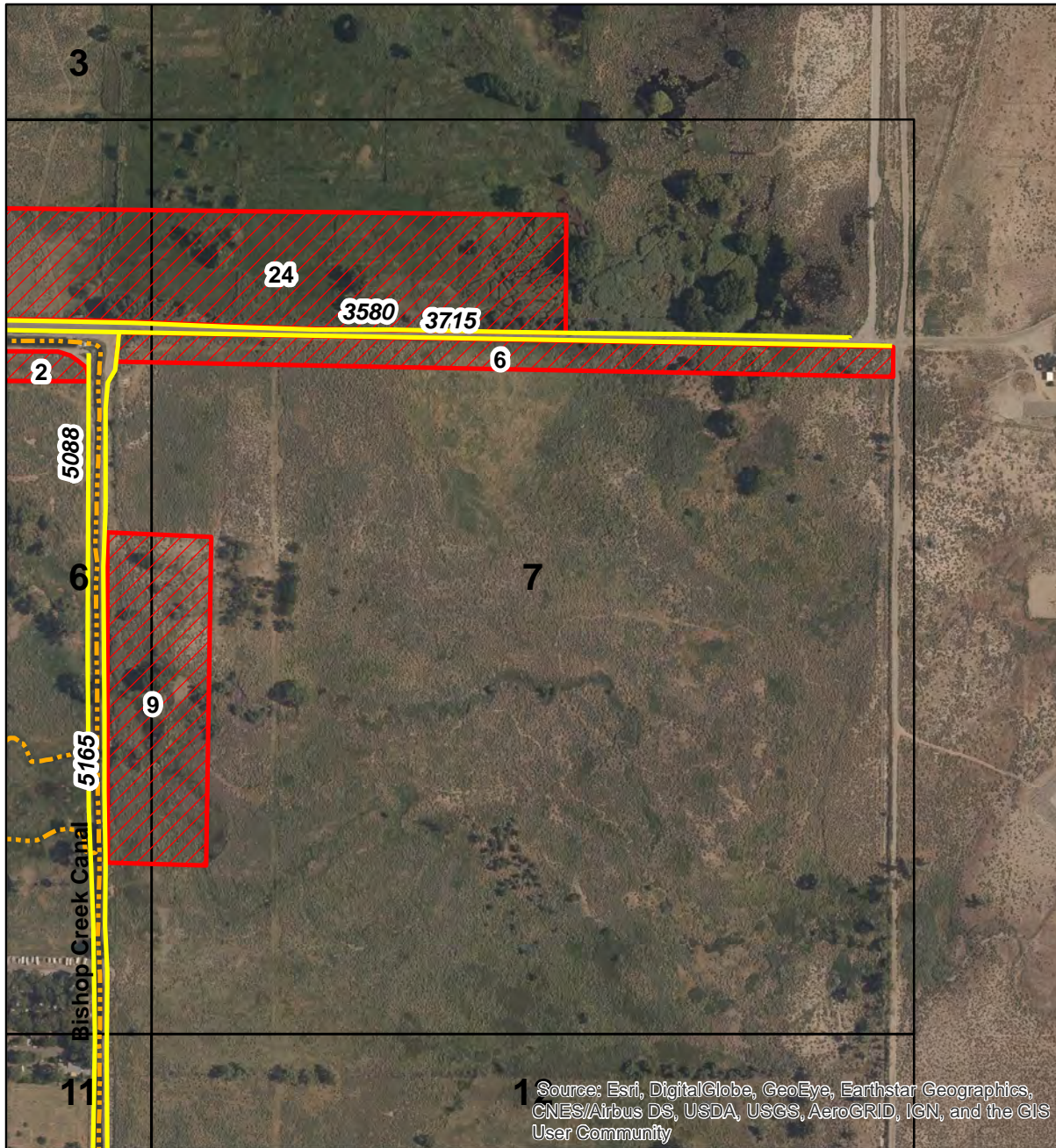
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



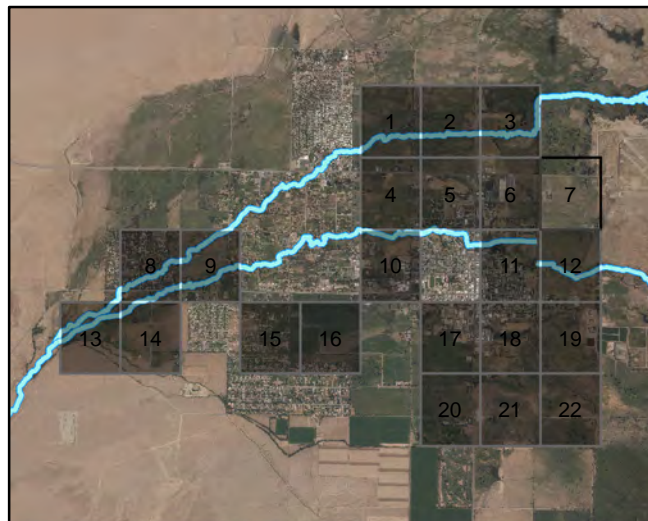
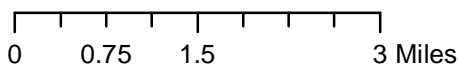
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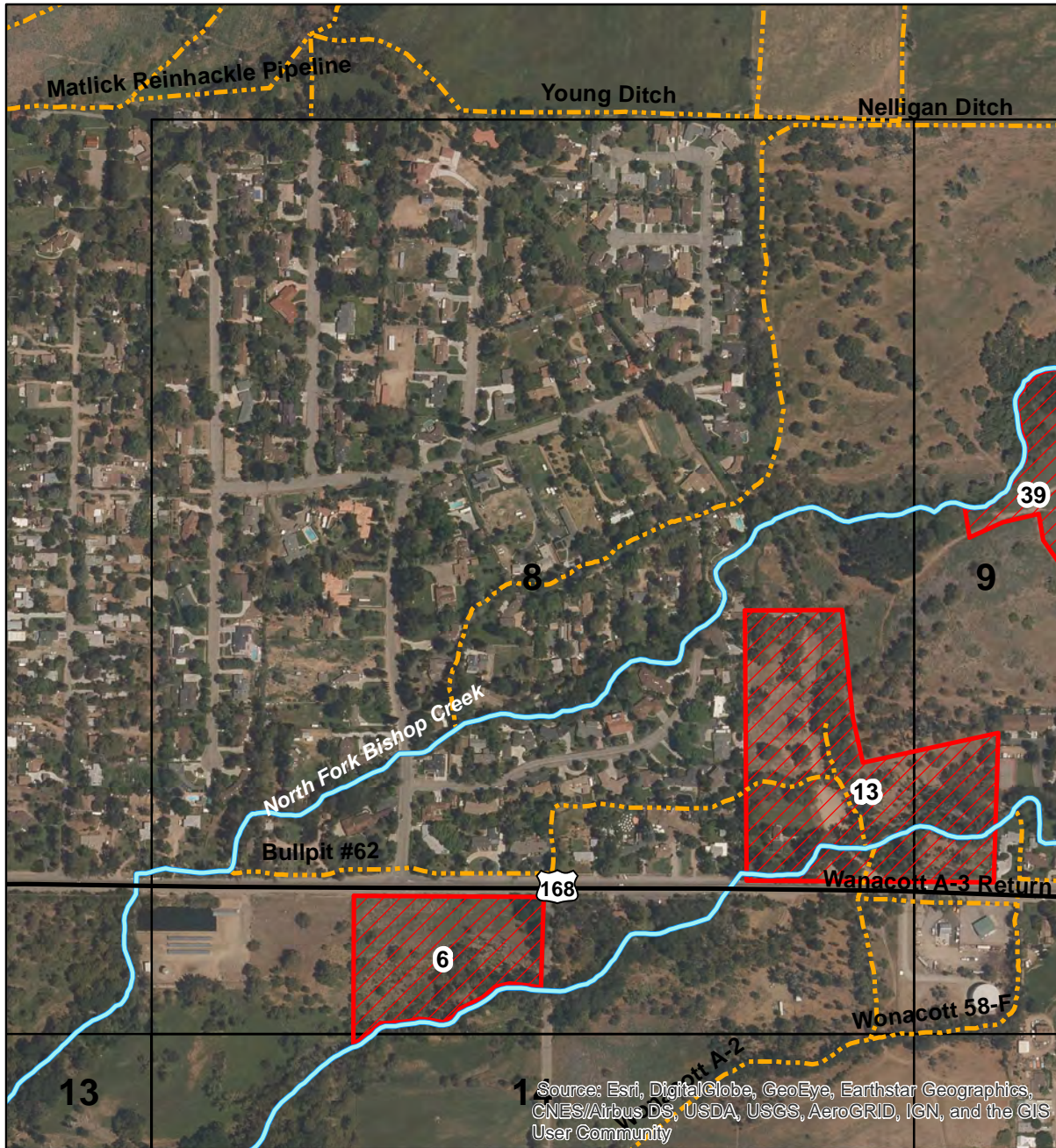
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



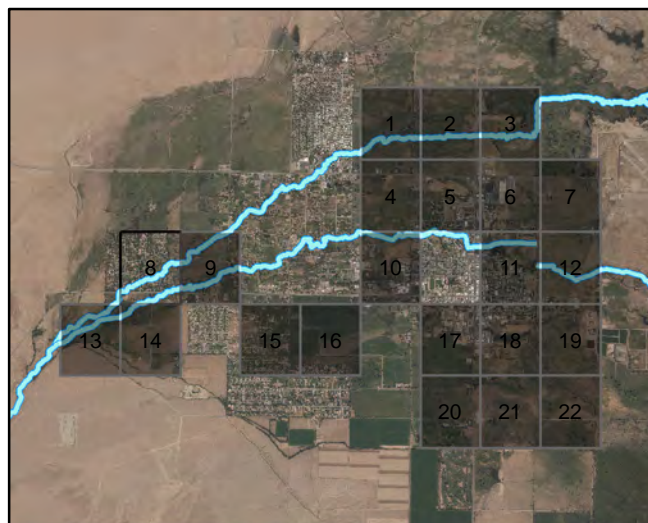
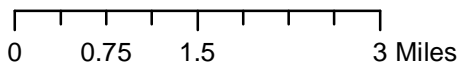
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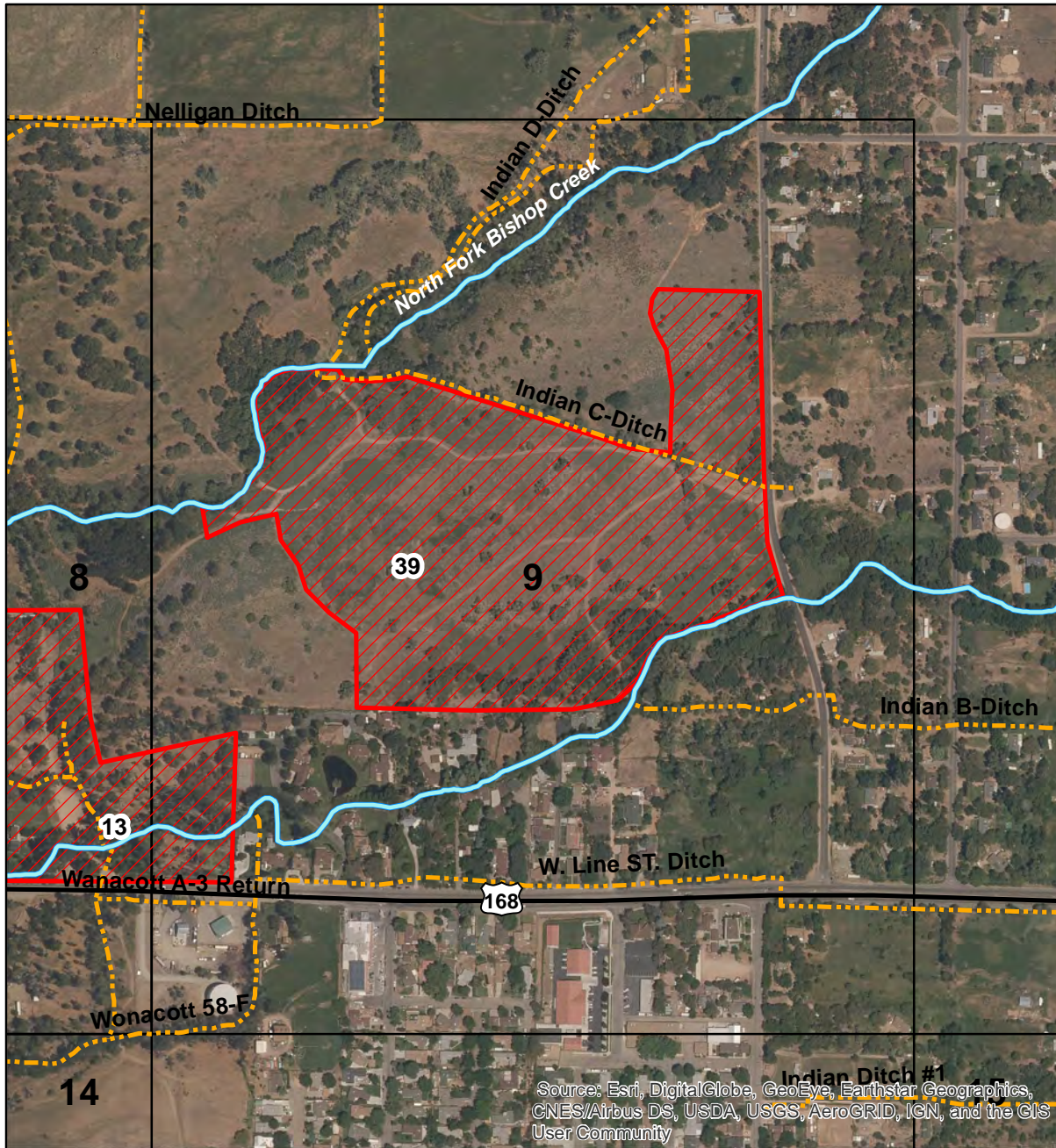
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



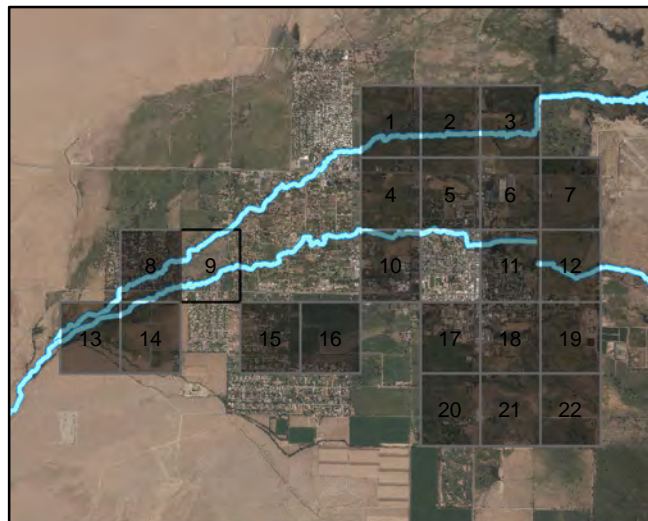
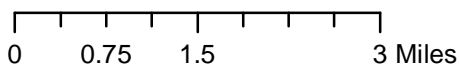
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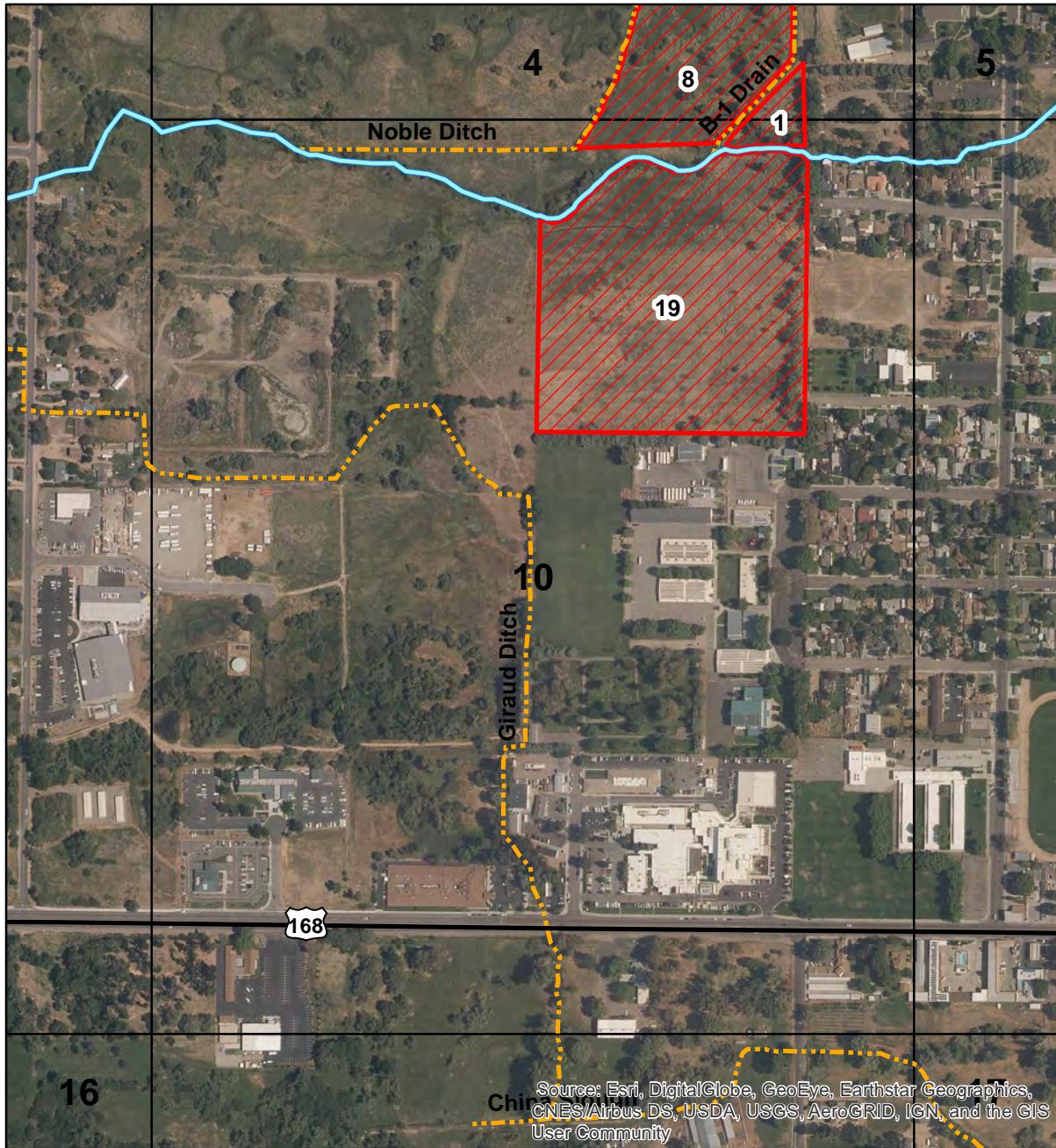
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



