

Attachment 5a: X2 Results (CalSim 3)

Appendix 4G

Attachment 5a: X2 Results (CalSim 3)

The following results of the CalSim 3 model are included for X2 position conditions for the following scenarios:

- Baseline Conditions (Updated) (040424)
- Alternative 1 plus Cumulative Projects (102023)

Title	Model Parameter	Table Numbers	Figure Numbers
X2 Position	X2_PRV ¹	4G-5-1-1a to 4G-5-1-1c	4G-5-1a to 4G-5-1r

Note:

¹. Parameter has been post-processed for the Alternative 1 plus Cumulative Projects scenario.

Report formats:

- Monthly tables comparing two scenarios (exceedance values, long-term average, and average by water year type).
- Monthly pattern charts (long-term average and average by water year type) including all scenarios.
- Monthly exceedance charts (all months) including all scenarios.

Table 4G-5-1-1a. X2 Position, Baseline Conditions (Updated) 040424, Monthly Distance (Km)

Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
10% Exceedance	93.9	92.9	91.0	86.2	78.7	77.3	78.4	81.3	85.3	89.0	91.5	92.7
20% Exceedance	92.2	91.8	89.4	84.4	74.5	71.8	74.6	78.4	82.1	85.6	88.9	91.0
30% Exceedance	91.4	90.5	87.9	80.7	68.2	66.1	70.9	76.6	81.0	85.1	88.0	90.2
40% Exceedance	89.7	89.5	86.8	72.8	66.0	64.6	67.4	72.1	80.4	83.4	86.8	89.0
50% Exceedance	88.7	86.2	83.6	70.0	61.6	62.0	64.5	68.2	77.4	82.7	86.0	87.9
60% Exceedance	80.1	85.2	78.5	64.6	58.2	58.5	61.5	66.1	75.6	80.2	84.0	80.1
70% Exceedance	80.0	84.3	69.4	59.2	54.8	55.8	60.0	63.1	71.5	79.4	82.8	79.9
80% Exceedance	80.0	82.6	63.1	54.3	52.8	53.3	56.6	58.9	63.8	75.0	82.2	79.7
90% Exceedance	79.9	76.1	56.0	52.5	51.8	52.1	53.2	55.4	59.2	73.3	81.0	79.5
Full Simulation Period Average ^a	85.8	85.4	78.0	69.5	63.6	62.9	65.5	68.8	75.0	81.2	85.3	85.4
Wet Water Years (30%)	83.1	80.0	64.8	57.0	53.6	54.5	56.7	59.2	64.9	74.0	80.1	78.2
Above Normal Water Years (11%)	86.3	86.8	79.7	61.8	56.8	56.5	59.8	63.9	71.3	78.5	83.1	79.9
Below Normal Water Years (21%)	85.0	85.3	81.9	72.3	64.8	62.7	64.8	68.4	76.6	82.4	86.0	88.2
Dry Water Years (22%)	86.2	87.6	84.3	78.8	70.3	68.3	71.6	75.4	81.1	85.3	88.3	90.4
Critical Water Years (16%)	90.9	91.5	87.5	81.5	76.3	76.0	78.4	82.0	85.8	89.2	91.7	92.9

Table 4G-5-1-1b. X2 Position, Alternative 1 plus Cumulative 102023, Monthly Distance (Km)

Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
10% Exceedance	93.2	92.7	91.1	86.1	78.4	75.2	76.4	81.5	85.1	88.0	90.4	92.1
20% Exceedance	91.7	91.4	89.8	83.9	73.8	70.2	72.7	77.4	81.2	84.8	87.9	90.6
30% Exceedance	90.9	90.3	88.3	80.3	67.4	64.6	69.2	76.4	80.7	84.2	87.5	90.1
40% Exceedance	90.0	89.5	87.0	72.7	65.3	63.2	66.0	72.1	79.9	82.9	86.1	89.3
50% Exceedance	88.4	85.8	83.6	69.6	61.5	60.5	63.9	69.1	77.4	81.5	85.2	87.7
60% Exceedance	80.0	85.1	78.1	64.1	58.2	57.9	61.3	66.6	74.9	79.9	83.5	80.1
70% Exceedance	79.9	84.0	69.4	59.1	54.4	55.2	59.1	62.9	71.2	78.6	82.6	79.7
80% Exceedance	79.9	82.6	63.0	54.2	52.8	52.8	55.6	58.7	63.8	74.6	82.0	79.4
90% Exceedance	79.8	75.6	55.8	52.5	51.8	51.9	53.0	55.5	59.3	72.6	81.6	79.3
Full Simulation Period Average ^a	85.6	85.2	77.9	69.2	63.2	61.8	64.3	69.0	74.7	80.5	84.9	85.3
Wet Water Years (30%)	82.9	79.8	64.6	56.8	53.6	54.2	56.1	59.5	64.8	73.7	80.3	78.4
Above Normal Water Years (11%)	86.2	86.3	80.1	61.8	56.6	55.9	58.5	63.4	70.8	77.2	82.4	79.6
Below Normal Water Years (21%)	84.8	85.0	81.7	71.9	64.4	61.2	63.8	69.1	76.4	81.3	85.3	88.2
Dry Water Years (22%)	85.9	87.5	84.2	78.4	70.1	66.6	69.6	74.8	80.3	84.4	87.5	90.1
Critical Water Years (16%)	90.5	91.3	87.9	81.5	74.9	74.3	77.2	82.3	86.0	88.9	91.1	92.3

Table 4G-5-1-1c. X2 Position, Alternative 1 plus Cumulative 102023 minus Baseline Conditions (Updated) 040424, Monthly Distance (Km)

Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
10% Exceedance	-0.7	-0.1	0.1	-0.1	-0.4	-2.1	-2.0	0.1	-0.2	-1.1	-1.1	-0.6
20% Exceedance	-0.5	-0.4	0.4	-0.5	-0.6	-1.6	-1.8	-0.9	-0.9	-0.8	-1.0	-0.4
30% Exceedance	-0.5	-0.2	0.4	-0.4	-0.8	-1.5	-1.7	-0.2	-0.3	-0.8	-0.5	-0.1
40% Exceedance	0.3	0.0	0.2	-0.1	-0.7	-1.4	-1.5	-0.1	-0.5	-0.5	-0.7	0.3
50% Exceedance	-0.3	-0.4	-0.1	-0.4	-0.1	-1.5	-0.7	0.9	-0.1	-1.2	-0.8	-0.1
60% Exceedance	-0.1	-0.1	-0.4	-0.6	0.0	-0.7	-0.3	0.6	-0.6	-0.3	-0.6	0.0
70% Exceedance	-0.1	-0.3	0.1	-0.1	-0.3	-0.6	-0.9	-0.2	-0.3	-0.8	-0.1	-0.2
80% Exceedance	-0.1	0.0	-0.1	-0.1	-0.1	-0.6	-1.0	-0.2	0.0	-0.4	-0.2	-0.3
90% Exceedance	-0.2	-0.5	-0.2	0.0	0.0	-0.2	-0.2	0.1	0.0	-0.7	0.5	-0.2
Full Simulation Period Average ^a	-0.2	-0.2	0.0	-0.2	-0.4	-1.2	-1.2	0.1	-0.3	-0.7	-0.4	-0.1
Wet Water Years (30%)	-0.2	-0.2	-0.2	-0.1	0.0	-0.4	-0.6	0.3	-0.1	-0.2	0.2	0.2
Above Normal Water Years (11%)	-0.1	-0.4	0.4	0.0	-0.2	-0.7	-1.3	-0.5	-0.6	-1.3	-0.7	-0.3
Below Normal Water Years (21%)	-0.2	-0.2	-0.2	-0.4	-0.4	-1.5	-1.0	0.7	-0.3	-1.1	-0.7	0.0
Dry Water Years (22%)	-0.3	-0.1	-0.1	-0.4	-0.2	-1.8	-2.0	-0.5	-0.7	-0.9	-0.8	-0.4
Critical Water Years (16%)	-0.4	-0.2	0.3	0.0	-1.4	-1.7	-1.2	0.4	0.2	-0.3	-0.6	-0.6

