2019 Water Plan Update

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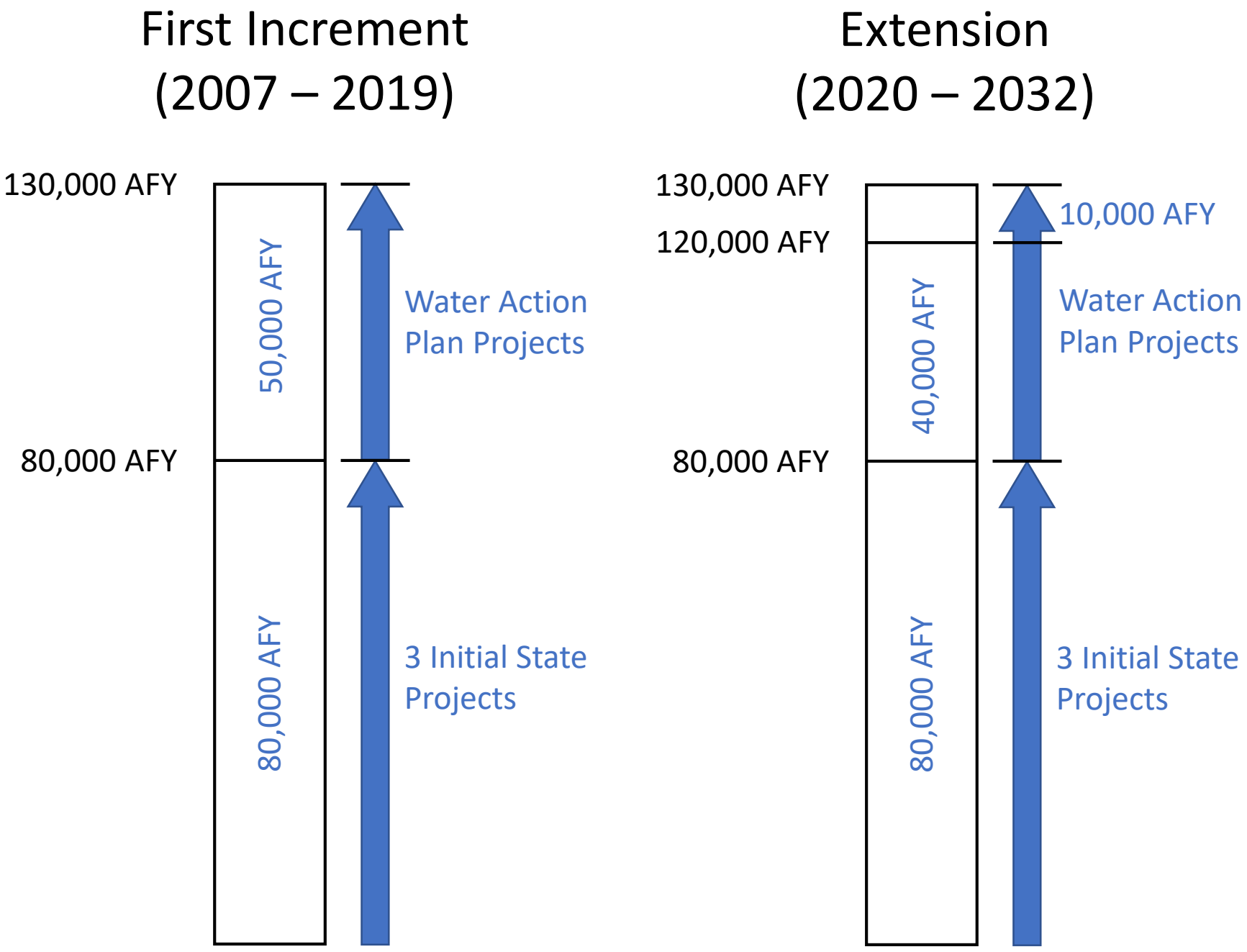
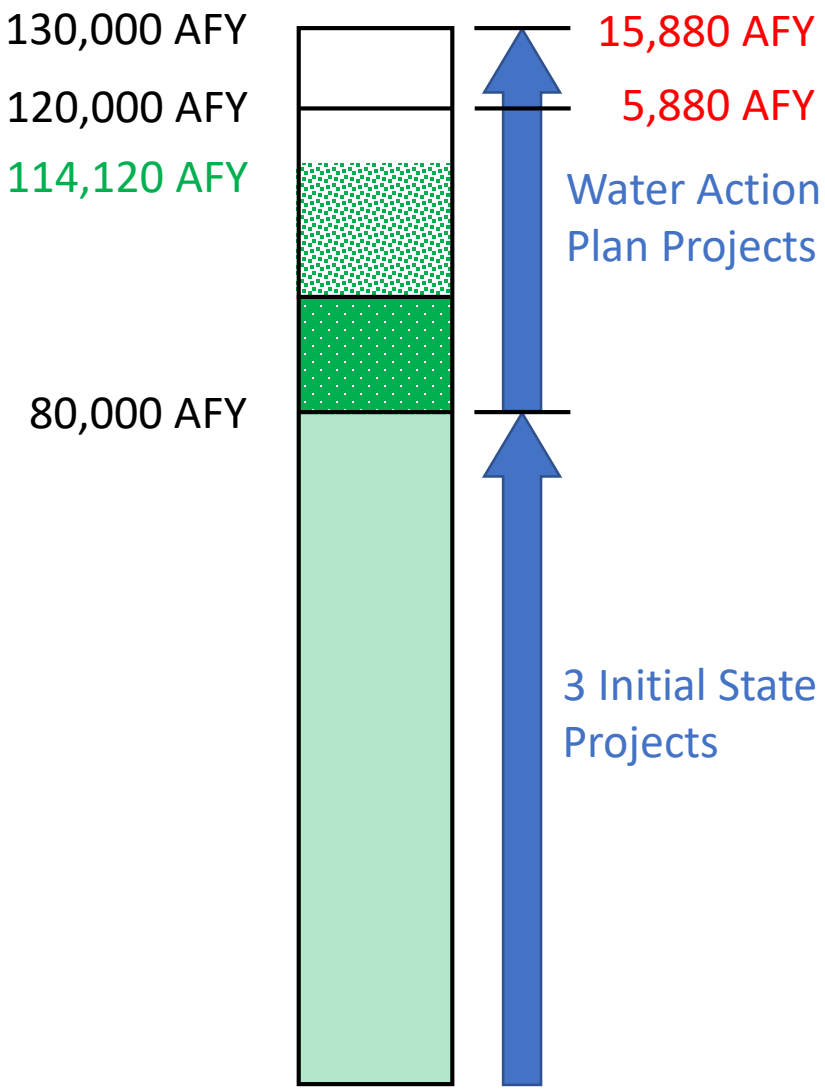

First Increment
(2007 – 2019)
130,000 AFY
80,000 AFY
50,000 AFY
80,000 AFY
Water Action
Plan Projects
3 Initial State
Projects
Extension
(2020 – 2032)
130,000 AFY
120,000 AFY
80,000 AFY
10,000 AFY
40,000 AFY
80,000 AFY
Water Action
Plan Projects
3 Initial State
Projects