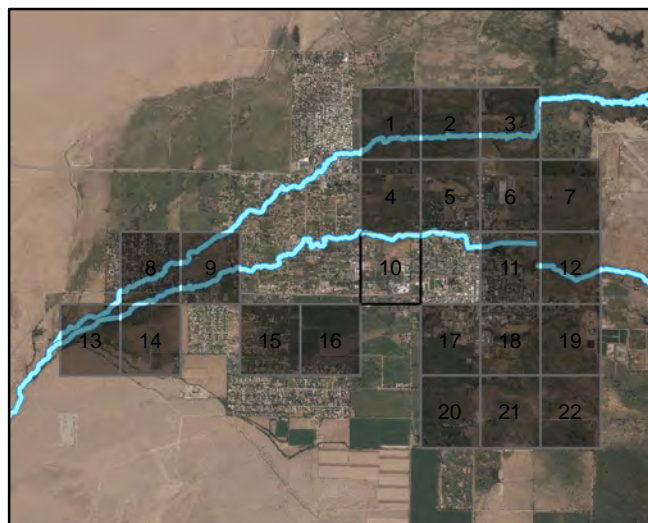
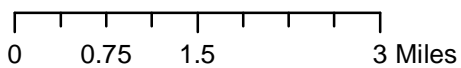
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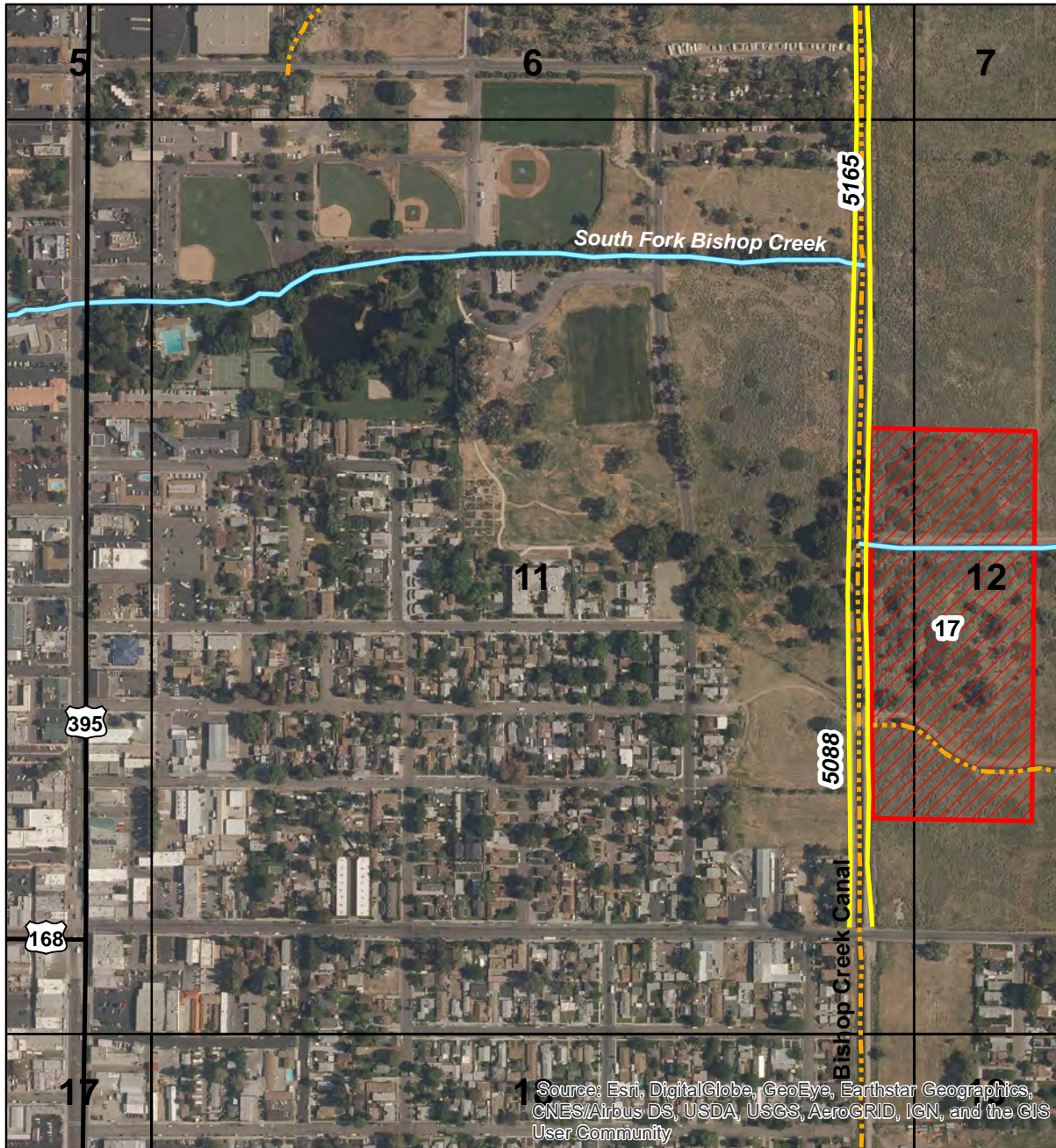
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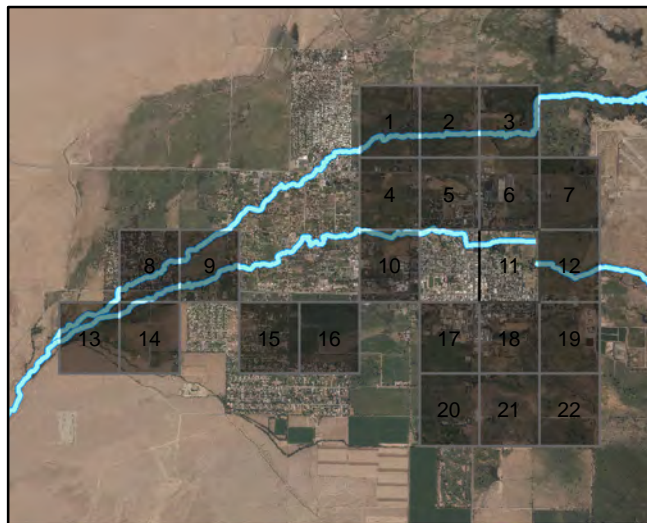
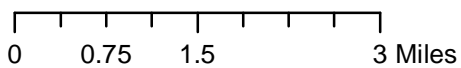
-  Fence (feet)
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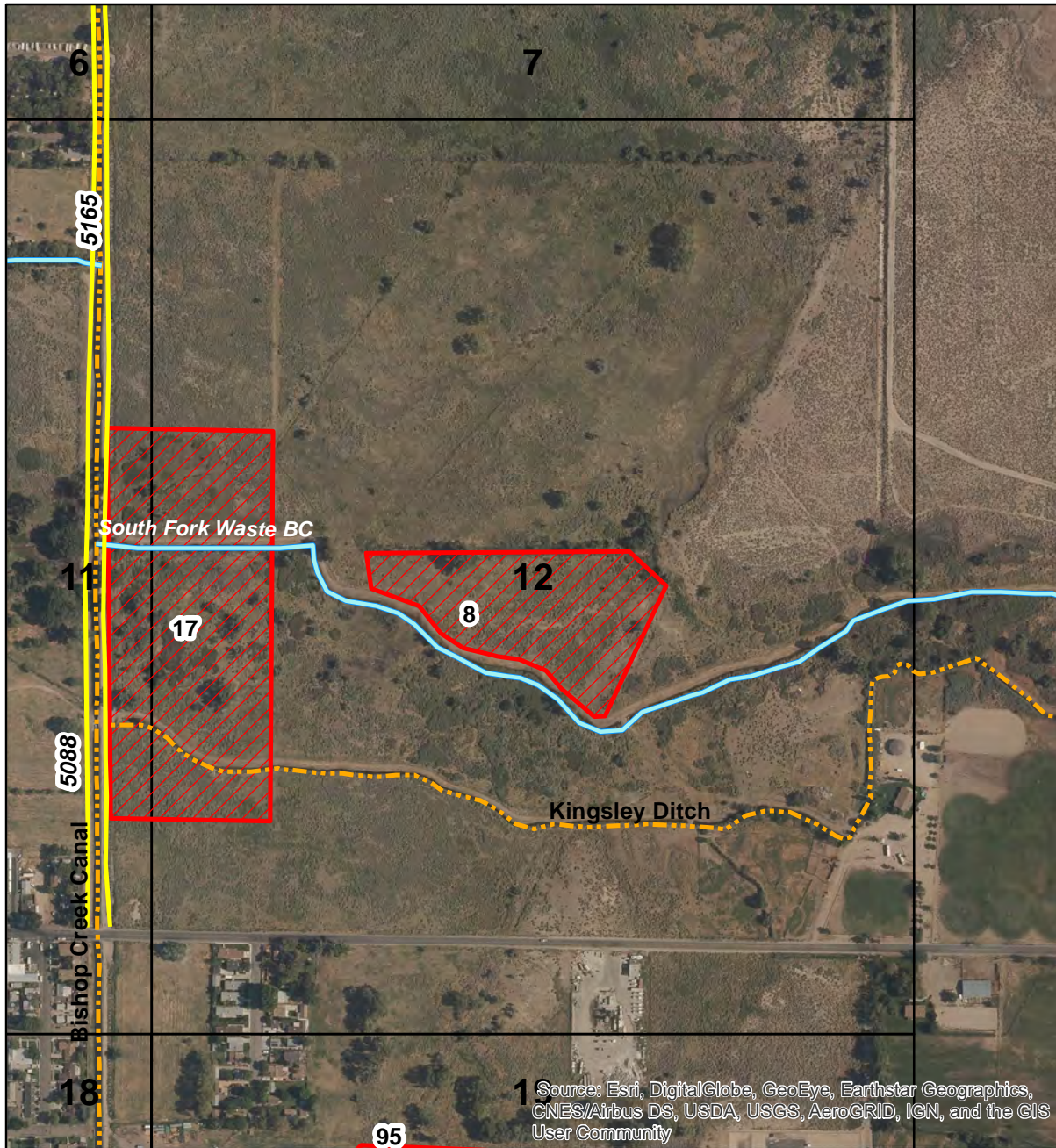
Mowed Areas in the Bishop Creek Drainage



-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



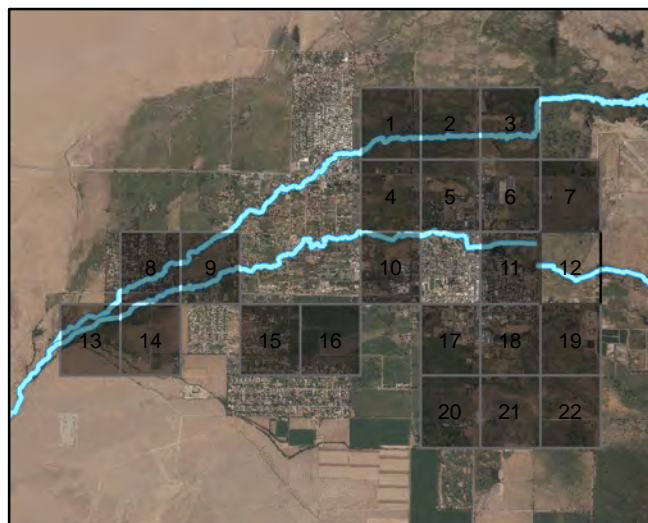
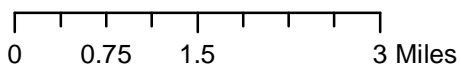
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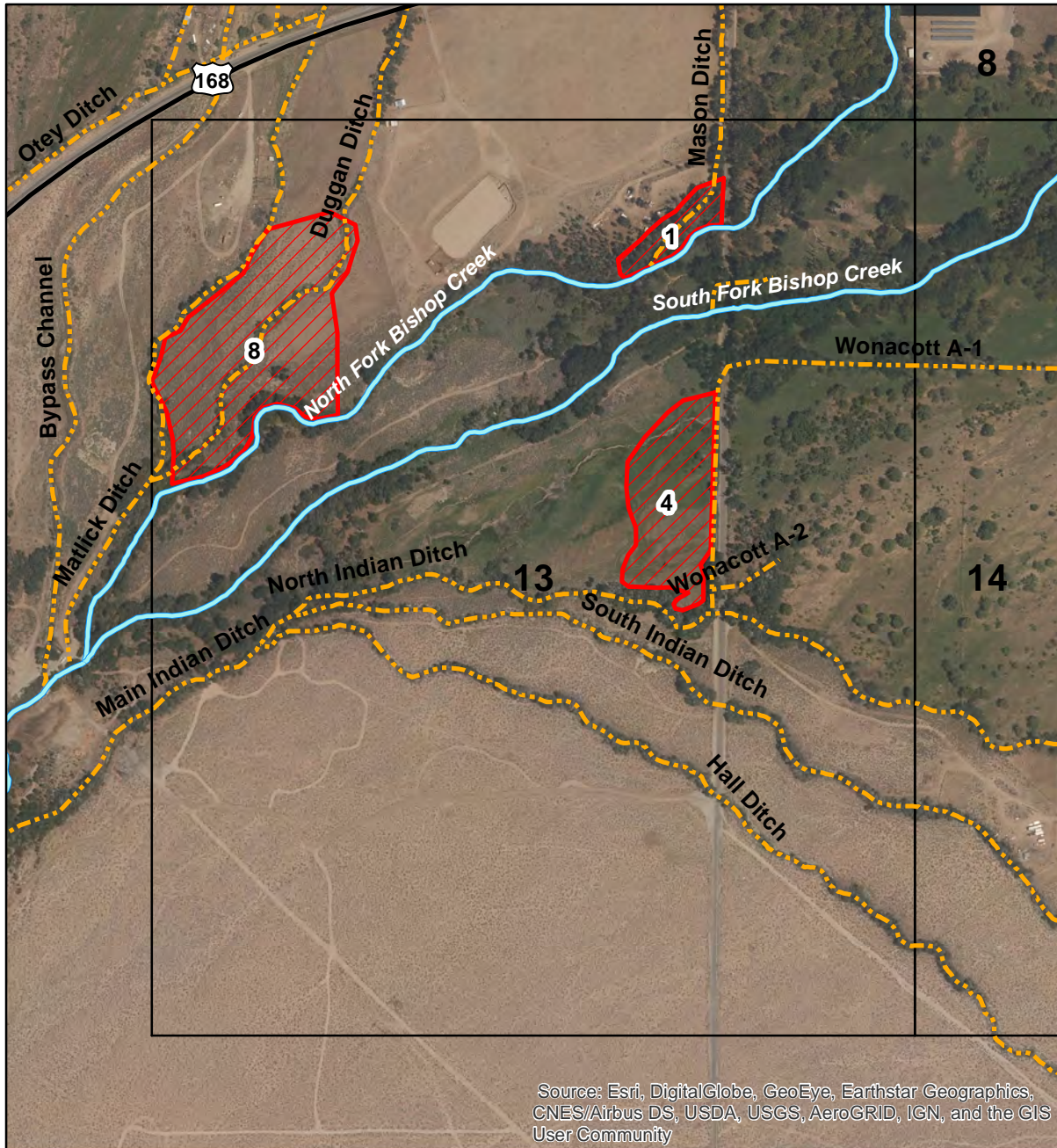
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



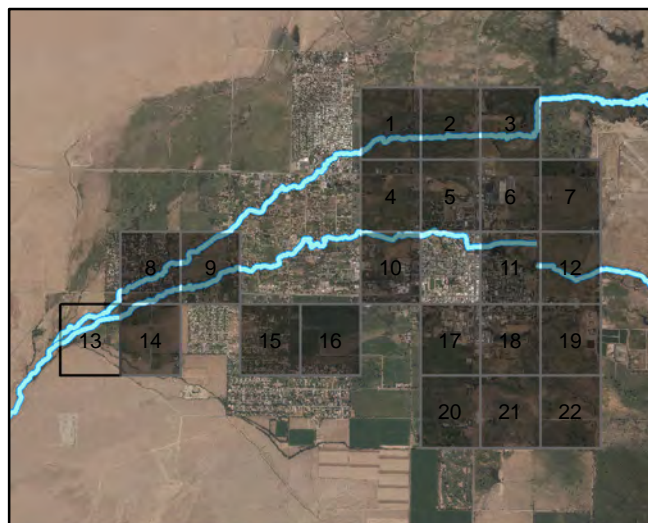
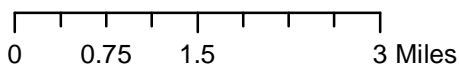
Mowed Areas in the Bishop Creek Drainage



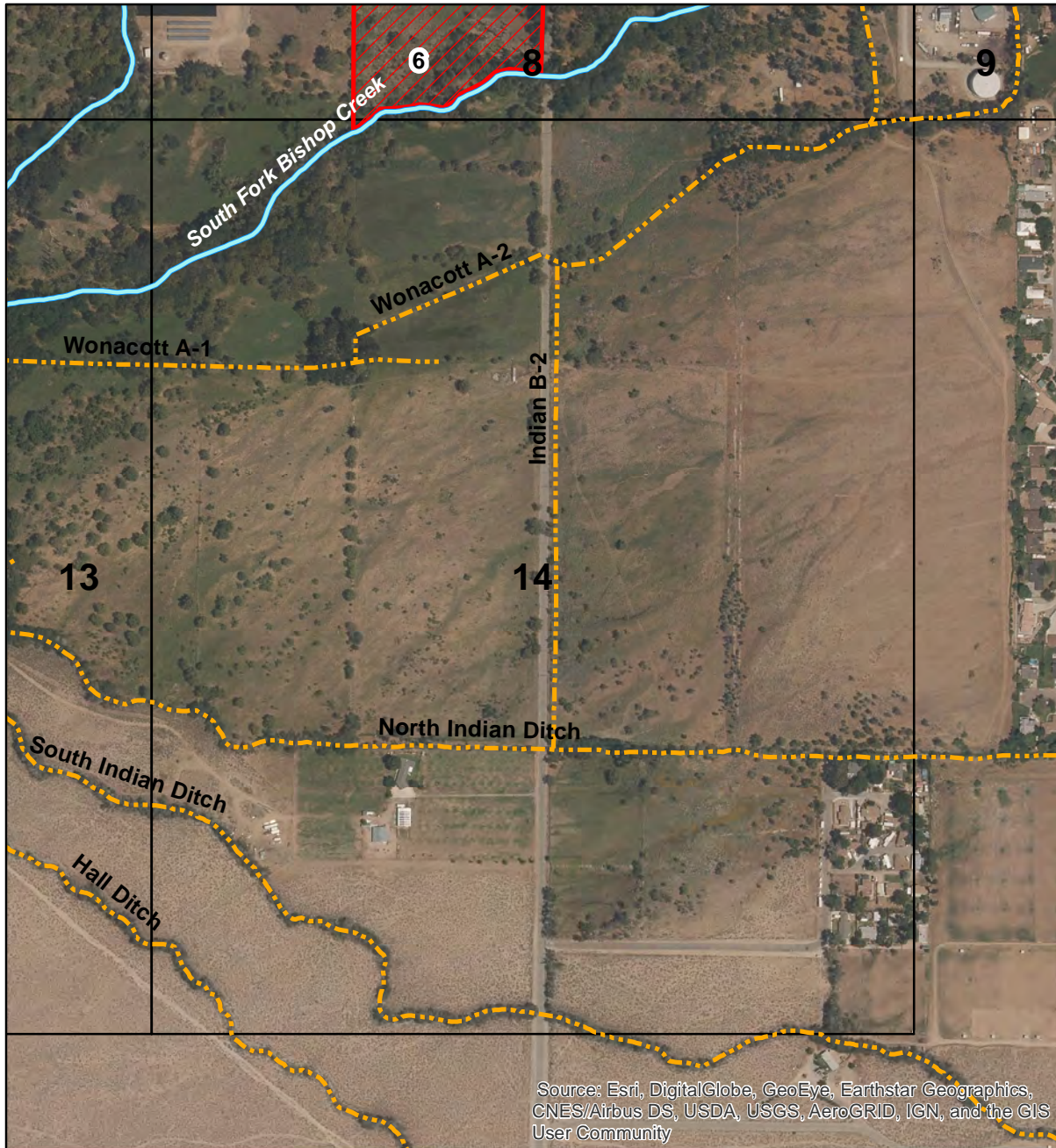
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



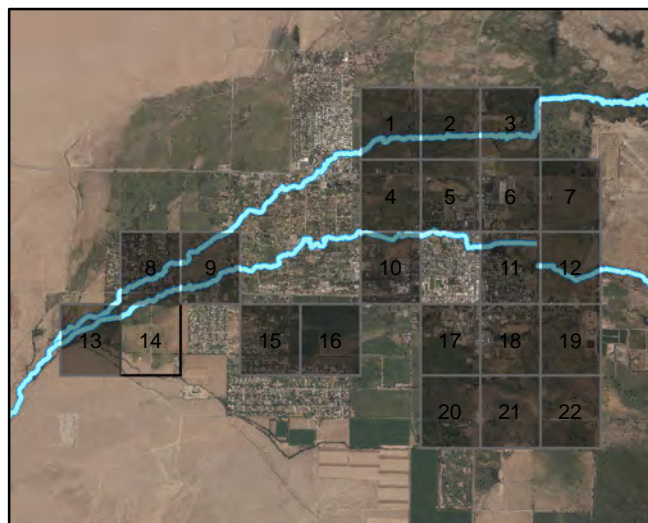
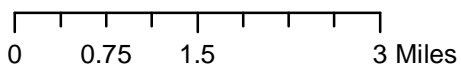
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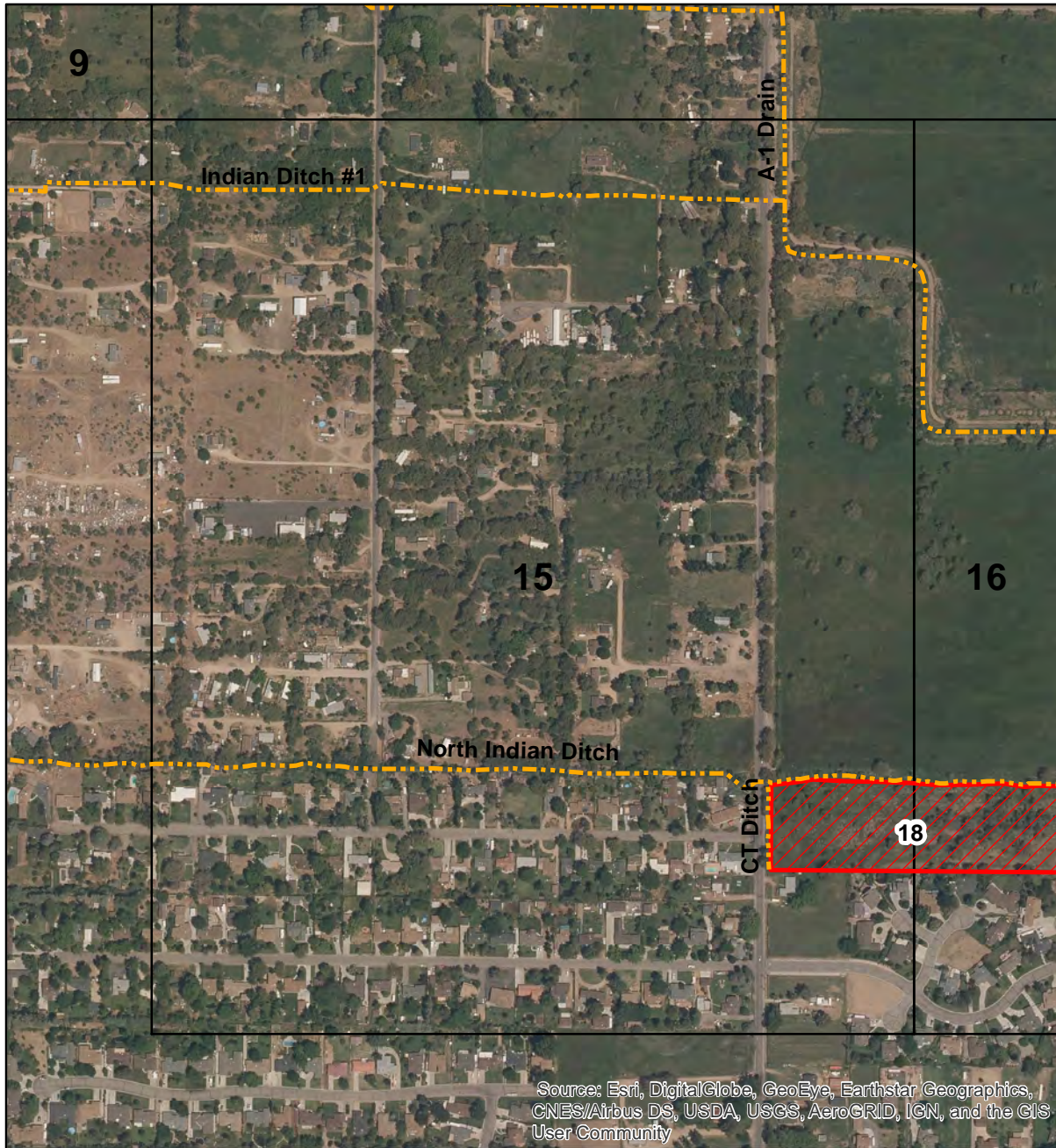
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-  Creek
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-  Mowed Areas (acres)



