Record of Decision and Statement of Findings for Department of the Army
(DA) Permit Application SAJ-2011-01869

Attachment E – Updates to Tables and Information Presented in the Final EIS

Updated Table 4-19.

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 100 Percent Capture at the Horse Creek Flow Station with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	171	0%	78	0%	404	0%
2020	171	0%	77	-1%	410	1%
2030	163	-5%	73	-6%	391	-3%
2040	166	-3%	75	-4%	399	-1%
2045	170	0%	77	-1%	410	1%
2050	175	3%	79	2%	422	4%
2060	177	3%	79	2%	424	5%

Updated Table 4-20

Projected Flows and percent Change from 2009 Flows during Average Rainfall Year and 50 Percent Capture at the Horse Creek Flow Station with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	171	0%	78	0%	404	0%
2020	172	1%	77	0%	411	2%
2030	168	-2%	76	-3%	404	0%
2040	170	0%	76	-1%	409	1%
2045	173	1%	78	0%	416	3%
2050	175	2%	79	2%	422	4%
2060	177	3%	79	2%	424	5%

Updated Table 4-21

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 100 Percent Capture at the Horse Creek Flow Stadium with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	84	0%	38	0%	199	0%
2020	84	0%	38	-1%	201	1%
2030	80	-5%	36	-6%	192	-3%
2040	82	-3%	37	-4%	196	-1%
2045	84	0%	38	-1%	201	1%
2050	86	3%	39	2%	207	4%
2060	87	3%	39	2%	209	5%

Updated Table 4-22

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 50 Percent Capture at the Horse Creek Flow Station with Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	84	0%	38	0%	199	0%
2020	84	1%	38	0%	202	2%
2030	83	-2%	37	-3%	198	0%
2040	84	0%	38	-1%	201	1%
2045	85	1%	38	0%	205	3%
2050	86	3%	39	2%	207	4%
2060	87	3%	39	2%	209	5%

Updated Table 4-23

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 100 Percent Capture at the Peace River at Arcadia Flow Station with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	713	0%	328	0%	1,657	0%
2020	726	2%	332	1%	1,698	3%
2030	734	3%	334	2%	1,738	5%
2040	750	5%	340	4%	1,779	7%
2050	771	8%	350	7%	1,829	10%
2060	782	10%	354	8%	1,858	12%

Updated Table 4-24

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 50 Percent Capture at the Peace River at Arcadia Flow Station with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	713	0%	328	0%	1,657	0%
2020	726	2%	332	1%	1,700	3%
2030	737	3%	335	2%	1,740	5%
2040	753	6%	342	4%	1,782	8%
2050	772	8%	351	7%	1,829	10%
2060	783	10%	355	8%	1,858	12%

Updated Table 4-25

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 100 Percent Capture at the Peace River at Arcadia Flow Station with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	330	0%	152	0%	766	0%
2020	336	2%	154	1%	786	3%
2030	340	3%	155	2%	805	5%
2040	348	5%	158	4%	825	8%
2050	358	8%	162	7%	848	11%
2060	363	10%	164	8%	862	13%

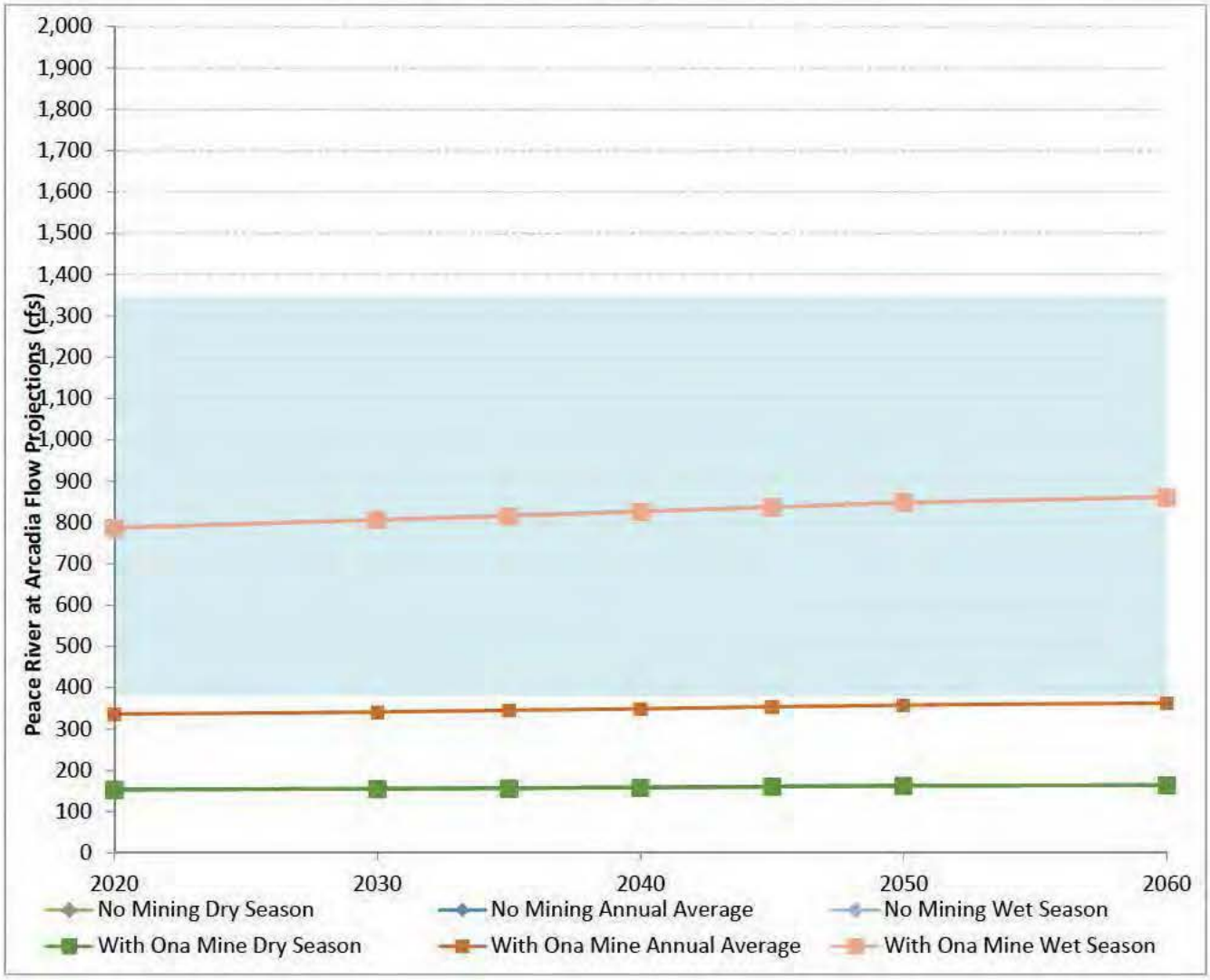
Updated Table 4-26

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 50 Percent Capture at the Peace River at Arcadia Flow Station with the Ona Mine

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	330	0%	152	0%	766	0%
2020	336	2%	154	1%	787	3%
2030	342	4%	156	2%	806	5%
2040	349	6%	159	5%	826	8%
2050	358	9%	163	7%	848	11%
2060	363	10%	165	9%	862	13%

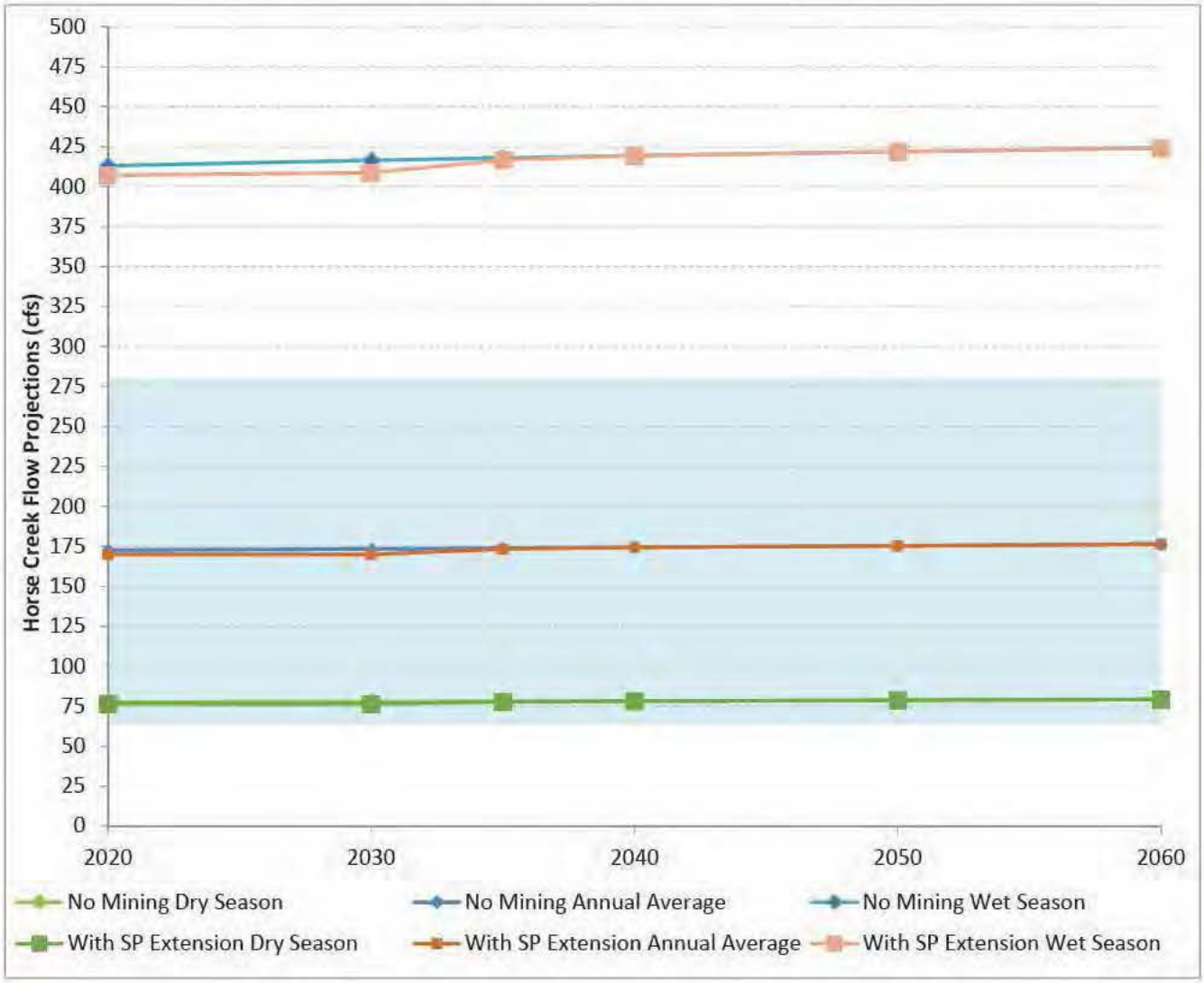
Updated Figure 45

Peace River at Arcadia Annual Average and Seasonal Projected Flows for Low Annual Rainfall based on 50 Percent Capture of Excess Rainfall with and without Ona Mine