Overview of Current Water Portfolio



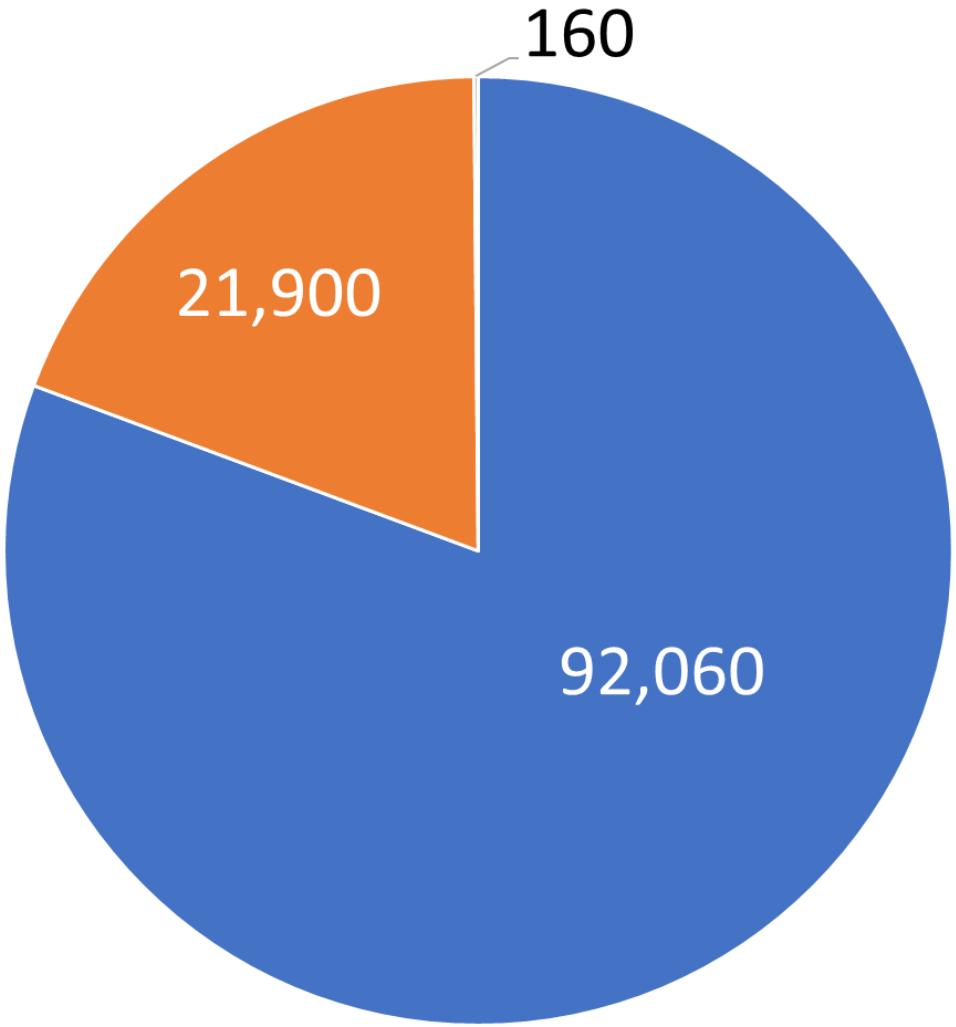
Project	Score [AFY]
3 Initial State Projects	80,000
6 Active WAP Projects (Accepted)	14,170
5 Active WAP Projects (Estimated)	19,950
TOTAL =	**114,120**