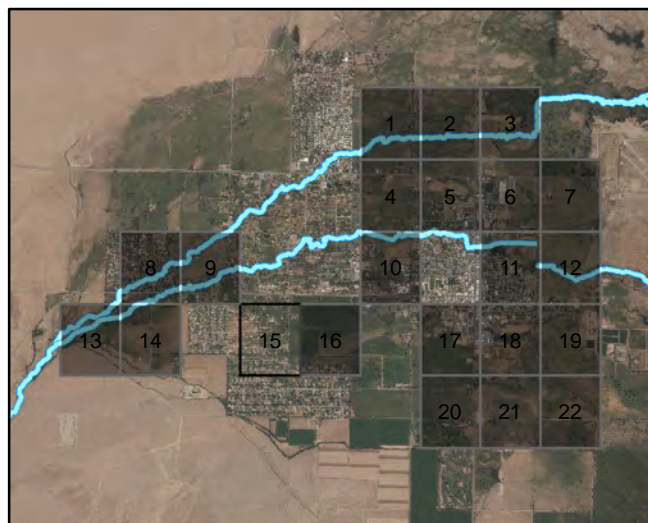
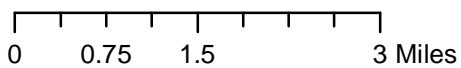
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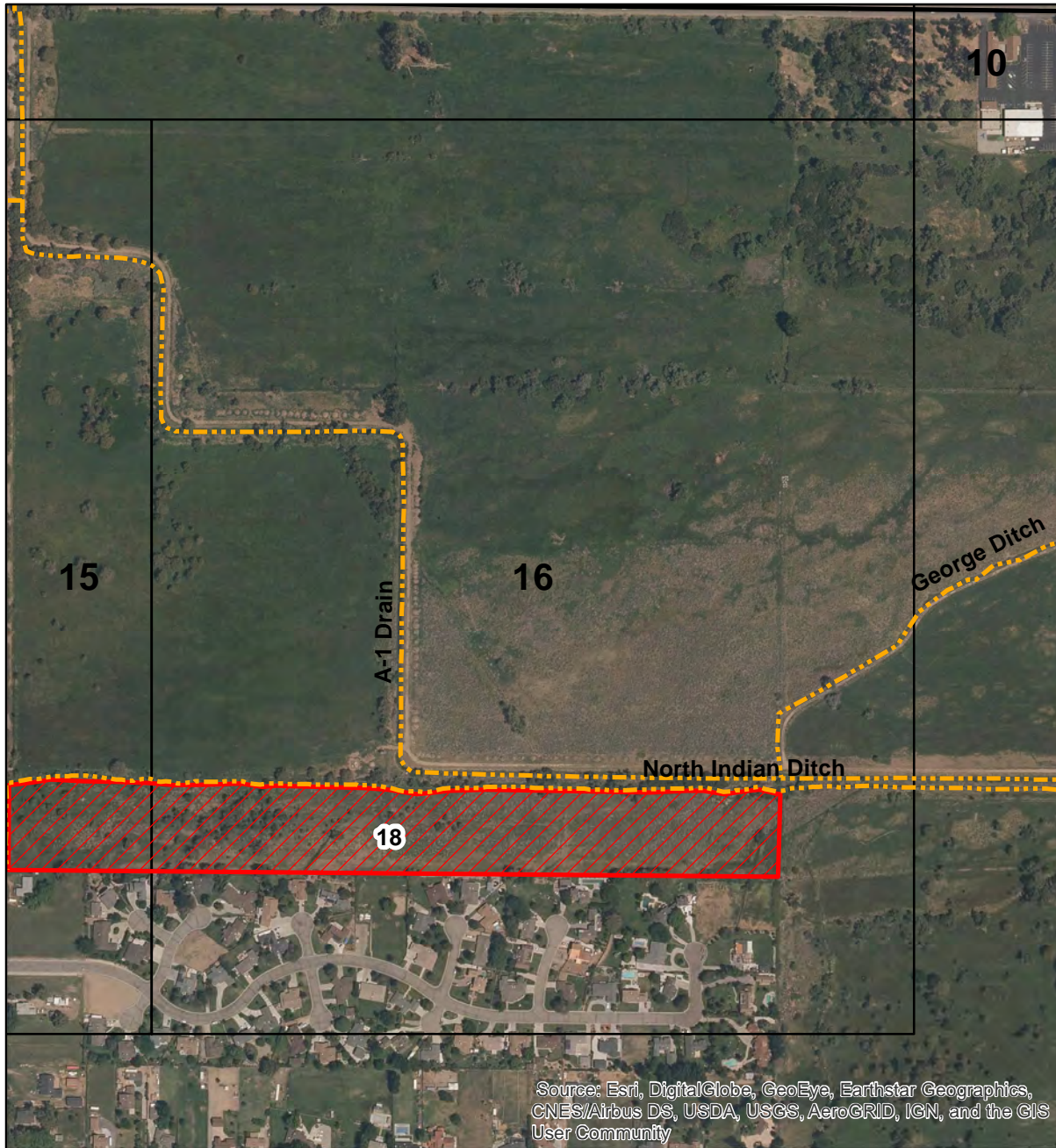
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



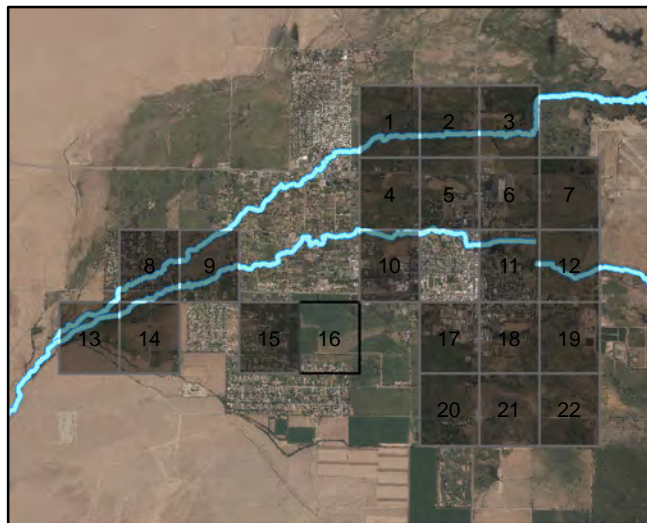
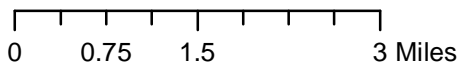
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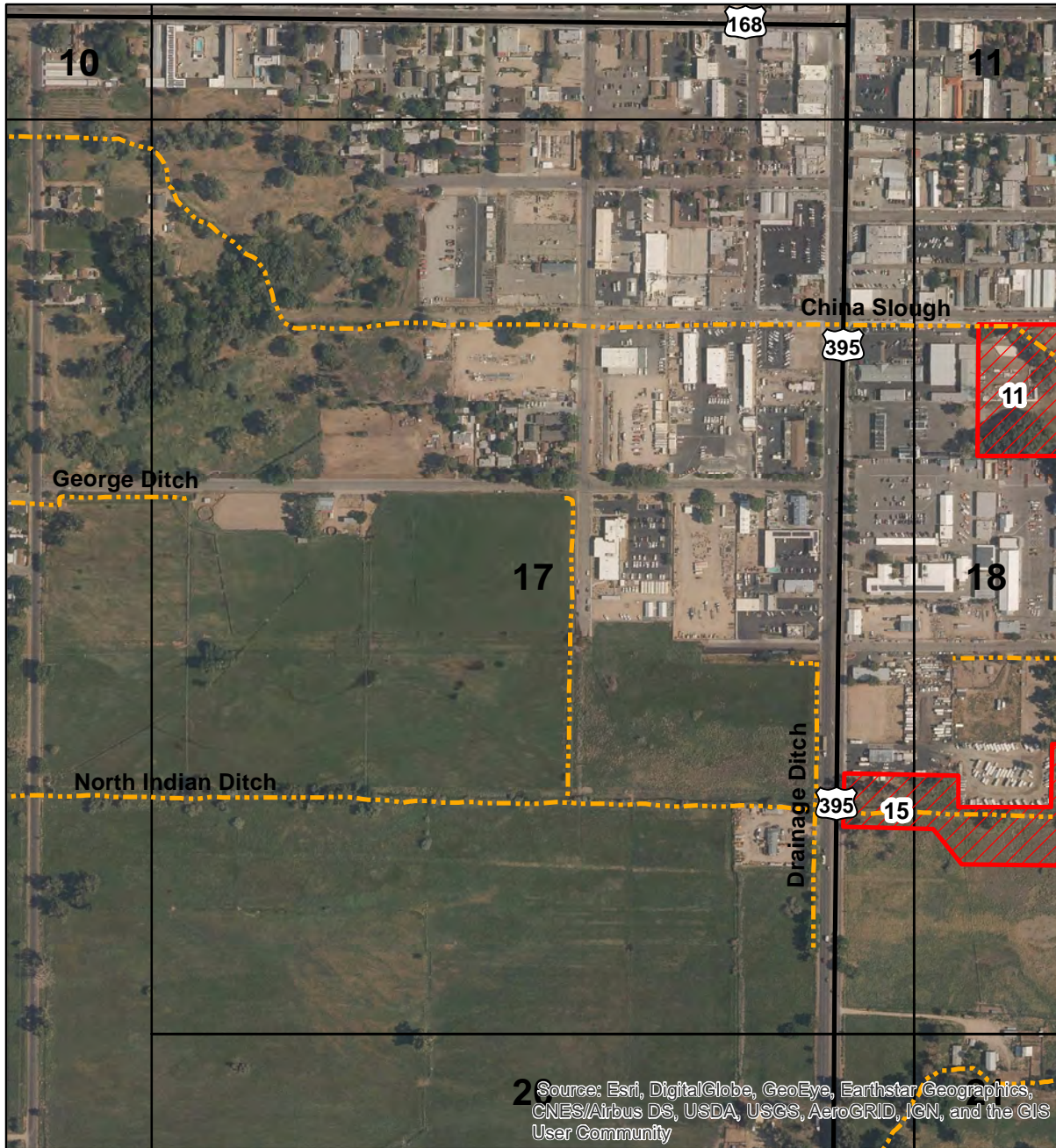
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



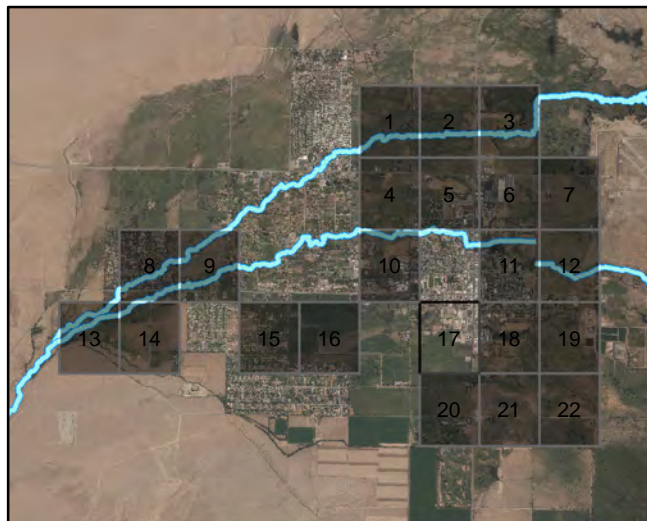
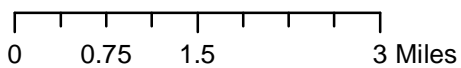
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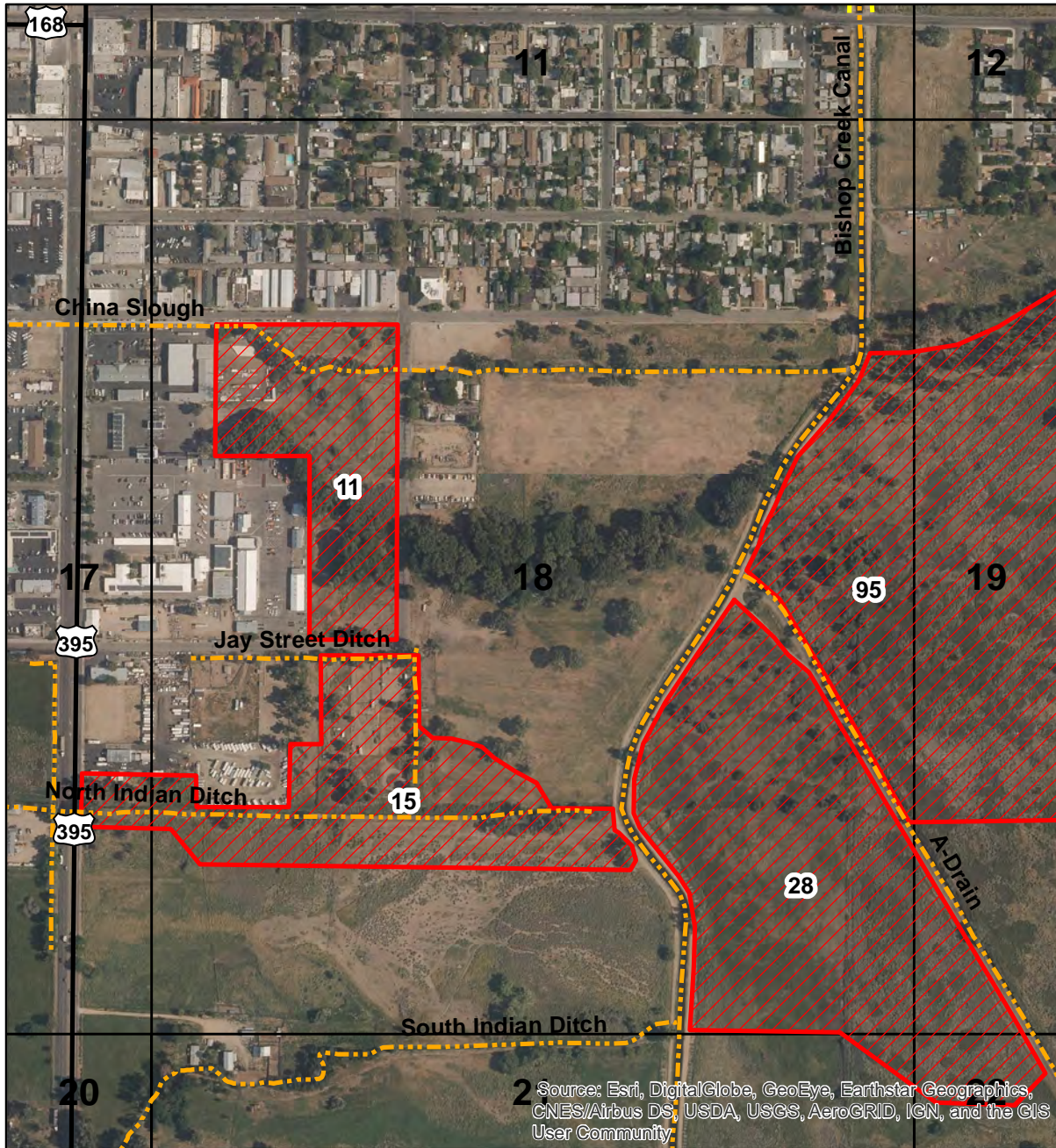
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-  Fence (feet)
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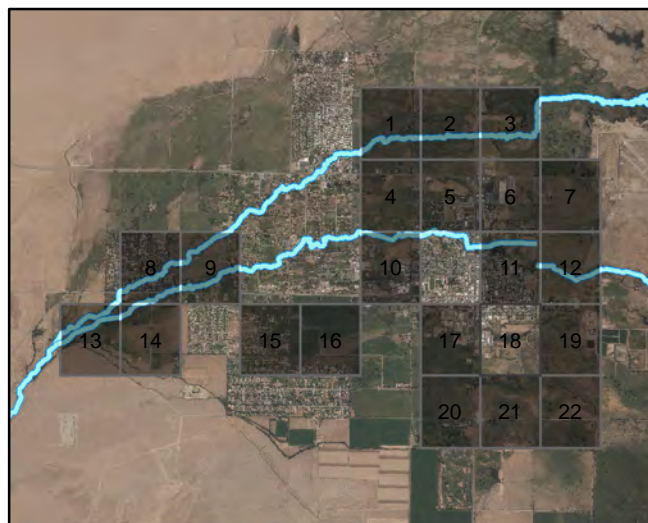
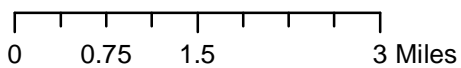
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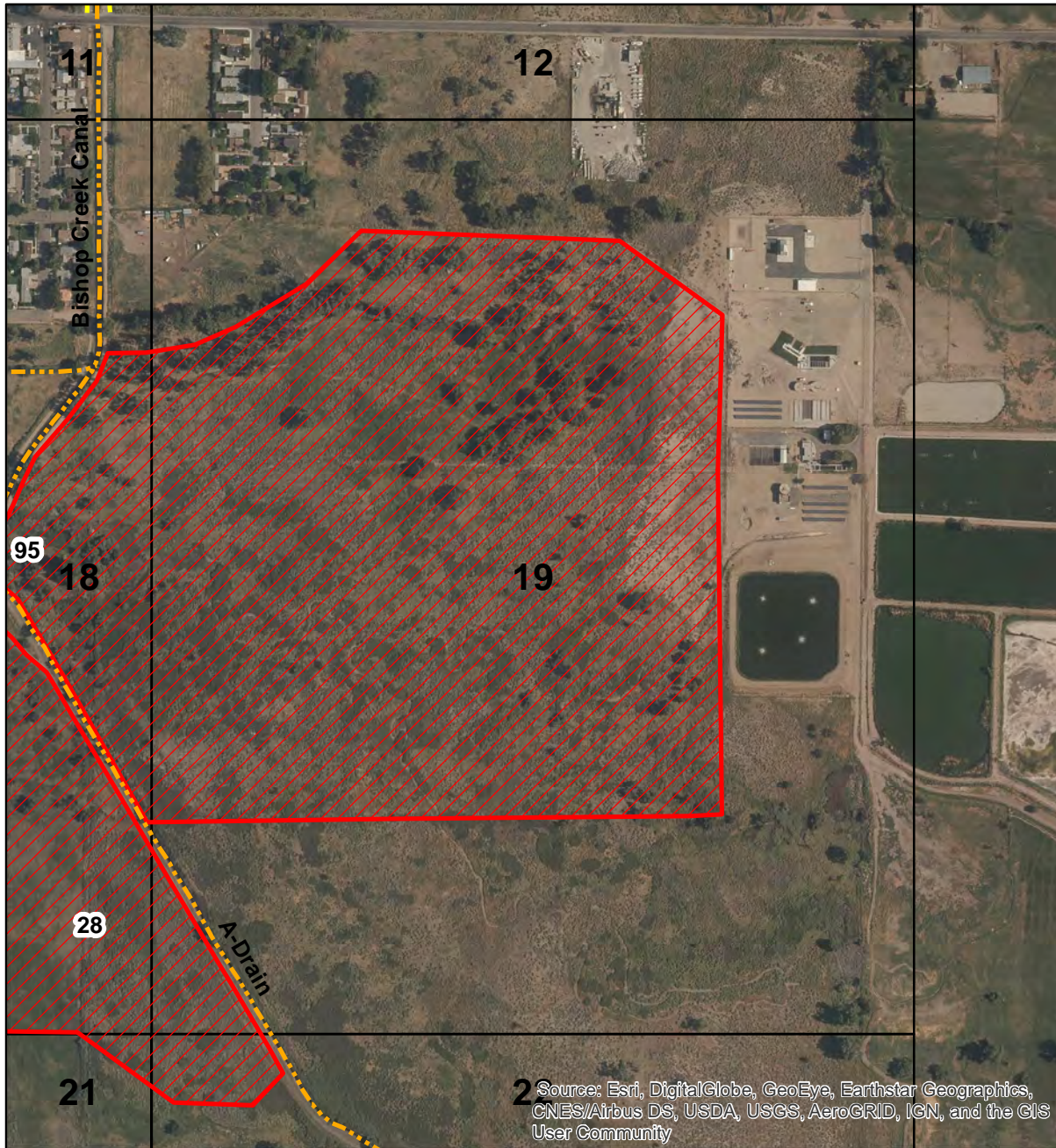
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



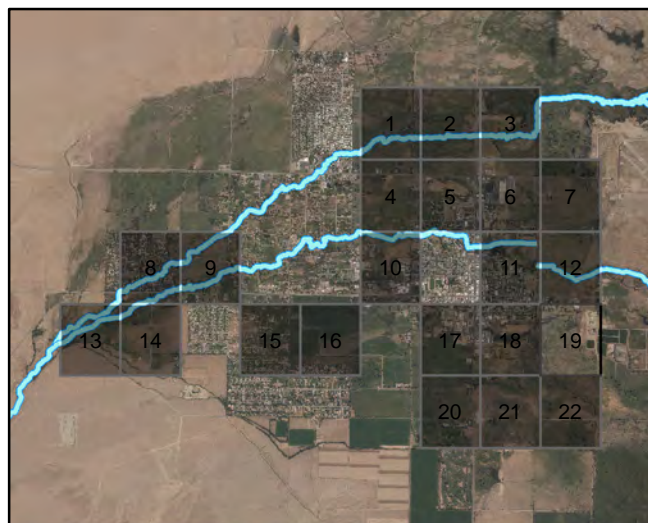
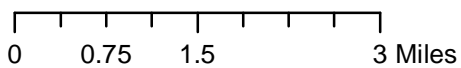
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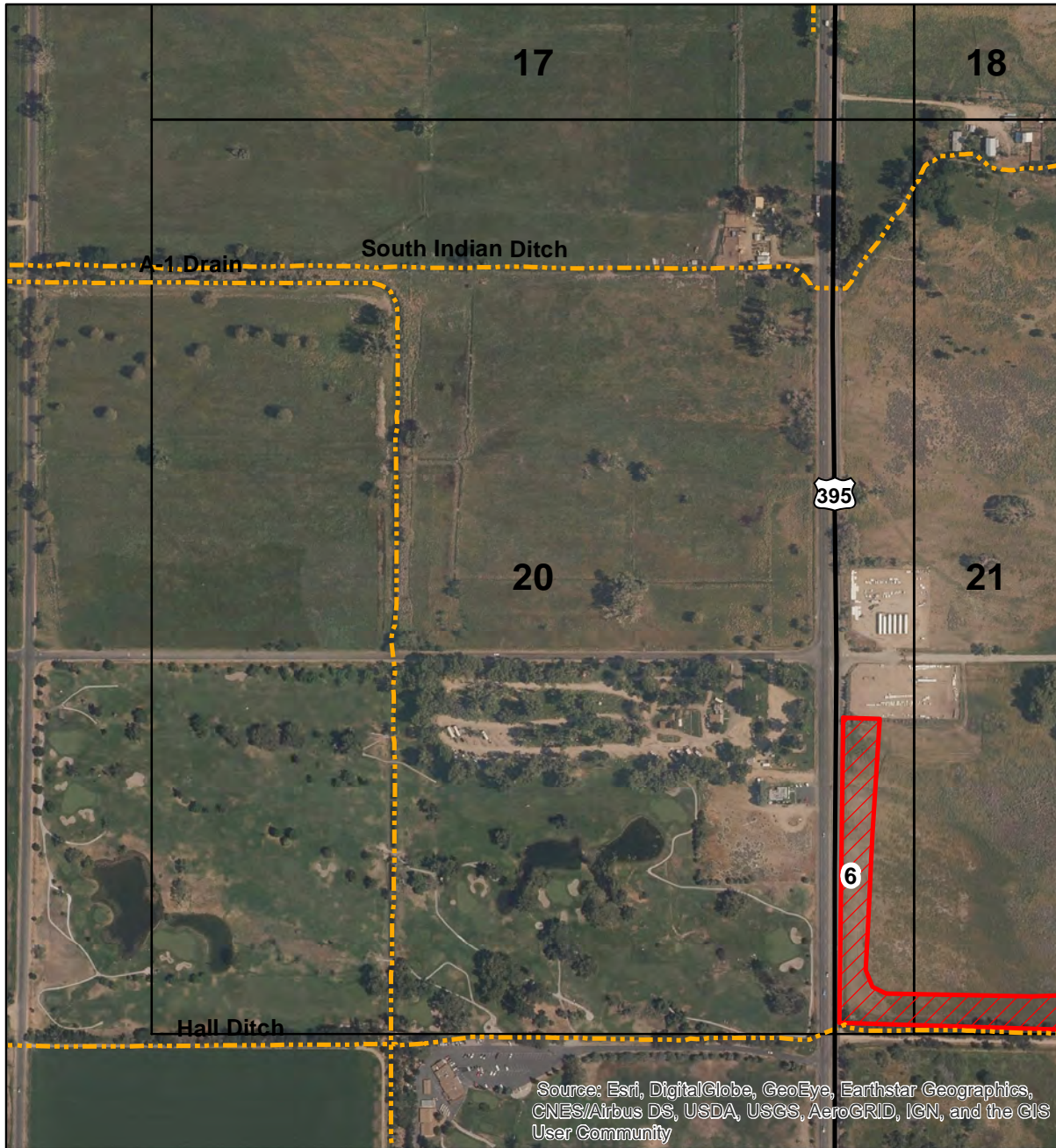
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



