

From: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>
Sent: Wednesday, May 8, 2019 3:52 PM
To: Brittany Cunningham - NOAA Affiliate
Subject: Re: ROCON: American River Division Effects
Attachments: ROConLTO_NOD_CVP_Deliveries_for_NOAA.xlsx

Hey Brittany,

I don't think there's much going on in the American River. You can dig around in the attached excel file from Derek Hiltz but there isn't much there aside from slightly higher deliveries being made in BN WYTs under the PA compared to the COS. Although small this point is supported by the Folsom storage modeling (below).

Table 5-3. Folsom Lake Storage, End of Month Storage

| Current Operations 011319 | | | | | | | | | | | | |
|---------------------------------------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Statistics | End of Month Storage (TAF) | | | | | | | | | | | |
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
| Probability of Exceedance | | | | | | | | | | | | |
| 10% | 552 | 542 | 557 | 557 | 557 | 559 | 752 | 967 | 967 | 913 | 792 | 681 |
| 20% | 534 | 489 | 557 | 554 | 556 | 556 | 752 | 967 | 967 | 849 | 755 | 618 |
| 30% | 492 | 457 | 521 | 557 | 558 | 652 | 752 | 967 | 955 | 755 | 683 | 570 |
| 40% | 452 | 425 | 484 | 525 | 553 | 645 | 752 | 967 | 910 | 663 | 574 | 516 |
| 50% | 403 | 413 | 447 | 482 | 530 | 632 | 752 | 960 | 842 | 599 | 532 | 474 |
| 60% | 358 | 392 | 414 | 436 | 491 | 621 | 787 | 852 | 767 | 522 | 460 | 408 |
| 70% | 327 | 347 | 382 | 412 | 457 | 599 | 731 | 751 | 667 | 450 | 399 | 380 |
| 80% | 282 | 304 | 345 | 369 | 408 | 524 | 598 | 613 | 533 | 412 | 350 | 303 |
| 90% | 256 | 240 | 257 | 294 | 358 | 409 | 488 | 481 | 433 | 350 | 305 | 262 |
| Long Term | | | | | | | | | | | | |
| Full Simulation Period ^a | 411 | 396 | 437 | 457 | 496 | 596 | 709 | 816 | 763 | 606 | 531 | 455 |
| Water Year Types^{b,c} | | | | | | | | | | | | |
| Wet (32%) | 500 | 439 | 477 | 517 | 515 | 632 | 784 | 950 | 935 | 795 | 698 | 583 |
| Above Normal (18%) | 416 | 412 | 455 | 506 | 527 | 640 | 786 | 944 | 873 | 607 | 540 | 475 |
| Below Normal (12%) | 420 | 411 | 447 | 484 | 531 | 617 | 754 | 834 | 771 | 549 | 483 | 451 |
| Dry (24%) | 389 | 407 | 433 | 419 | 475 | 568 | 682 | 751 | 665 | 531 | 452 | 429 |
| Critical (18%) | 242 | 250 | 331 | 314 | 358 | 430 | 493 | 477 | 428 | 374 | 318 | 271 |

| Proposed Action 011519 | | | | | | | | | | | | |
|---------------------------------------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Statistics | End of Month Storage (TAF) | | | | | | | | | | | |
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
| Probability of Exceedance | | | | | | | | | | | | |
| 10% | 697 | 557 | 557 | 557 | 557 | 659 | 752 | 967 | 967 | 915 | 792 | 745 |
| 20% | 635 | 555 | 557 | 557 | 557 | 656 | 752 | 967 | 967 | 851 | 747 | 670 |
| 30% | 573 | 538 | 557 | 556 | 554 | 652 | 752 | 967 | 952 | 773 | 692 | 633 |
| 40% | 495 | 521 | 541 | 558 | 558 | 642 | 752 | 967 | 883 | 669 | 587 | 531 |
| 50% | 417 | 461 | 508 | 543 | 553 | 631 | 752 | 959 | 825 | 597 | 524 | 472 |
| 60% | 390 | 423 | 470 | 502 | 528 | 621 | 788 | 880 | 786 | 551 | 488 | 437 |
| 70% | 359 | 382 | 423 | 453 | 477 | 606 | 729 | 751 | 657 | 515 | 452 | 398 |
| 80% | 341 | 353 | 385 | 417 | 448 | 556 | 653 | 649 | 577 | 435 | 373 | 349 |
| 90% | 292 | 283 | 305 | 348 | 394 | 497 | 534 | 547 | 453 | 371 | 304 | 259 |
| Long Term | | | | | | | | | | | | |
| Full Simulation Period ^a | 459 | 444 | 472 | 488 | 503 | 594 | 716 | 824 | 765 | 623 | 544 | 455 |
| Water Year Types^{b,c} | | | | | | | | | | | | |
| Wet (32%) | 612 | 533 | 527 | 523 | 515 | 632 | 786 | 954 | 930 | 809 | 712 | 653 |
| Above Normal (18%) | 451 | 449 | 497 | 538 | 539 | 640 | 789 | 949 | 867 | 639 | 558 | 505 |
| Below Normal (12%) | 397 | 425 | 447 | 544 | 548 | 623 | 756 | 828 | 754 | 547 | 461 | 415 |
| Dry (24%) | 418 | 445 | 463 | 442 | 498 | 591 | 697 | 769 | 680 | 552 | 489 | 442 |
| Critical (18%) | 261 | 282 | 373 | 383 | 405 | 480 | 484 | 496 | 447 | 382 | 331 | 283 |