Current Water Portfolio
Controllable vs Uncontrollable

Storage - Controllable

Retiming - Uncontrollable

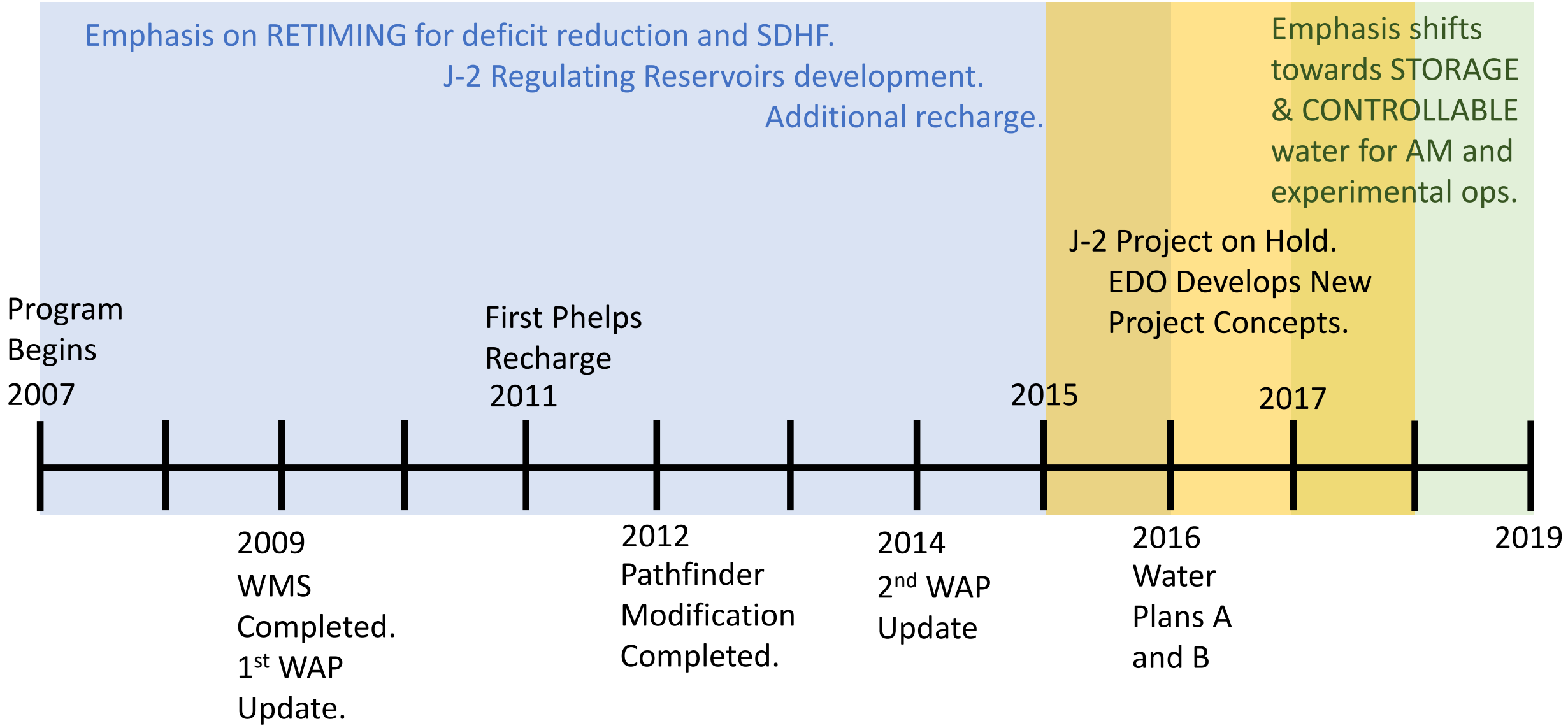
Retiming - Controllable



Operational Variability

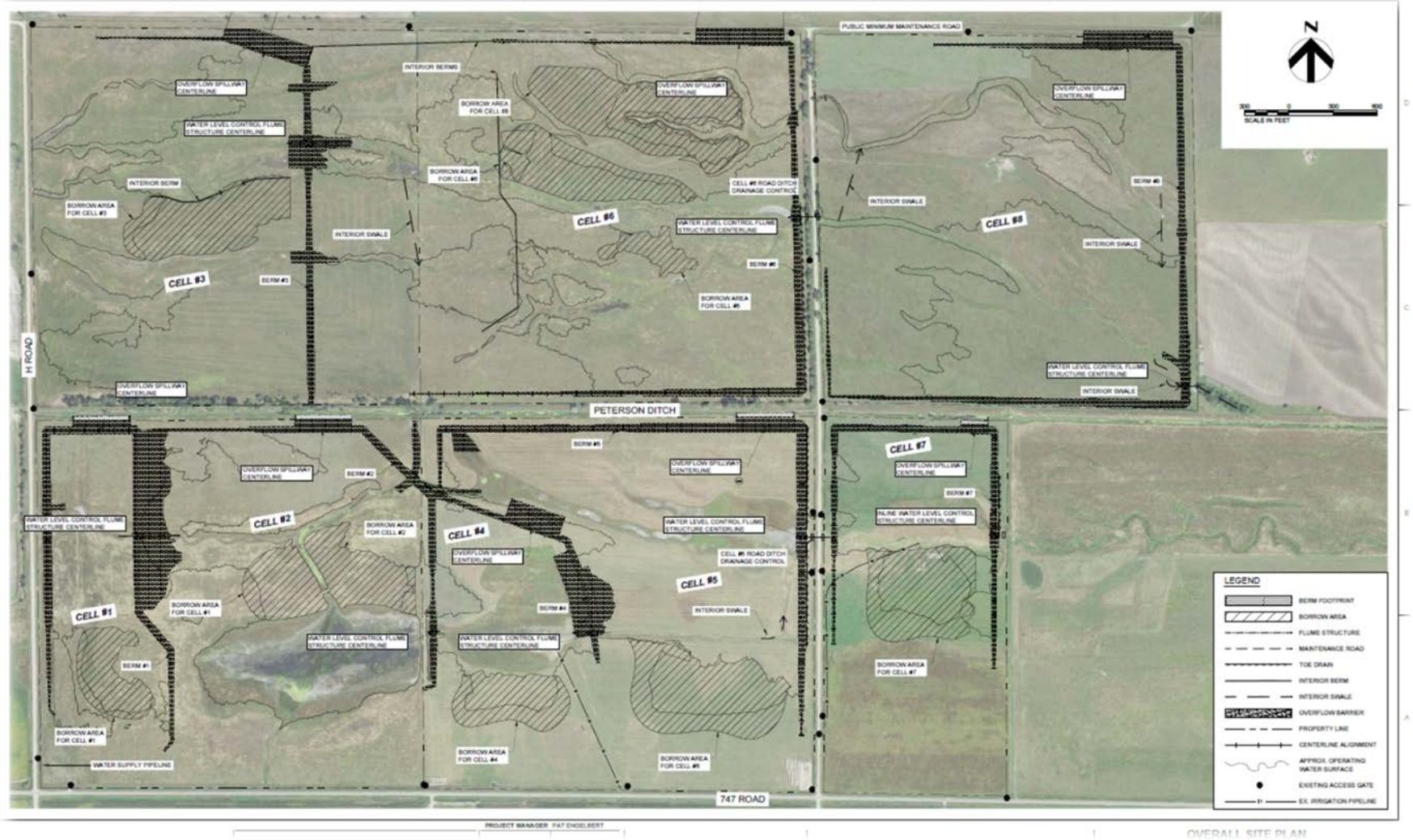
Normal and Wet Years	Dry Years
• Entire First Increment • Reliable storage supplies • Reliable excess flows for retiming • Banked large volume through recharge	• Expect during Extension • Storage and controllable supplies much more reliable for operations • Excess flows for retiming reduced significantly

Evolving WAP Priorities



Design and Implementation: Current WAP Projects

Design and Implementation: CWR Broad-Scale Recharge Facility



Design and Implementation:
CWR Broad-Scale Recharge Facility

Design and Implementation: Lessons Learned

- Expensive and time-consuming
- Storage and other facilities exist
- Program time best spent where, where and how much water to use given several controllable buckets/projects
- If designing and building: pursue simple and cheap, controllable projects