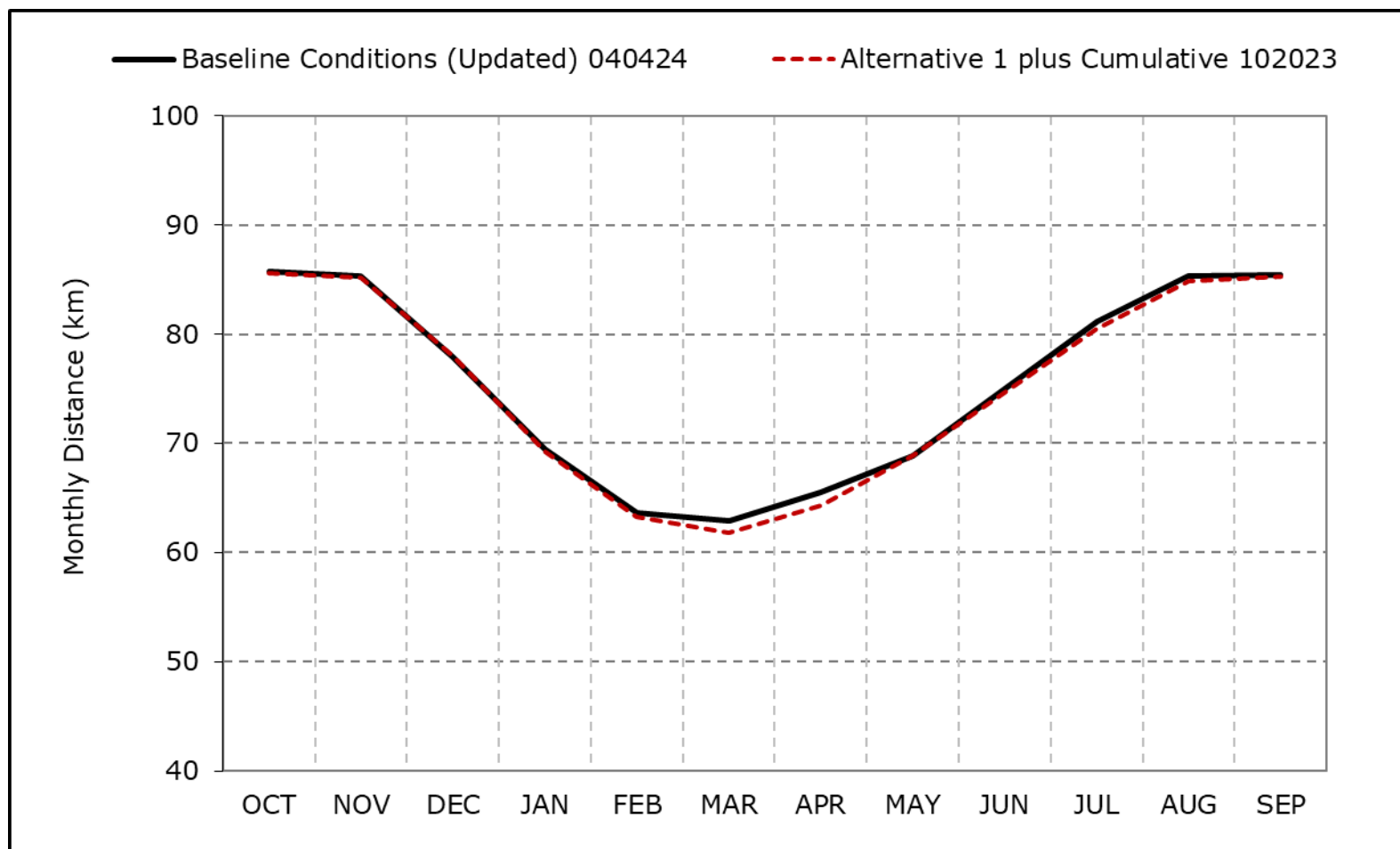
^a Based on the 100-year simulation period.

* All scenarios are simulated at current climate condition and 0 cm sea level rise.

* Water Year Types defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

* Water Year Types results are displayed with water year - year type sorting.

Figure 4G-5-1a. X2 Position, Long-Term Average Distance

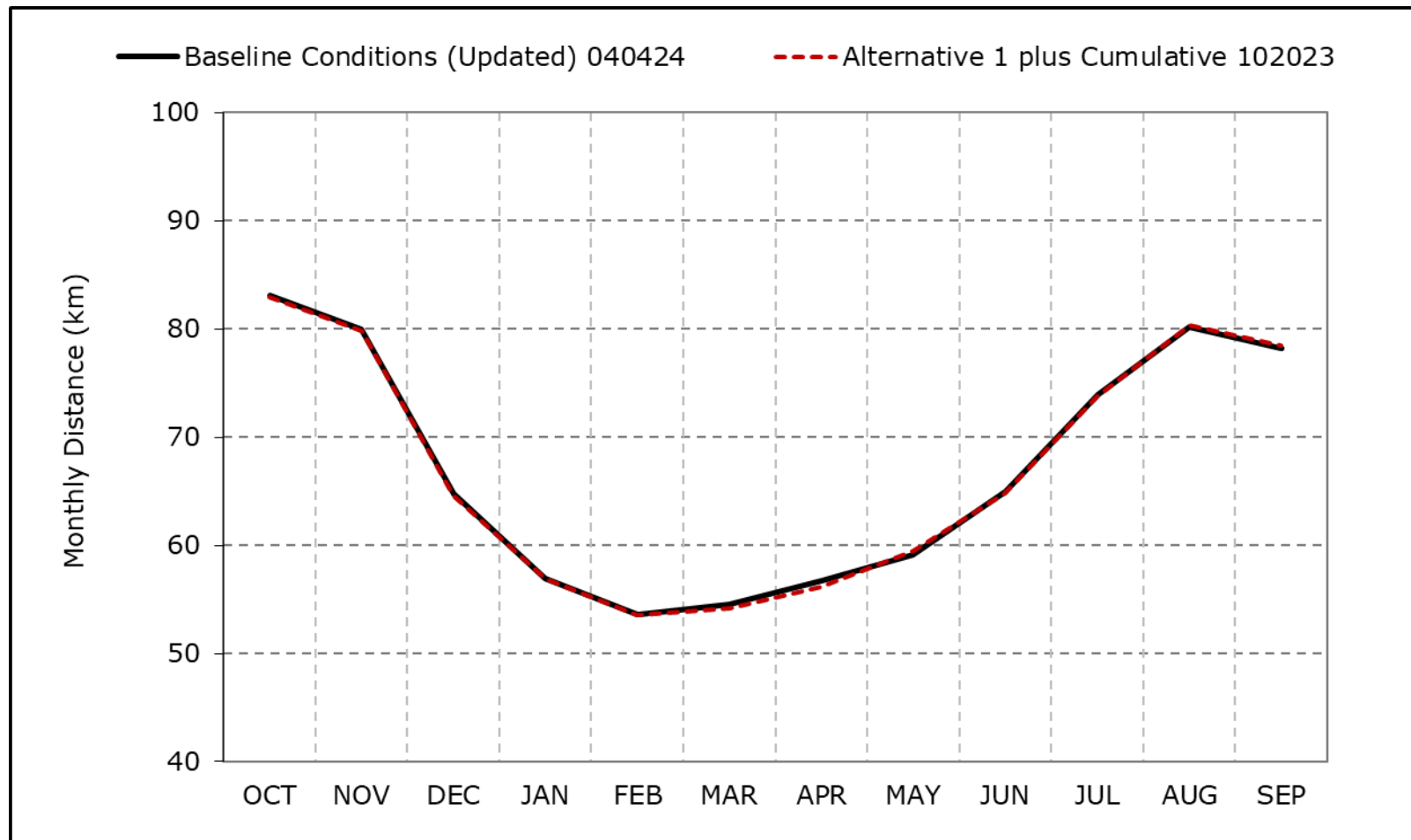


*As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

*These results are displayed with water year - year type sorting.

*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1b. X2 Position, Wet Year Average Distance

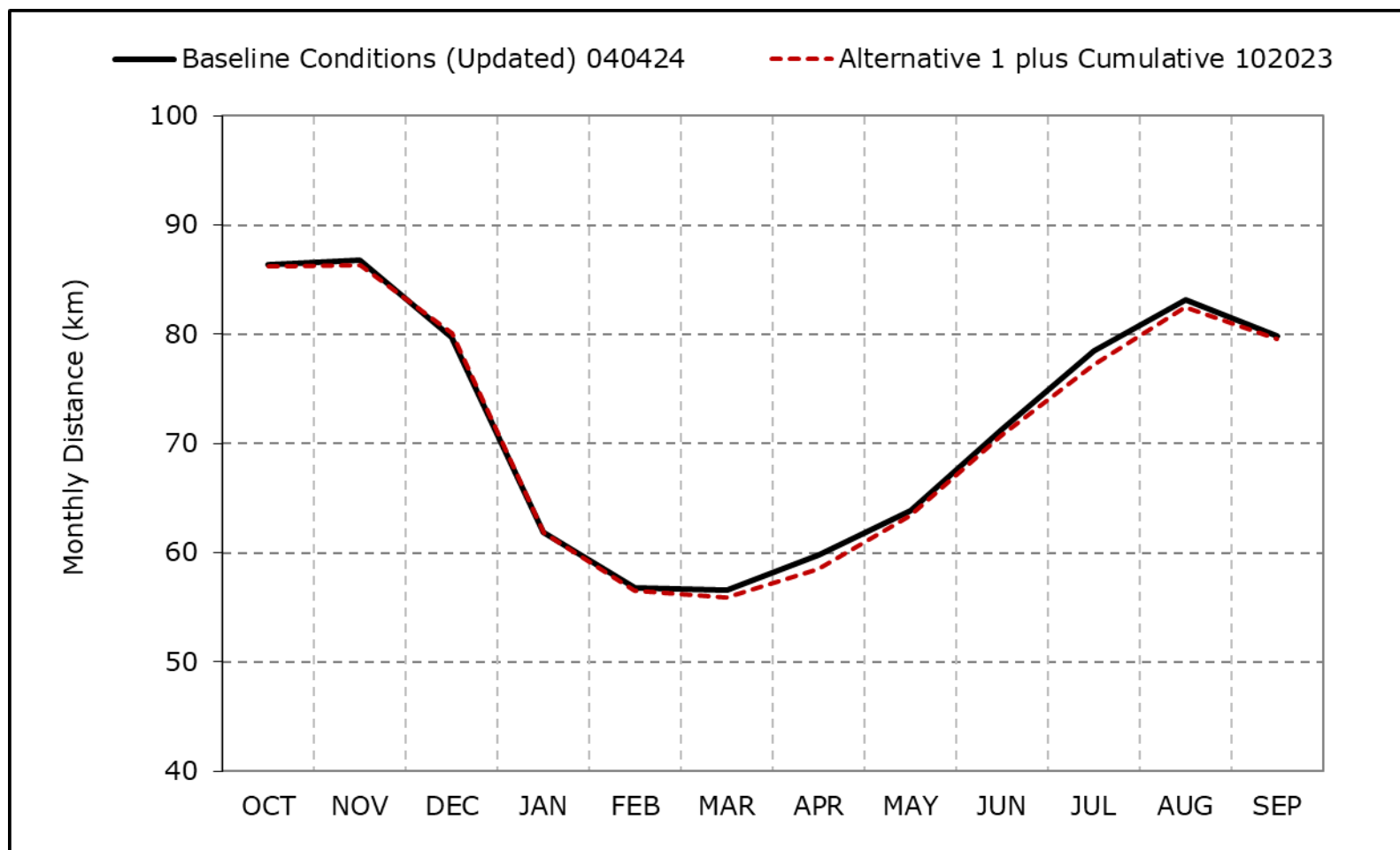


*As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

*These results are displayed with water year - year type sorting.