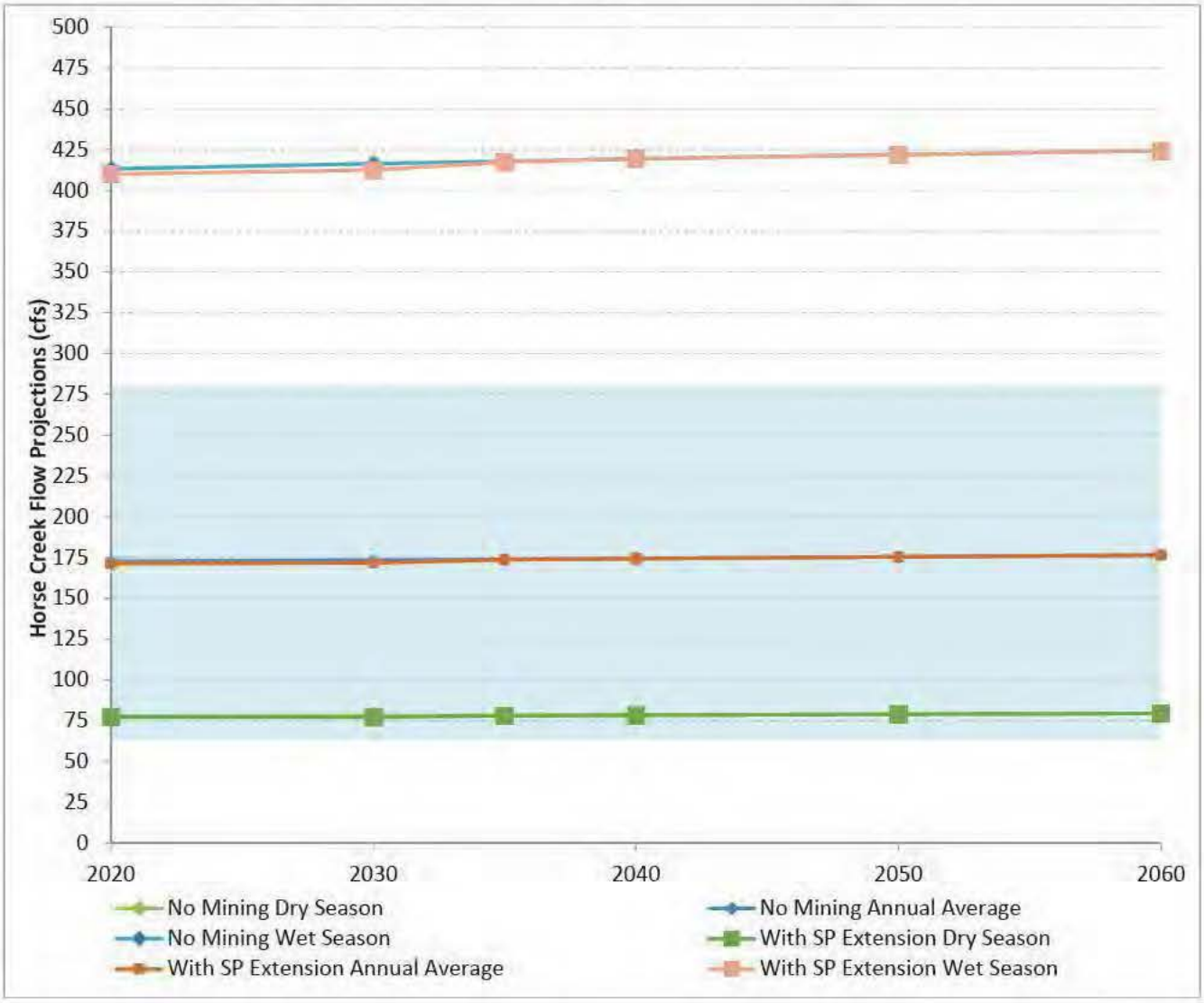
Updated Figure 50

Horse Creek Annual Average and Seasonal Projected Flows for Average Annual Rainfall based on 100 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



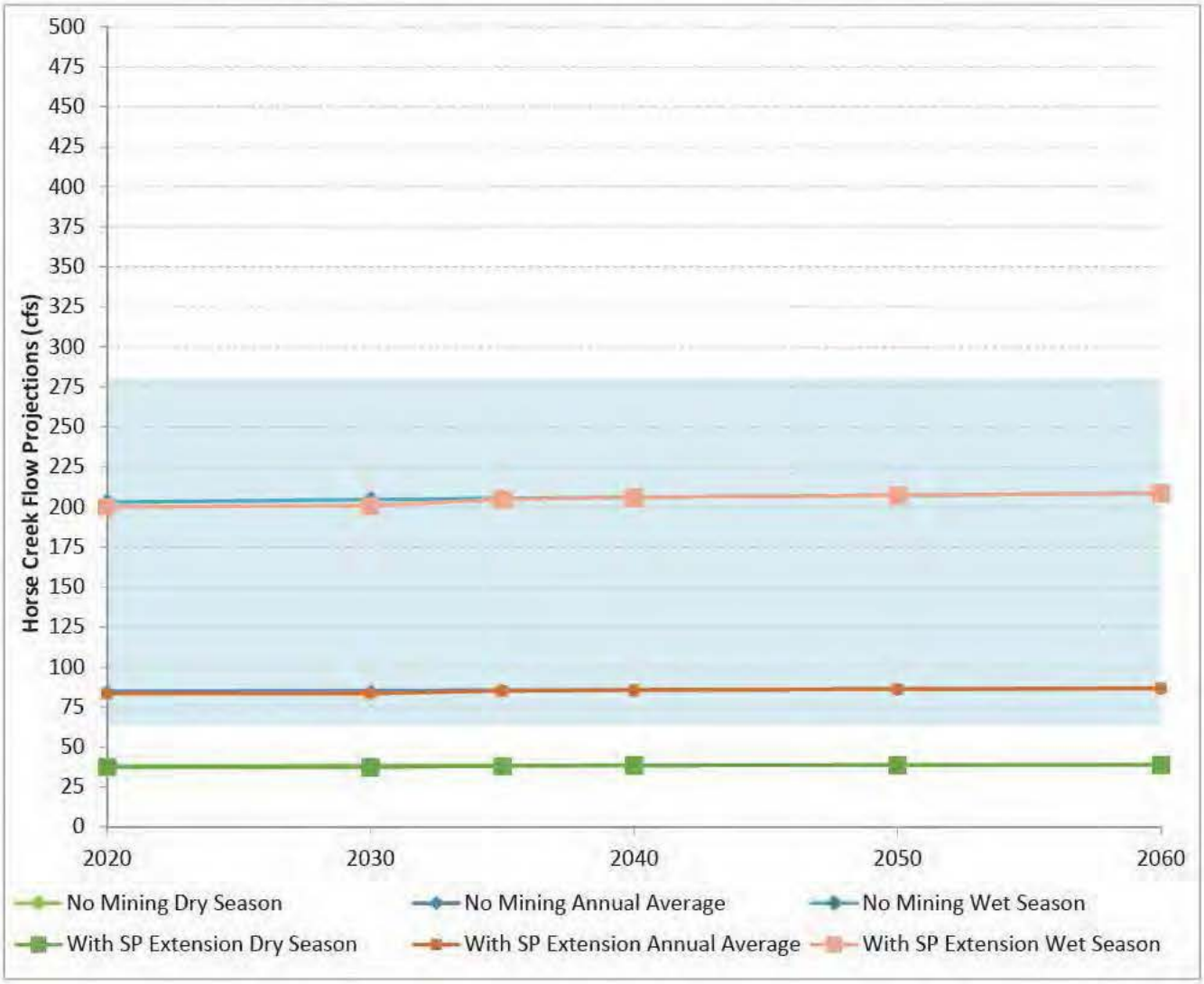
Updated Figure 51

Horse Creek Annual Average and Seasonal Projected Flows for Average Annual Rainfall based on 50 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



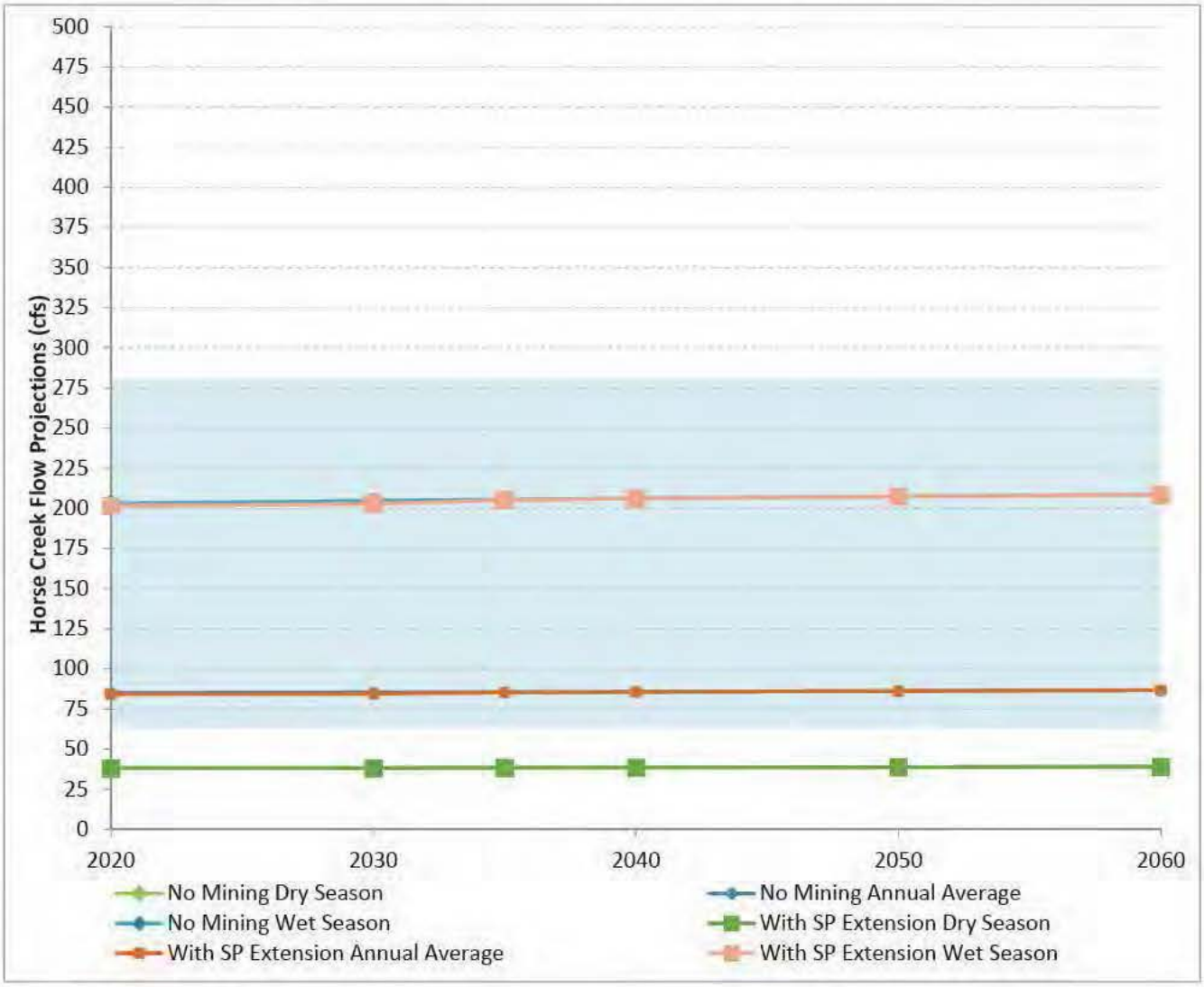
Updated Figure 52

Horse Creek Annual Average and Seasonal Projected Flows for Low Annual Rainfall based on 100 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