Future WAP Projects – Path to 120,000 AFY

Project	Score [AFY]
Recharge Recapture Project(s)	8,000
North Platte Irrigator Lease(s)	2,500
Lakeside Gravel Pit	2,800
CNPPID Storage Lease	6,600
TOTAL =	**19,900**

- Need about 6,000 AF to reach 120,000 AF.
- All options under review are CONTROLLABLE water supplies.
- Recapture takes advantage of water already purchased and intentionally recharged.
- Implementation to begin as early as 2020.

Take Away Messages

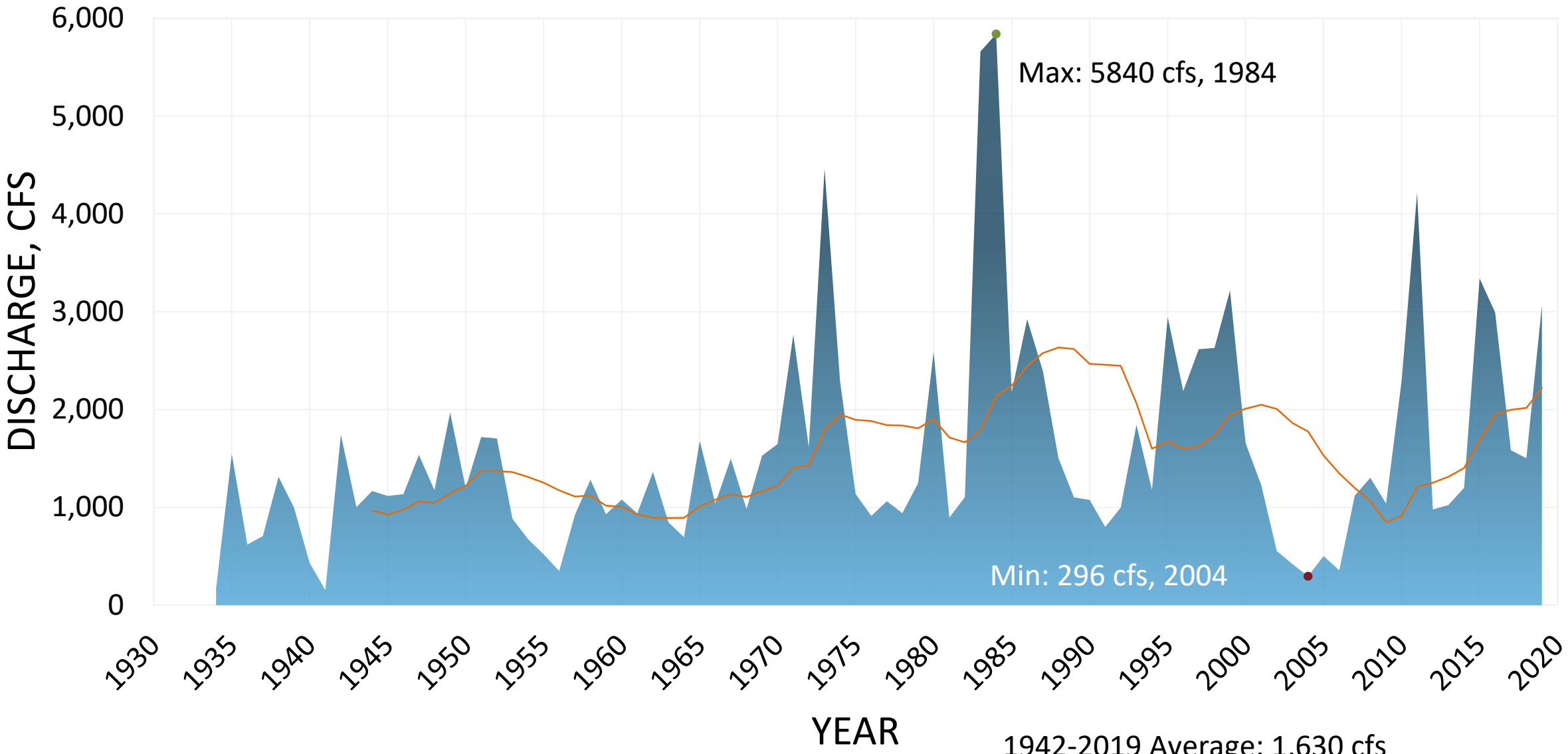
- Closing in on achieving water goals.
- Transitioning to a more operational and experimental phase.
- Prioritizing controllable water (storage and recapture) for remaining WAP projects.
- Focus of future operations and experiments will be on coordinated use of stored water in Lake McConaughy EA and recharge water controlled by recapture wells.
- Recharge accretions will continue to provide continuous baseflow contributions and some shortage reductions through the Extension and beyond.