*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1c. X2 Position, Above Normal Year Average Distance

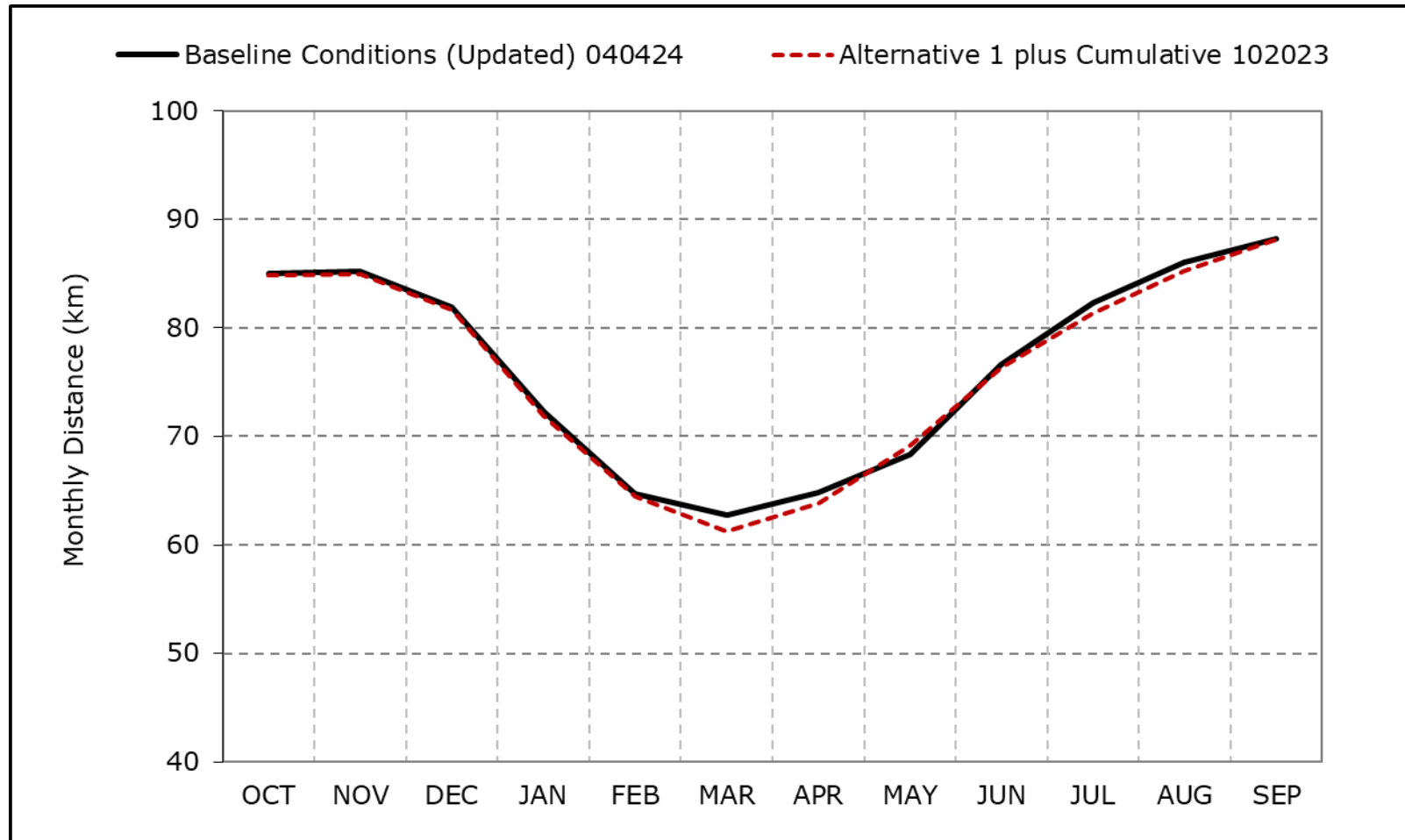


*As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

*These results are displayed with water year - year type sorting.

*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1d. X2 Position, Below Normal Year Average Distance

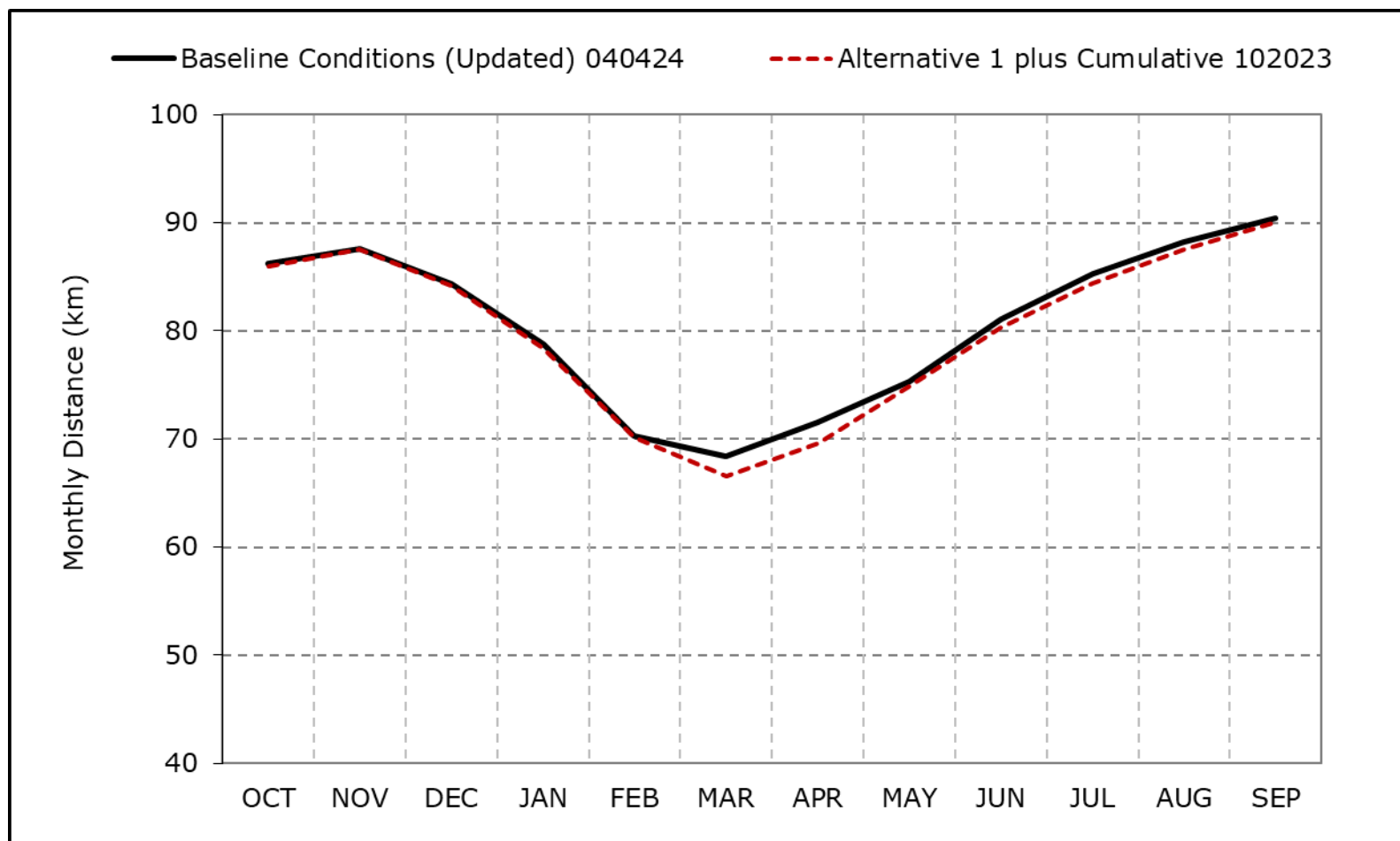


*As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

*These results are displayed with water year - year type sorting.

*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1e. X2 Position, Dry Year Average Distance