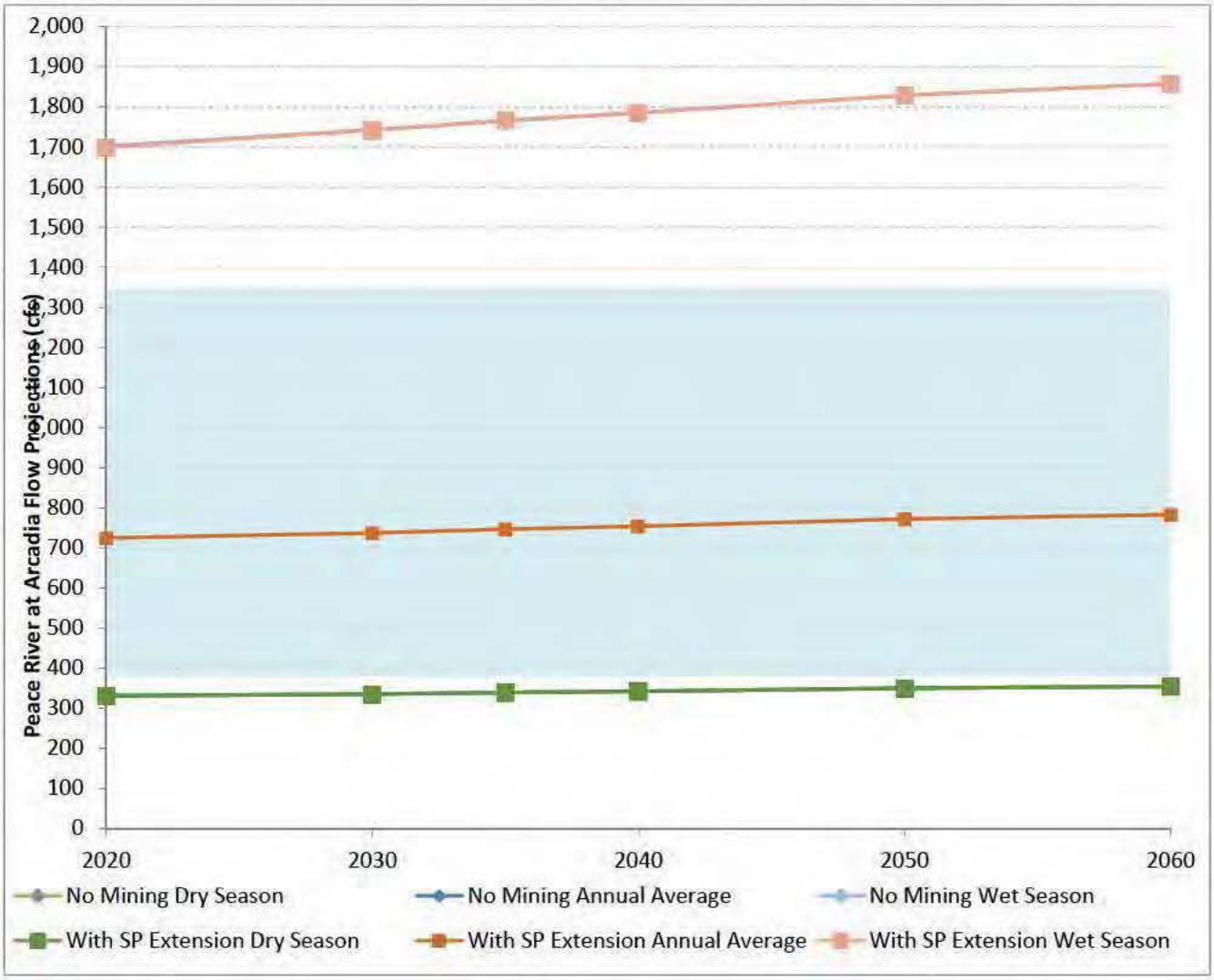
Updated Figure 53

Horse Creek Annual Average and Seasonal Projected Flows for Low Annual Rainfall based on 50 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



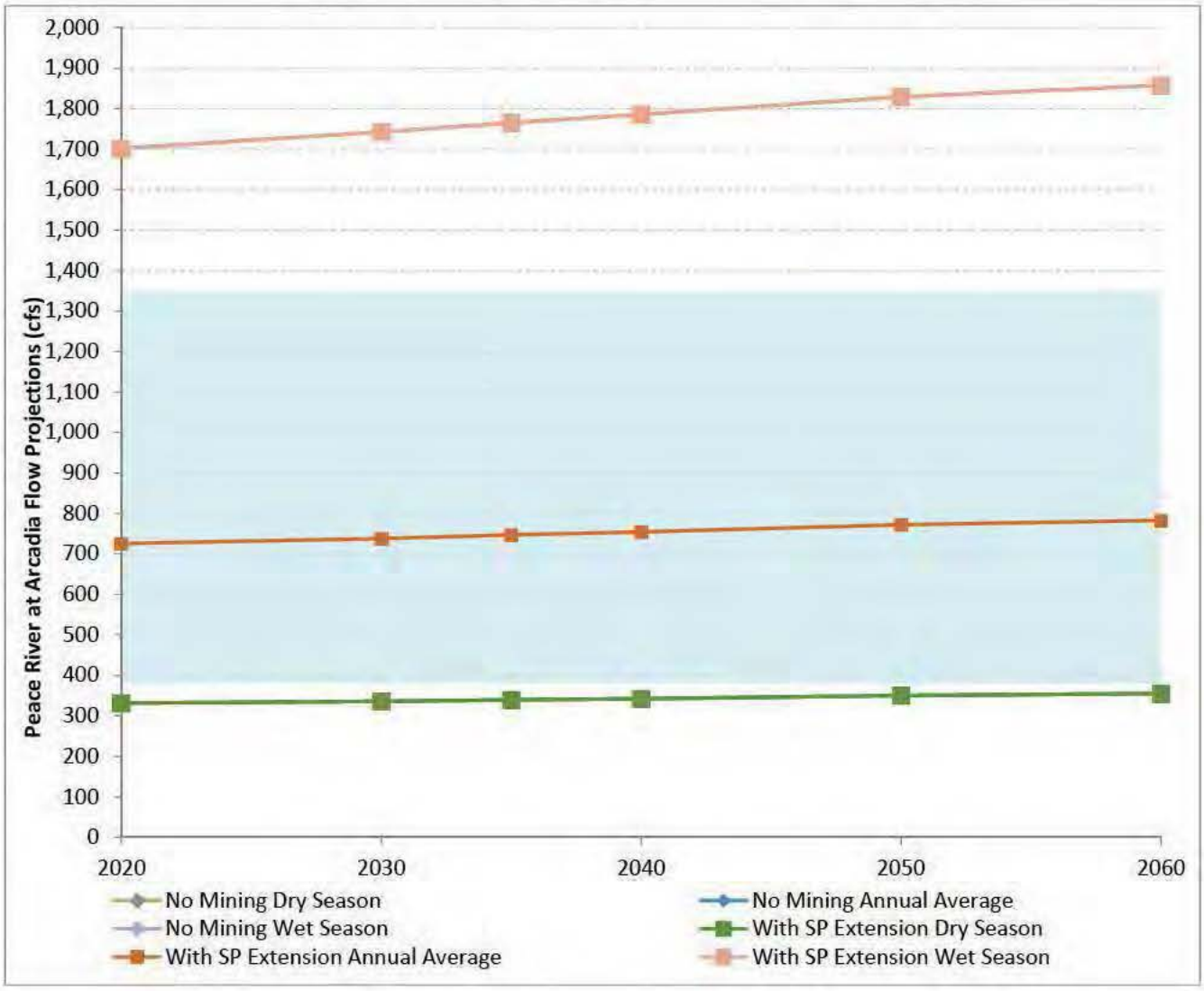
Updated Figure 54

Peace River at Arcadia Annual Average and Seasonal Projected Flows for Average Annual Rainfall based on 100 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



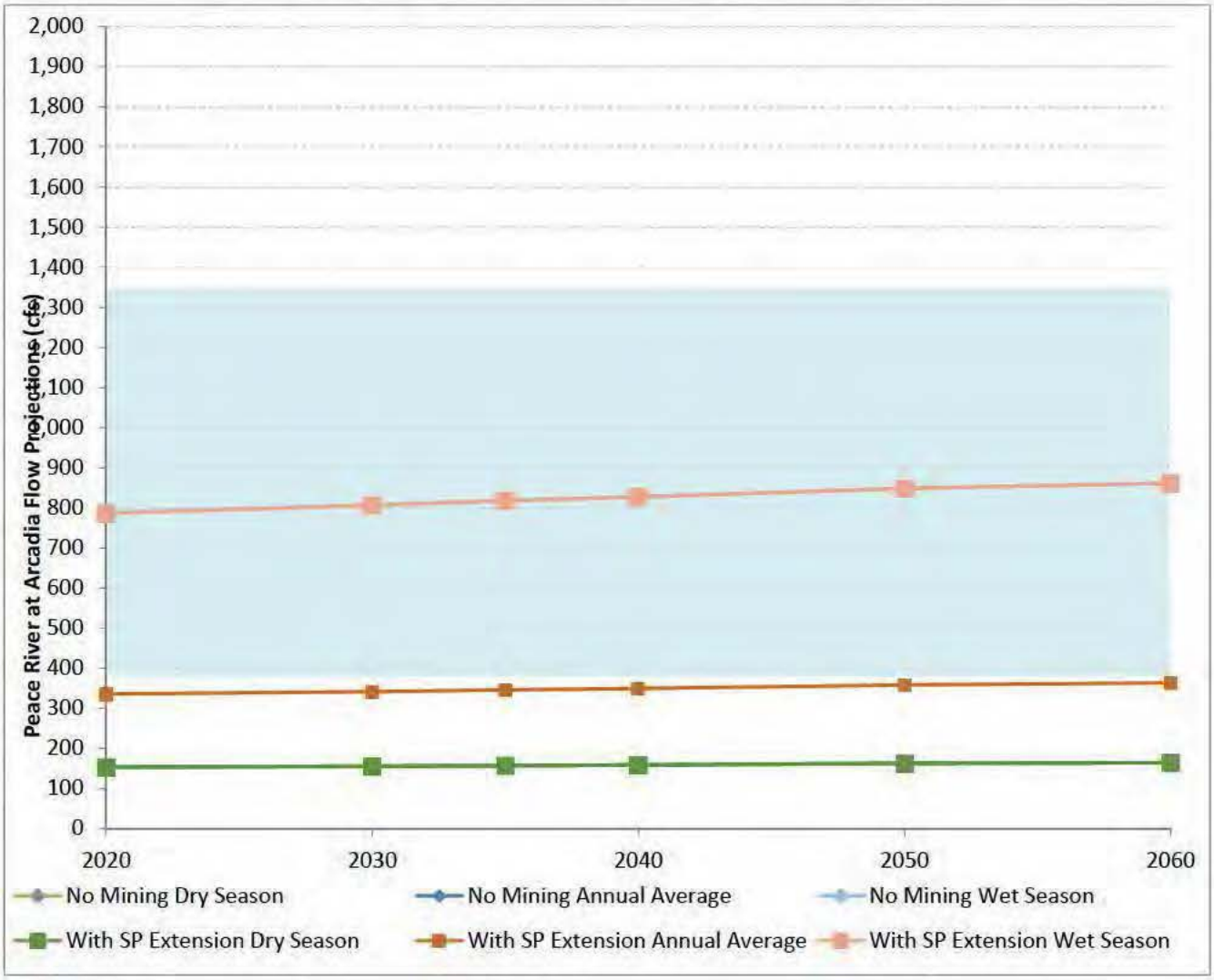
Updated Figure 55

Peace River at Arcadia Annual Average and Seasonal Projected Flows for Average Annual Rainfall based on 50 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