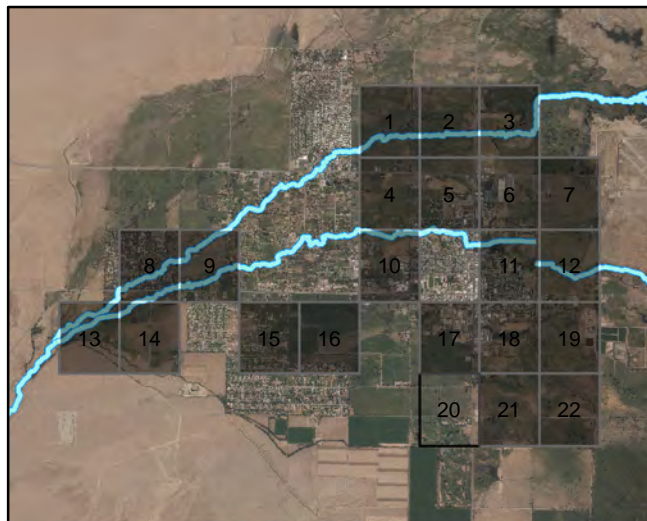
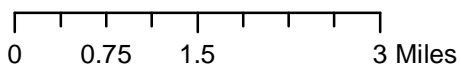
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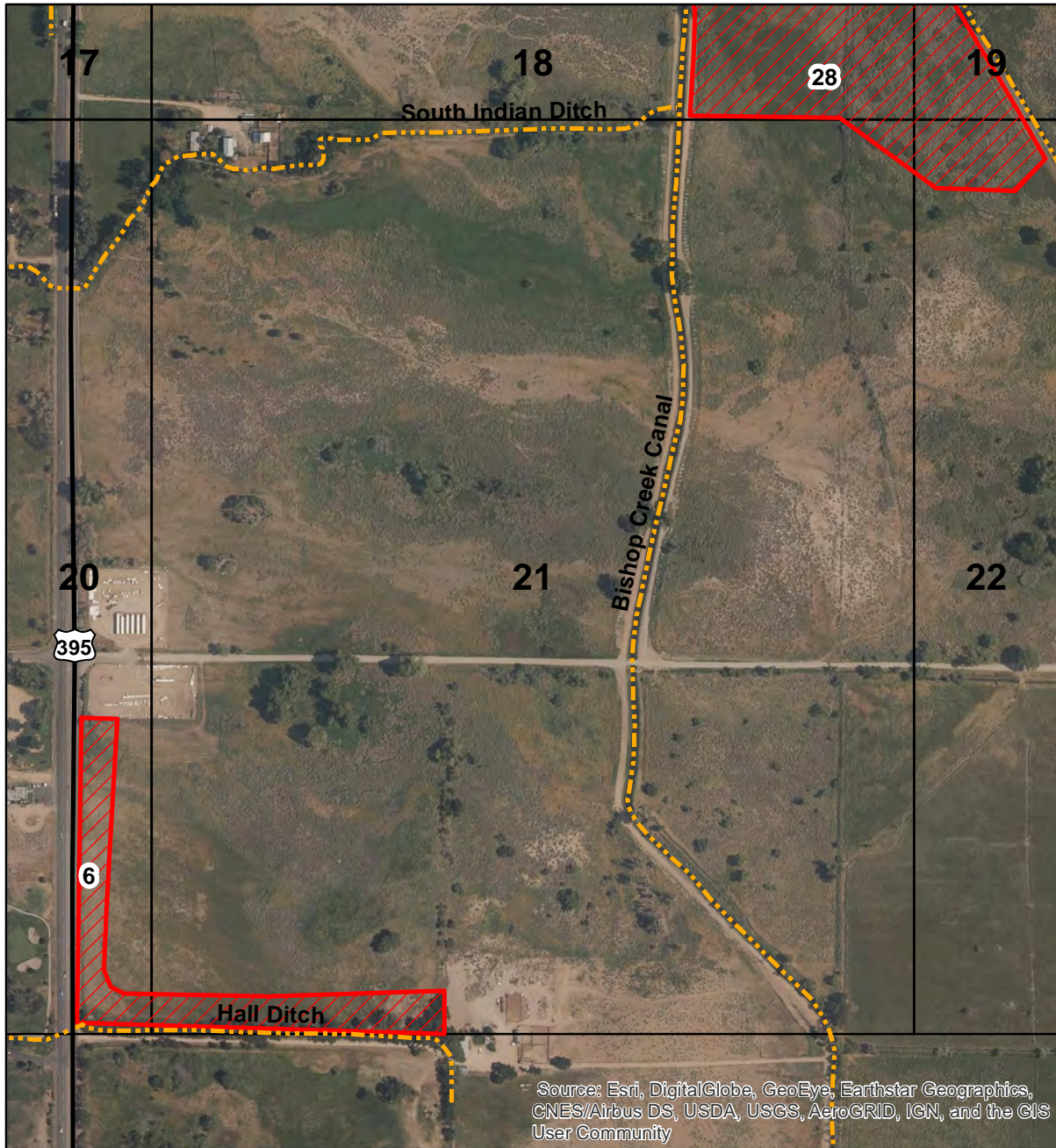
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



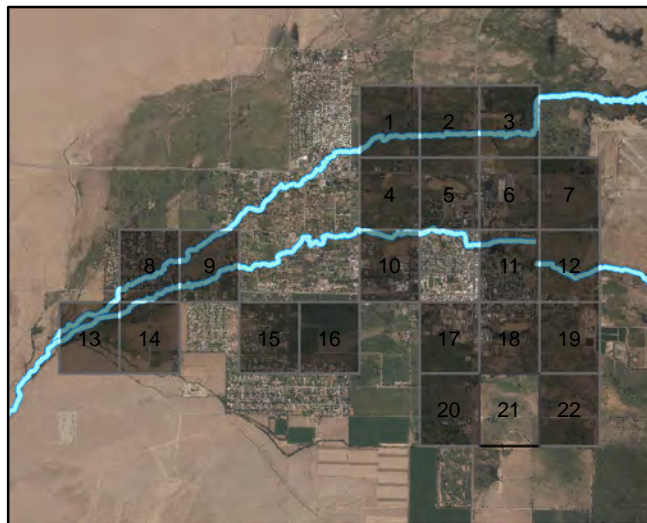
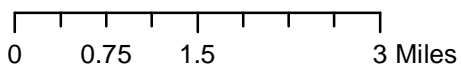
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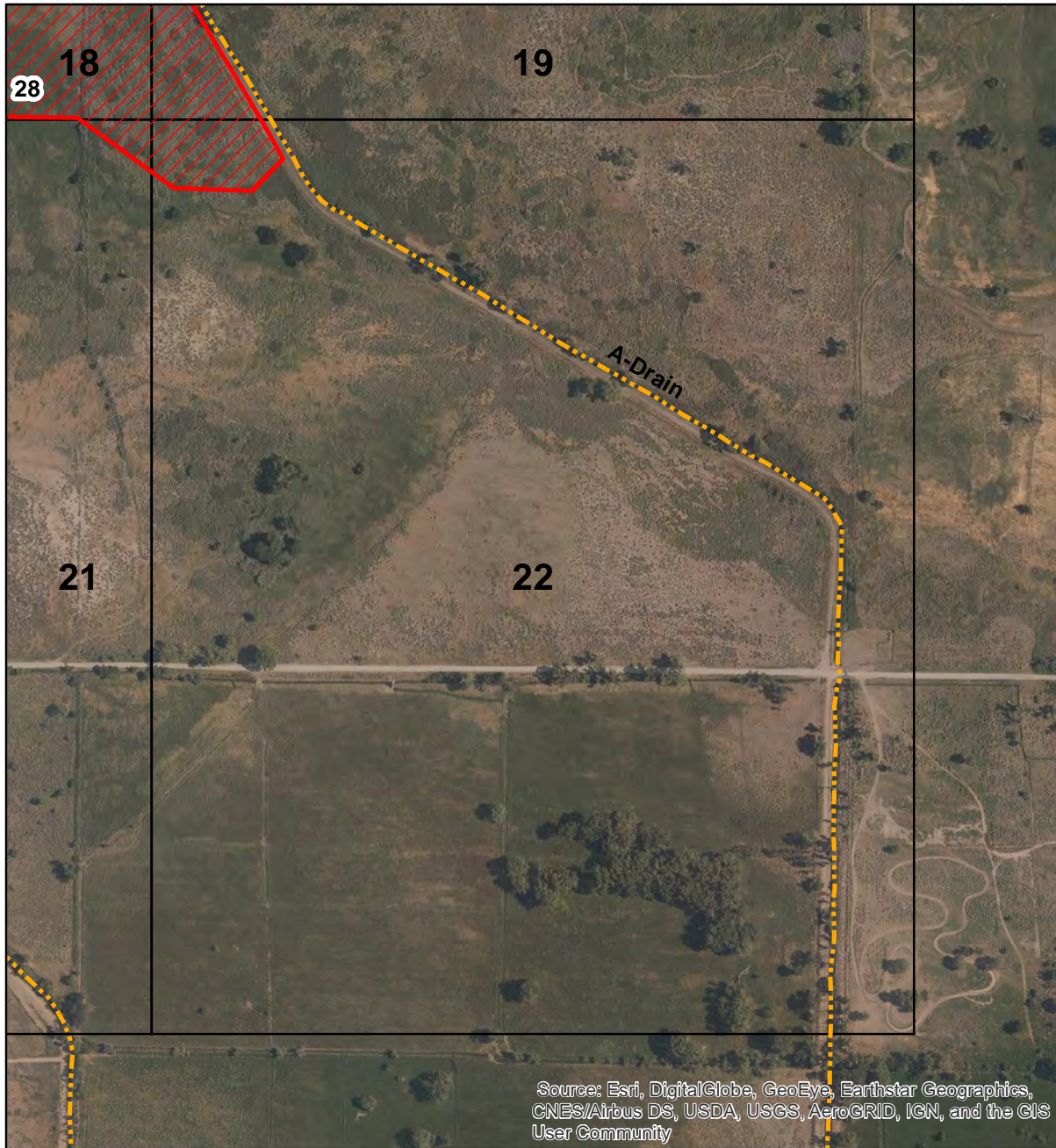
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-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



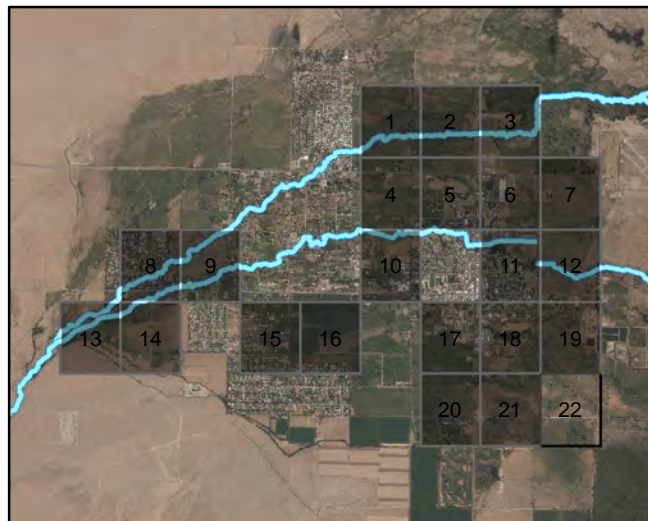
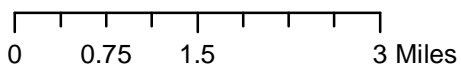
Mowed Areas in the Bishop Creek Drainage



22

Page 22 of 22

-  Fence (feet)
-  Creek
-  Ditch
-  Mowed Areas (acres)



Appendix D: LADWP BMP information

February 1, 2022

Daniel Sussman
Senior Environmental Scientist
Chief, Planning and Assessment Unit
Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd., South Lake Tahoe, CA 96150

Attention: Mr. Ed Hancock

Dear Mr. Sussman:

Subject: LADWP Information on Best Management Practices to Protect Bishop Creek Canal

As discussed at the meeting held between the Los Angeles Department of Water and Power (LADWP) and the Lahontan Regional Water Quality Control Board on January 28, 2022, LADWP respectfully submits the remaining information in regards to Best Management Practices (BMP) implementation within the Bishop Creek Watershed that includes manhours and timing of implementation. In LADWP's submittal on February 1st, which included the first action item of the January 28th, 2022 meeting held between the Lahontan Regional Board and LADWP, LADWP indicated that it would forward the remaining information once it was received. Please see below for the additional information.

Item #1: Timing of Fence Installation and Mowing

The Lahontan Regional Board requested timing of BMP implementation. LADWP began the most recent set of BMP operations in August 2021 and has continued through the beginning of 2022.

Item #2: Man-hours required for fence implementation and mowed areas

The Lahontan Regional Board requested the number of manhours LADWP has spent for the addition of fences throughout the Bishop Creek Watershed and mowing of areas to avoid any transients along the creek. In their most recent effort, LADWP spent approximately 200 manhours installing fencing and approximately 1,280 hours for mowing – a grand total of 1,480 manhours.

In reference to your email on January 28th, 2022, to recap:

Requested Information:	Sent to the Regional Board on:	Refer to:
Resource Maps with Mowing and Fencing	February 1, 2022	Maps in Enclosure 1 of "LADWP Updated Resource Maps"
Implementation Dates	February 2, 2022	Item #1 in this report – August 2021 through beginning of 2022
Data About Costs:		
Manhours	February 2, 2022	Item #2 in this report – Total of 1,480 manhours
Linear Feet of Fences	February 1, 2022	Maps in Enclosure 1 of "LADWP Updated Resource Maps"
Areas Mowed (including acreage)	February 1, 2022	Maps in Enclosure 1 of "LADWP Updates Resource Maps"

Should you have any questions or require additional information, please feel free to reach out to Mr. Victor Ventura of the Wastewater Quality and Compliance Group at (213) 367-1339 or myself at (213) 367-0436.

Sincerely,



Katherine Rubin
Manager, Air and Wastewater Quality and Compliance

VV:

c/enc: Mr. Ed Hancock, Lahontan Regional Water Quality Control Board
Mr. Eric Tillemans, LADWP
Ms. Lori Gillem, LADWP
Mr. Victor Ventura, LADWP

Appendix E: Water Board 2014 Letter to Stakeholders

Lahontan Regional Water Quality Control Board

May 30, 2014

To: Distribution List (see below)

Bishop Creek Bacteria Monitoring Results

The Lahontan Regional Water Quality Control Board (Water Board) staff collected water samples for bacteria analysis in the Owens River Watershed during 2012 and 2013. I am transmitting the attached data and maps to inform you that high concentrations of bacteria were detected at some locations along Bishop Creek. These high concentrations exceed both Water Board standards and US EPA's Recreational Water Quality Criteria. Depending upon the bacteria sources, certain management actions may help to reduce the bacteria levels to acceptable concentrations. Because we are concerned about these high concentrations and risks to human health, we attended a meeting in Bishop with many interested agencies and the Bishop Paiute Tribe on April 16 to present the data and discuss next steps.

Water Board staff (along with Board Member Peter Pumphrey) attended the meeting that was hosted by Inyo County Health Department to inform community leaders about the findings of Water Board and Tribal bacteria monitoring programs in the Bishop area, and to initiate discussions about appropriate responses. The meeting attendees included representatives of Inyo County, Eastern Sierra CSD, Bishop Paiute Tribe, Los Angeles Department of Water and Power, the University of California's Sierra Nevada Aquatic Research Laboratory (SNARL), and two members of the Bishop City Council.

Water Board staff presented findings of bacteria monitoring that was conducted in the Bishop area in 2012 and 2013 by the Water Board's Surface Water Ambient Monitoring Program. After initial results documented high levels of bacteria at some locations along Bishop Creek, Water Board staff designed a monitoring project to characterize the magnitude and extent of the problem. About a dozen locations along the various forks of Bishop Creek were tested for bacteria (several times per month) during 2012-2013.

The results documented frequently high concentrations of indicator bacteria (i.e., fecal coliform bacteria and *E. coli*) in Bishop Creek during 2012-13. While the sources of indicator bacteria in Bishop Creek remain unknown, the recurring high concentrations indicate ongoing risks to human health from water contact recreation. Enclosure 1 contains maps showing the approximate locations of the sampling sites and Enclosure 2 contains the bacteria monitoring data.

Staff also informed the group that the Water Board has recently contracted SNARL to begin "microbial source tracking" (MST) at Bishop Creek and at ten other bacteria-impaired rivers & streams throughout the Lahontan Region. The MST project will provide an initial assessment of bacteria sources at bacteria-impaired waters throughout the Region. Based on the MST results and identification of sources, management actions should be implemented to address any sources attributable to human activities, including human or animal wastes.

County health department staff expressed a desire to organize interested individuals and organizations to further discuss and deliberate a coordinated community response to the bacterial pollution of Bishop Creek. Water Board staff are happy to work collaboratively and to provide technical assistance to the group and we plan to keep this group informed of the MST results as they become available. We encourage all land use managers to consider the attached data and begin implementing measures to reduce bacteria sources within the watershed.

If you have any questions, please contact either Mike Plaziak, Division Manager in our Victorville office at MPlaziak@waterboards.ca.gov (760) 2412-7325, or Doug Smith, Division Manager in our South Lake Tahoe office at DFSmith@waterboards.ca.gov (530) 542-5453.


Lauri Kemper, P.E.
Assistant Executive Officer

Enclosures: 1. Bishop Creek Bacteria Sampling Locations.pdf
2. Bishop Creek Bacteria data.pdf

Distribution List:

Bishop Paiute Tribe: *BryAnna Vaughn*

City of Bishop Officials: *Jim Ellis, Patricia Gardner, Keith Glidewell, Laura Smith, David Stottlemire, Robert Kimball*

City of Bishop Staff: *Keith Caldwell, David Grah, Deston Dishion (via email)*

Inyo County Supervisors: *Linda Arcularius, Rick Pucci, Matt Kingsley, Jeff Griffiths, Mark Tillemans*