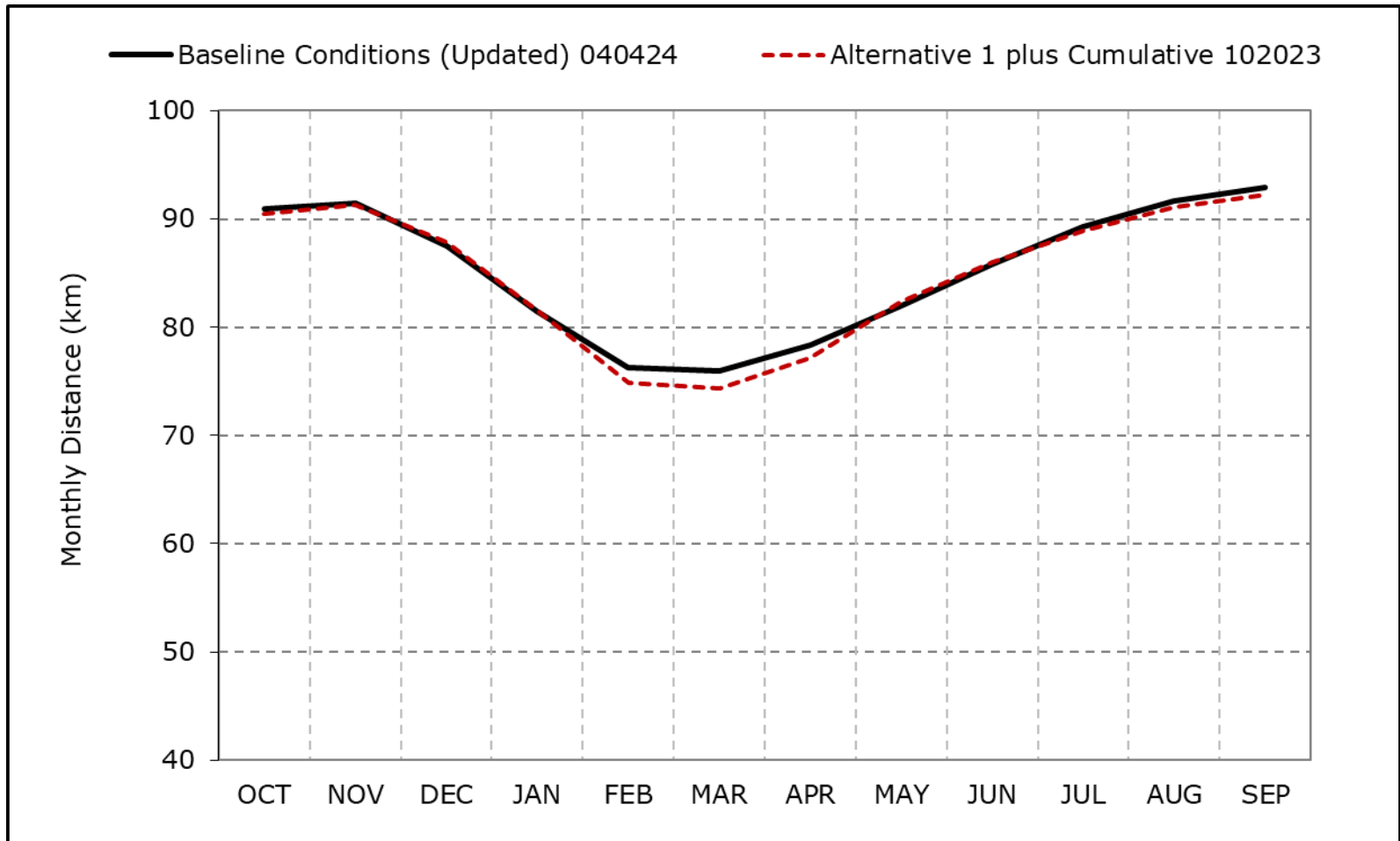


*As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

*These results are displayed with water year - year type sorting.

*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1f. X2 Position, Critical Year Average Distance

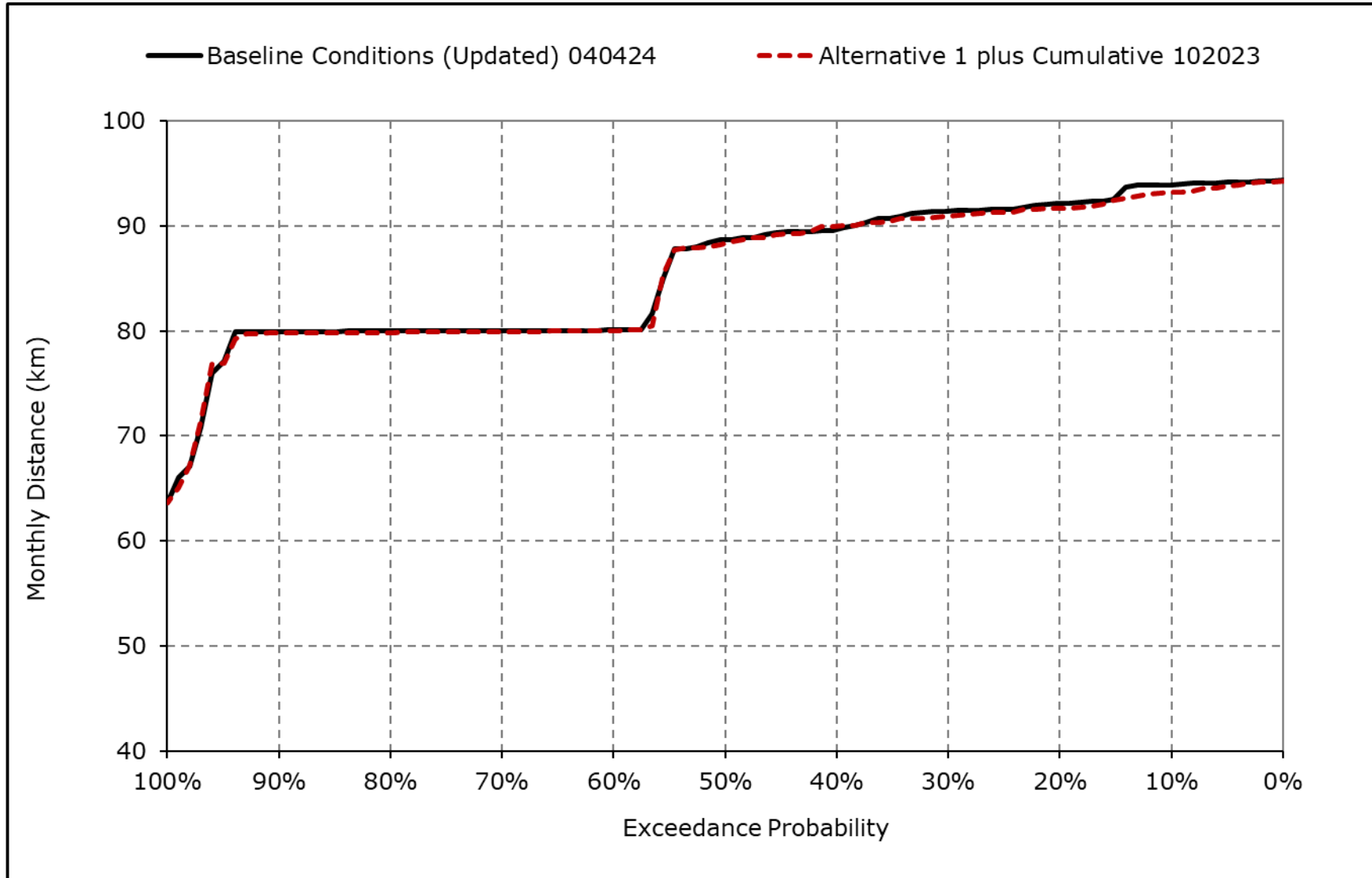


*As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999).

*These results are displayed with water year - year type sorting.

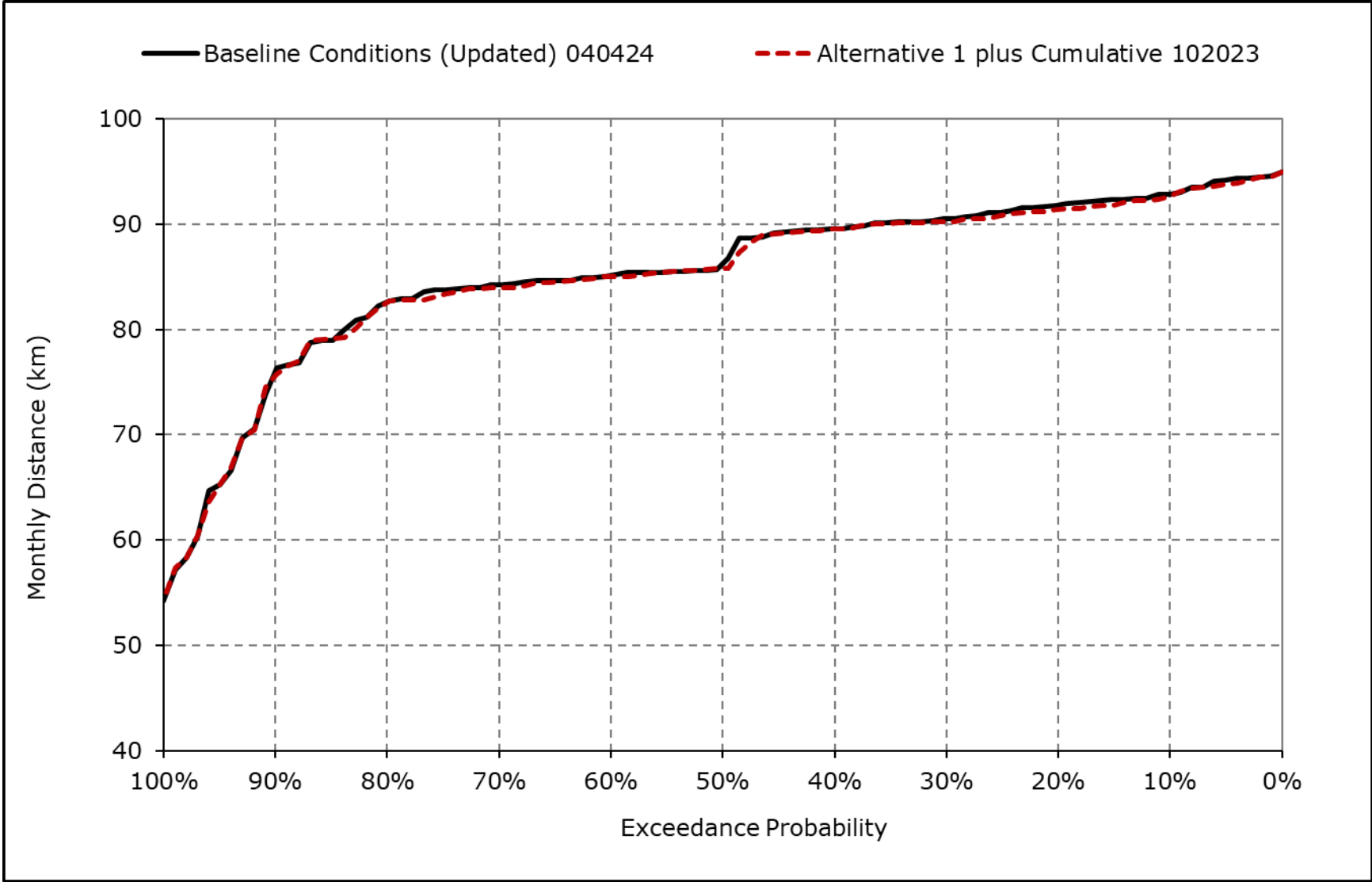
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1g. X2 Position, October