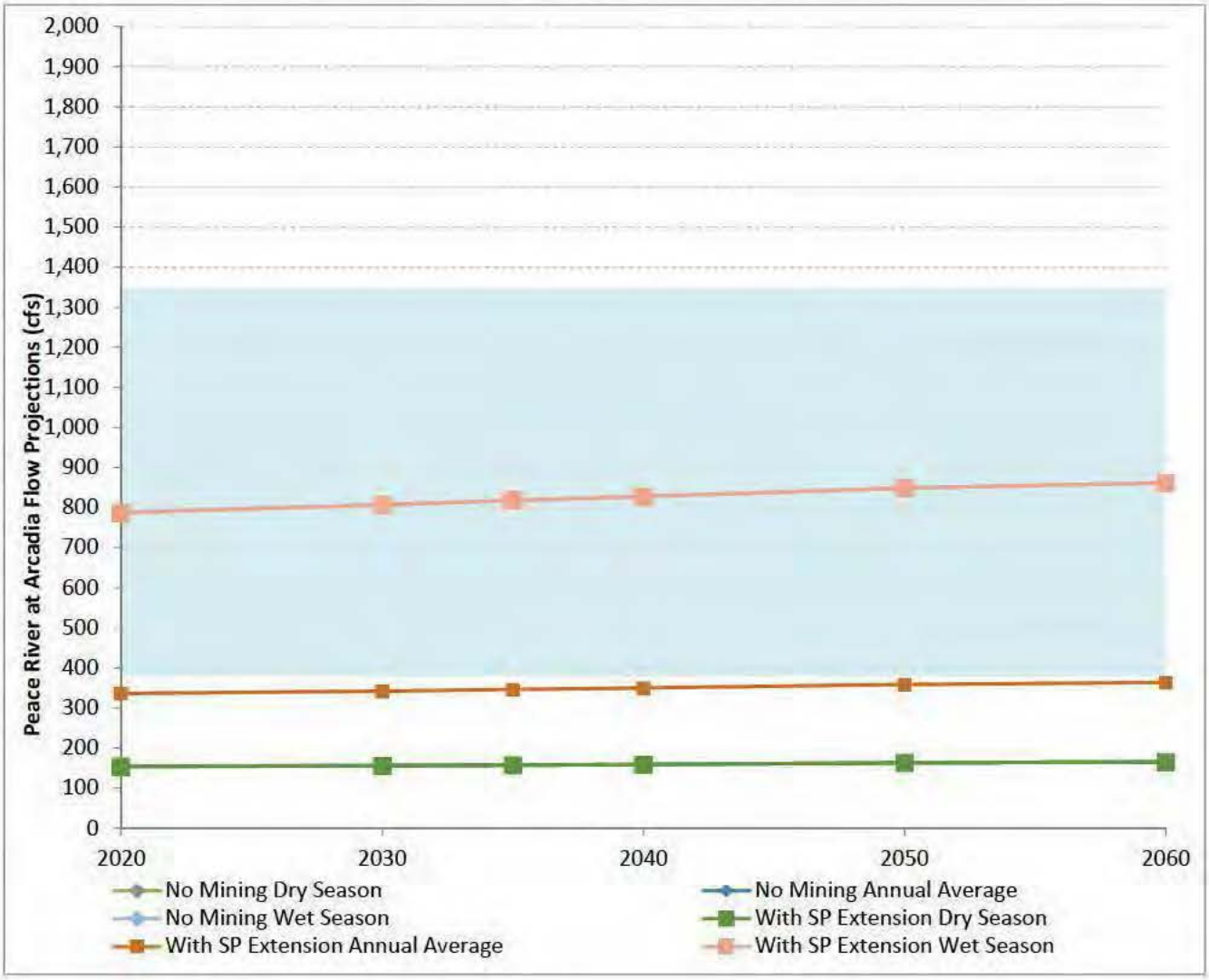
Updated Figure 56

Peace River at Arcadia Annual Average and Seasonal Projected Flows for Low Annual Rainfall based on 100 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



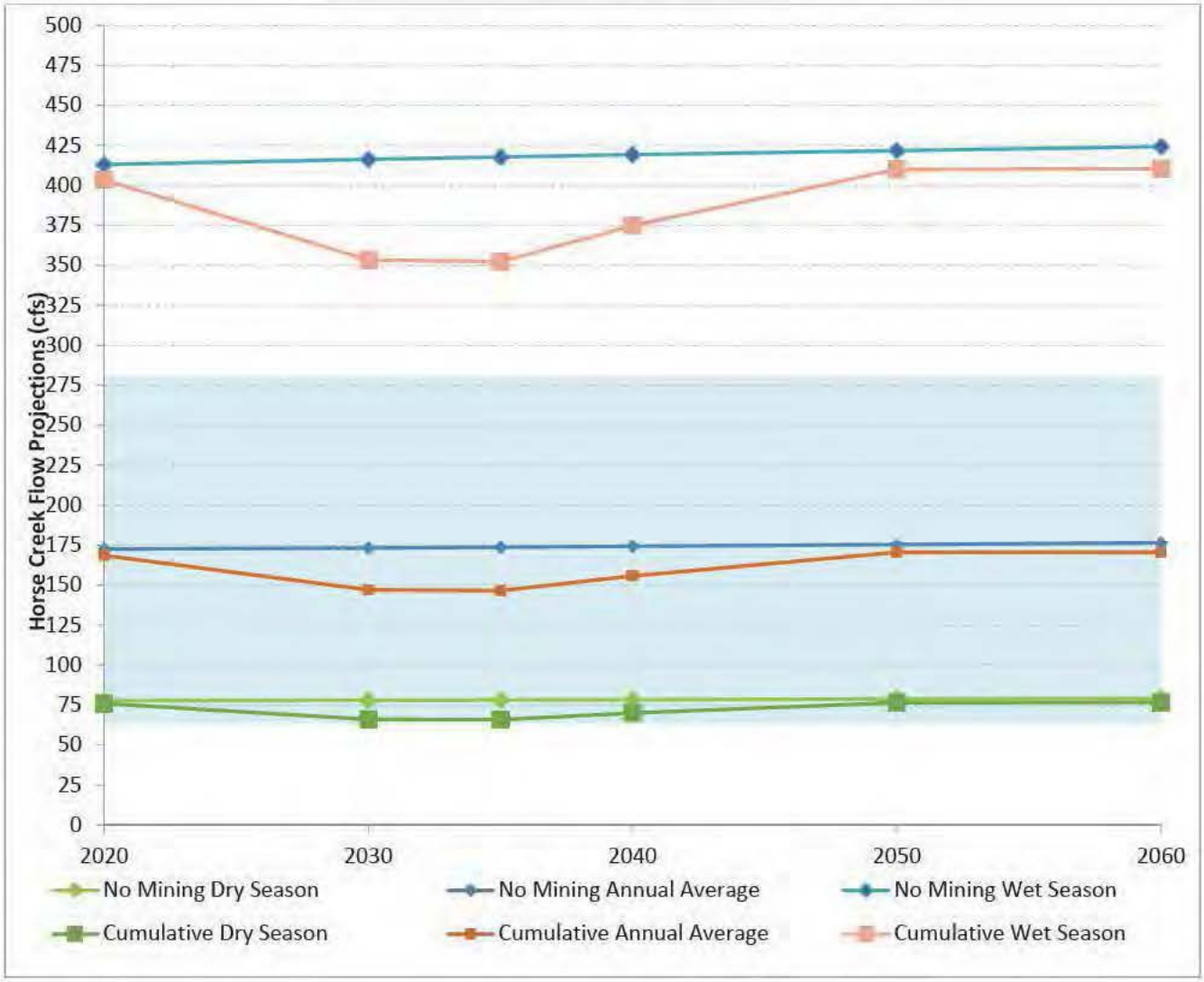
Updated Figure 57

Peace River at Arcadia Annual Average and Seasonal Projected Flows for Low Annual Rainfall based on 50 Percent Capture of Excess Rainfall with and without South Pasture Mine Extension



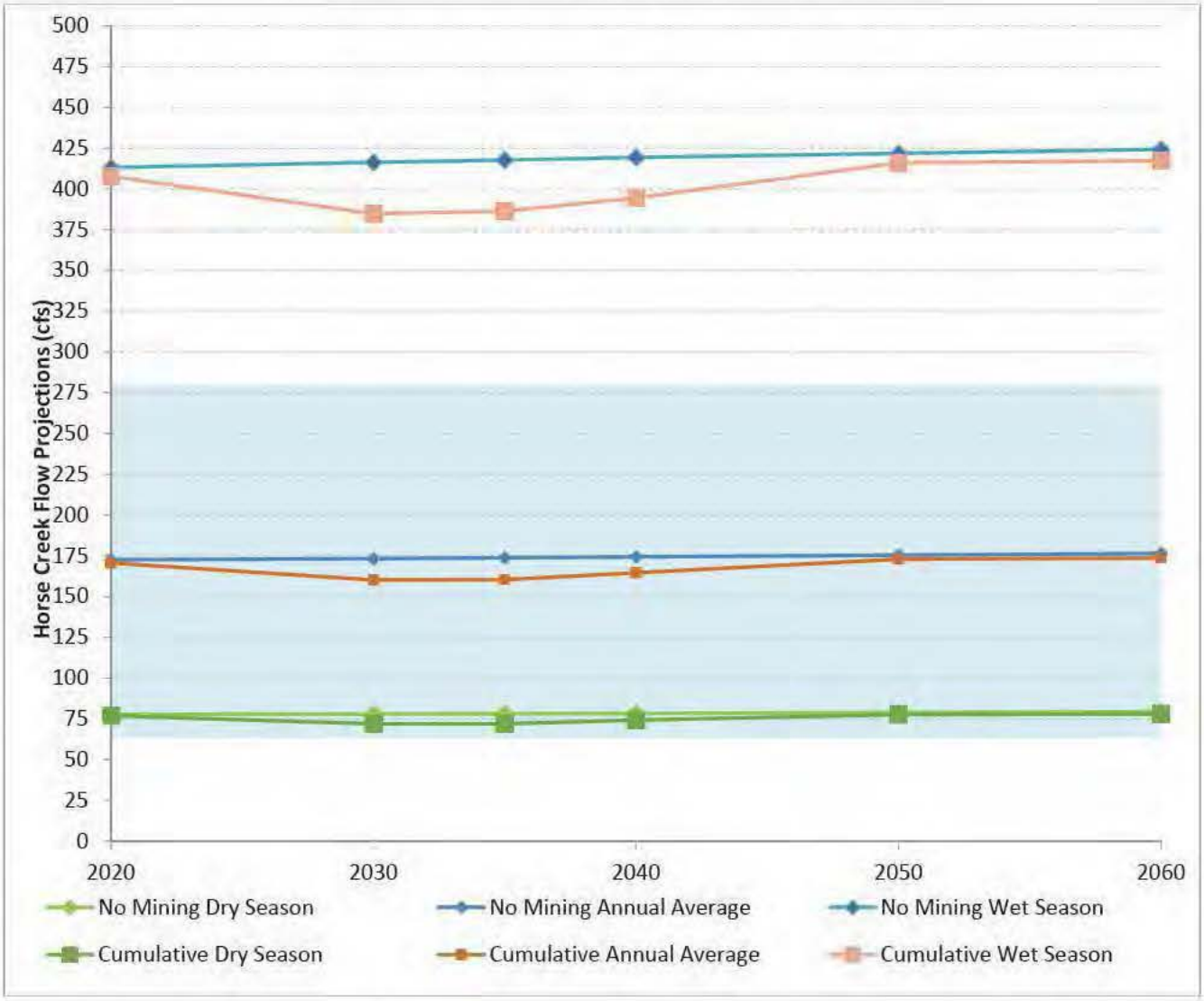
Updated Figure 90

Horse Creek Annual Average and Seasonal Projected Flows for Average Annual Rainfall based on 100 Percent Capture of Excess Rainfall with and without the Three Current Actions and Two Foreseeable Actions