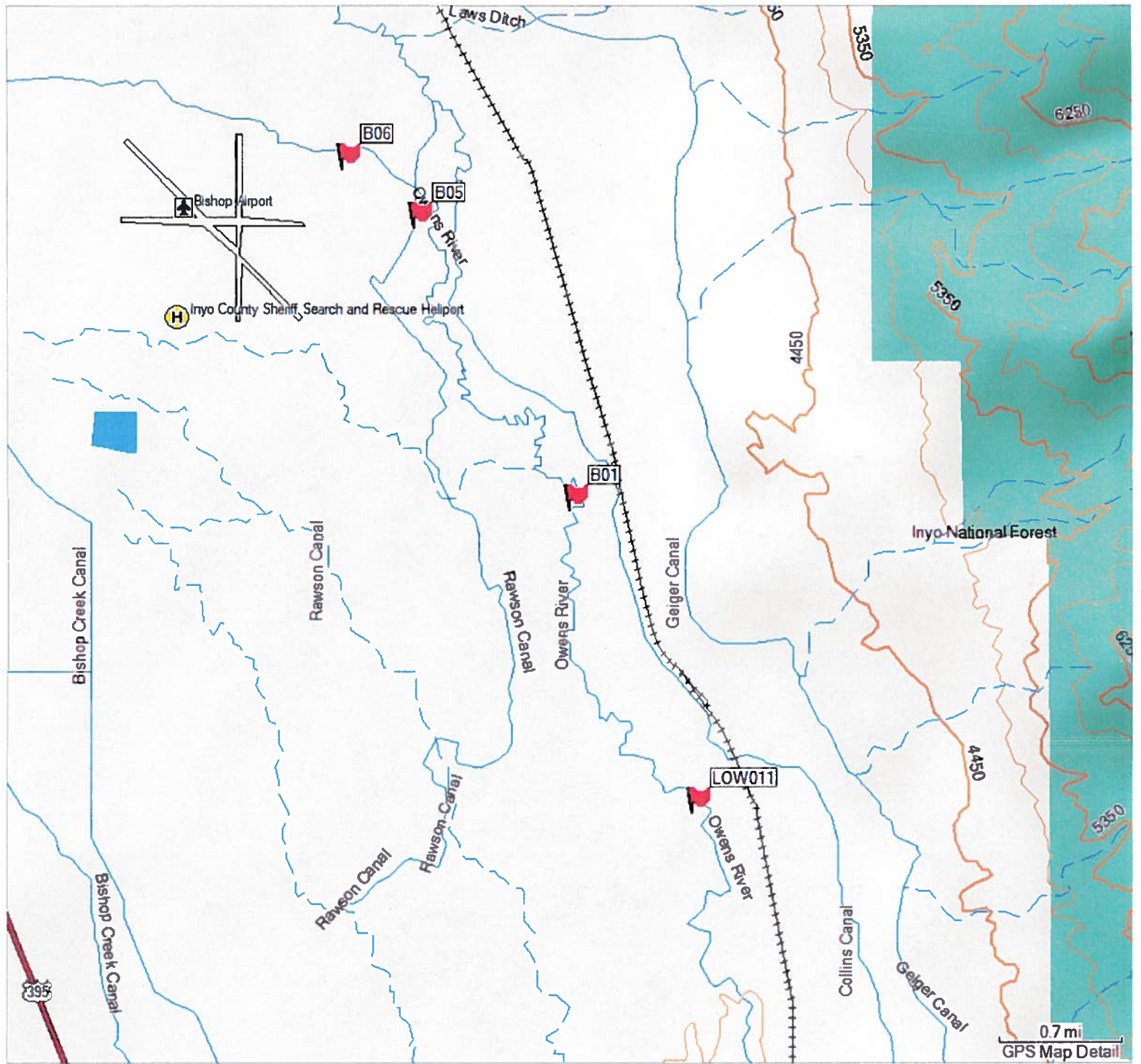
Inyo County Administrative Officer

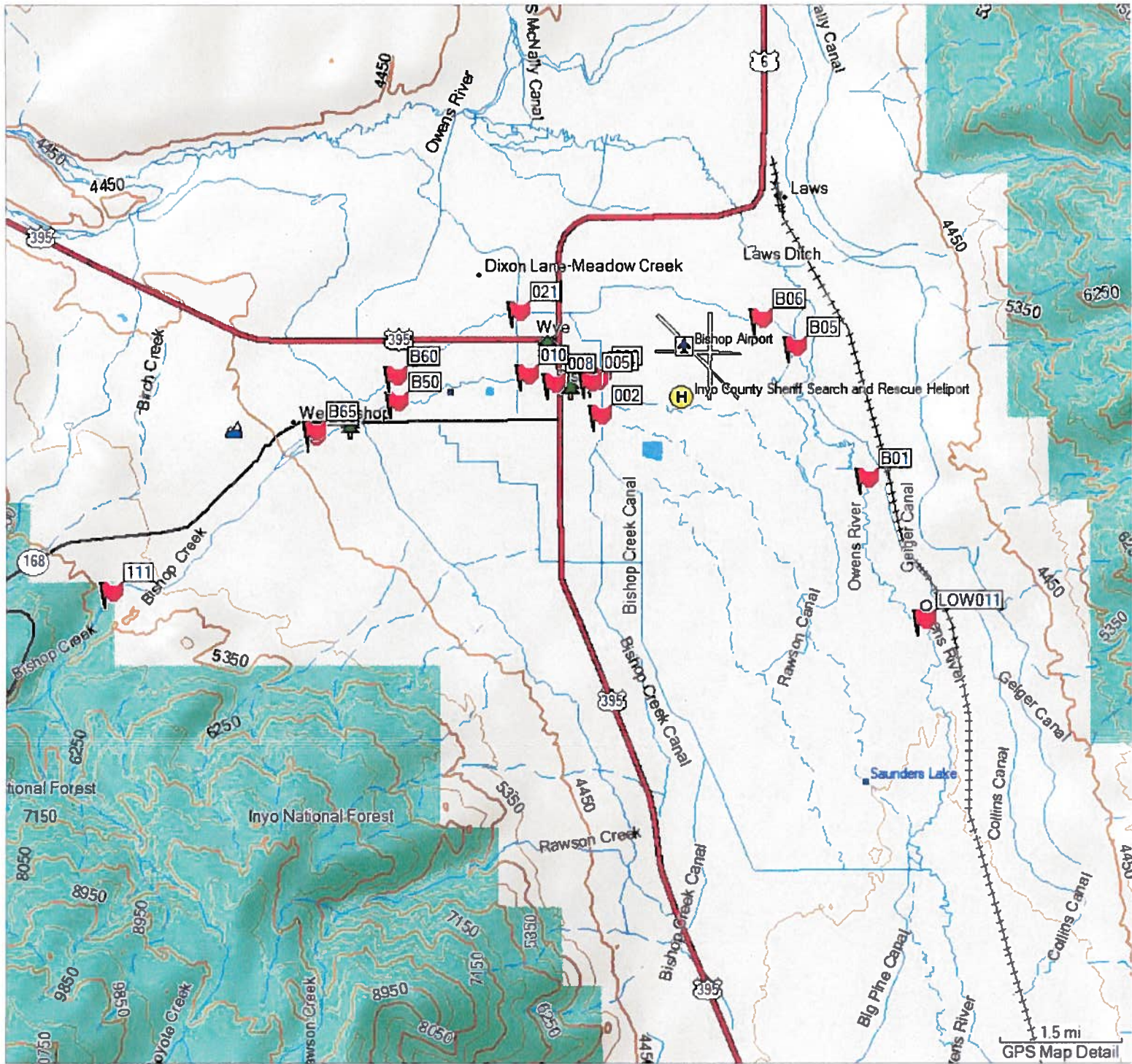
Inyo County Staff (via email): *Marvin Moskowitz, Bob Harrington*

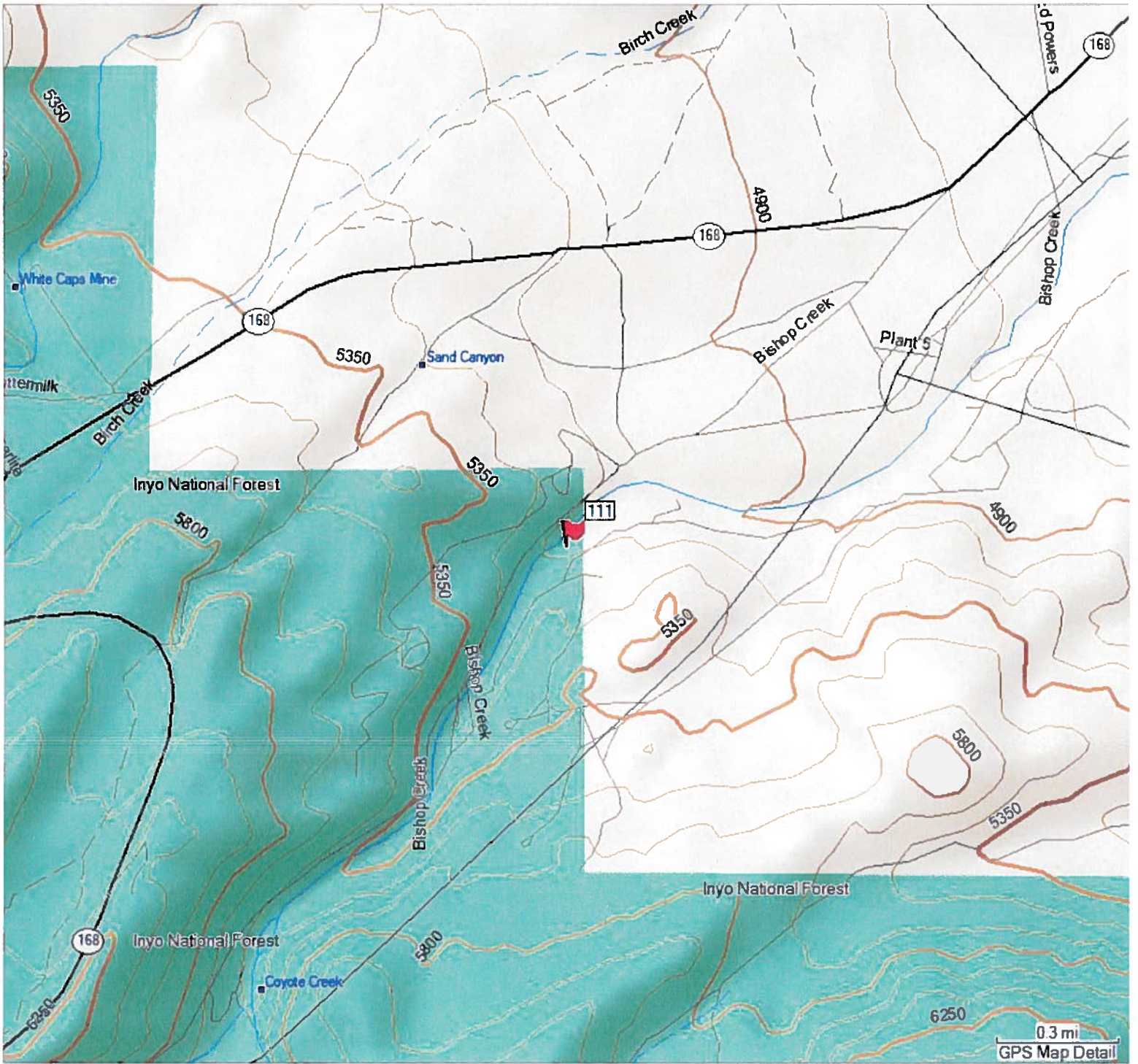
LADWP: *Katherine Rubin - Manager of Wastewater Quality and Compliance Group*

LADWP (via email): *Clayton Yoshida, Anne Parekh, Michael Mechardo*

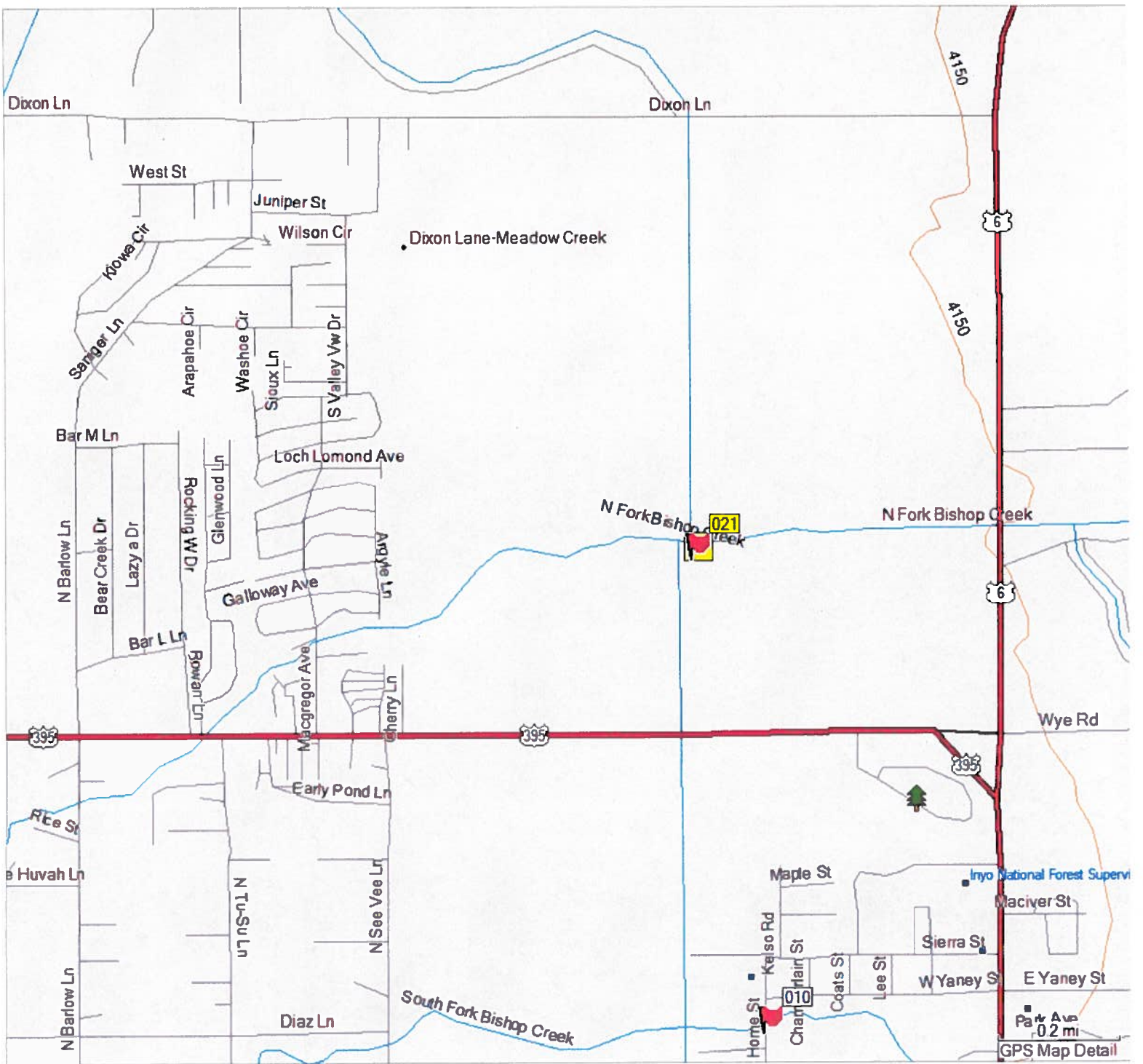
**Enclosure 1: Bishop Creek Bacteria Sampling
Locations.pdf**

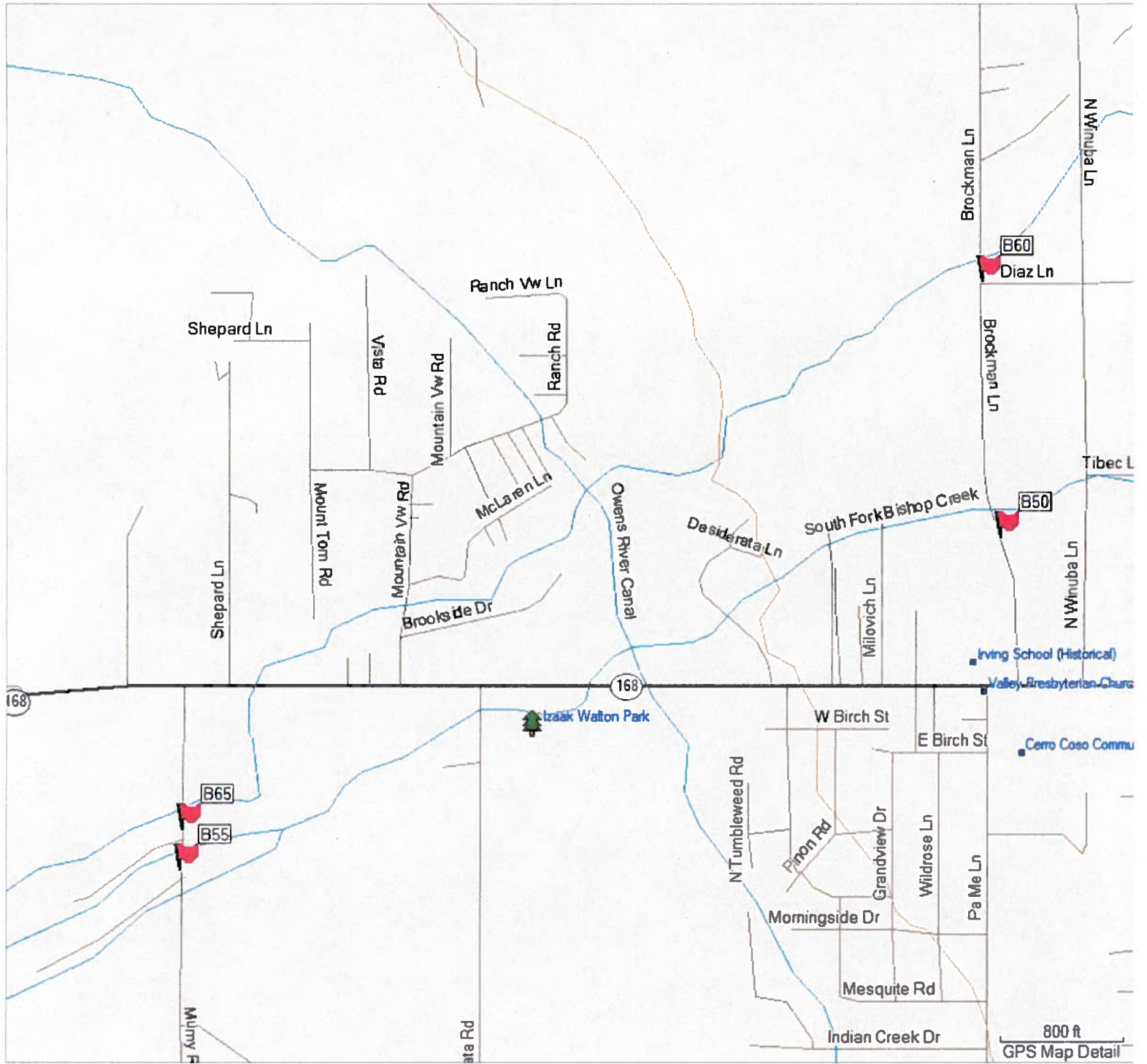












Enclosure 2: Bishop Creek Bacteria Data.pdf

Bishop Creek Canal @ East Line Street (603BSP002)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
5/30/2012	6/28/2012	4	19 ^a	35	45	17 ^a	29
5/31/2012	6/29/2012	3	38	43	46	22	35
6/5/2012	7/4/2012	3	44	50	57	44	35
6/19/2012	7/18/2012	3	46	287	6863	46	202
7/3/2012	8/1/2012	6	60	132	4392	21	41
7/9/2012	8/7/2012	6	8564 ^{a,e}	140	4392	8564 ^{a,e}	51
7/19/2012	8/17/2012	6	16	60	154	8	22
7/23/2012	8/21/2012	6	52	66	154	8	27
7/24/2012	8/22/2012	5	220	70	167	8	34
8/1/2012	8/30/2012	5	55	52	75	55	46
8/7/2012	9/5/2012	4	88	51	77	76	44
8/13/2012	9/11/2012	4	52	47	59	48	41
8/21/2012	9/19/2012	3	30	45	59	30	39
8/30/2012	9/28/2012	4	49	108	275	35	84
9/11/2012	10/10/2012	5	62	88	255	57	67
9/20/2012	10/19/2012	5	134	80	255	76	62
9/24/2012	10/23/2012	5	336	64	222	336	55
10/2/2012	10/31/2012	6	52	52	78	32	45
10/9/2012	11/7/2012	5	36 ^a	52	80	29 ^a	49
10/18/2012	11/16/2012	5	40	42	80	40	41
10/23/2012	11/21/2012	4	43 ^h	43	82	40 ^h	41
10/26/2012	11/24/2012	3	88	42	84	88	41
10/30/2012	11/28/2012	2	67 ^a	30	62	67 ^a	28
11/15/2012	12/14/2012	1	13 ^a	13	13	12 ^a	12
1/23/2013	2/21/2013	2	4	1	4	4	4
2/1/2013	3/2/2013	1	0	0	0	0	0
3/21/2013	4/19/2013	1	16	16	16	16	16
4/22/2013	5/21/2013	1	27 ^a	27	27	4 ^a	4
5/22/2013	6/20/2013	2	73 ^{a,h}	68	72	72 ^{a,h}	49
6/11/2013	7/10/2013	1	64	64	64	34	34
7/25/2013	8/23/2013	1	552	552	552	44	44
9/4/2013	10/3/2013	2	44	25	41	20	9
9/23/2013	10/22/2013	2	14	9	13	4	4
10/22/2013	11/20/2013	2	6	8	11	4	6
10/24/2013	11/22/2013	1	11 ^a	11	11	8 ^a	8

^a = average value of two duplicates

^e = estimated; used statistical analysis to calculate estimated result

^h = hold time exceeded

Bishop Creek Canal above South Fork Bishop Creek (603BSP003)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
5/30/2012	6/28/2012	4	20 ^a	47	114	18 ^a	42
5/31/2012	6/29/2012	3	145 ^a	62	124	145 ^a	57
6/5/2012	7/4/2012	3	41 ^a	45	52	39 ^a	31
6/19/2012	7/18/2012	3	40 ^a	43	52	32 ^a	30
7/3/2012	8/1/2012	6	55	27	56	23	20
7/9/2012	8/7/2012	6	36	24	46	36	20
7/19/2012	8/17/2012	6	14	27	71	14	24
7/23/2012	8/21/2012	6	15	42	133	15	35
7/24/2012	8/22/2012	5	15	52	142	13	41
8/1/2012	8/30/2012	5	56	52	142	30	43
8/7/2012	9/5/2012	4	28	51	152	24	46
8/13/2012	9/11/2012	4	86	56	152	86	50
8/21/2012	9/19/2012	3	180	49	152	140	42
8/30/2012	9/28/2012	4	16	24	40	16	20
9/11/2012	10/10/2012	5	40	35	73	32	20
9/20/2012	10/19/2012	5	40	36	75	36	21
9/24/2012	10/23/2012	5	13	33	75	8	19
10/2/2012	10/31/2012	6	95	34	70	17	21
10/9/2012	11/7/2012	5	28	28	38	22	22
10/18/2012	11/16/2012	5	44	14	36	40	12
10/23/2012	11/21/2012	4	24 ^h	11	25	20 ^h	9
10/26/2012	11/24/2012	3	22	8	24	19	7
10/30/2012	11/28/2012	2	25	5	23	17	4
11/15/2012	12/14/2012	1	1	1	1	1	1
1/23/2013	2/21/2013	2	3	11	40	3	9
2/1/2013	3/2/2013	1	44	44	44	30	30
3/21/2013	4/19/2013	2	138 ^a	56	127	134 ^a	52
3/23/2013	4/21/2013	1	23 ^a	23	23	20 ^a	20
4/22/2013	5/21/2013	2	37	56	79	9	19
4/30/2013	5/29/2013	2	84	70	81	42	49
5/22/2013	6/20/2013	2	58	53	57	58	43
6/11/2013	7/10/2013	2	48	48	48	32	31
7/10/2013	8/8/2013	3	48	39	50	30	22
7/19/2013	8/17/2013	3	24 ^a	24	46	18 ^a	14
7/25/2013	8/23/2013	3	51	30	50	19	17
8/11/2013	9/9/2013	3	11 ^a	33	65	8 ^a	20
8/21/2013	9/19/2013	2	46	57	68	30	31
9/4/2013	10/3/2013	2	70	35	65	32	17
9/23/2013	10/22/2013	2	18	16	18	9	11
10/22/2013	11/20/2013	2	14	11	13	14	7
10/24/2013	11/22/2013	1	8	8	8	4	4
11/25/2013	12/24/2013	2	2	3	4	1	1
12/2/2013	12/31/2013	1	4	4	4	2	2

^a = average value of two duplicates
^h = hold time exceeded

South Fork Bishop Creek above Bishop Creek Canal (603BSP004)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
6/5/2012	7/4/2012	3	191	180	195	191	173
6/19/2012	7/18/2012	3	196	194	231	192	143
7/3/2012	8/1/2012	6	156	160	238	140	124
7/9/2012	8/7/2012	6	240	148	238	108	116
7/19/2012	8/17/2012	6	92	127	200	92	114
7/23/2012	8/21/2012	6	236	110	200	216	99
7/24/2012	8/22/2012	5	128	95	150	112	85
8/1/2012	8/30/2012	5	164	86	137	108	77
8/7/2012	9/5/2012	4	95	73	96	95	71
8/13/2012	9/11/2012	4	96	93	197	96	88
8/21/2012	9/19/2012	3	40	92	208	40	85
8/30/2012	9/28/2012	3	80	302	1191	70	124
9/11/2012	10/10/2012	4	240	396	1084	220	355
9/24/2012	10/23/2012	5	1429 ^e	248	969	1429 ^e	142
10/2/2012	10/31/2012	6	256	145	272	180	129
10/9/2012	11/7/2012	5	280	129	274	280	120
10/18/2012	11/16/2012	5	35 ^a	94	207	35 ^a	87
10/23/2012	11/21/2012	4	264 ^h	120	221	228 ^h	109
10/26/2012	11/24/2012	3	122	92	120	110	86
10/30/2012	11/28/2012	2	114	80	108	102	76
11/15/2012	12/14/2012	1	56	56	56	56	56
1/23/2013	2/21/2013	2	13 ^a	4	12	13 ^a	4
2/1/2013	3/2/2013	1	1	1	1	1	1
3/21/2013	4/19/2013	2	51	167	495	49	155
3/23/2013	4/21/2013	1	544	544	544	488	488
4/22/2013	5/21/2013	2	62	142	298	30	93
4/30/2013	5/29/2013	2	324	161	300	288	129
5/22/2013	6/20/2013	2	80 ^h	163	309	58 ^h	128
6/11/2013	7/10/2013	2	334	253	320	282	233
7/10/2013	8/8/2013	3	192	259	734	192	105
7/19/2013	8/17/2013	3	104	201	717	60	74
7/25/2013	8/23/2013	3	870	206	718	100	83
8/11/2013	9/9/2013	3	90	122	166	68	95
8/21/2013	9/19/2013	2	112	142	173	84	113
9/4/2013	10/3/2013	2	180	203	223	152	180
9/23/2013	10/22/2013	2	228	165	217	212	149
10/22/2013	11/20/2013	2	120	177	246	105	159
10/24/2013	11/22/2013	1	260	260	260	240	240
11/25/2013	12/24/2013	2	76	210	530	72	199
12/2/2013	12/31/2013	1	580	580	580	551 ^e	551