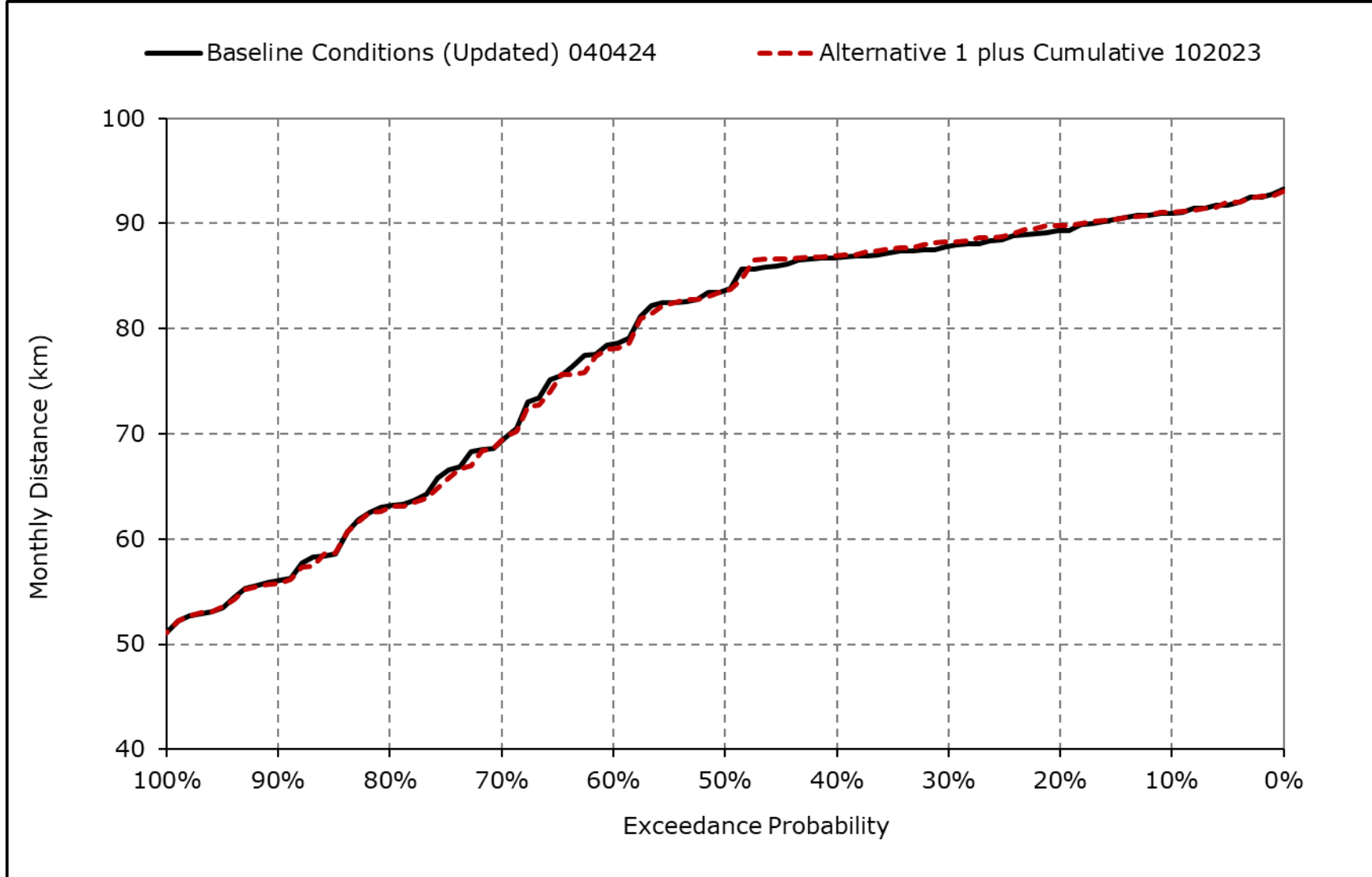
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1h. X2 Position, November



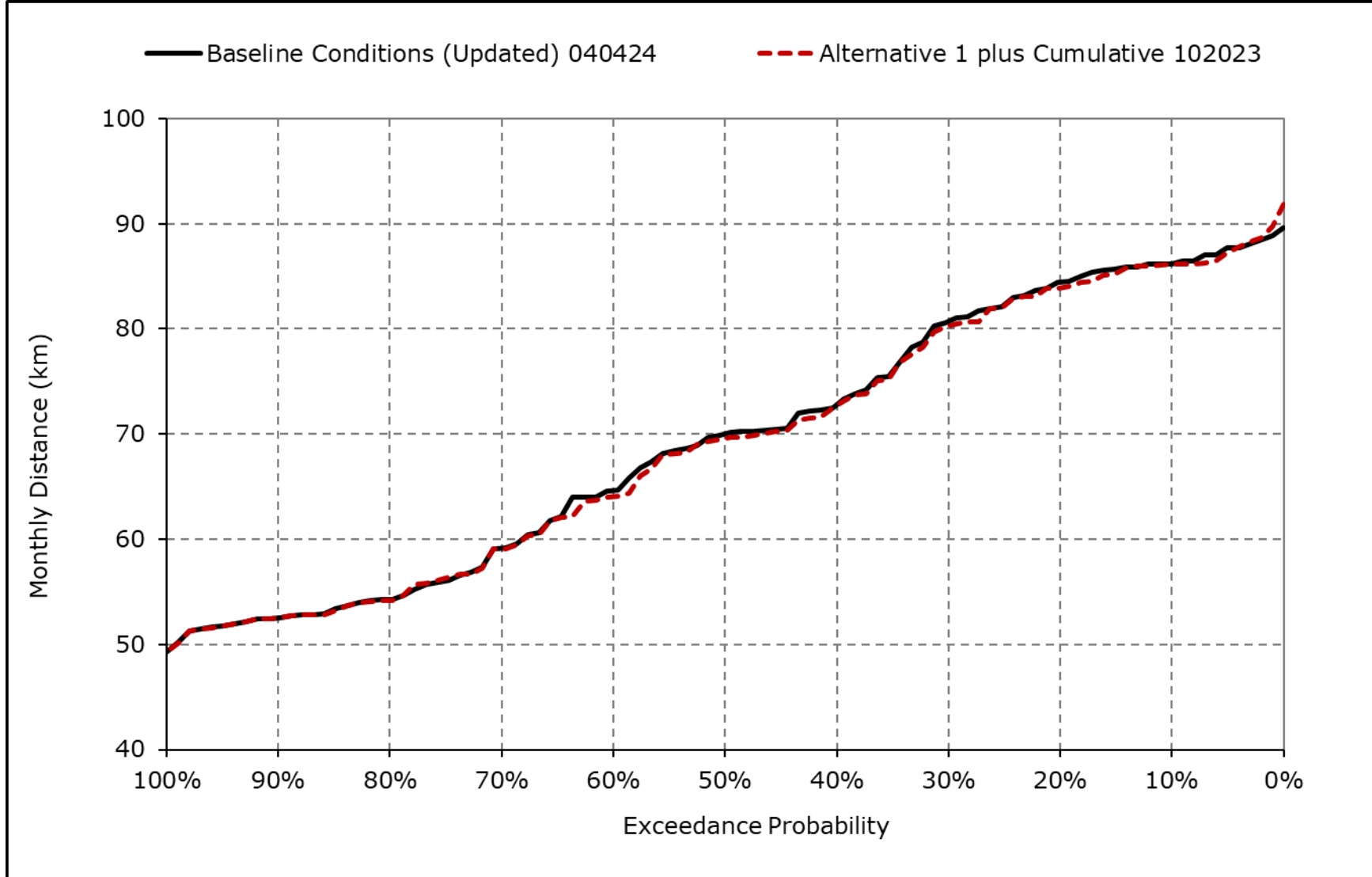
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1i. X2 Position, December



