

Appendix 4A

**Attachment 7: SWP Proportion**

---

## 4A-7.1 Introduction

The scope of the Proposed Project is to secure coverage for the long-term operations of the SWP under CESA. The CalSim modeling performed to analyze the proposed long-term SWP operations simulates joint SWP and CVP operations. Therefore, the following approach was used to isolate potential SWP proportion of any changes in combined OMR flow that may be a result of joint operation of the SWP and CVP.

The approach is based on differences in total Jones and Banks Pumping Plant exports under the Proposed Project and Baseline Conditions and the proportion of differences in SWP Banks Pumping Plant exports in this total. As such, the following export quantities were determined for each month over the 100-year CalSim 3 simulation period:

- SWP Banks Pumping Plant Exports (C\_CAA003\_SWP)
- CVP Banks Pumping Plant Exports (C\_CAA003\_CVP)
- Jones Pumping Plant Exports (C\_DMC000)

Monthly proportions were averaged by Sacramento 40-30-30 water year types and the long-term simulation period. Table 4A-7-1 shows the estimated SWP proportion of an effect that is a result of joint operations of SWP and CVP. The proportions shown in Table 4A-7-1 are based on the Proposed Project and Baseline Conditions CalSim modeling performed to support the effects analysis described in Chapter 4. These proportions are only for use in effects analyses for the Proposed Project.

It should be noted that there are occurrences where the calculated SWP proportion results in large percentages that exceed 100%. These values result from instances where the difference in total exports and SWP Banks Pumping Plant exports between the Proposed Project and Baseline Conditions are small, and the difference in SWP Banks Pumping Plant exports is much larger relative to the difference in total exports. This can occur where CVP and SWP exports increase and decrease (or vice-a-versa), respectively, yet total exports remain relatively unchanged. Differences can also result in negative values (i.e., decrease in exports) for SWP and/or total exports. Because of this, the proportions displayed in Table 4A-7-1 were capped between 0% and 100%. As an example, for the July December average of Below Normal water years, the calculated SWP proportion was capped at 100%. Here, the difference between SWP Banks Pumping Plant exports under the Proposed Project and Baseline Conditions results in a relative change of 1% while the difference in total exports results in nearly no change. Additional information on results from the Baseline Conditions and Proposed Project is provided in Appendix 4B.

**Table 4A-7-1. Estimated SWP Proportion of an Effect that may be a Result of Joint Operation of SWP and CVP**

Month	Wet	Above Normal	Below Normal	Dry	Critical	Long-term Average
October	100% <sup>1,2</sup>	<del>100</del> <u>85</u> % <sup>1,2</sup>	<del>0</del> <u>76</u> % <sup>1,2</sup>	<del>0</del> <u>54</u> % <sup>1</sup>	<del>0</del> <u>100</u> % <sup>1</sup>	100% <sup>1,2</sup>
November	<del>5</del> <u>84</u> % <sup>2</sup>	<del>100</del> <u>77</u> % <sup>1,2</sup>	<del>0</del> <u>52</u> % <sup>1</sup>	<del>0</del> <u>100</u> % <sup>1</sup>	<del>48</del> <u>60</u> % <sup>2</sup>	<del>0</del> <u>65</u> % <sup>1,2</sup>
December	<del>0</del> <u>50</u> % <sup>1</sup>	<del>13</del> <u>51</u> %	100% <sup>1</sup>	<del>95</del> <u>90</u> % <sup>2</sup>	<del>0</del> <u>100</u> % <sup>1</sup>	<del>0</del> <u>100</u> % <sup>1,2</sup>
January	<del>42</del> <u>60</u> % <sup>2</sup>	<del>41</del> <u>48</u> % <sup>2</sup>	<del>55</del> <u>68</u> % <sup>2</sup>	<del>15</del> <u>100</u> % <sup>1,2</sup>	<del>59</del> <u>100</u> % <sup>1,2</sup>	<del>45</del> <u>82</u> % <sup>2</sup>
February	<del>100</del> <u>85</u> % <sup>1,2</sup>	<del>89</del> <u>76</u> % <sup>2</sup>	<del>58</del> <u>65</u> % <sup>2</sup>	<del>41</del> <u>33</u> % <sup>2</sup>	<del>61</del> <u>66</u> % <sup>2</sup>	<del>51</del> <u>57</u> % <sup>2</sup>
March	<del>100</del> <u>83</u> % <sup>1</sup>	100% <sup>1,2</sup>	100% <sup>1,2</sup>	<del>78</del> <u>94</u> % <sup>2</sup>	<del>0</del> <u>29</u> % <sup>1,2</sup>	<del>92</del> <u>99</u> % <sup>2</sup>
April	<del>94</del> <u>100</u> % <sup>1</sup>	100% <sup>1</sup>	100% <sup>1</sup>	<del>100</del> <u>99</u> % <sup>1,2</sup>	100% <sup>1</sup>	100% <sup>1</sup>
May	<del>91</del> <u>100</u> % <sup>1</sup>	<del>77</del> <u>98</u> %	<del>99</del> <u>100</u> % <sup>1</sup>	100% <sup>1</sup>	100% <sup>1</sup>	<del>92</del> <u>100</u> % <sup>1</sup>
June	<del>39</del> <u>55</u> % <sup>2</sup>	43% <sup>2</sup>	<del>34</del> <u>31</u> % <sup>2</sup>	<del>33</del> <u>55</u> % <sup>2</sup>	<del>78</del> <u>92</u> % <sup>2</sup>	<del>38</del> <u>46</u> % <sup>2</sup>
July	<del>67</del> <u>6</u> %	<del>52</del> <u>48</u> %	100% <sup>1,2</sup>	63%	100% <sup>1,2</sup>	<del>31</del> <u>16</u> %
August	<del>100</del> <u>84</u> % <sup>1</sup>	<del>90</del> <u>51</u> %	<del>100</del> <u>24</u> % <sup>1,2</sup>	<del>1</del> <u>14</u> %	<del>35</del> <u>0</u> % <sup>1</sup>	<del>64</del> <u>52</u> %
September	100% <sup>1</sup>	100% <sup>1</sup>	<del>100</del> <u>64</u> % <sup>1,2</sup>	43% <sup>2</sup>	<del>100</del> <u>10</u> % <sup>1,2</sup>	100% <sup>1</sup>
<b>Annual Average<sup>3</sup></b>	<b>100%<sup>1</sup></b>	<b><del>96</del> <u>100</u> %<sup>1</sup></b>	<b><del>0</del> <u>38</u> %<sup>1,2</sup></b>	<b><del>38</del> <u>68</u> %<sup>2</sup></b>	<b><del>27</del> <u>28</u> %<sup>2</sup></b>	<b>100%<sup>1</sup></b>

## Notes:

The proportions presented are averaged by water year type and long-term by month.

<sup>1</sup> Values marked by a superscript one (1) indicate a value was capped between 0% and 100%.

<sup>2</sup> Values marked by a superscript two (2) indicate a decrease in SWP exports under the Proposed Project. Where displayed percentages are still positive, it can be assumed that total exports decrease as well.

<sup>3</sup> The annual average indicates the percent change (between the Baseline Conditions and Proposed Project) in the sum of annual averages across SWP Banks Pumping Plant, CVP Banks Pumping Plant, and Jones Pumping Plant exports for a given water year type or the full simulation period. The annual average is not representative of the average value of the months shown in each column of Table 4A-7-1.