^a = average value of two duplicates

^e = estimated; used statistical analysis to calculate estimated result

^h = hold time exceeded

South Fork Bishop Creek @ Hanby Street (603BSP005)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
6/5/2012	7/4/2012	3	375	283	356	375	253
6/19/2012	7/18/2012	3	280	285	363	250	195
7/3/2012	8/1/2012	6	216	139	300	172	88
7/9/2012	8/7/2012	6	384	117	278	172	72
7/19/2012	8/17/2012	6	110	95	141	90	58
7/23/2012	8/21/2012	6	172	101	164	144	63
7/24/2012	8/22/2012	5	75	90	137	60	54
8/1/2012	8/30/2012	5	60	92	137	20	57
8/7/2012	9/5/2012	4	80	103	142	52	75
8/13/2012	9/11/2012	4	108	133	205	48	104
8/21/2012	9/19/2012	3	156	142	212	152	135
8/30/2012	9/28/2012	4	82 ^a	169	261	82 ^a	158
9/11/2012	10/10/2012	5	226 ^a	221	268	198 ^a	197
9/20/2012	10/19/2012	5	158 ^a	310	857	148 ^a	285
9/24/2012	10/23/2012	5	276 ^a	322	857	260 ^a	282
10/2/2012	10/31/2012	6	208 ^a	182	750	170 ^a	151
10/9/2012	11/7/2012	5	255	178	849	230	148
10/18/2012	11/16/2012	5	1245	113	823	1245	96
10/23/2012	11/21/2012	4	190 ^h	62	161	140 ^h	51
10/26/2012	11/24/2012	3	32	43	80	20	36
10/30/2012	11/28/2012	2	92	50	86	88	49
11/15/2012	12/14/2012	1	27	27	27	27	27
1/23/2013	2/21/2013	2	13	10	12	13	9
2/1/2013	3/2/2013	1	7	7	7	6	6
4/22/2013	5/21/2013	1	58	58	58	31	31
7/25/2013	8/23/2013	1	330	330	330	130	130
9/4/2013	10/3/2013	2	270	137	250	130	130
9/23/2013	10/22/2013	2	70	47	66	-	-
10/22/2013	11/20/2013	2	32 ^a	60	106	24 ^a	52
10/24/2013	11/22/2013	1	114	114	114	112	112

^a = average value of two duplicates
^h = hold time exceeded
- = no result due to laboratory error

South Fork Bishop Creek @ Creekside Inn (603BSP008)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
5/30/2012	6/28/2012	3	170	212	362	170	204
6/5/2012	7/4/2012	3	136	228	370	124	207
6/19/2012	7/18/2012	3	410	254	370	400	216
7/3/2012	8/1/2012	5	212	159	202	180	124
7/9/2012	8/7/2012	5	188	140	186	140	98
7/19/2012	8/17/2012	5	88	132	173	60	90
7/24/2012	8/22/2012	5	156	133	173	140	97
8/1/2012	8/30/2012	5	184	110	167	140	82
8/7/2012	9/5/2012	4	112	97	133	56	72
8/13/2012	9/11/2012	4	142 ^a	96	132	90 ^a	79
8/21/2012	9/19/2012	3	90 ^a	84	104	86 ^a	75
8/30/2012	9/28/2012	4	62	108	254	62	79
9/11/2012	10/10/2012	5	108	162	305	80	89
9/20/2012	10/19/2012	5	64	245	636	50	143
9/24/2012	10/23/2012	5	316	263	636	160	159
10/2/2012	10/31/2012	6	288	154	569	56	108
10/9/2012	11/7/2012	5	180	136	582	155	123
10/18/2012	11/16/2012	5	850	98	546	850	91
10/23/2012	11/21/2012	4	90 ^{a,h}	57	83	85 ^{a,h}	52
10/26/2012	11/24/2012	3	68 ^a	49	64	50 ^a	44
10/30/2012	11/28/2012	2	50	41	48	50	41
11/15/2012	12/14/2012	1	34	34	34	34	34
1/23/2013	2/21/2013	2	34	18	32	34	15
2/1/2013	3/2/2013	1	10 ^a	10	10	7 ^a	7
4/22/2013	5/21/2013	1	50	50	50	40	40

^a = average value of two duplicates

^h = hold time exceeded

South Fork Bishop Creek @ Home Street (603BSP010)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
5/30/2012	6/28/2012	3	44	128	338	44	128
6/5/2012	7/4/2012	3	121	163	338	121	151
6/19/2012	7/18/2012	3	392	141	332	392	132
7/3/2012	8/1/2012	6	90 ^a	141	454	73 ^a	132
7/9/2012	8/7/2012	6	80	132	454	80	125
7/19/2012	8/17/2012	6	82	121	454	82	114
7/23/2012	8/21/2012	6	738	119	454	736	112
7/24/2012	8/22/2012	5	170	82	144	165	77
8/1/2012	8/30/2012	5	105	47	93	90	44
8/7/2012	9/5/2012	4	60	38	70	52	37
8/13/2012	9/11/2012	4	48	61	297	48	61
8/21/2012	9/19/2012	3	74	66	328	72	66
8/30/2012	9/28/2012	4	10	77	327	10	72
9/11/2012	10/10/2012	5	392	102	306	392	93
9/20/2012	10/19/2012	5	50	91	201	40	83
9/24/2012	10/23/2012	5	176	93	201	176	89
10/2/2012	10/31/2012	6	32	51	159	28	48
10/9/2012	11/7/2012	5	100	56	171	92	53
10/18/2012	11/16/2012	5	218	31	153	218	28
10/23/2012	11/21/2012	4	56 ^h	19	46	56 ^h	17
10/26/2012	11/24/2012	3	20	13	22	20	11
10/30/2012	11/28/2012	2	22	10	20	19	9
11/15/2012	12/14/2012	1	5	5	5	4	4
1/23/2013	2/21/2013	2	16	65	237	16	65
2/1/2013	3/2/2013	1	261 ^a	261	261	261 ^a	261
3/21/2013	4/19/2013	2	8	8	8	8	6
3/23/2013	4/21/2013	1	8	8	8	4	4
4/22/2013	5/21/2013	2	14	39	100	9	31
4/30/2013	5/29/2013	2	110 ^a	55	102	110 ^a	55
5/22/2013	6/20/2013	2	28	96	296	28	73
6/11/2013	7/10/2013	2	326	298	318	192	204
7/10/2013	8/8/2013	3	272	158	318	216	51
7/19/2013	8/17/2013	3	44	96	276	31	21
7/25/2013	8/23/2013	3	330	98	276	20	23
8/11/2013	9/9/2013	3	60	98	276	15	50
8/21/2013	9/19/2013	2	47	125	302	39	90
9/4/2013	10/3/2013	2	330	120	301	210	46
9/23/2013	10/22/2013	2	44	44	45	10	16
10/22/2013	11/20/2013	2	45	28	42	25	17
10/24/2013	11/22/2013	1	18	18	18	12	12
11/25/2013	12/24/2013	2	30 ^a	16	28	30 ^a	11
12/2/2013	12/31/2013	1	9 ^a	9	9	4 ^a	4

^a = average value of two duplicates

^h = hold time exceeded

North Fork Bishop Creek above Bishop Creek Canal (603BSP021)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
3/21/2013	4/19/2013	1	20	20	20	18	18
4/22/2013	5/21/2013	2	23 ^a	50	100	9 ^a	25
4/30/2013	5/29/2013	2	108	113	117	68	63
5/22/2013	6/20/2013	2	118	327	829	58	100
6/11/2013	7/10/2013	2	908	578	854	172	213
7/10/2013	8/8/2013	3	368	178	338	264	101
7/19/2013	8/17/2013	3	70	73	190	56	41
7/25/2013	8/23/2013	3	220	106	219	70	51
8/11/2013	9/9/2013	3	25	108	232	18	68
8/21/2013	9/19/2013	2	216 ^a	226	234	108 ^a	133
9/4/2013	10/3/2013	2	236	197	229	164	92
9/23/2013	10/22/2013	2	164	118	156	52	64
10/22/2013	11/20/2013	2	85	109	135	80	85
10/24/2013	11/22/2013	1	140	140	140	90	90
11/25/2013	12/24/2013	2	25	11	23	24	11
12/2/2013	12/31/2013	1	5	5	5	5	5

^a = average value of two duplicates

North Fork Bishop Creek @ Brockman Lane (603BSPB60)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
10/18/2012	11/16/2012	5	28	20	30	28	19
10/23/2012	11/21/2012	4	31	19	29	21	17
10/26/2012	11/24/2012	3	23	16	22	23	16
10/30/2012	11/28/2012	2	16 ^a	13	16	16 ^a	13
11/15/2012	12/14/2012	1	11	11	11	11	11
1/23/2013	2/21/2013	2	0 ^a	1	3	0 ^a	1
2/1/2013	3/2/2013	1	3 ^a	3	3	3 ^a	3
4/22/2013	5/21/2013	2	40	88	177	18	59
4/30/2013	5/29/2013	1	192 ^a	192	192	192 ^a	192
7/10/2013	8/8/2013	3	124	194	556	124	123
7/19/2013	8/17/2013	3	88	118	549	60	68
7/25/2013	8/23/2013	3	664	104	543	248	57
8/11/2013	9/9/2013	3	28 ^a	59	108	21 ^a	42
8/21/2013	9/19/2013	2	60	85	114	36	59
9/4/2013	10/3/2013	2	120	106	117	96	85
9/23/2013	10/22/2013	2	94	99	103	76	89
10/22/2013	11/20/2013	2	104	74	99	104	72
10/24/2013	11/22/2013	1	52	52	52	50	50
11/25/2013	12/24/2013	2	21	16	20	20	15
12/2/2013	12/31/2013	1	12	12	12	12	12

^a = average value of two duplicates

South Fork Bishop Creek @ Brockman Lane (603BSPB50)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
10/18/2012	11/16/2012	5	12	10	19	12	10
10/23/2012	11/21/2012	4	23	10	19	23	10
10/26/2012	11/24/2012	3	7	8	10	7	7
10/30/2012	11/28/2012	2	11	8	11	9	7
11/15/2012	12/14/2012	1	6	6	6	6	6
1/23/2013	2/21/2013	2	3	2	3	3	2
2/1/2013	3/2/2013	1	1	1	1	0	0
4/22/2013	5/21/2013	2	19	45	97	13	37
4/30/2013	5/29/2013	1	106	106	106	106	106
7/10/2013	8/8/2013	3	88	66	136	88	45
7/19/2013	8/17/2013	3	22 ^a	49	126	11 ^a	31
7/25/2013	8/23/2013	3	148	59	126	92	42
8/11/2013	9/9/2013	3	37	43	54	29	22
8/21/2013	9/19/2013	2	38	47	56	28	20
9/4/2013	10/3/2013	2	58	71	85	14	17
9/23/2013	10/22/2013	2	88	44	81	20	18
10/22/2013	11/20/2013	2	22	16	21	16	16
10/24/2013	11/22/2013	1	11	11	11	-	-
11/25/2013	12/24/2013	2	9 ^a	5	8	7 ^a	3
12/2/2013	12/31/2013	1	3 ^a	3	3	2 ^a	2

^a = average value of two duplicates
 - = no result due to laboratory error

North Fork Bishop Creek @ Mummy Lane (603BSPB65)							
Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
10/18/2012	11/16/2012	5	2	2	4	2	2
10/23/2012	11/21/2012	4	3	2	4	3	2
10/26/2012	11/24/2012	3	4	2	4	4	2
10/30/2012	11/28/2012	2	2	1	2	2	1
11/15/2012	12/14/2012	1	0	0	0	0	0
1/23/2013	2/21/2013	2	0	1	4	0	1
2/1/2013	3/2/2013	1	4	4	4	4	4
3/21/2013	4/19/2013	2	16	3	14	16	3
3/23/2013	4/21/2013	1	0	0	0	0	0
4/22/2013	5/21/2013	2	0	2	5	0	2
4/30/2013	5/29/2013	2	5	3	5	5	3
5/22/2013	6/20/2013	2	2 ^a	2	2	2 ^a	1
6/11/2013	7/10/2013	2	2	6	17	1	4
7/10/2013	8/8/2013	3	19	15	74	19	13
7/19/2013	8/17/2013	3	2	4	71	2	4
7/25/2013	8/23/2013	3	88	8	72	62	5
8/11/2013	9/9/2013	3	0	2	8	0	1
8/21/2013	9/19/2013	2	10	4	9	4	2
9/4/2013	10/3/2013	2	2	4	8	1	2
9/23/2013	10/22/2013	2	9	5	8	4	3
10/22/2013	11/20/2013	2	3	3	3	3	3
10/24/2013	11/22/2013	1	3	3	3	3	3
11/25/2013	12/24/2013	2	0	0	0	0	0
12/2/2013	12/31/2013	1	0	0	0	0	0

^a = average value of two duplicates

South Fork Bishop Creek @ Mummy Lane (603BSPB55)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
10/18/2012	11/16/2012	5	3	3	3	3	2
10/23/2012	11/21/2012	4	2	2	3	2	2
10/26/2012	11/24/2012	3	3	3	3	2	2
10/30/2012	11/28/2012	2	2	2	3	2	2
11/15/2012	12/14/2012	1	3	3	3	3	3
1/23/2013	2/21/2013	2	0	0	0	0	0
2/1/2013	3/2/2013	1	0	0	0	0	0
3/21/2013	4/19/2013	2	17 ^a	34	63	17 ^a	34
3/23/2013	4/21/2013	1	68 ^a	68	68	68 ^a	68
4/22/2013	5/21/2013	2	2	1	2	2	1
4/30/2013	5/29/2013	2	0	1	4	0	1
5/22/2013	6/20/2013	2	4	6	8	4	6
6/11/2013	7/10/2013	2	8	8	9	8	8
7/10/2013	8/8/2013	3	9	8	88	9	7
7/19/2013	8/17/2013	3	0	3	86	0	3
7/25/2013	8/23/2013	3	108	5	87	68	4
8/11/2013	9/9/2013	3	0	2	8	0	2
8/21/2013	9/19/2013	2	3	5	8	2	4
9/4/2013	10/3/2013	2	9	7	9	8	6
9/23/2013	10/22/2013	2	5	2	5	5	2
10/22/2013	11/20/2013	2	1	1	1	1	1
10/24/2013	11/22/2013	1	0	0	0	0	0
11/25/2013	12/24/2013	2	0	0	0	0	0
12/2/2013	12/31/2013	1	0	0	0	0	0

^a = average value of two duplicates

Bishop Creek @ National Forest Boundary (603BSP111)							
Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
4/22/2013	5/21/2013	2	0	1	2	0	1
4/30/2013	5/29/2013	2	2	1	2	1	1
5/22/2013	6/20/2013	2	1	1	2	1	1
6/11/2013	7/10/2013	2	2 ^a	4	7	2 ^a	3
7/10/2013	8/8/2013	3	8	4	11	5	3
7/19/2013	8/17/2013	3	0	1	10	0	1
7/25/2013	8/23/2013	3	12	3	11	9	3
8/11/2013	9/9/2013	3	0	2	5	0	2
8/21/2013	9/19/2013	2	5	5	5	5	5
9/4/2013	10/3/2013	2	5	2	5	5	2
9/23/2013	10/22/2013	2	1	1	1	0	1
10/22/2013	11/20/2013	2	1	1	1	1	1
10/24/2013	11/22/2013	1	1	1	1	1	1
11/25/2013	12/24/2013	2	0	0	0	0	0
12/2/2013	12/31/2013	1	0	0	0	0	0

^a = average value of two duplicates

Artesian Swimming Holes

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90 th Percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
Artesian Swimming Hole North 1 (603ARTB05)							
10/18/2012	11/16/2012	1	1	1	1	0	0
4/30/2013	5/29/2013	2	3	4	5	3	4
5/22/2013	6/20/2013	2	5 ^h	2	5	5 ^h	2
6/11/2013	7/10/2013	1	0	0	0	0	0
7/25/2013	8/23/2013	2	4	4	4	0	1
8/21/2013	9/19/2013	2	4	1	4	1	1
9/4/2013	10/3/2013	2	0	1	1	0	0
9/23/2013	10/22/2013	2	1	4	17	0	1
10/22/2013	11/20/2013	2	19	4	17	2	1
10/24/2013	11/22/2013	1	1	1	1	1	1
11/25/2013	12/24/2013	2	0	1	4	0	1
12/2/2013	12/31/2013	1	4	4	4	4	4
Artesian Swimming Hole North 2 (603ARTB06)							
10/18/2012	11/16/2012	1	0	0	0	0	0
4/30/2013	5/29/2013	2	13	12	13	13	11
5/22/2013	6/20/2013	2	12 ^h	8	11	10 ^h	7
6/11/2013	7/10/2013	1	6	6	6	5	5
7/25/2013	8/23/2013	2	800 ^e	57	720	4	4
8/21/2013	9/19/2013	2	4	9	19	4	9
9/4/2013	10/3/2013	2	21	5	19	20	3
9/23/2013	10/22/2013	2	1	1	1	0	0
10/22/2013	11/20/2013	2	0	0	0	0	0
10/24/2013	11/22/2013	1	-	-	-	-	-
11/25/2013	12/24/2013	2	0	1	1	0	1
12/2/2013	12/31/2013	1	1	1	1	1	1
Artesian Swimming Hole South 1 (603ARTB01)							
10/18/2012	11/16/2012	1	0	0	0	0	0
4/30/2013	5/29/2013	2	0	0	0	0	0
5/22/2013	6/20/2013	2	0 ^h	2	7	0 ^h	1
6/11/2013	7/10/2013	1	8	8	8	1	1
7/25/2013	8/23/2013	2	2 ^a	1	2	0 ^a	0
8/21/2013	9/19/2013	2	0	6	68	0	5
9/4/2013	10/3/2013	2	75 ^a	61	73	50 ^a	5
9/23/2013	10/22/2013	2	50	32	47	0	1
10/22/2013	11/20/2013	2	21	3	19	3	1
10/24/2013	11/22/2013	1	0	0	0	0	0
11/25/2013	12/24/2013	2	0	3	20	0	0
12/2/2013	12/31/2013	1	22	22	22	0	0

^a = average value of two duplicates
^e = estimated; used statistical analysis to calculate estimated result
^h = hold time exceeded
 - = no result due to laboratory error

Lower Owens River @ Warm Springs Road (603LOW011)

Sample Date	to date (30 days)	# of samples in 30-day period	fecal coliform (colonies per 100 ml)	fecal coliform 30-d log mean (20/100 ml)	fecal coliform 90th percentile (40/100 ml)	E. coli (colonies per 100 ml)	E. coli 30-d log mean (100/100ml)
4/30/2013	5/29/2013	2	30	39	50	30	36
5/22/2013	6/20/2013	2	52 ^h	30	49	44 ^h	27
6/11/2013	7/10/2013	2	17	9	16	17	9
7/10/2013	8/8/2013	2	5	9	15	5	9
7/25/2013	8/23/2013	2	16	14	16	15	9
8/21/2013	9/19/2013	1	12	12	12	6	6
10/24/2013	11/22/2013	1	3	3	3	1	1
11/25/2013	12/24/2013	1	7	7	7	7	7

^h = hold time exceeded

Appendix F: Public meeting sign-in sheets 2014, 2015, 2016

Sign In

<u>Name</u>	<u>Agency</u>	<u>Email address</u>
Lauri Kemper	Lahontan Water Board.	lauri.kemper@waterboards.ca.gov
Deston Dishion	City of Bishop	destondishion@ca-bishop.u
Mike Plaziak	Lahontan WB - Victorville	mplaziak@waterboards.ca.gov
Walt Pachucki	Eastern Sierra Community SP	walt@tesmbishop.com
Michael Mercado	LADWP	michael.mercado@ladwp.com
Clayton Yoshida	LADWP	clayton.yoshida@ladwp.com
Anne Parekh	LADWP	anne.parekh@ladwp.com
Marriv Maskowitz	Inyo Co	mmoskowitz@insgocounty.us
Roland Knapp	UC - Sierra Nevada Aquatic Research Lab	knapp@lifesci.ucsb.edu
Tom Suk	Lahontan RWQCB	thomzsuk@waterboards.ca.gov
BryAnna Vaughan	Bishop Paiute Tribe	bryanna.vaughan@bishoppaiute.org
Bob Harrington	Inyo Co.	bharrington@inyocounty.us
Peter Pumphrey	Lahontan	pepumphrey@schat.net
Dave Stottkemeyer	Bishop	
Kevan Carrunchio	Inyo Co.	