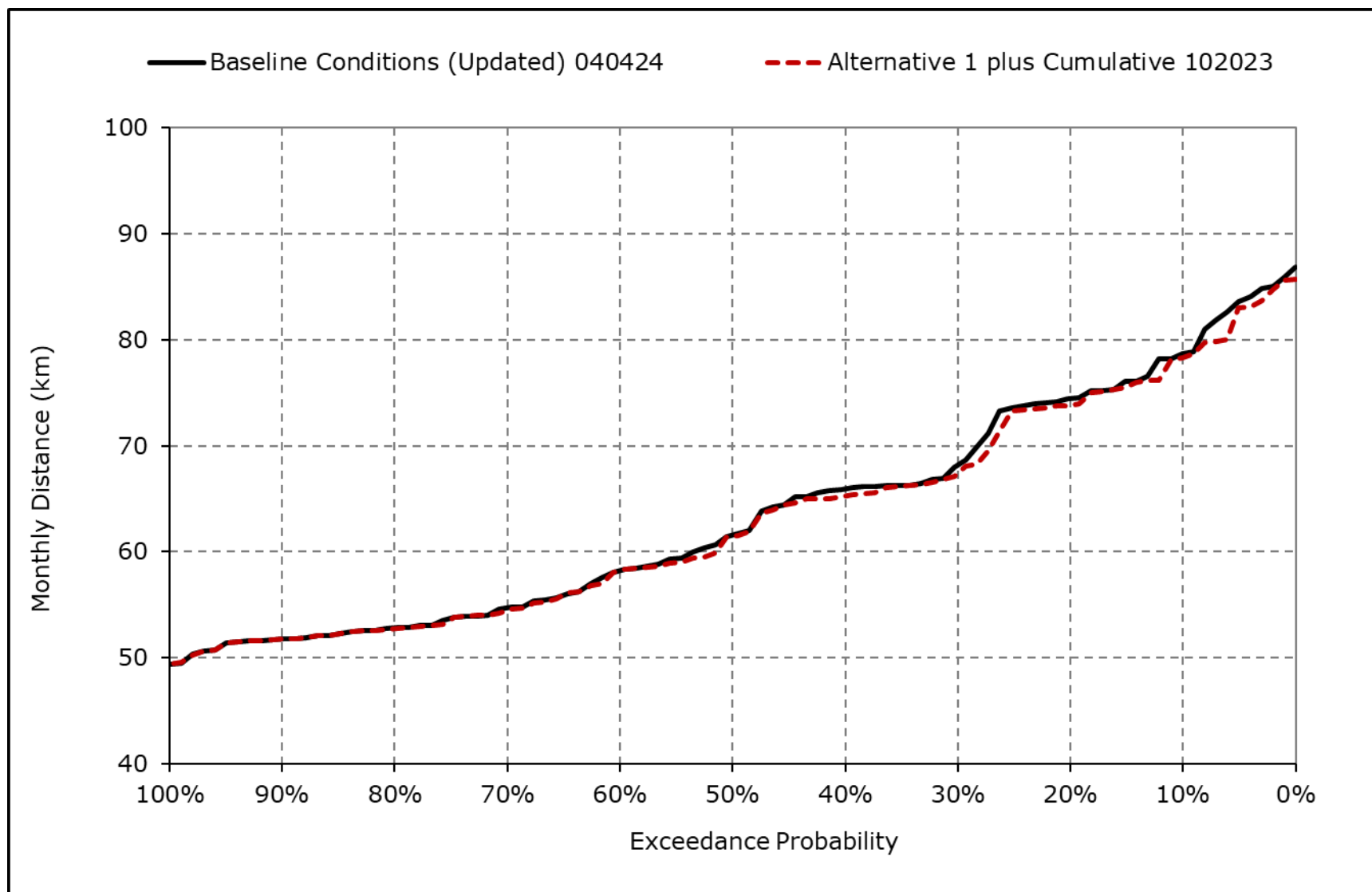
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1j. X2 Position, January



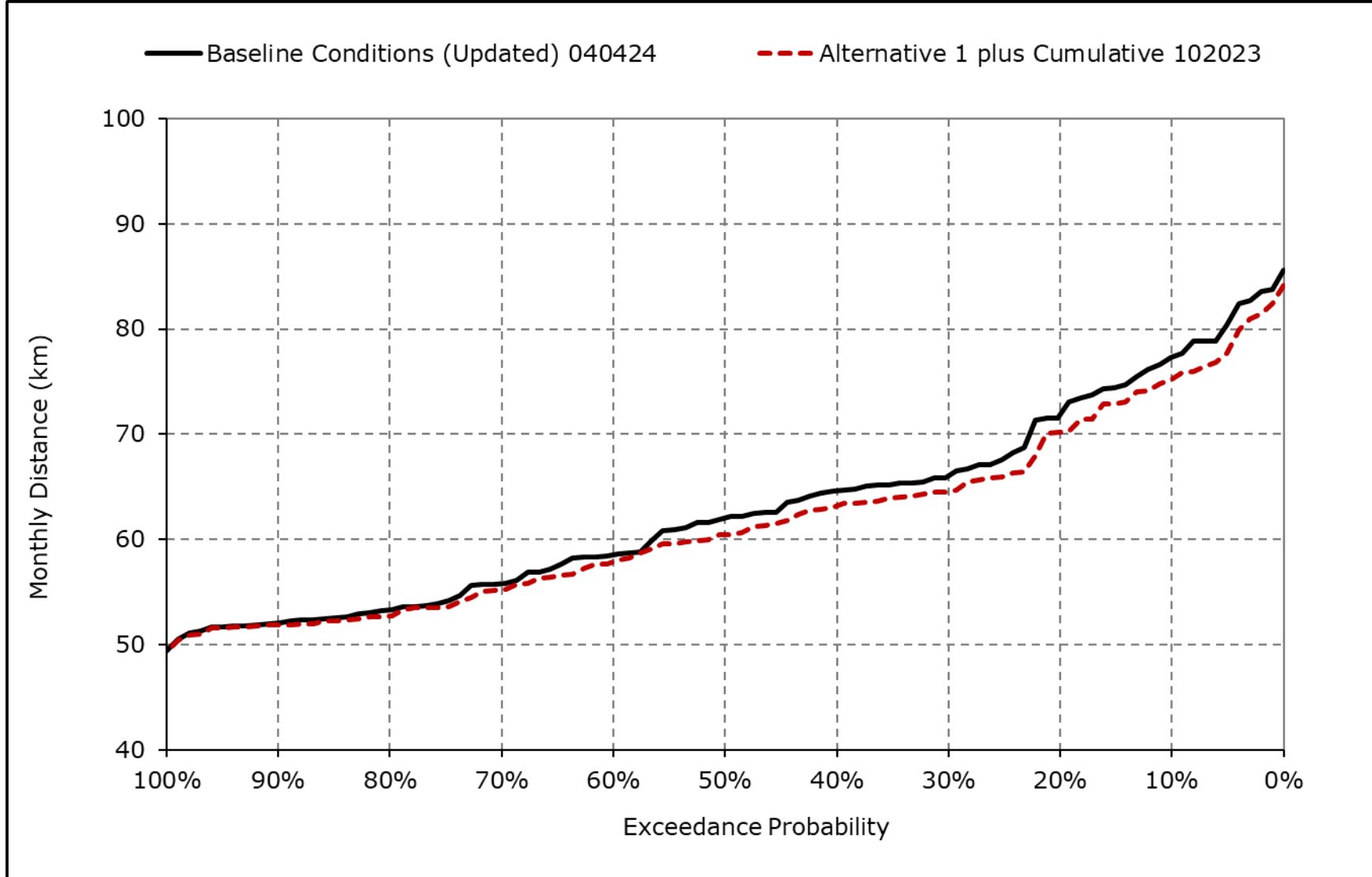
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1k. X2 Position, February



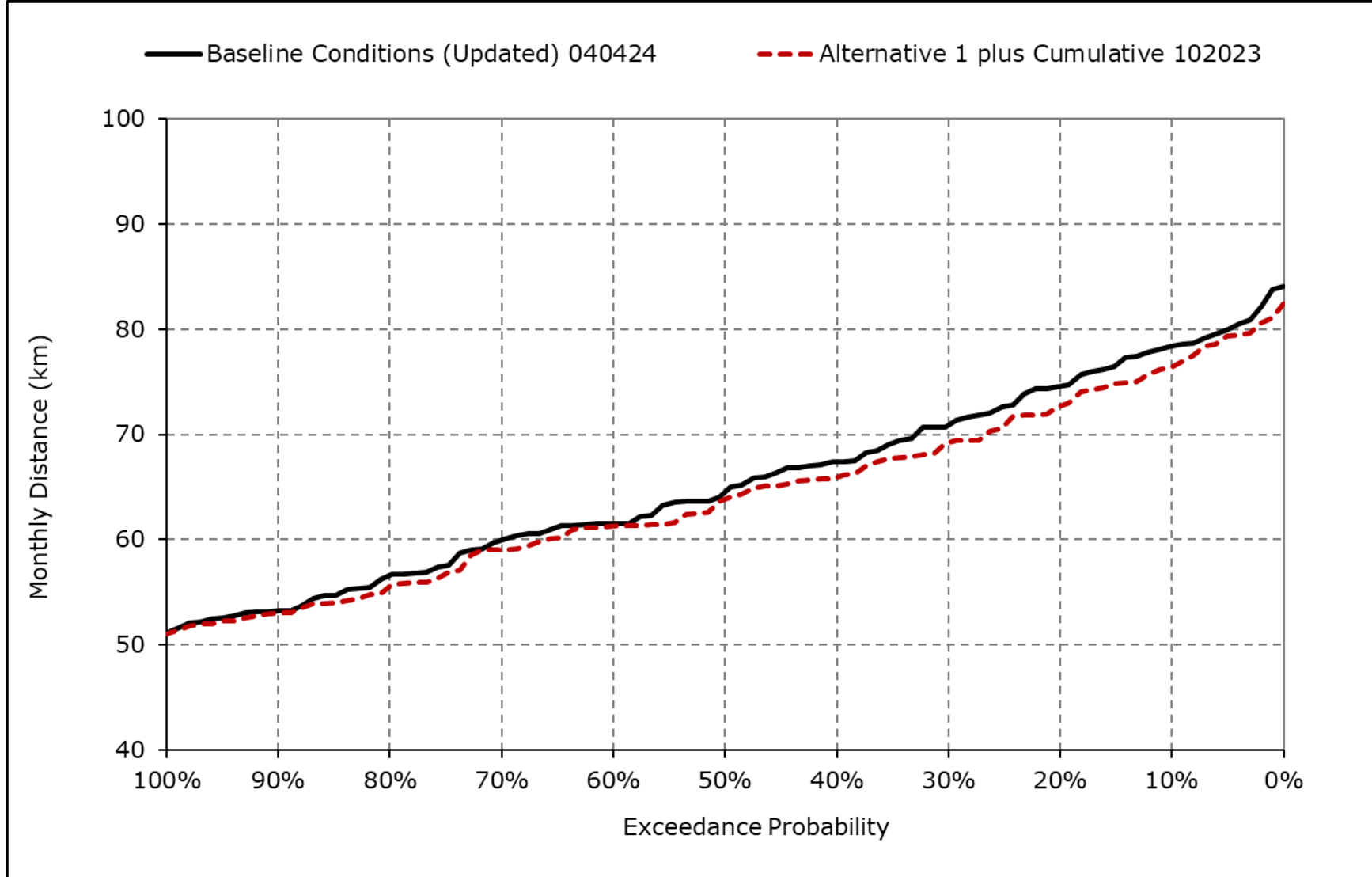
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-11. X2 Position, March