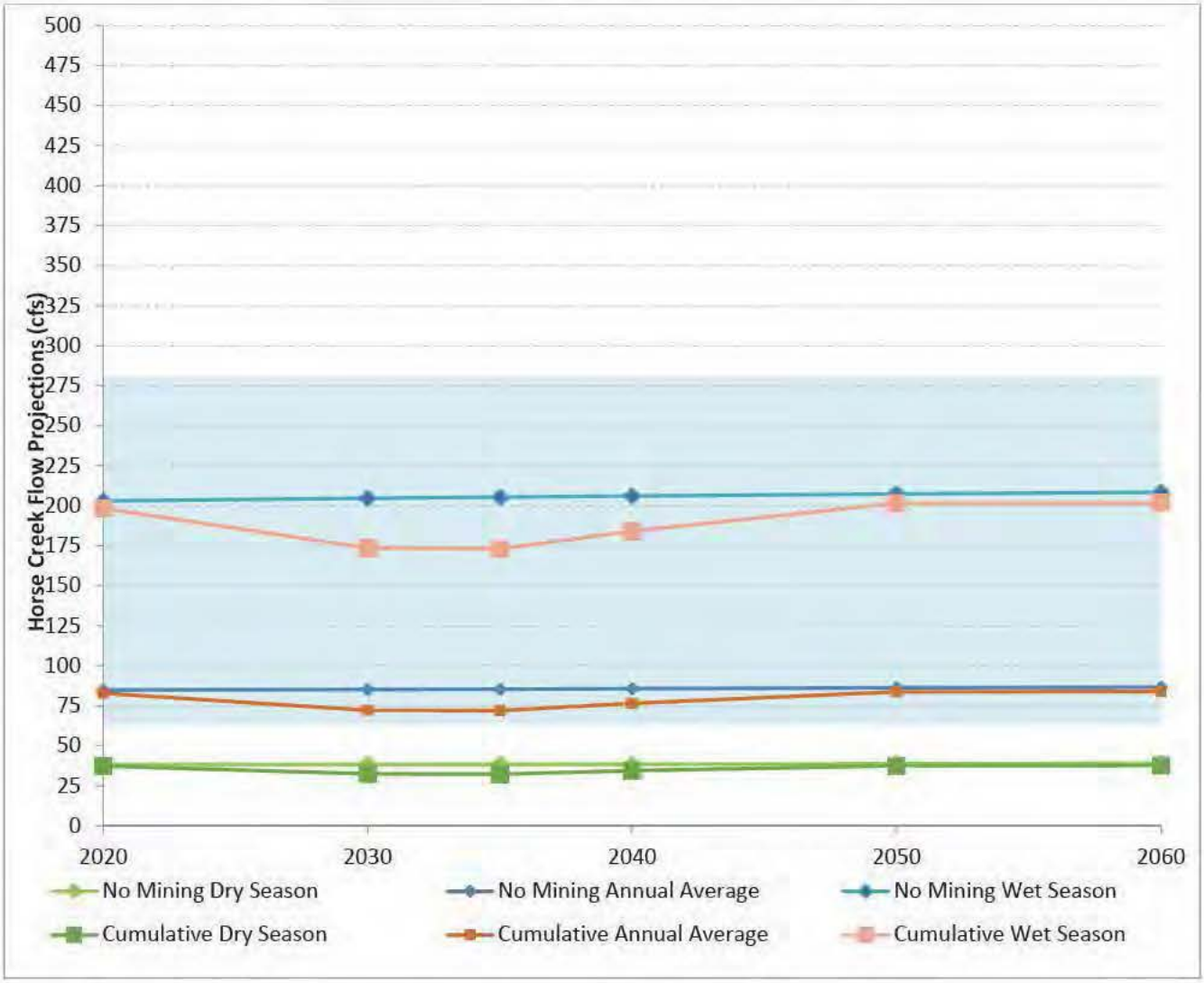
Updated Figure 91

Horse Creek Seasonal and Annual Average Projected Flows for 50 Percent Capture of Excess Rainfall Case during Average Annual Rainfall with and without the Three Current Actions and Two Foreseeable Actions



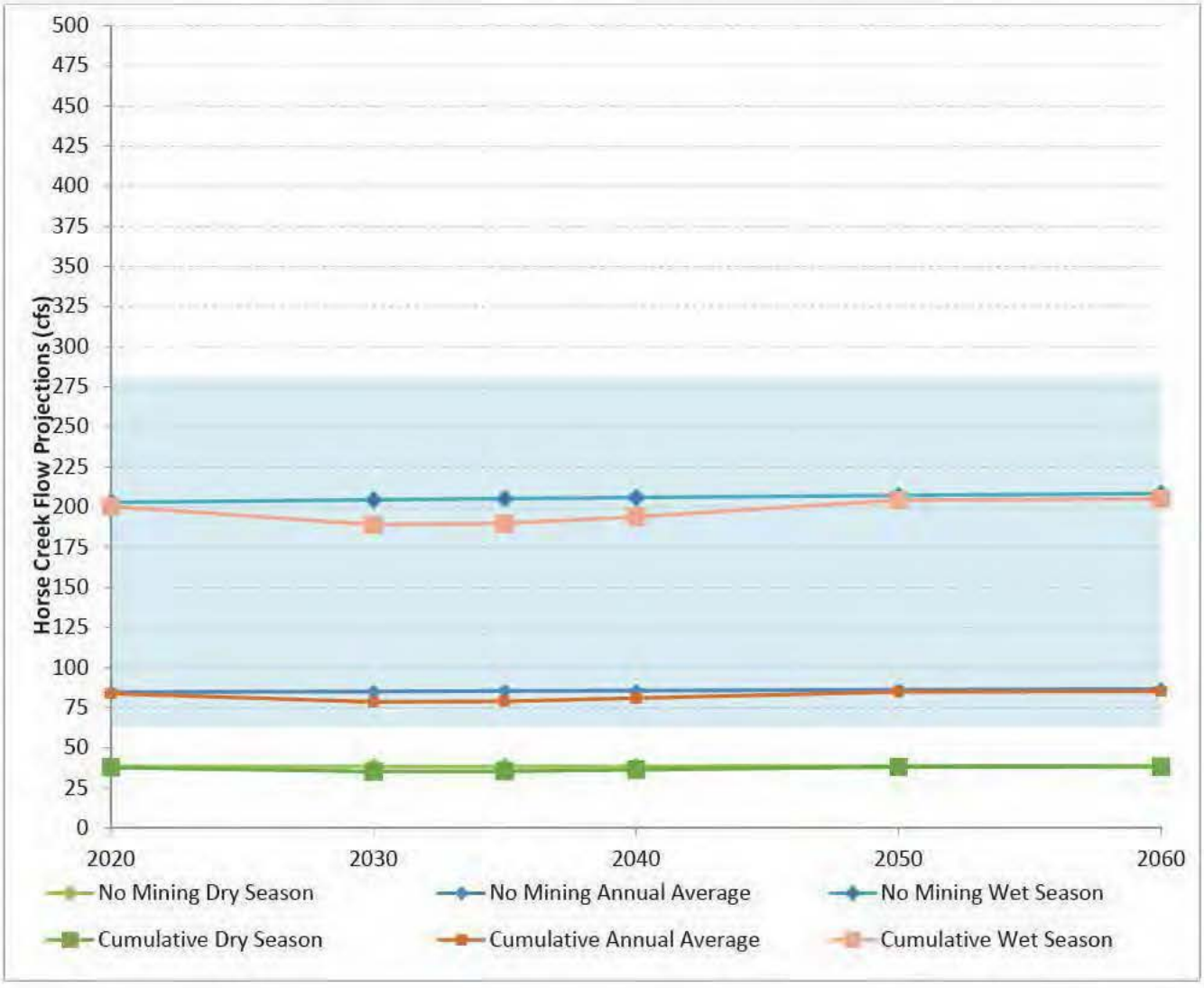
Updated Figure 92

Horse Creek Seasonal and Annual Average Projected Flows for 100 Percent Capture of Excess Rainfall Case during Low Annual Rainfall with and without the Three Current Actions and Two Foreseeable Actions



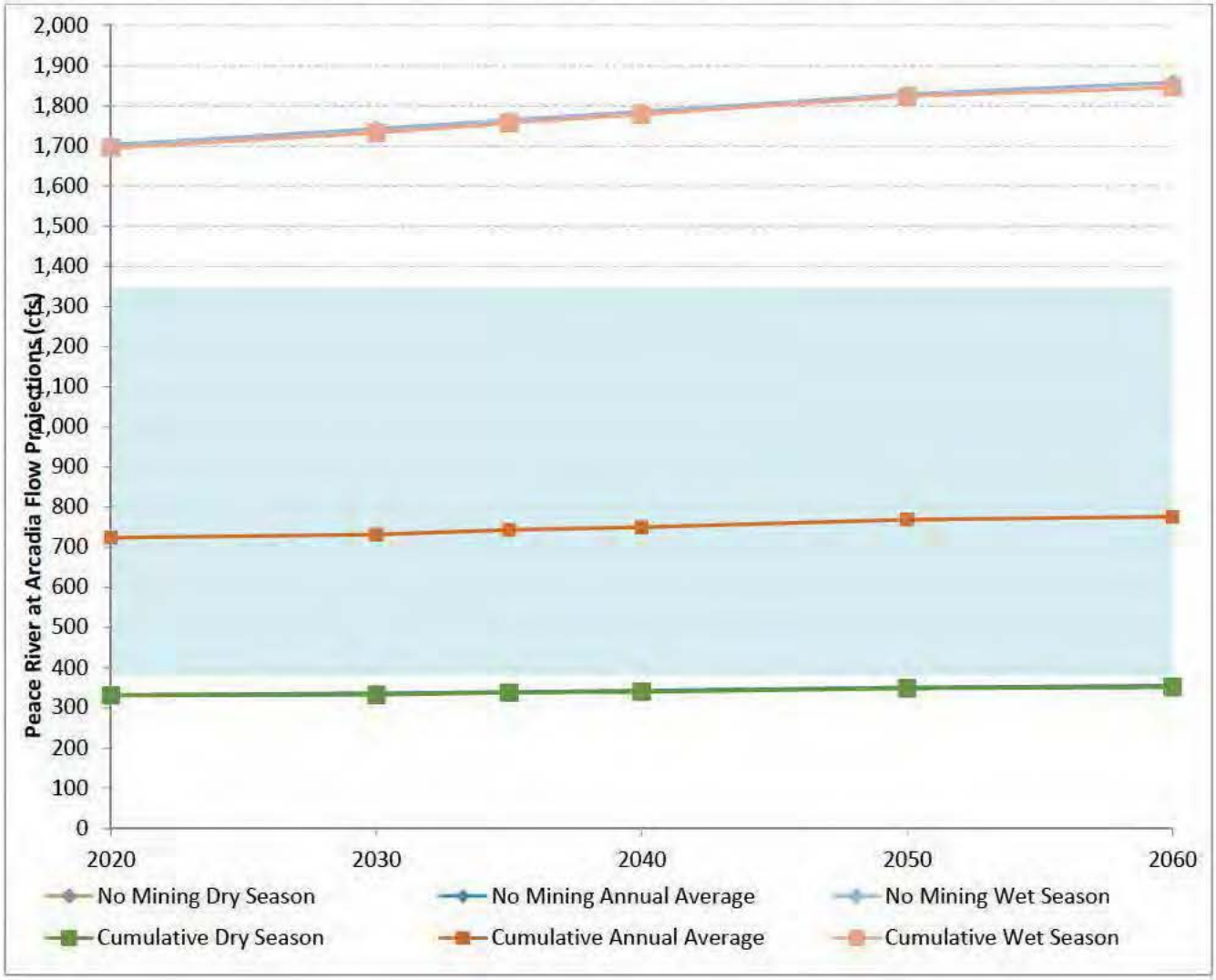
Updated Figure 93

Horse Creek Seasonal and Annual Average Projected Flows for 50 Percent Capture of Excess Rainfall Case during Low Annual Rainfall with and without the Three Current Actions and Two Foreseeable Actions