Bishop City Hall

Bishop Bacteria Data Sharing Meeting

<u>NAME / Organization</u>	<u>PHONE</u>	<u>4-27-15</u> <u>EMAIL</u>
Mike Plazick Lehontan	760 241 7325	mike.plazick@waterboards.ca.gov
Andrea Yip / LADWP	213 367 4230	andrea.yip@ladwp.com
Katherine Rubin / LADWP	213 367 0436	katherine.rubin@ladwp.com
Patty Kouyoumdjian Lehontan	(530) 541-5412	patty.kouyoumdjian@waterboards.com
Brian Adkins	760-873-3584	brian.adkins@bshppa.org
Douglas Cushman	530 542-5412	douglas.cushman@ca.gov
ERIC MILLER	714 850-4830	emiller@mbcnet.net
Bryanna Vaughan / Bishop Pointe	760 873 3584	bryanna.vanughan@bishoppointe.org
Mark Sedlacek / LADWP	213-367-0403	mark.sedlacek@ladwp.com
Lori Gillem / LADWP	700 873 0407	lori.gillem@ladwp.com
Jimmy Nunez / mbc	714 850-4830	Jnunez@mbcnet.net
Merrin Moskowitz / Inyo CO health	760 878 0261	mmoskowitz@inyocounty.us
Mary Fiore-Wagner	530 542-5425	mfiore-wagner@waterboards.ca.gov

Bishop Creek Bacteria Meeting

May 18, '16

- 530 542 5417 Douglas Cushman douglas.cushman@waterboards.ca.gov
EMIL MILLER emiller@mscnet.net
- Marvin Moskowitz mmoskowitz@nyocounty.us
- 530 542.5425 Mary Fiore-Wagner mary.fiore-wagner@waterboards.ca.gov
- Lori Gillem lori.gillem@LADWP.com
- Jonathan Ma Jonathan.Ma@ladwp.com
- Michael Hanson michael.hanson@ladwp.com
- Katherine Rubin katherine.rubin@ladwp.com
- Brian Adkins brian.adkins@bishopparute.org
- (530) 542-5412 Patty Kouyoumdjian patty.kouyoumdjian@waterboards.ca.gov
- 760.241.7404 Parrico Copeland parricocopeland@waterboards.ca.gov
- 760/241-7376 Jan Zimmerman jan.zimmerman@waterboards.ca.gov
- 760/873-6618 X7009 Peter Bernasconi (public works director) peter.bernasconi@bishopparute.org

Bishop Parute Tribe

Appendix G: Bishop Paiute Tribe & Water Board joint presentation to U.S. EPA Tribal Conference (2020)



BETTER TOGETHER

Bishop Paiute Tribe & California Regional Water Board
Partnering to Address Impaired Water of Bishop Creek



BryAnna Vaughan
Water Quality Program Coordinator
Bishop Paiute Tribe



Ed Hancock
Environmental Scientist
Regional Water Quality Control Board

5/28/20

1

Overview of Presentation

- The Partners**
 - Bishop Paiute Tribe
 - CA Lahontan Regional Water Quality Control Board
- The Place**
 - Overview of the Watershed
- The Problem**
 - Water Quality Impairment
- The Process**
 - Vision Project

2

California Water Boards

2

The Partners

California Regional Water Quality Control Board

Bishop Paiute Tribe

3

California Water Boards

3

One of Nine California Regional Water Boards



Lahontan Region –R6

- 570 miles long
- 33,131 square miles
- 20% of the State

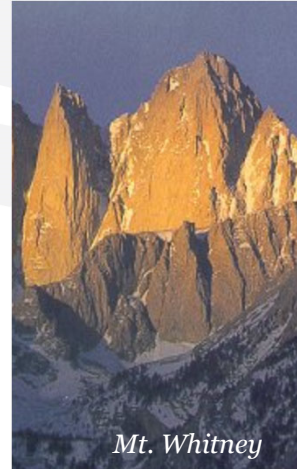
4

California Water Boards

4

Water Resources

- 700+ lakes
- 3,000+ miles of streams
- 1,500+ sq miles of groundwater basins
- 2 ONRWs
- Diverse landscapes

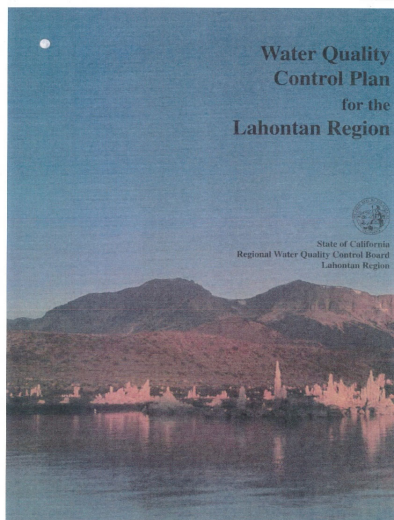


5

California Water Boards

5

Lahontan Region WQOs



Basin Plan contains:

- Narrative WQOs
- Region-wide WQOs
- Site-Specific WQOs for many constituents
 - Based on historic water quality data
 - Reflects pristine condition of Lahontan waters

6

California Water Boards

6

Bishop Creek Watershed, Inyo Co. CA

Bishop Creek

- 129,000-acre drainage of Eastern Sierra Nevada, Inyo County
- Largest tributary to the Owens River
- Undeveloped headwaters, moderate development on valley floor
- Rec uses dominate headwaters, mixed uses (Ag, residential, urban) in valley

*Map does not depict all water conveyances in Greater Bishop Creek Watershed

Updated 9/31/17. ed.hancock@waterboards.ca.gov

7

California Water Boards

7

Bishop Creek Project Area

- ~4000-acre project area, including 875 acres of Bishop Paiute Reservation
- Bishop Creek flows as two channels, north and south
- Both channels pass through the Reservation, and are surrounded by agricultural, residential and urban uses

Inset Map: Location of Bishop, California


Ed.Hancock@waterboards.ca.gov 11-19-18

8

California Water Boards

8

Water Quality Monitoring Program

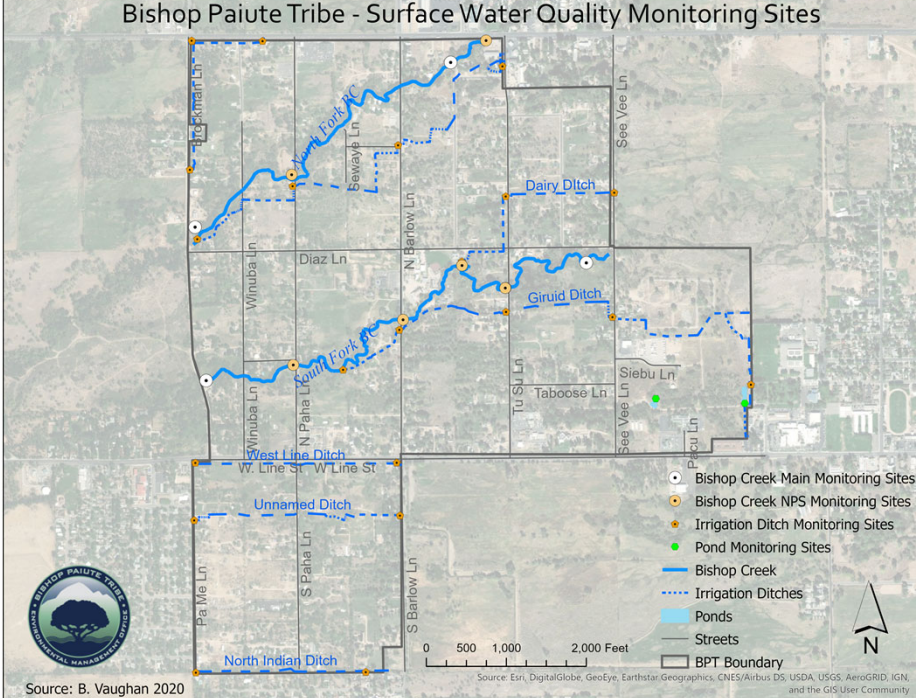


- 1998
 - Bishop Paiute Tribe WQCP established
- 2006
 - Granted Treatment in the same manner As a State (TAS) by EPA under CWA §518(e)
 - for purposes of administering CWA §303(c) and §401
- 2007
 - EPA and Tribal-Approved Water Quality Standards
- Current program
 - CWA Sections 106, 319, 104, Multipurpose Funding
 - Exchange Network

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- Bishop Paiute Reservation – 875 acres
- Two forks, north and south, of Bishop Creek flow through the Reservation. Total linear length ~ 2 miles.
- Multiple irrigation ditches flow through the Reservation
- Two small ponds in the Conservation Open Space Area.

Bishop Paiute Tribe - Surface Water Quality Monitoring Sites

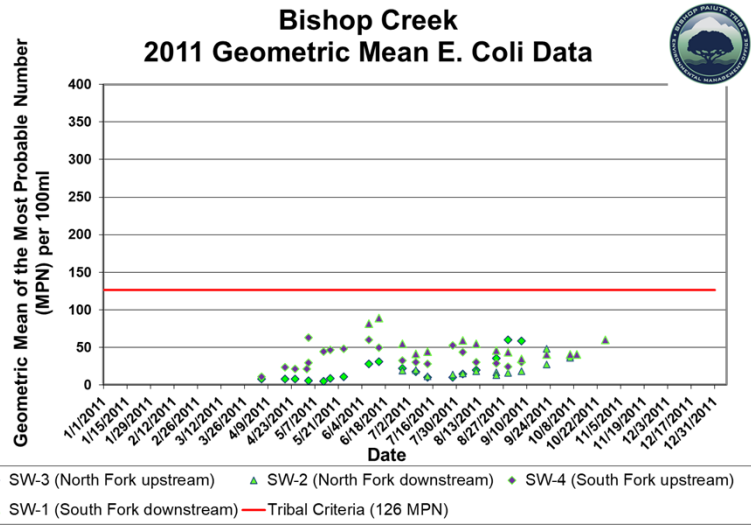


Source: B. Vaughan 2020

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

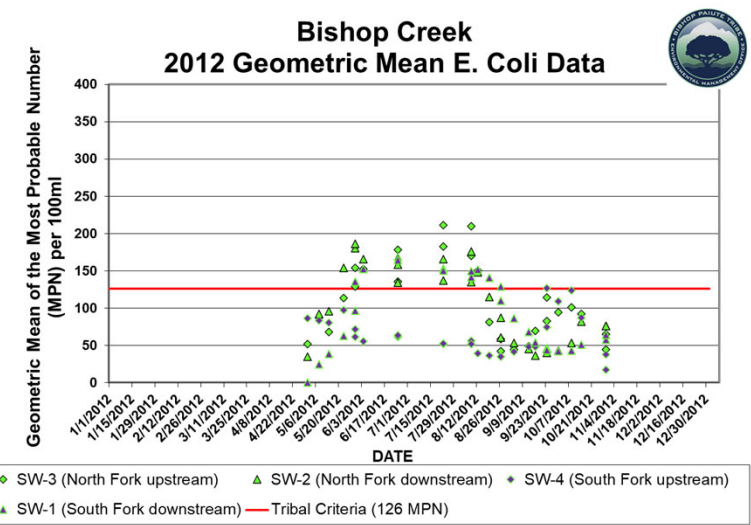
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E. coli data 2011



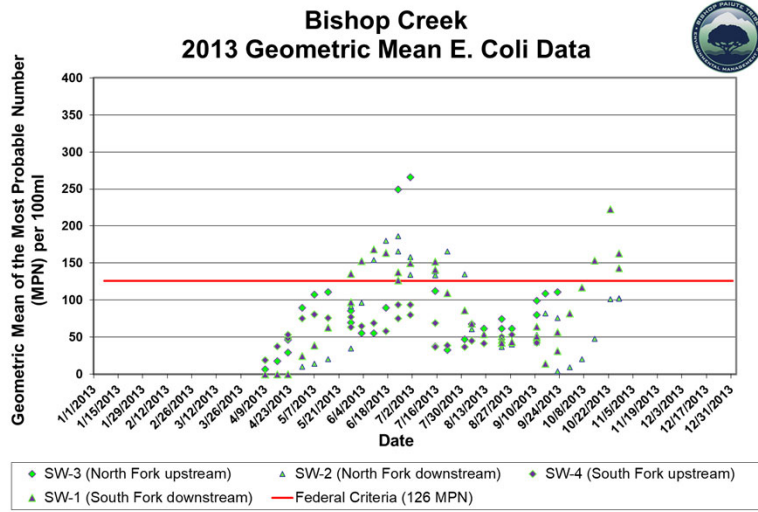
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E. coli data 2012



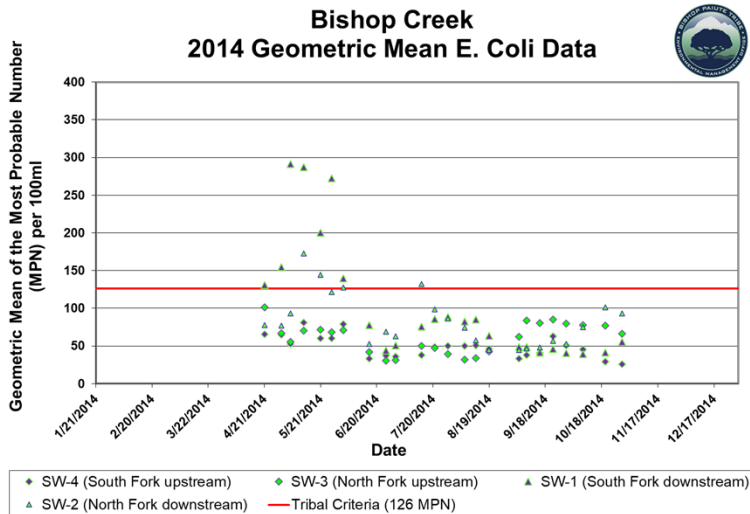
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E. coli data 2013



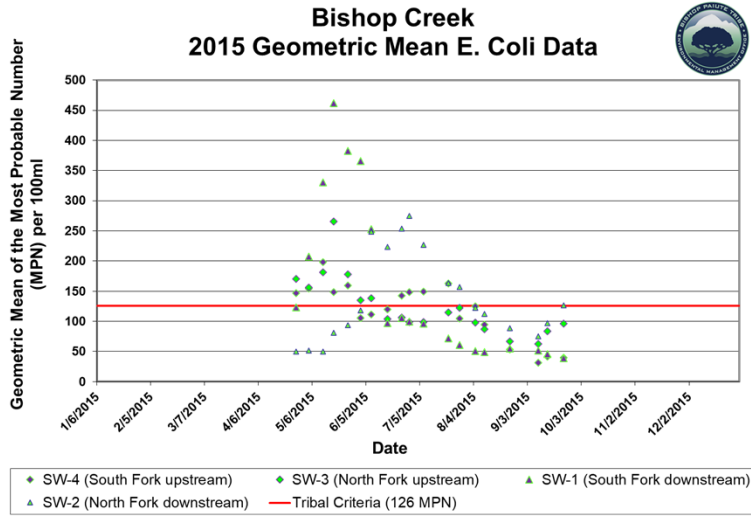
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E. coli data 2014



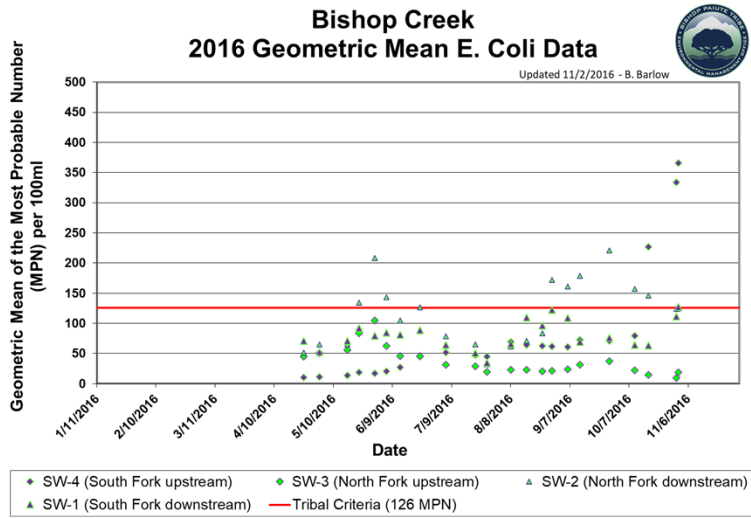
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E. coli data 2015



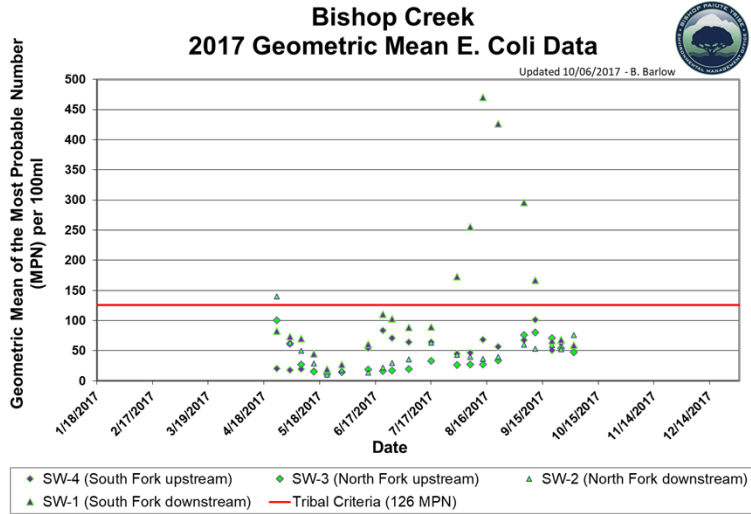
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E. coli data 2016



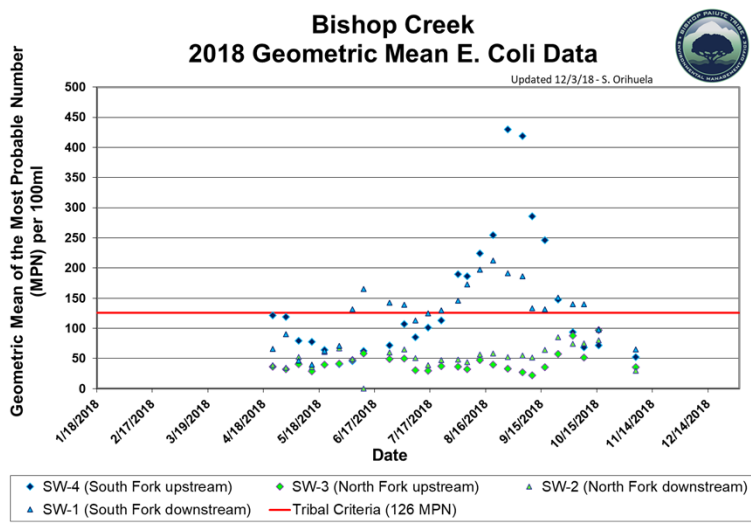
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E. coli data 2017



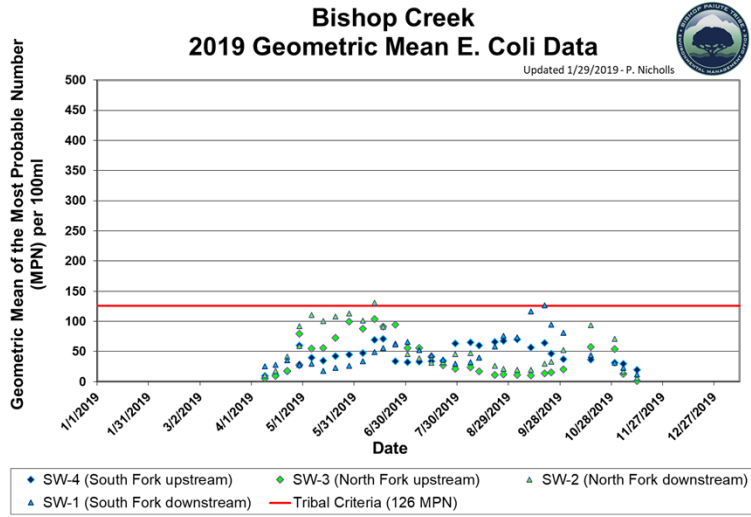
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E. coli data 2018



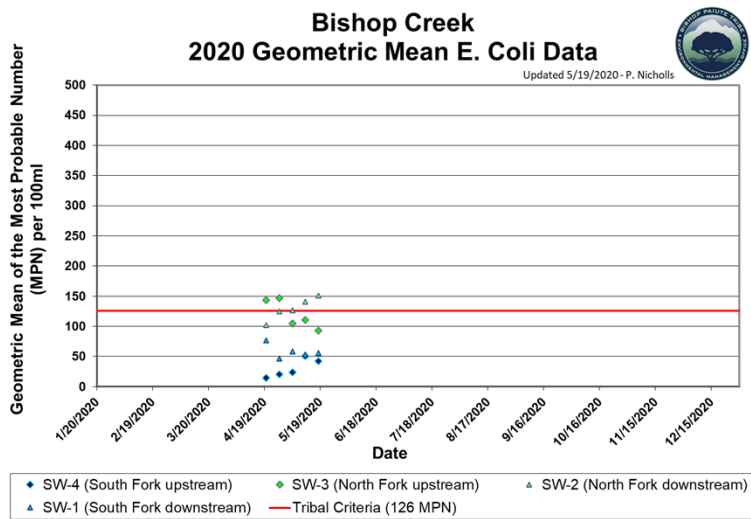
18

E. coli data 2019



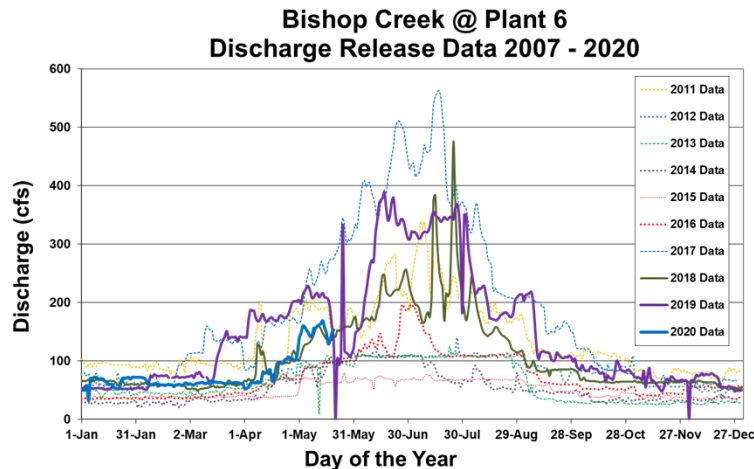
19

E. coli data 2020



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Plant 6 Discharge Data 2011-2020



Discharge (cubic feet per second) recorded at the Southern California Edison Power Plant 6, located upstream of the Bishop Paiute Reservation. Data collected from 2007 through 2020. Source: Bishop Paiute Tribe collected LADWP data from https://ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-losangelesaqueduct/a-w-laa-laaqueduct/conditionreports?_afll_cfi=state=1b76d2k18e_48_afiLoop=20111271871181

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Water Quality Problem Timeline

- **2010:** Tribe alerts Water Board of elevated fecal indicator bacteria (FIB) in Bishop Creek
- **2011-2017:** Water Board deploys extensive diagnostic FIB sampling 2011-2017
- **2014:** Collaborative meetings amongst jurisdictional entities begin.
 - Water Board, Bishop Paiute Tribe, Inyo County, City of Bishop, Los Angeles Dept. of Water and Power
- **2017:** Water Board notifies interested parties that Bishop Creek will likely be 303(d) listed because FIB are impairing beneficial uses (REC-1 & MUN)
- **2017-present:** Water Board and Tribe begin collaborative address water quality problem
- **2019:** Water Board recommends Bishop Creek as addition to 303(d) List (currently pending US EPA approval)

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Bishop Creek Water Quality Objectives (WQOs) for Fecal Indicator Bacteria

- Fecal coliform WQO of the Lahontan Basin Plan applies to all California jurisdictional surface waters in the Lahontan Region
- *E. coli* WQO adopted by the State Water Board in 2018 protects California jurisdictional waters where the Water Contact Recreation (REC-1) beneficial use applies
- Both WQOs apply to Bishop Creek. Each WQO is the subject of a Water Board evaluation and could change in the future.