| Proposed Action 011519 minus Current Operations 011319 | | | | | | | | | | | | |
|--|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Statistics | End of Month Storage (TAF) | | | | | | | | | | | |
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
| Probability of Exceedance | | | | | | | | | | | | |
| 10% | 105 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 64 |
| 20% | 101 | 76 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 2 | -8 | 52 |
| 30% | 81 | 81 | 46 | 9 | 6 | 0 | 0 | 0 | -3 | 18 | 9 | 63 |
| 40% | 43 | 96 | 57 | 33 | 5 | -4 | 0 | 0 | -29 | 6 | 13 | 15 |
| 50% | 14 | 47 | 50 | 52 | 23 | -2 | 0 | 0 | -17 | -2 | -7 | -2 |
| 60% | 32 | 32 | 55 | 55 | 37 | 0 | 1 | 28 | -1 | 29 | 28 | 29 |
| 70% | 42 | 34 | 41 | 41 | 20 | 7 | -2 | -1 | -11 | 65 | 53 | 18 |
| 80% | 59 | 49 | 40 | 48 | 40 | 31 | 55 | 36 | 44 | 22 | 23 | 47 |
| 90% | -8 | 43 | 48 | 54 | 26 | 57 | 46 | 65 | 50 | 20 | -1 | 7 |
| Long Term | | | | | | | | | | | | |
| Full Simulation Period ^a | 48 | 49 | 35 | 31 | 17 | 8 | 8 | 8 | 2 | 17 | 13 | 30 |
| Water Year Types^{b,c} | | | | | | | | | | | | |
| Wet (32%) | 113 | 94 | 50 | 6 | 0 | 0 | 2 | 4 | -4 | 15 | 14 | 80 |
| Above Normal (18%) | 35 | 37 | 32 | 32 | 13 | 0 | 3 | 4 | -8 | 21 | 18 | 30 |
| Below Normal (12%) | -22 | -8 | 0 | 60 | 17 | 6 | 2 | -8 | -18 | -2 | -22 | -36 |
| Dry (24%) | 29 | 39 | 31 | 23 | 23 | 13 | 15 | 18 | 15 | 31 | 28 | 13 |
| Critical (18%) | 20 | 31 | 43 | 69 | 47 | 30 | 20 | 19 | 19 | 8 | 14 | 12 |

^a Based on the 12-year simulation period.
^b As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCC 04-1991, 1999).
^c These results are disclosed with calendar year - year flow sorting.
^d All scenarios are simulated at EIT (Early Long-Term) OI with 2025 climate change and 15 cm sea level rise.
^e These are draft results meant for qualitative analysis and are subject to revision.

On Wed, May 8, 2019 at 3:26 PM Brittany Cunningham - NOAA Affiliate <brittany.cunningham@noaa.gov> wrote:

Hi Evan,

I'm making edits to the American River Division Effects Section. I'm trying to track down updated data on **annual water deliveries from the American River** Division. We currently only have 2000-2006. Garwin suggested that you may be able to help me with this?

If not, do you have any recommendations for who I could ask about this.

Thanks,
Brittany

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