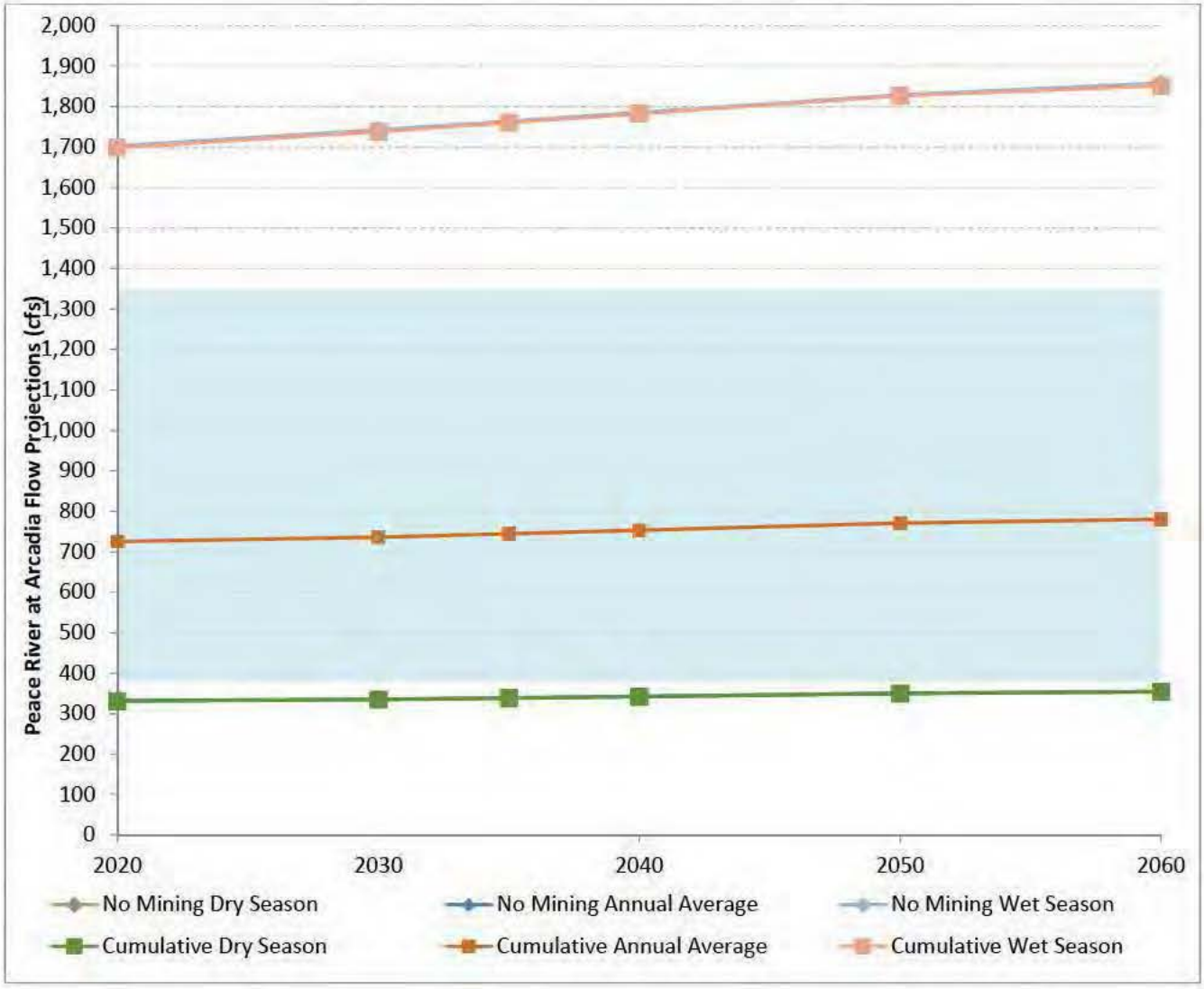
Updated Figure 94

Peace River at Arcadia Annual Average and Seasonal Projected Flows For Average Annual Rainfall based on 100 Percent Capture of Excess Rainfall with and without the Three Current Actions and One Foreseeable Action



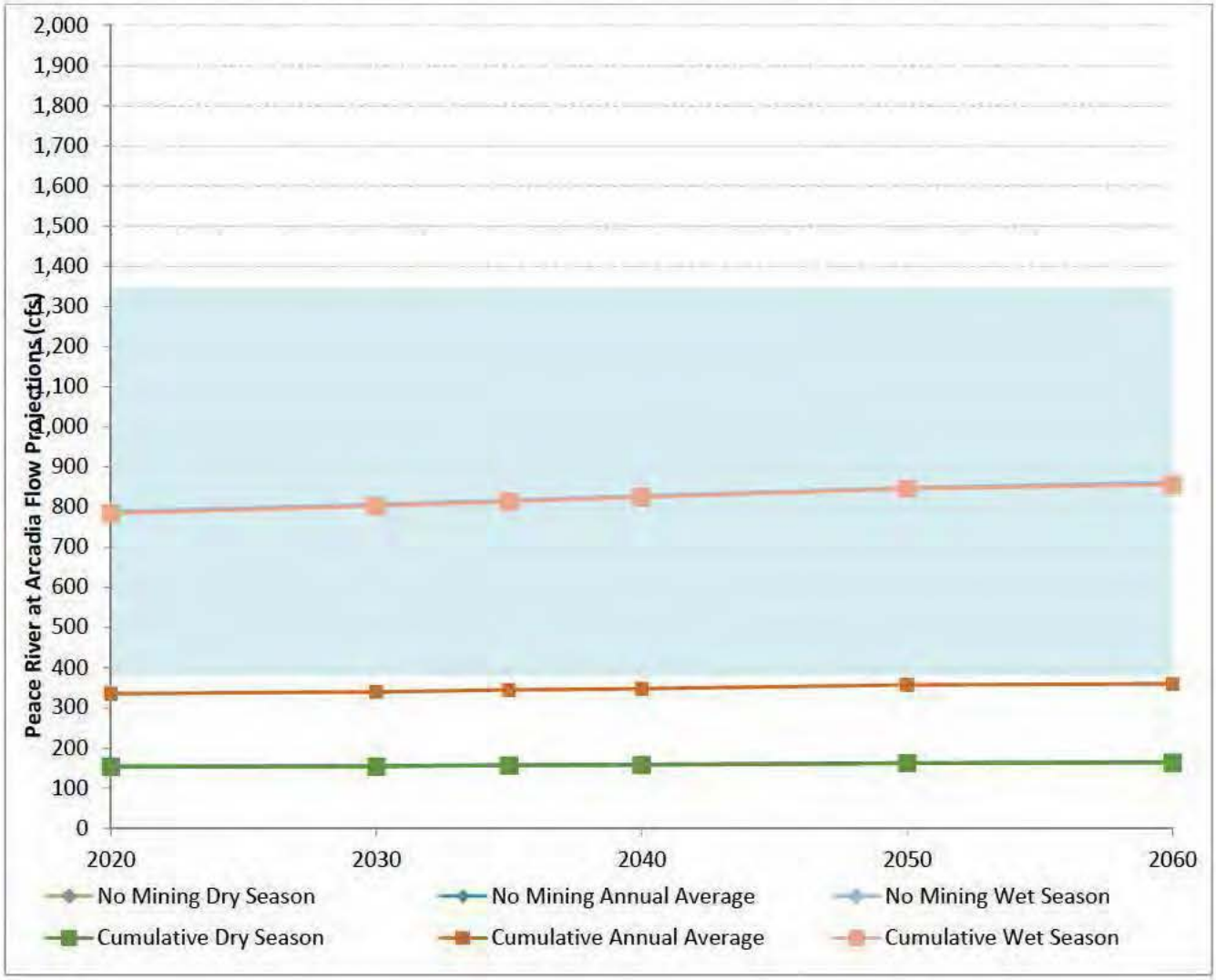
Updated Figure 95

Peace River at Arcadia Seasonal and Annual Average Projected Flows for 50 Percent Capture of Excess Rainfall Case During Average Rainfall with and without the Three Current Actions and One Foreseeable Action



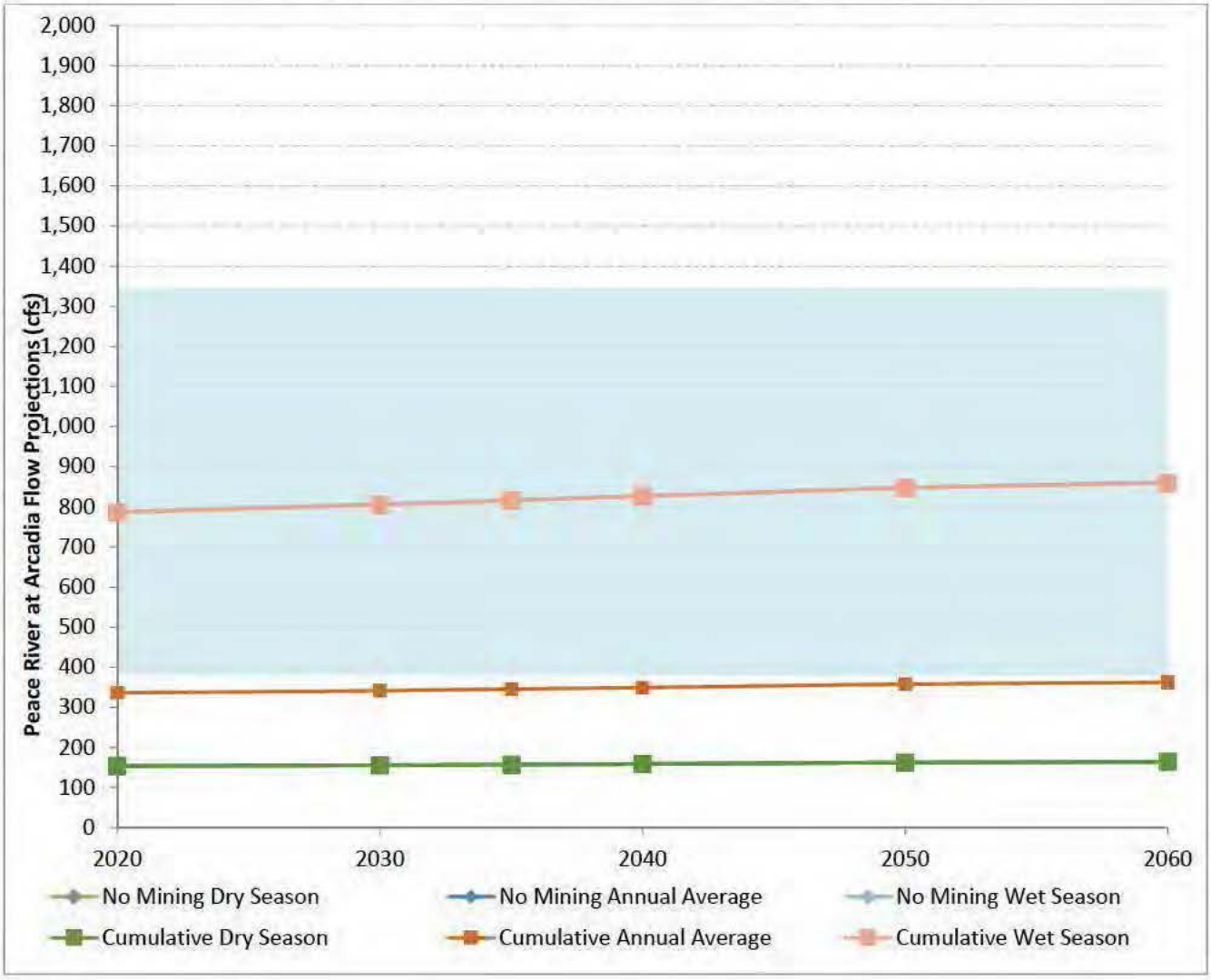
Updated Figure 96

Peace River at Arcadia Seasonal and Annual Average Projected Flows for 100 Percent Capture of Excess Rainfall Case During Low Annual Rainfall with and without the Three Current Actions and One Foreseeable Action



Updated Figure 97

Peace River at Arcadia Seasonal and Annual Average Projected Flows for 50 Percent Capture of Excess Rainfall Case During Low Annual Rainfall with and without the Three Current Actions and One Foreseeable Action