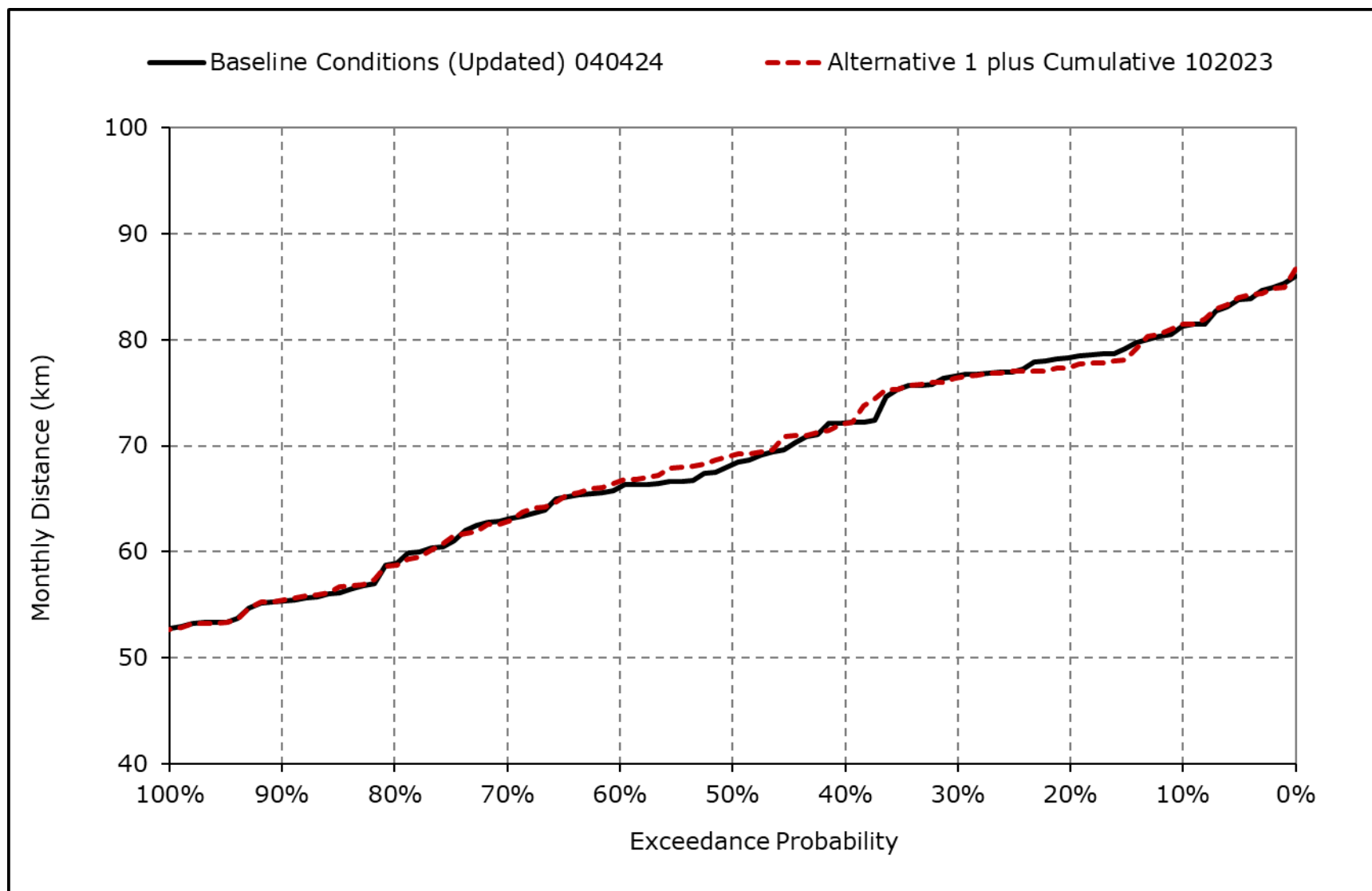
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1m. X2 Position, April



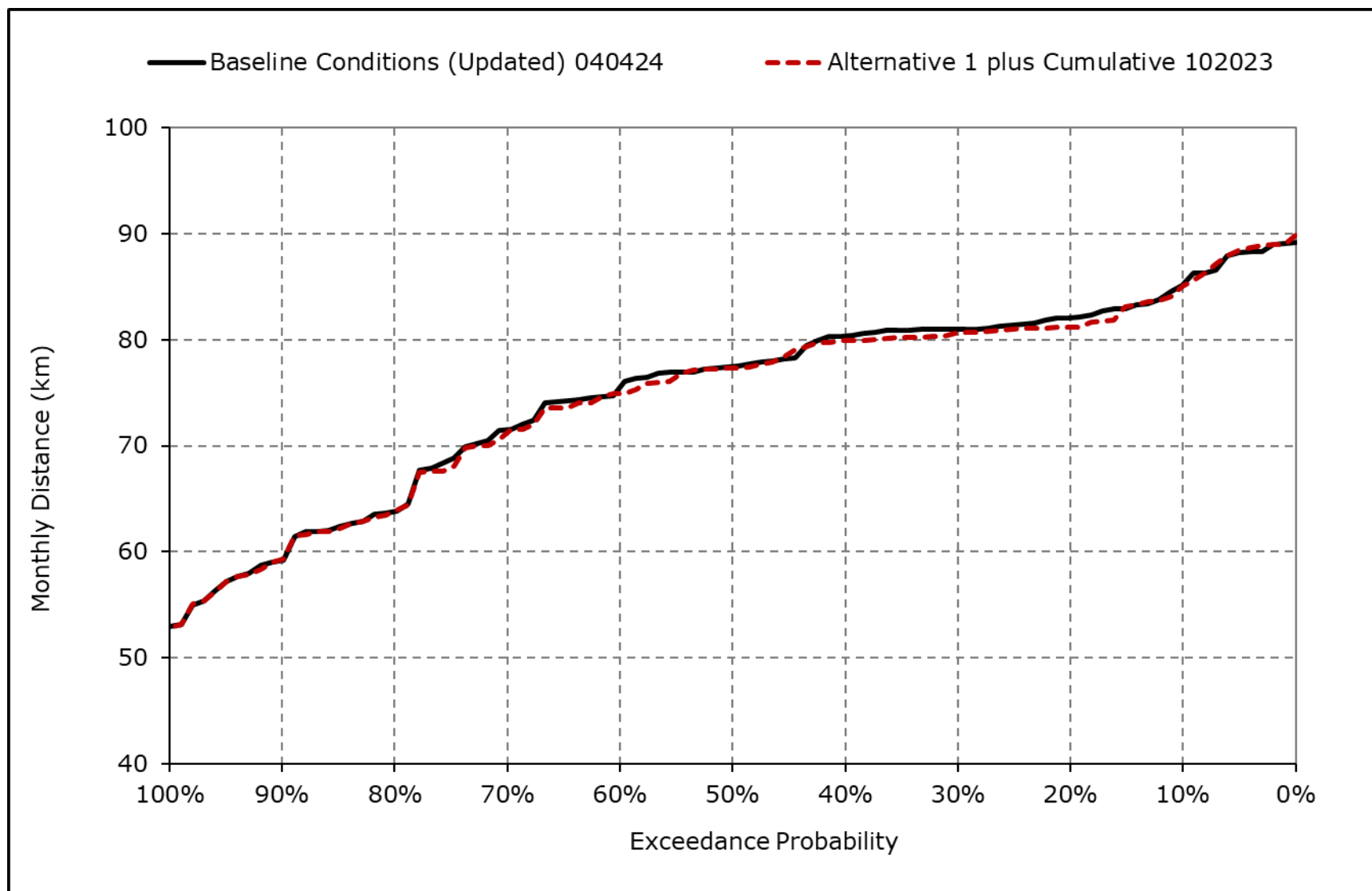
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1n. X2 Position, May



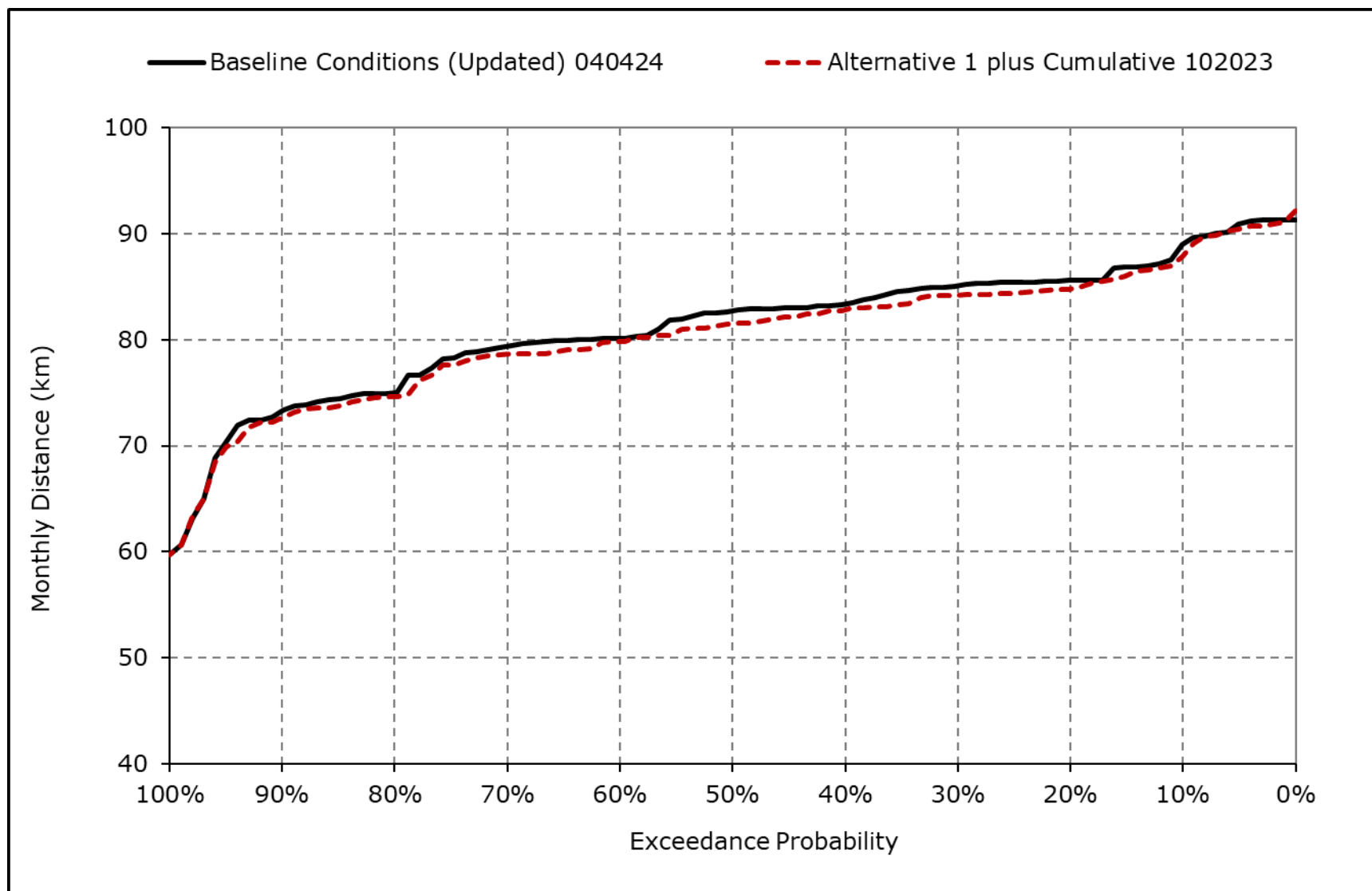
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1o. X2 Position, June