PLATTE RIVER
RECOVERY IMPLEMENTATION PROGRAM

2018-2019 Flow Summary

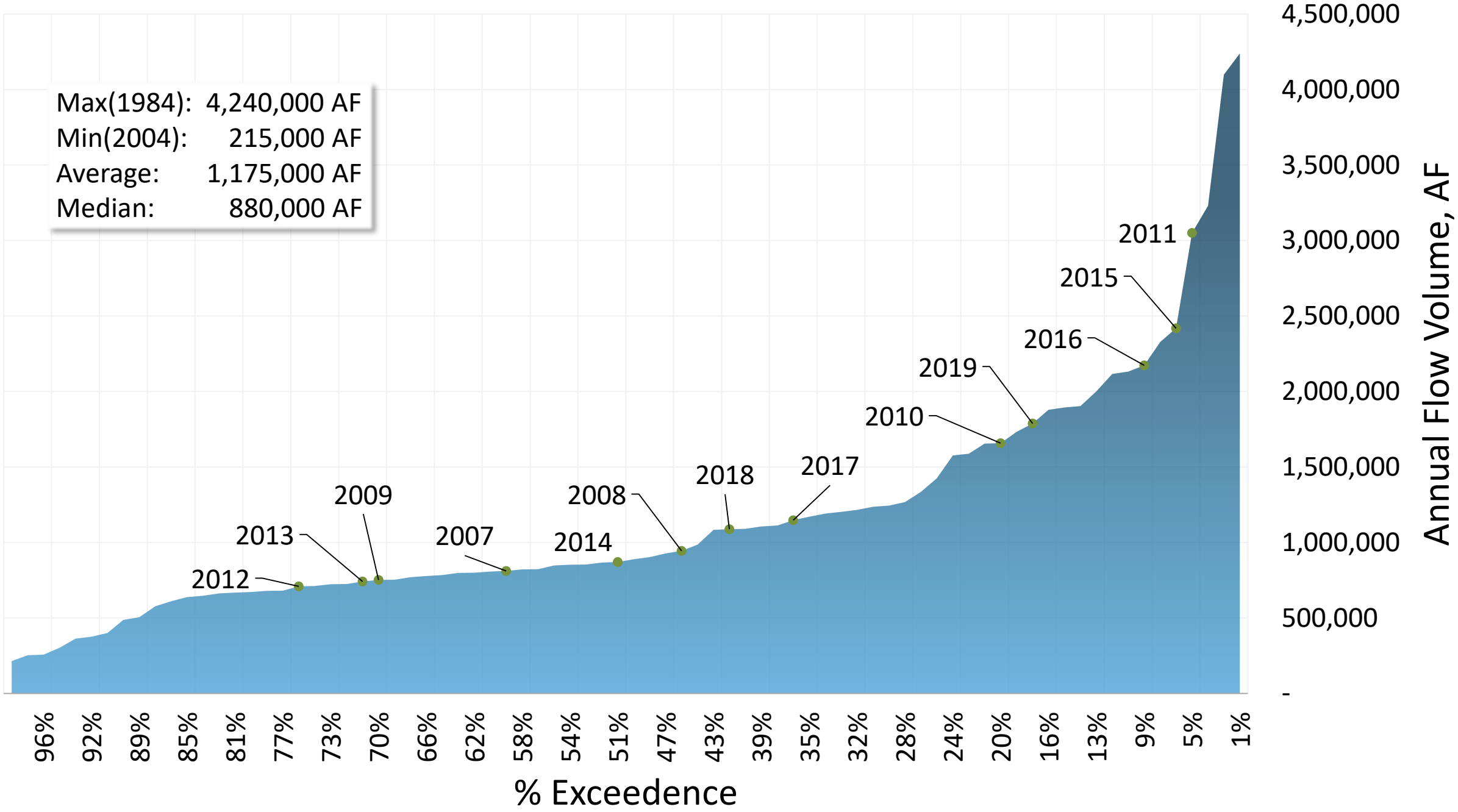
Scott Griebling
Sr. Water Resources Engineer