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Fecal Indicator Bacteria (FIB) Data

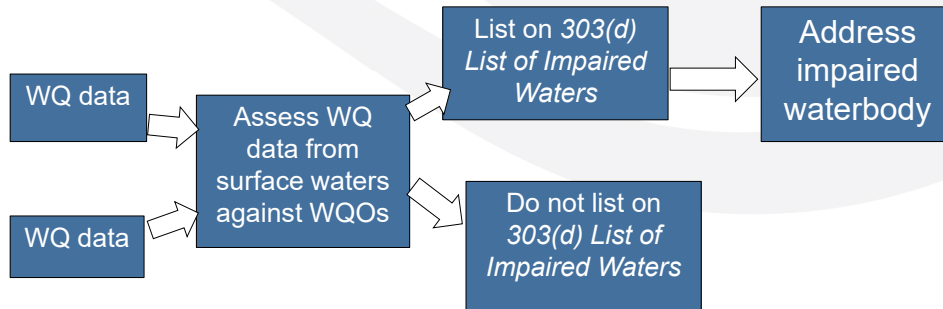
- Bishop Paiute Tribe: 2000-Present
 - Samples for *E. coli* and Total Coliform at various locations throughout the Reservation
- Water Board collected data: 2011-2017
 - 16 stations sampled for fecal coliform & *E. coli*
 - Microbial Source Tracking (MST) dataset 2013-2014
- Los Angeles Dept. of Water and Power (LADWP): 2014-Present
 - 27 stations sampled for *E. coli*
 - MST dataset 2014-2015

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Waterbody Assessment Process



Assessments follow the guidelines contained in the [Water Quality Control Policy for Developing California's Clean Water Act Section 303\(d\) List](#) (Listing Policy)

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303(d) Listings – Indicator Bacteria

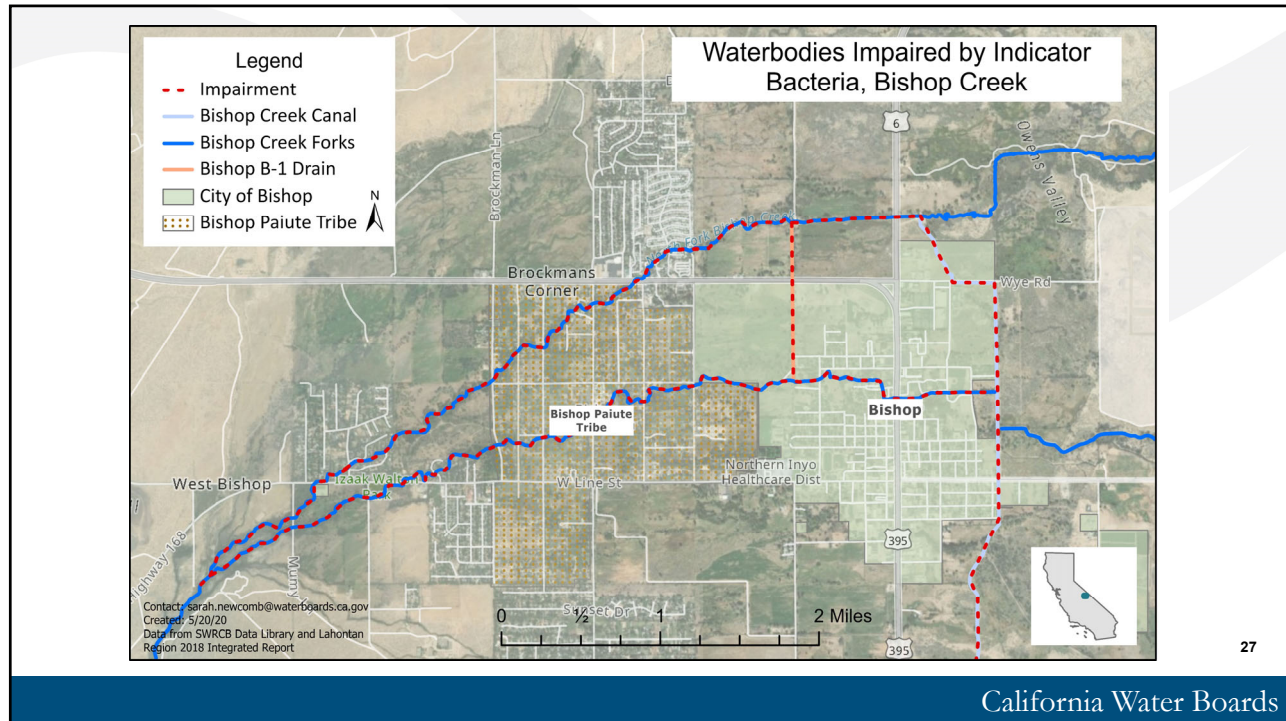
- REC-1 and MUN beneficial uses are not supported in:
 - Bishop Creek Forks (bifurcation of north and south forks to confluence with Bishop Creek Canal)
 - Bishop Creek B-1 Drain – flows South=>North and joins the south fork with the north fork
 - Bishop Creek Canal

...as demonstrated by concentrations of FIB in water samples

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Water quality impairments addressed in several ways:

- Total Maximum Daily Loads (TMDLs): prescriptive approach to dealing with pollutant sources at a load-based level
- Waste Discharge Requirements (WDRs), Waivers of discharge, or other permit tools placed on landowners and dischargers.
- Water Quality Improvement Plans (WQIPs): collaborative approach which relies on voluntary actions to improve water quality

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What is a Vision Project?



“Long-Term Vision for Assessment, Restoration, and Protection”

- Watershed-wide, collaborative planning effort focused on improving water quality through voluntary actions
- Provides flexibility in using available tools beyond TMDLs to improve water quality

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Bishop Creek Vision Project

- Data collected to date indicates several sources of FIB
 - Grazing
 - Human
 - Wildlife
- MST data implies that grazing sources are the largest contributor of fecal bacteria to creek waters
- The Water Board and Tribe are collaborating on a second MST study for Bishop Creek to help focus implementation

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Bishop Creek Vision Project-Two Phases

Phase 1: Meeting the Statewide REC-1 WQO by addressing grazing sources

Phase 2: Meeting the Lahontan Basin Plan WQO by addressing human and other controllable sources of bacteria in the watershed

- Vision Plan scheduled for completion in September 2022

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Better Together

- Sharing data and information
- Coordination to leverage monitoring resources
- Collaborate on effective implementation measures to improve water quality
- Partnerships which inform Basin Planning project to add Tribal Beneficial Uses

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 **Questions?** 

BryAnna Vaughan – Bishop Paiute Tribe
BryAnna.Vaughan@BishopPaiute.org

Ed Hancock – CA Regional Water Quality Control Board
Ed.Hancock@waterboards.ca.gov

Cindy Wise – CA Regional Water Quality Control Board
Cindy.Wise@waterboards.ca.gov

Appendix H: IRWM Presentation (2018)



**Update on
Bishop Creek
Vision Project
for Inyo Mono
IRWM**

- TMDL-alt project to address bacteria impairment in Bishop Creek, Inyo Co.
- Collaborative approach with stakeholders rather than a “traditional” TMDL

Contacts ed.hancock@waterboards.ca.gov
cindy.wise@waterboards.ca.gov

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Overview – update since January 2018 IRWM discussion

- What is a Vision Project?
- How were water quality issues identified in Bishop?
- Vision Project work completed to date
- Stakeholder engagement for data inventory
- Next steps

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What is a Vision Project?

- **2013: USEPA announces a new collaborative framework for implementing the CWA Section 303(d) program called the Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (The Vision).**
- **Watershed-wide planning initiative focused on improving WQ**
- **Provides flexibility in using available tools beyond TMDLs to attain WQ restoration**



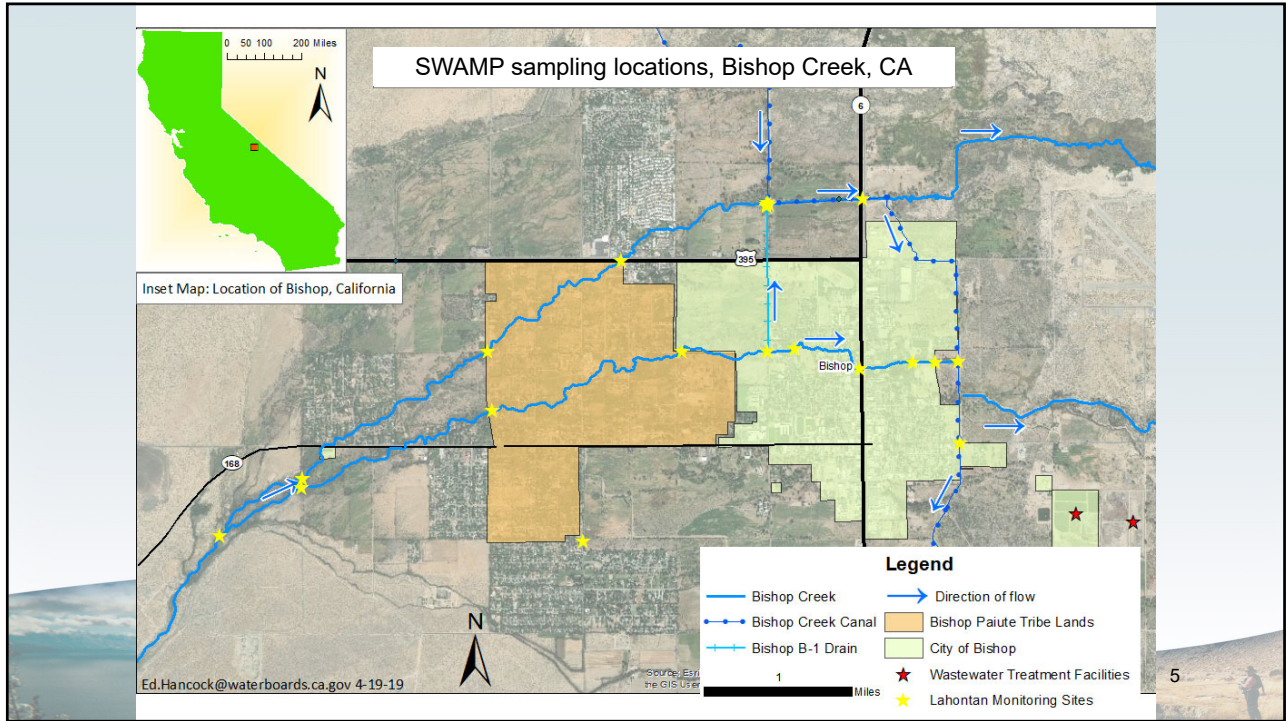
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How were bacteria issues identified in Bishop Creek?

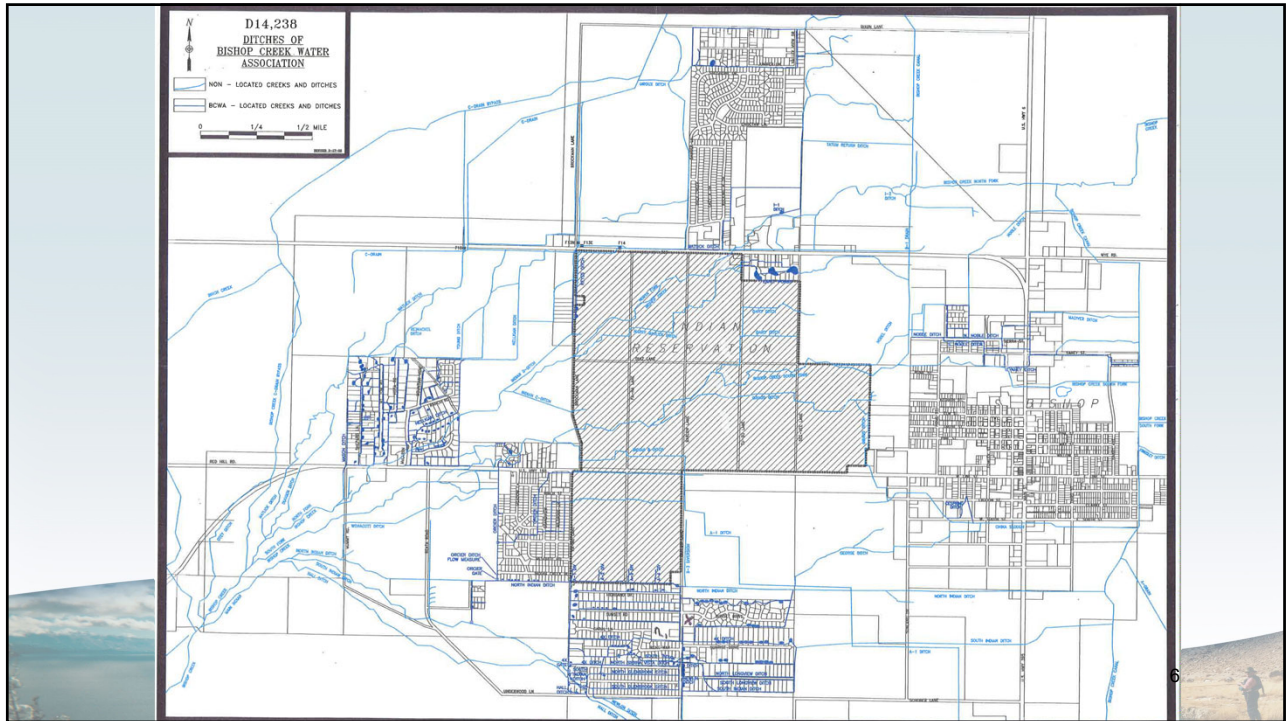
- **2012/2013: SWAMP screening detects unusually high bacteria concentrations**
- **2013-2016: Diagnostic sampling reveals bacteria concentrations in the creek as well above WQOs**
 - Sampling strategy was somewhat “shotgun”; data set is useful for identifying that there is a water quality impairment, but less useful for source analysis due to temporal variation in site visits
- **2014: Contractor working for Lahontan performs MST analysis in Bishop Creek as part of wider-focused Eastern Sierra Bacteria Study**



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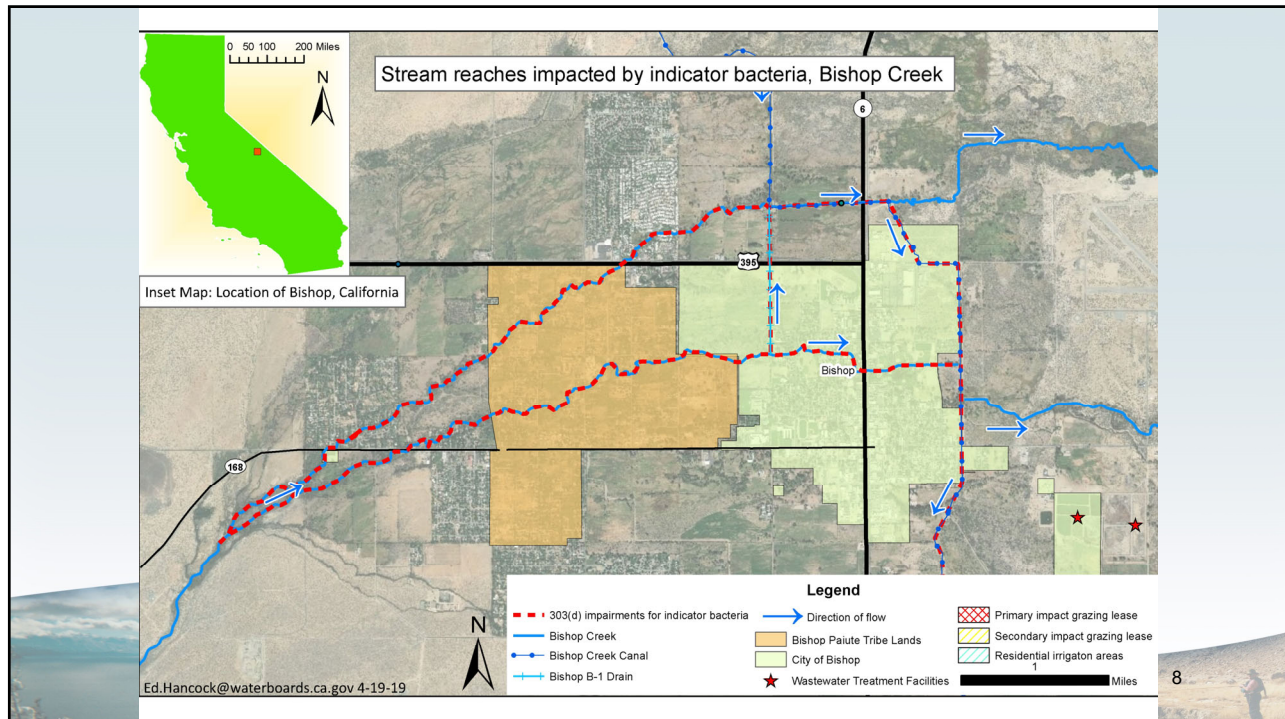


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Vision Project Timeline of Key Events

- **2014:** Inyo County Health Dept. posts warning signs in portions of creek where water contact rec is known to occur
 - 2014-present: Paiute Tribe continues to post warning signs on sections of the creek which flow through tribal lands
- **303(d) listing for Indicator Bacteria due with adoption of pending 2018 Integrated Report** (likely November 2019)
- **2015:** In anticipation of listing, Water Board identifies Bishop Creek as Vision Project candidate
- **2017:** Staff begin work on Vision Project Plan
- **Expected:** 2022 Vision Project Plan complete

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Potential sources of bacteria

- Grazing related sources from numerous grazing leases
- Urban and suburban runoff (pet wastes, ornamental residential creek diversions, urban NPS)
- Wastewater exfiltration (sewer laterals, WWTP collection infrastructure)
- Natural sources

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Vision Project Work Completed to Date

- Planning and Outreach Documents (Project Charter, Problem Statement, Fact Sheet, Draft Outreach Plan)
- Initial stakeholder outreach: Paiute Tribe, LADWP, City of Bishop, Inyo County, Eastern Sierra Land Trust, Eastern Sierra CSD
- Website and listserve
https://www.waterboards.ca.gov/lahontan/water_issues/programs/tmdl/bishopcreek.html
- Sanitary Sewer Audit (April 2018) led by staff from Lahontan South Office (Victorville)
- Data analysis identified four (4) grazing leases west of the City of Bishop which are probable major contributors to bacteria in the creek

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Two Key Stakeholders Contributing to Vision Project Data Inventory

- Bishop Paiute Tribe
 - Collecting *E. coli* data for ~20 years above and below tribal lands (4 locations, 2 on each fork of creek)
 - Data not submitted to CEDEN. No IR assessments possible prior to 2018 cycle. Bacteria issue identified sooner if Lahontan had worked with Tribe to submit data to CEDEN/Water Board?
 - Tribe has now shared data set with the Water Board
 - Tribe dataset is useful, but sampling does not have spatial resolution to help detailed source analysis

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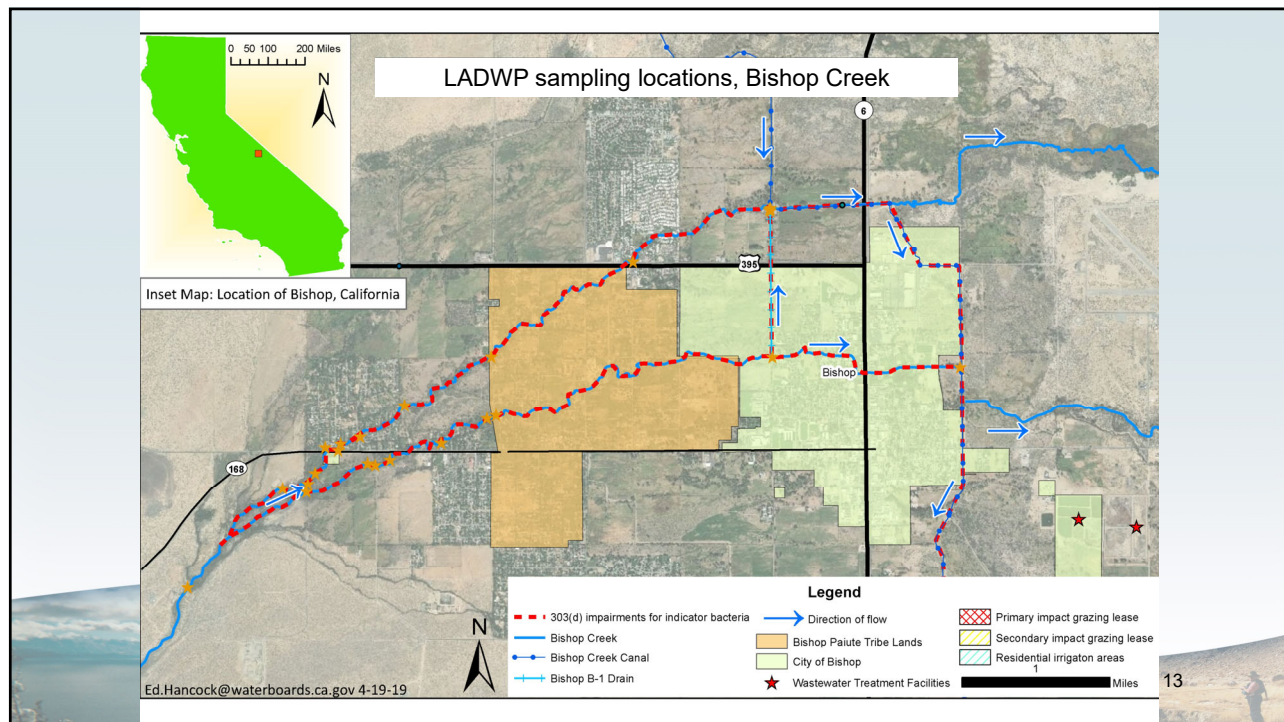
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Two Key Stakeholders Contributing to Vision Project Data Inventory

- Los Angeles Dept. of Water and Power (LADWP)
 - Major land owner in Owens Valley
 - **Responsible**
 - Collecting *E. coli* and MST data since 2014 (after they are alerted about potential WQ issue in surface waters adjacent to their grazing lands)
 - Weekly collections (*E. coli*) from 25 sites = >5200 data points, unrivaled temporal and spatial dataset
 - Working with us since April 2019 to enter data into CEDEN, or provide full data set to the Water Board
 - **for leasing the majority of grazing leases in the lowlands areas of Owens Valley**

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Next Steps for Vision Project

- Detailed source analysis using Lahontan, LADWP, Tribe data, available MST data
- Stakeholder outreach and education
 - Connect ranchers with NRCS
 - Healthy watershed education program in collaboration with Paiute Tribe
- Water Board is preparing a waste discharge permit (WDR) for LADWP grazing lands (planned adoption by November 2019)
 - Vision staff expect that WDR will go a long way to attain WQOs in Bishop Creek
 - WDR will be a major implementation tool for Vision Project
- Complete Vision Project Plan document

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If Other Stakeholders have Bishop Creek Data for Us to Consider, Data Sharing Resources Are Available

- Regional Monitoring Coordinator can provide training and information to stakeholders who collect water quality data and are willing/desire to upload that data to CEDEN
- Vision Project staff can connect stakeholders with the regional data center (RDC) or to the Regional Monitoring Coordinator to assist in data upload



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Questions?

Ed.Hancock@waterboards.ca.gov
Cindy.Wise@waterboards.ca.gov

https://www.waterboards.ca.gov/lahtontan/water_issues/programs/tmdl/bishopcreek.html



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