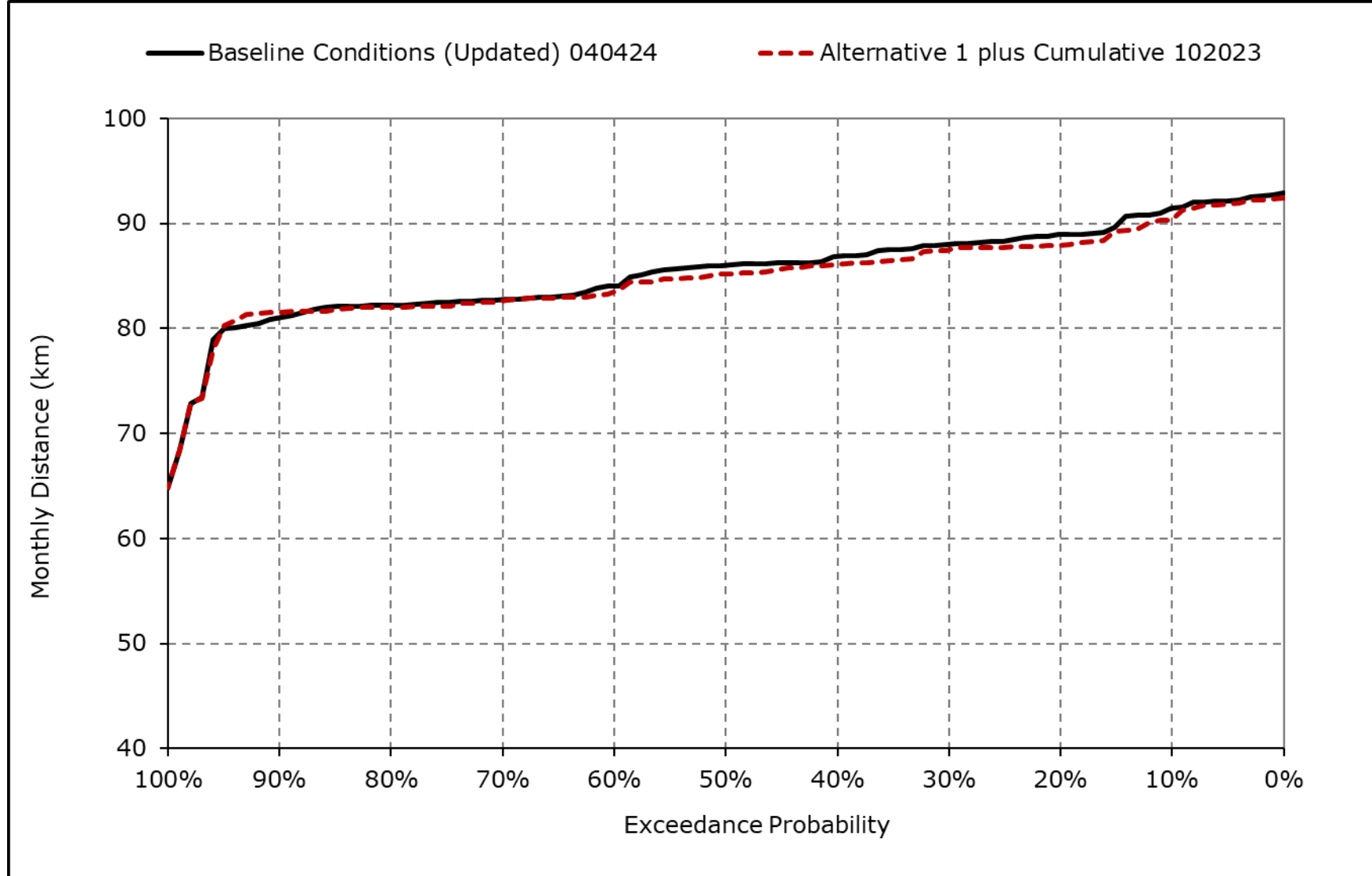
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1p. X2 Position, July



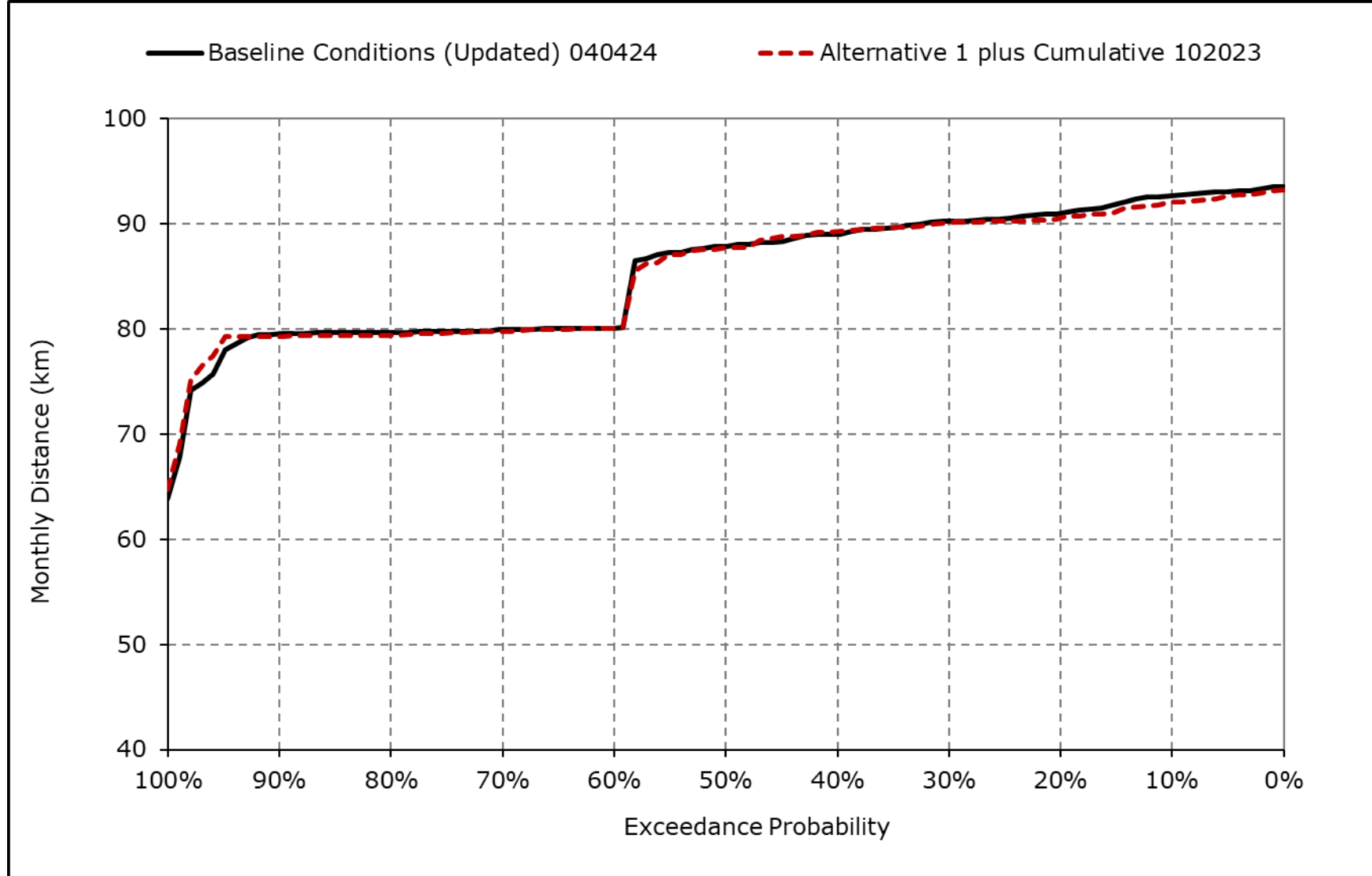
*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1q. X2 Position, August



*All scenarios are simulated at current climate condition and 0 cm sea level rise.

Figure 4G-5-1r. X2 Position, September



*All scenarios are simulated at current climate condition and 0 cm sea level rise.