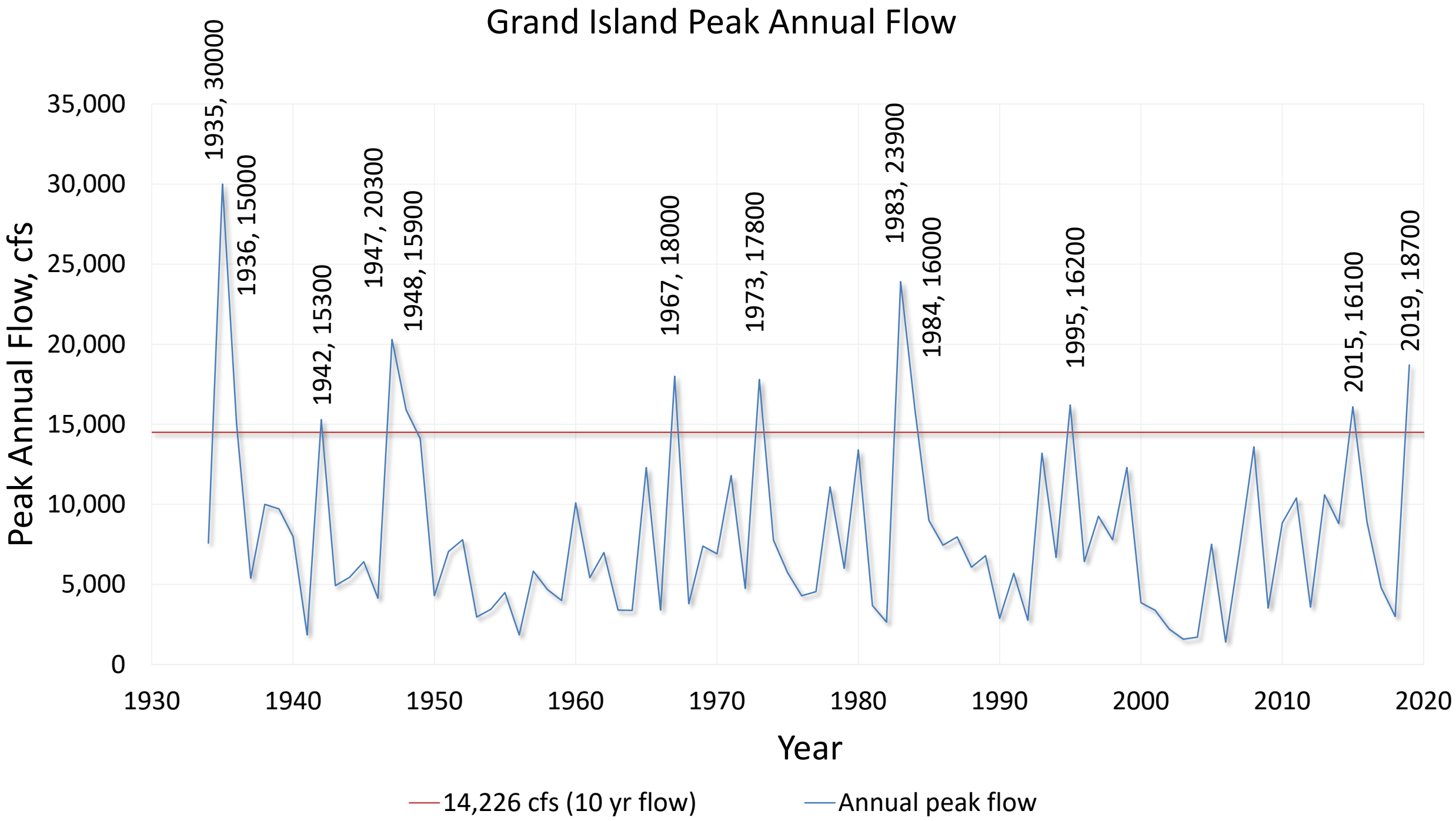
Grand Island Annual Average Daily Flow

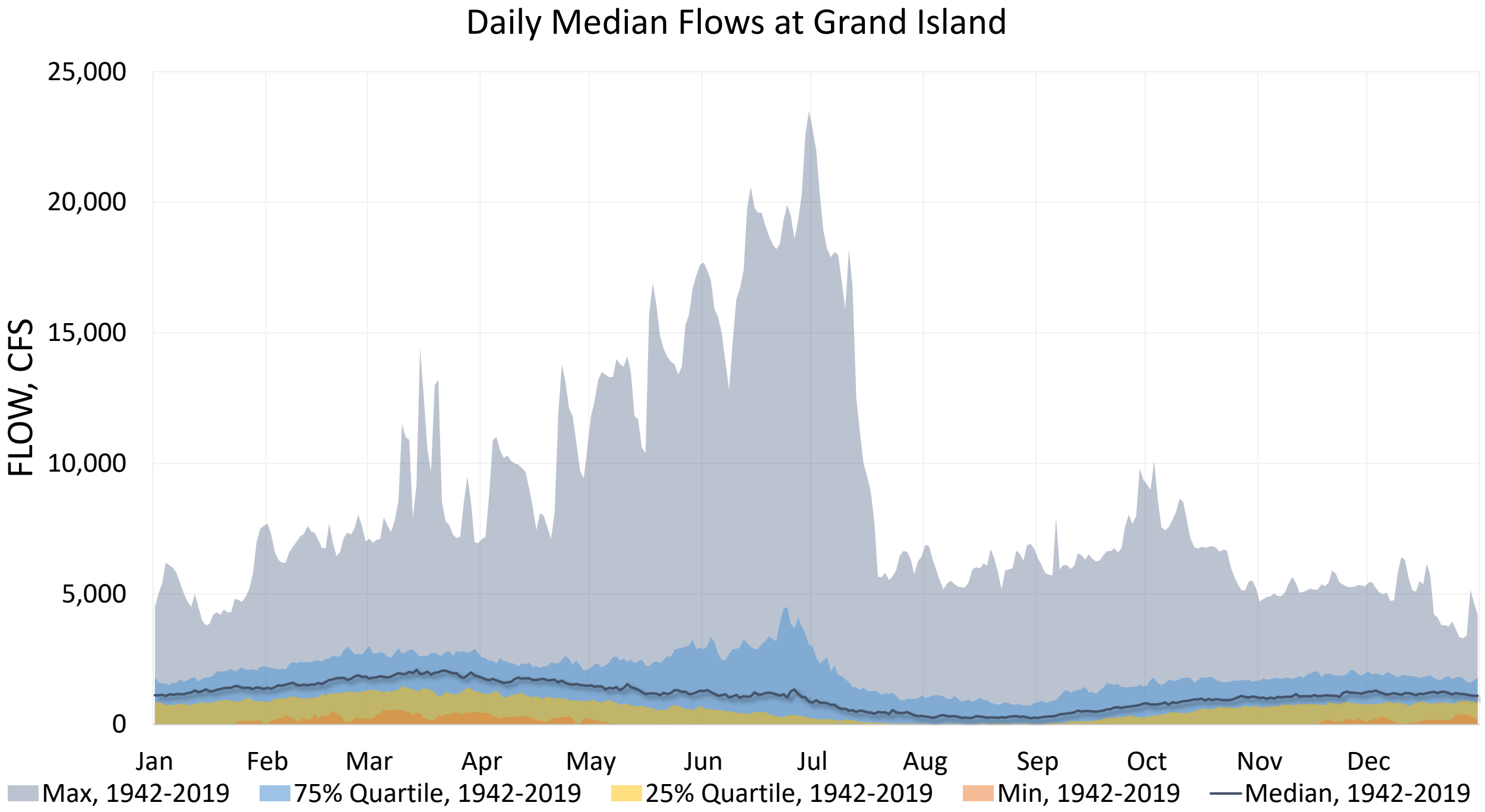


1942-2019 Average: 1,630 cfs
1942-2019 Median: 1,215 cfs

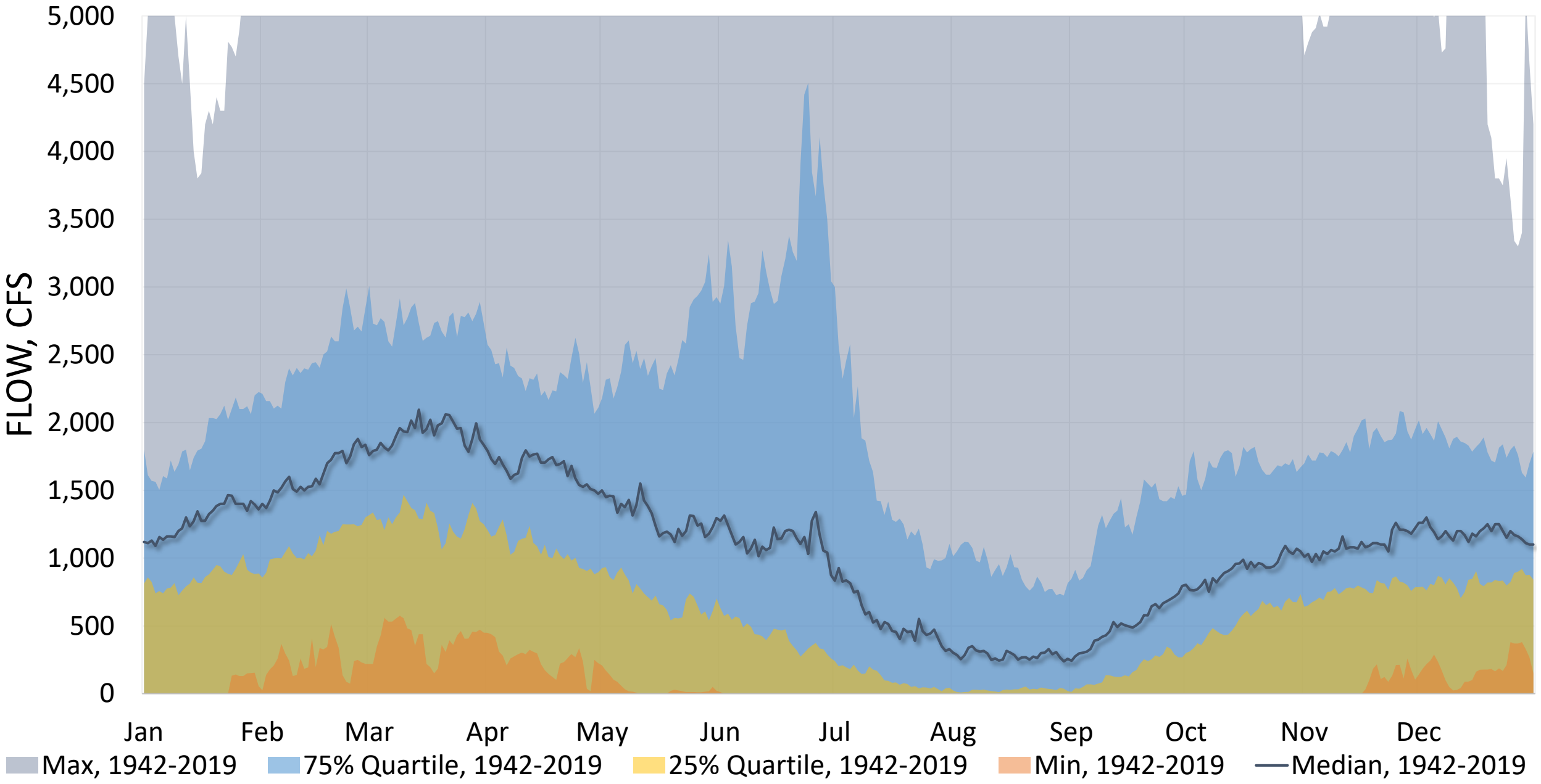
Grand Island Annual Flow Volume

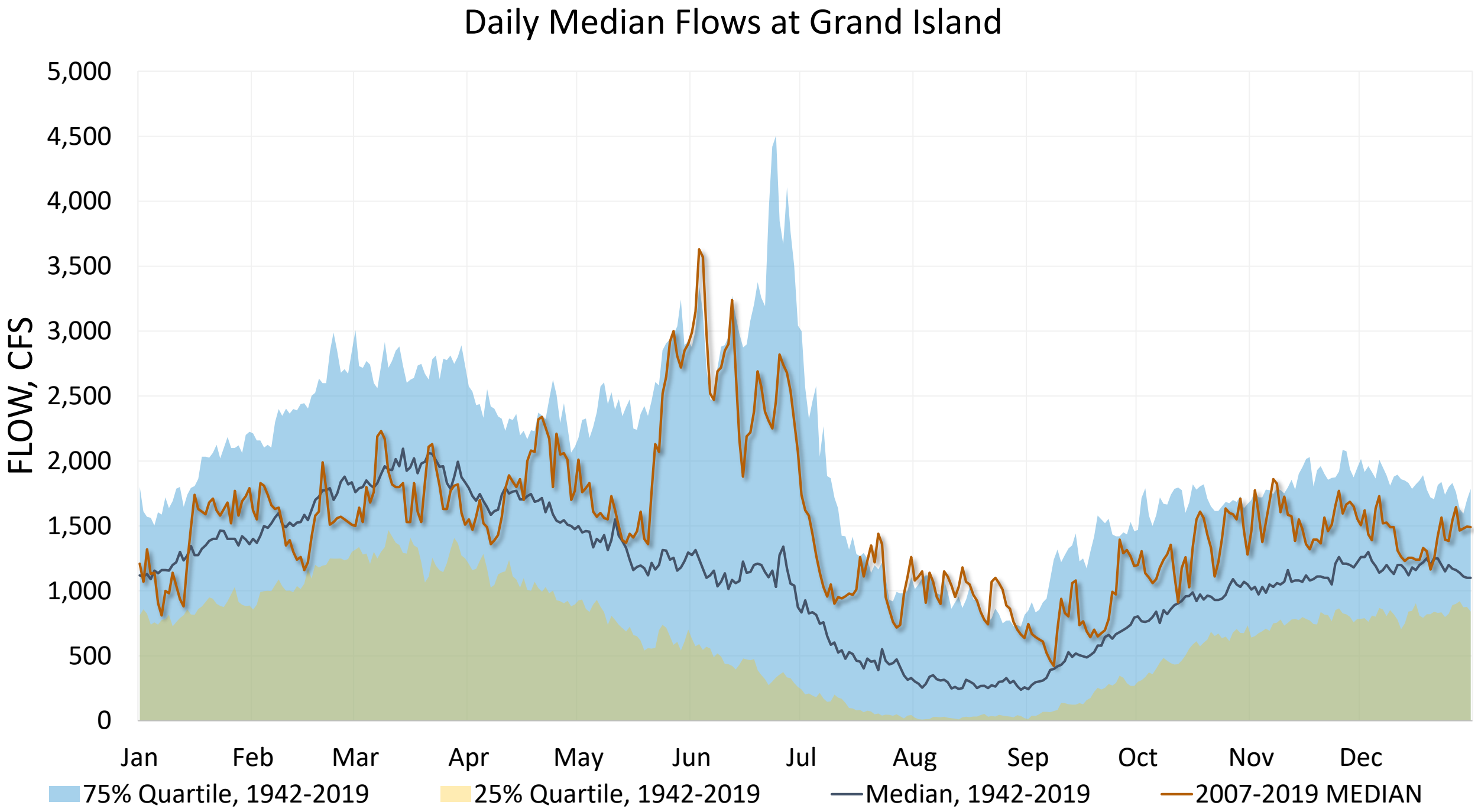


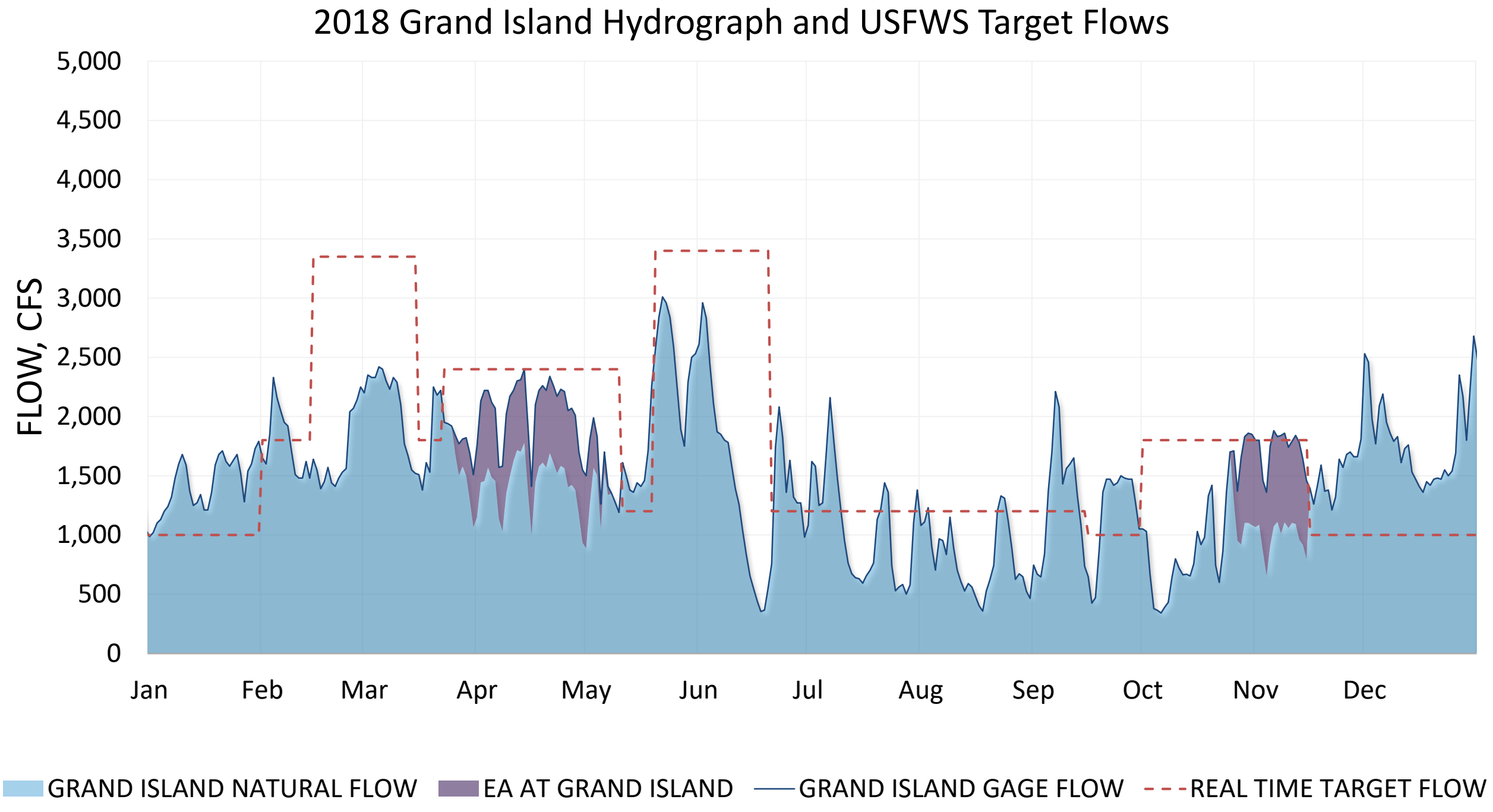

Grand Island Peak Annual Flow
Peak Annual Flow, cfs
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Year
1935, 30000
1936, 15000
1942, 15300
1947, 20300
1948, 15900
1967, 18000
1973, 17800
1983, 23900
1984, 16000
1995, 16200
2015, 16100
2019, 18700
14,226 cfs (10 yr flow)
Annual peak flow


Daily Median Flows at Grand Island
FLOW, CFS
25,000
20,000
15,000
10,000
5,000
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Max, 1942-2019
75% Quartile, 1942-2019
25% Quartile, 1942-2019
Min, 1942-2019
Median, 1942-2019