Updated Figure 4-16

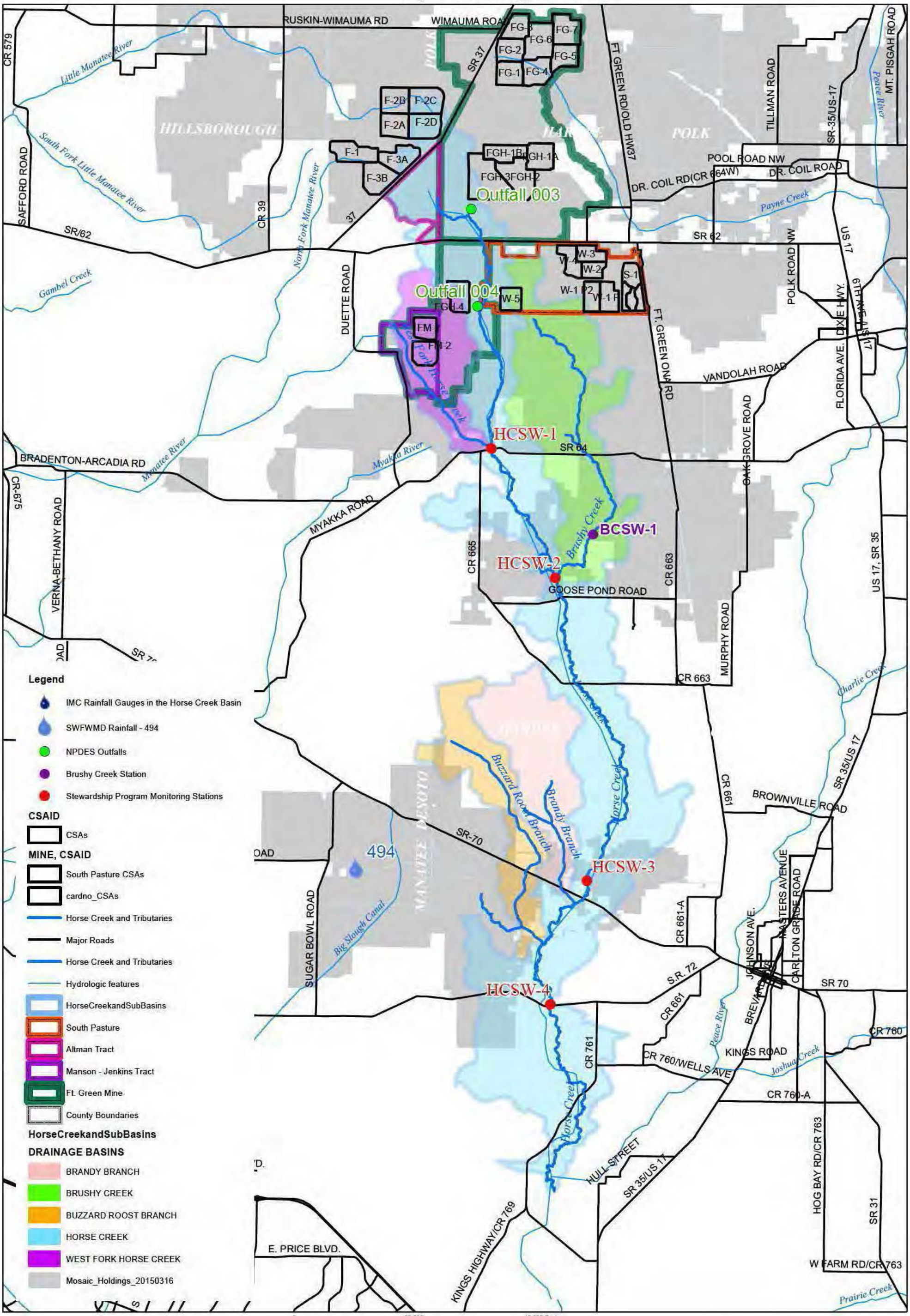


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Figure 1. Overview of drainage basins, HCSP sampling locations, and Mosaic property in the Horse Creek Basin.

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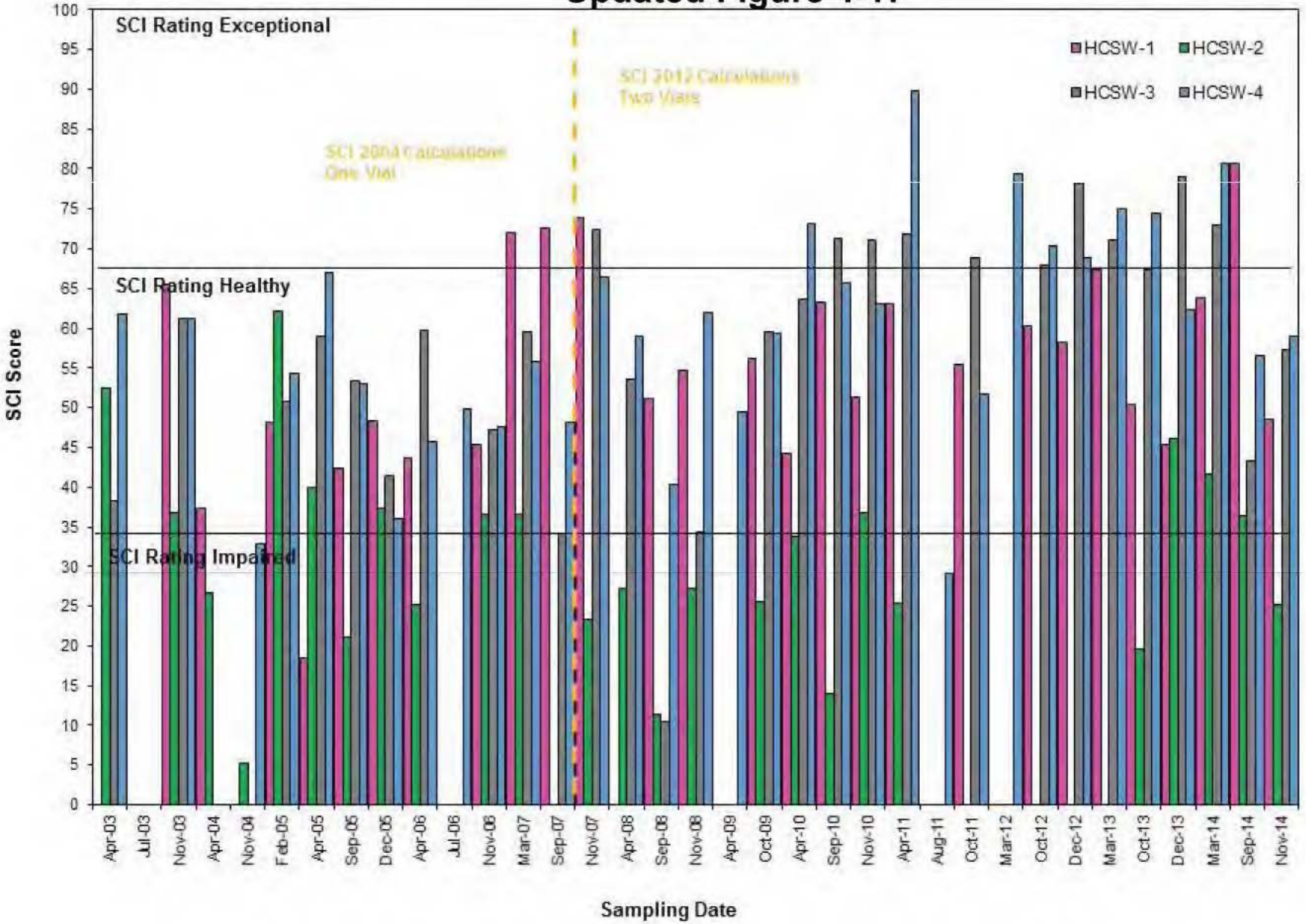
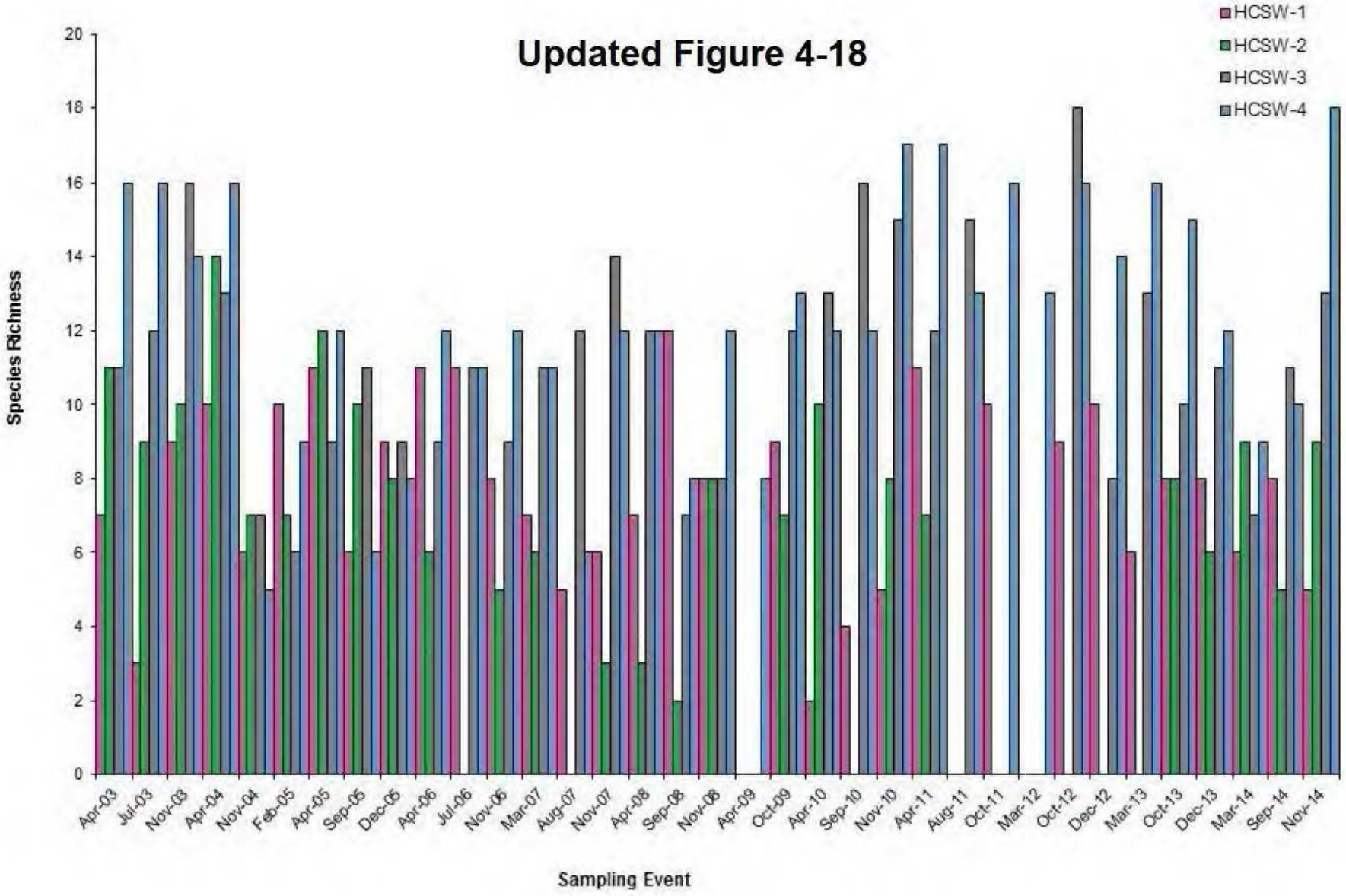
NAD 1983 UTM Zone 17N feet

Rev. Date: 12/05/16 FM: KMNR GIS Analyst: KMNR Map Document: horsecreek_overview_2014_Figure1.mxd PDF Document: horsecreek_overview_2014_Figure1.pdf Plot Size: 11 x 17

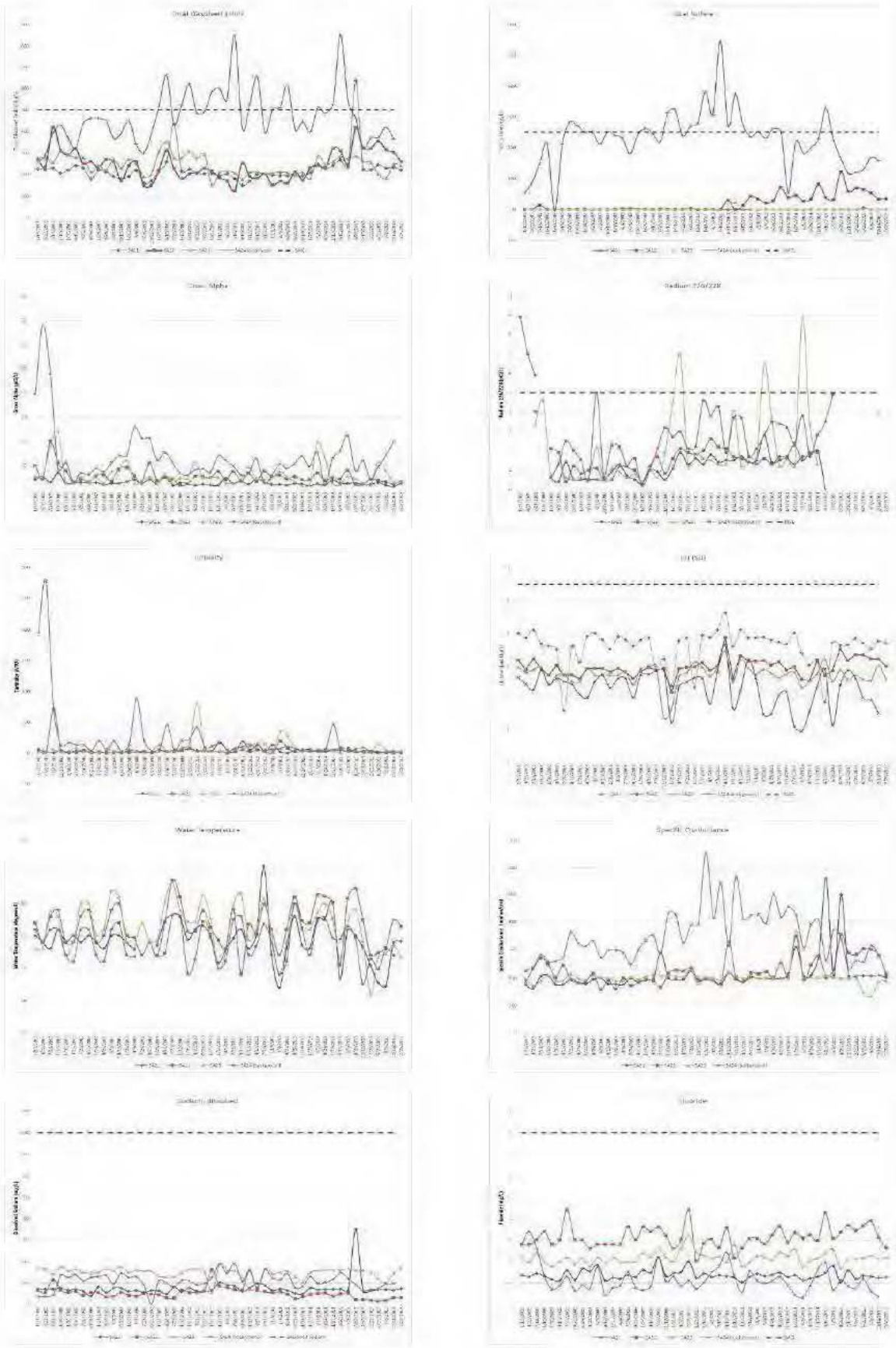
Updated Figure 4-17



Updated Figure 4-18



Updated Figure 4-20. South Pasture Mine Groundwater Monitoring Water Quality Records, 2005-2017