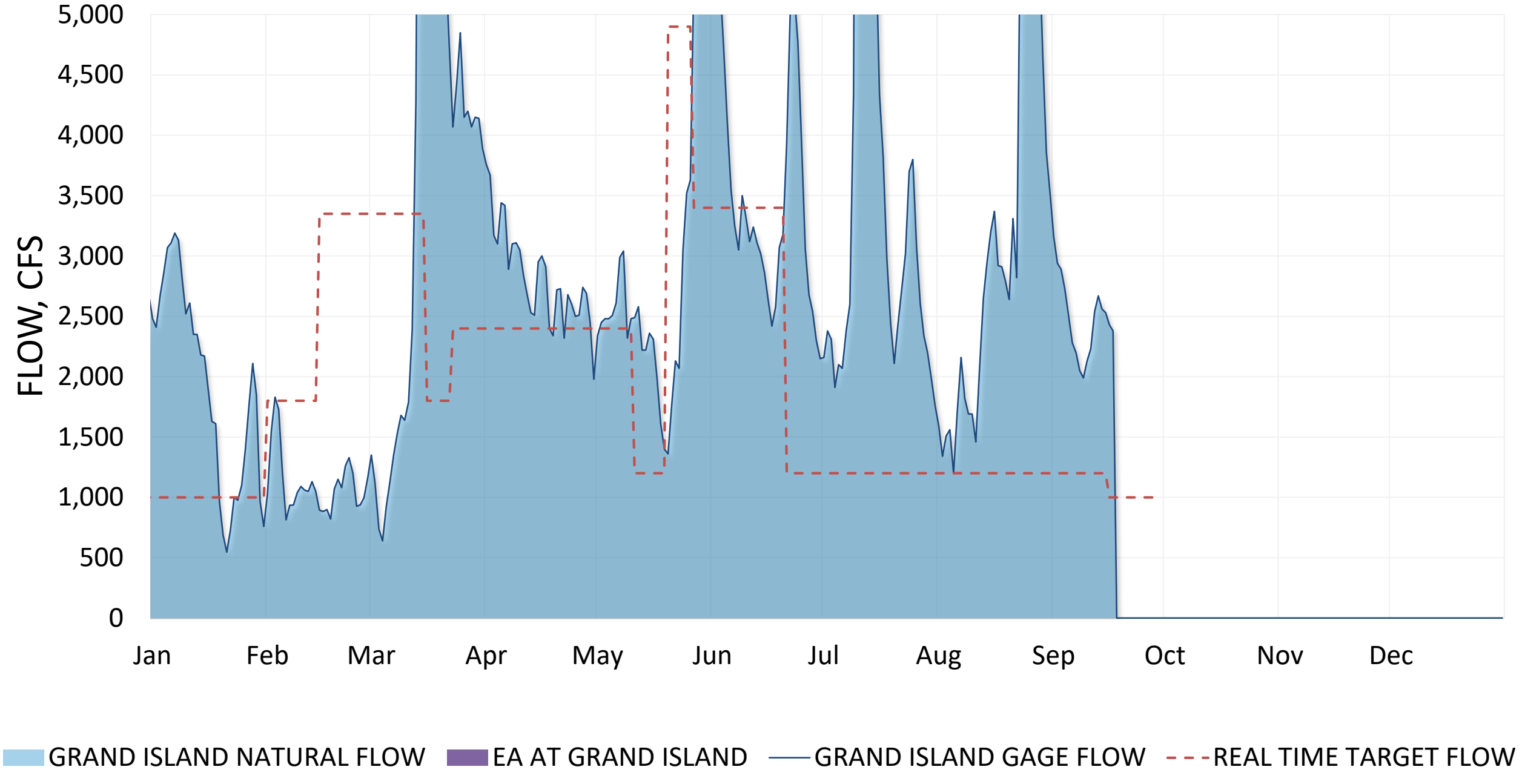
Daily Median Flows at Grand Island



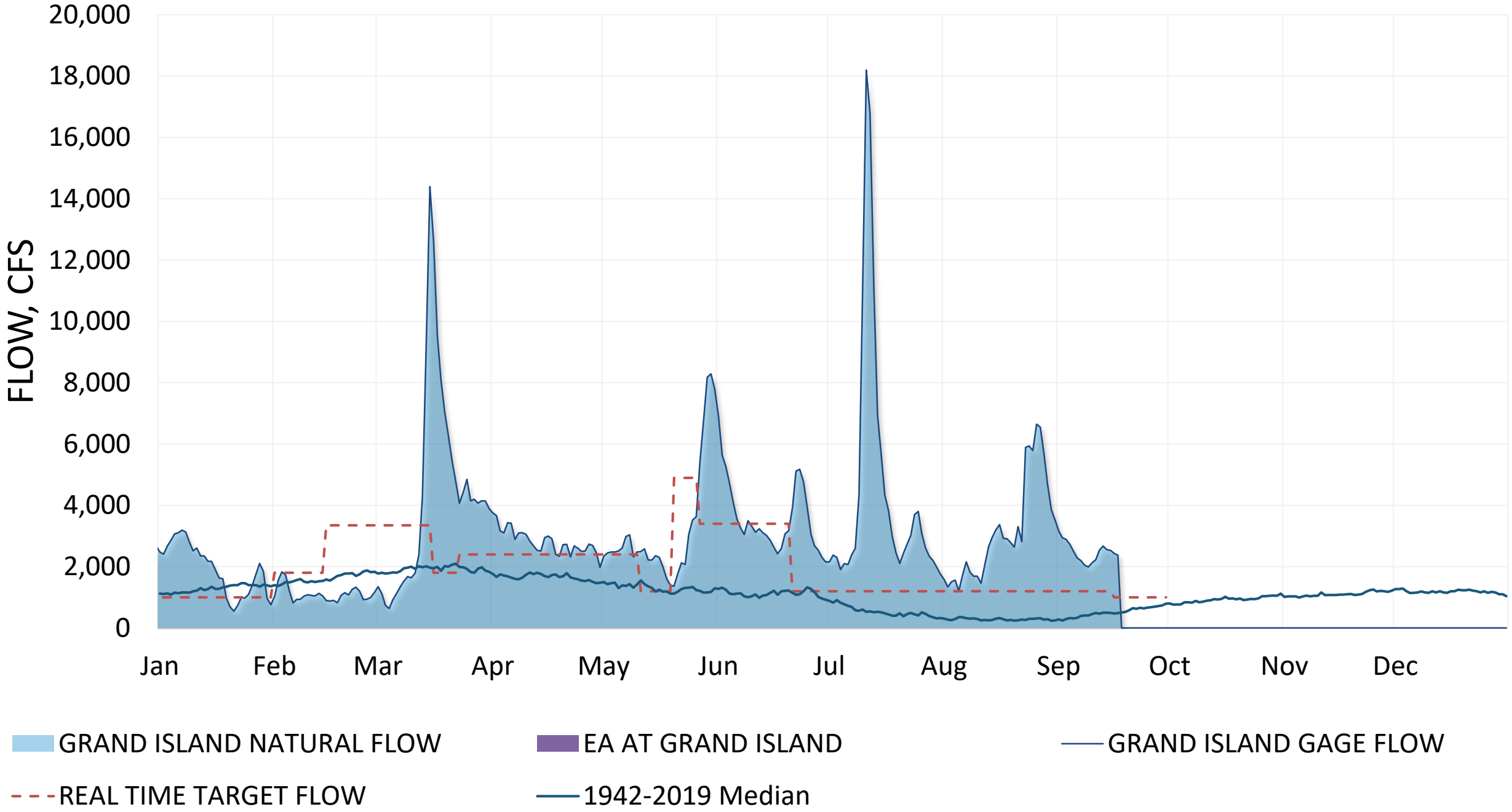

Daily Median Flows at Grand Island
FLOW, CFS
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
75% Quartile, 1942-2019
25% Quartile, 1942-2019
Median, 1942-2019
2007-2019 MEDIAN

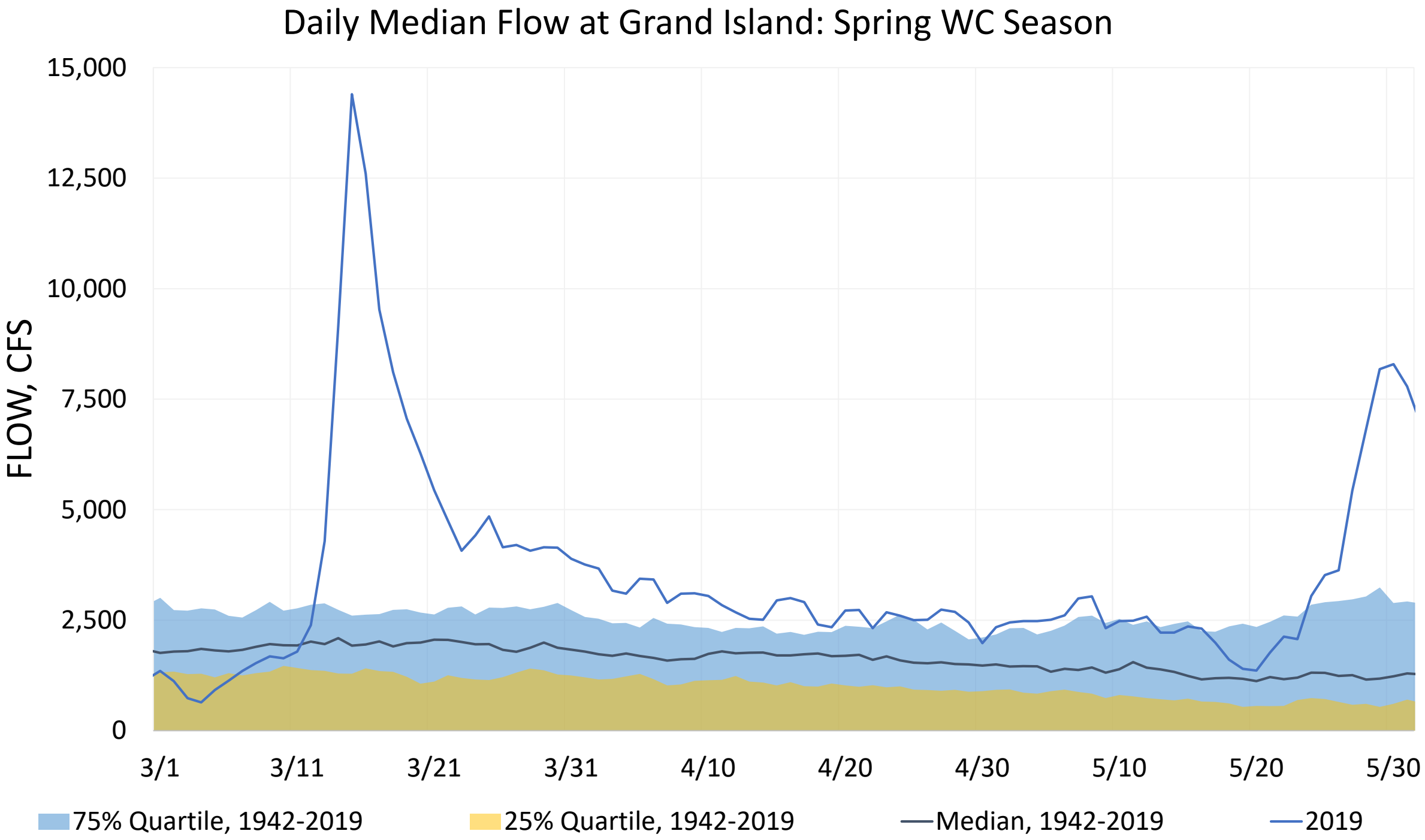

2018 Grand Island Hydrograph and USFWS Target Flows
FLOW, CFS
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
GRAND ISLAND NATURAL FLOW
EA AT GRAND ISLAND
GRAND ISLAND GAGE FLOW
REAL TIME TARGET FLOW

2019 Grand Island Hydrograph and USFWS Target Flows



2019 Grand Island Hydrograph and USFWS Target Flows




Daily Median Flow at Grand Island: Spring WC Season
FLOW, CFS
15,000
12,500
10,000
7,500
5,000
2,500
0
3/1
3/11
3/21
3/31
4/10
4/20
4/30
5/10
5/20
5/30
75% Quartile, 1942-2019
25% Quartile, 1942-2019
Median, 1942-2019
2019