Source: Mosaic, 2017

Updated Table 4-71

Table 4-71. Current Summary of Avoidance of and Impacts to Waters of the United States for Ona Mine[a]

	Existing (% of Mine Site)	Avoid (% of Total)	Impact (% of Total)
All Wetlands and Waters (acres)	4,885 (22%)	1,484 (30%)	3,426 (70%)
Forested Wetlands (acres)	2,456 (11%)	1,105 (45%)	1,358 (55%)
Non-forested Wetlands (acres)	2,390 (11%)	378 (16%)	2,032 (85%)
Non-stream Surface Waters (acres)	38.7 (<1%)	<1 (<1%)	36.2 (94%)
Streams (linear feet)	221,622	120,856 (55%)	100,767 (45%)

[a] Based on the November 2016 application. Values subject to change.

Updated Table 4-83

Table 4-83. Current Summary of Upland Wildlife Habitat Avoidance, Impact, and Reclamation for Ona Mine[a]

Habitat Type	Existing (% of Mine Site)	Avoid (% of Total)	Impact (% of Total)	Reclaim[b]	Post-Mining	Amount Change (% Change)
Rangeland	2,858 (13%)	422 (<1%)	2,391 (84%)	1,491	2,055	-803 (-28%)
Upland Forest	6,339 (28%)	1,881 (30%)	4,457 (70%)	4,191	6,346	-7 (<-1%)
Pastureland and Row Crops	9,258 (41%)	30 (<1%)	8,846 (96%)	8,460	8,490	-768 (-8%)

[a] Based on the November 2016, application. Values subject to change.
[b] Not under the USACE's authority.
Notes:
Values = acres

Updated Table 4-98 – Ona Project with Changes
Net Impacts with Ona Alternative as Compared to No Action Alternative on Hardee County

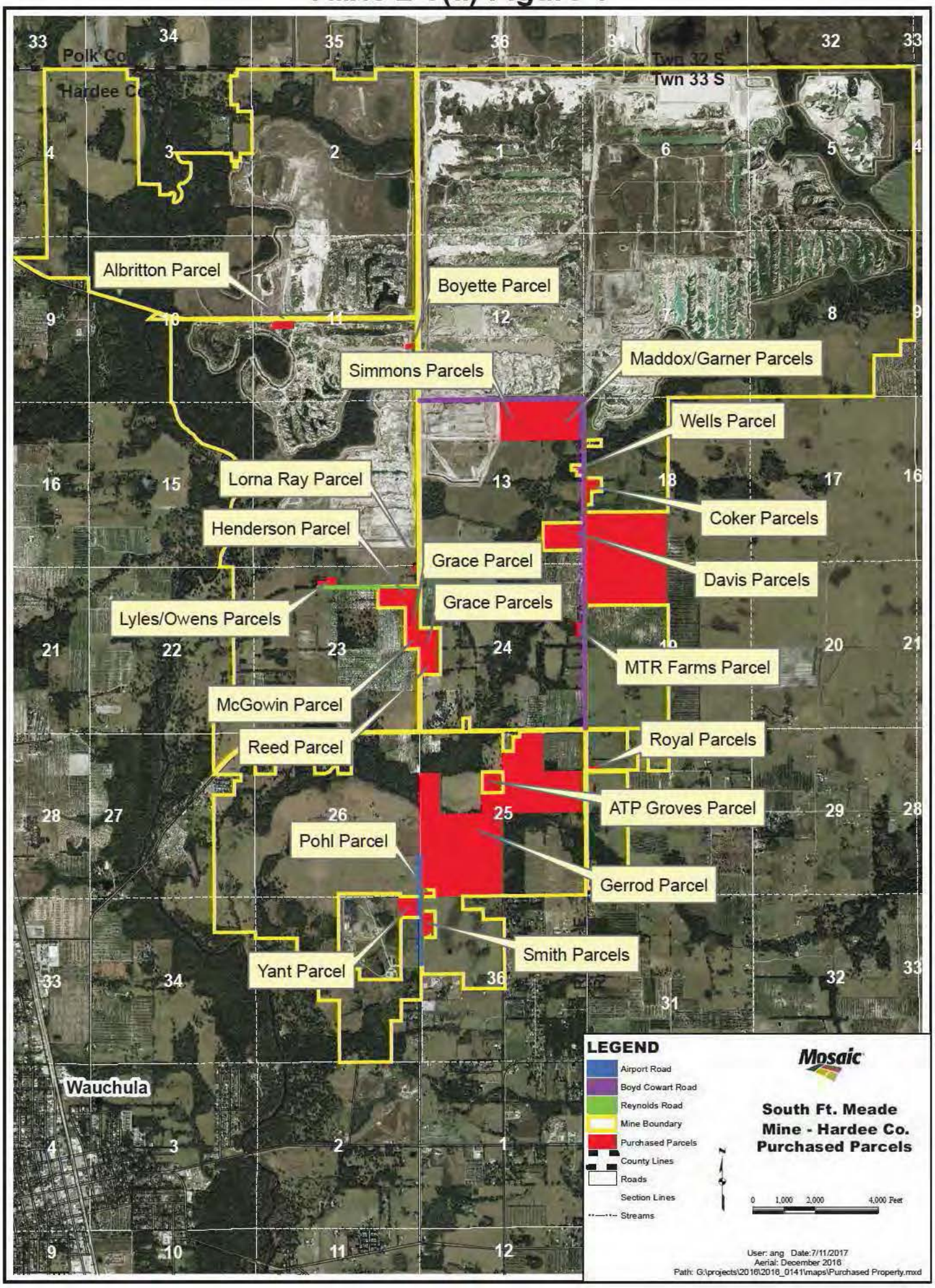
	No Action	With Mine	Difference
Average Annual	840	1,691	851
Present Value Labor Income	$3,296,500,00	$6,145,200,00	$2,848,700,0
Present Value – Value	$6,798,600,00	$12,622,100,00	$5,823,500,0
Present Value Output	$11,459,900,00	$21,266,600,00	$9,806,700,0

Table 2-3(a)	Waters of the U.S. Potentially Impacted by Additional Infill Parcels

Mine Site	Total Area of Infill (Acres)*	Land Area to be Disturbed (acres)**	Wetlands Proposed to be Impacted (acres)***	Streams Proposed to be Impacted (linear feet)***
South Fort Meade	717	717	48.5	6,030
South Pasture	930	930	143.38	950
Totals	1,647	1,647	191.88	6,980

*Includes areas that may be associated with future No Permit Required requests
** Estimate only-Avoidance and minimization analysis has not yet occurred
***Estimates based on preliminary information-Approved jurisdictional determinations are not available for all sites

Table 2-3(a) Figure 1



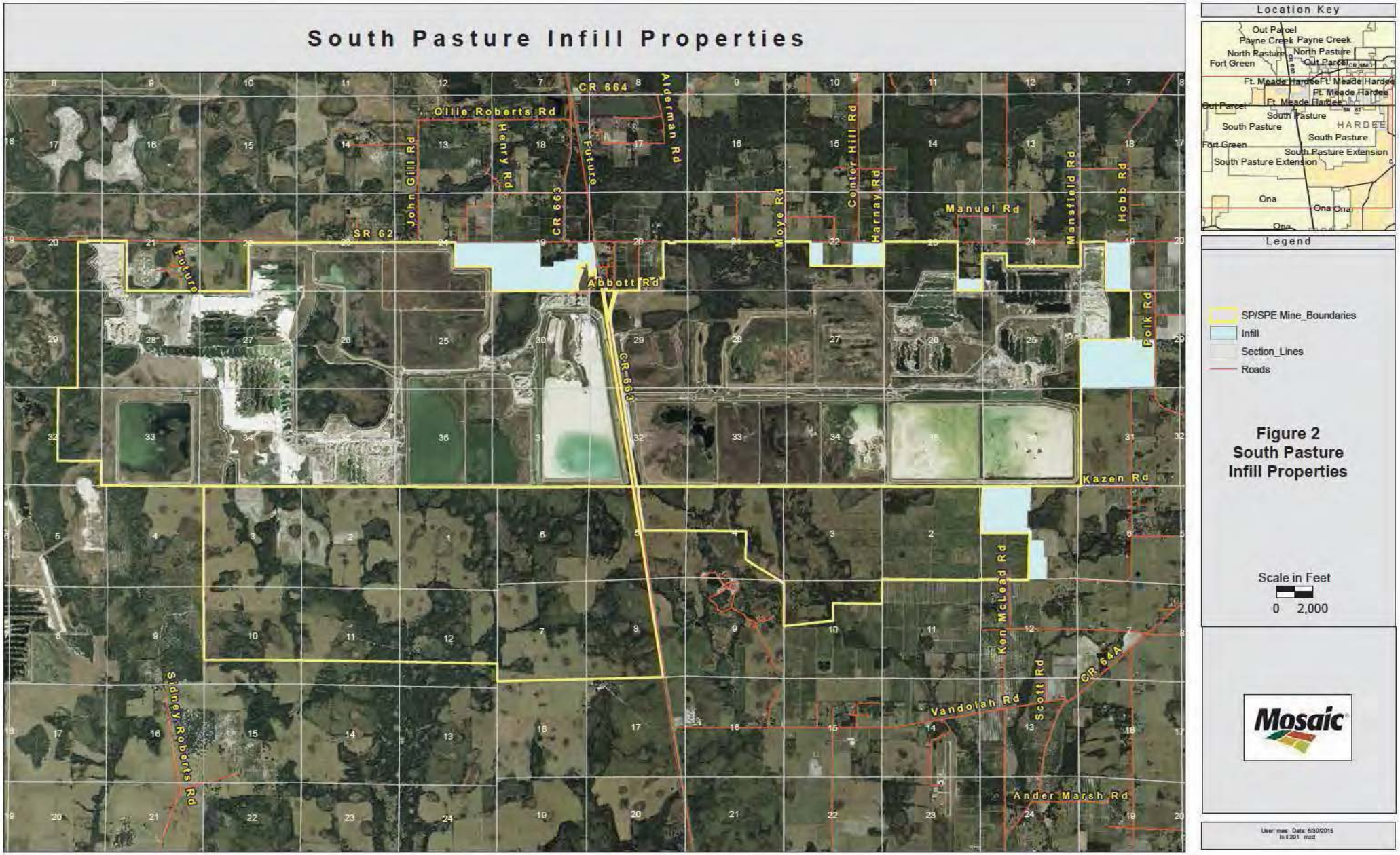
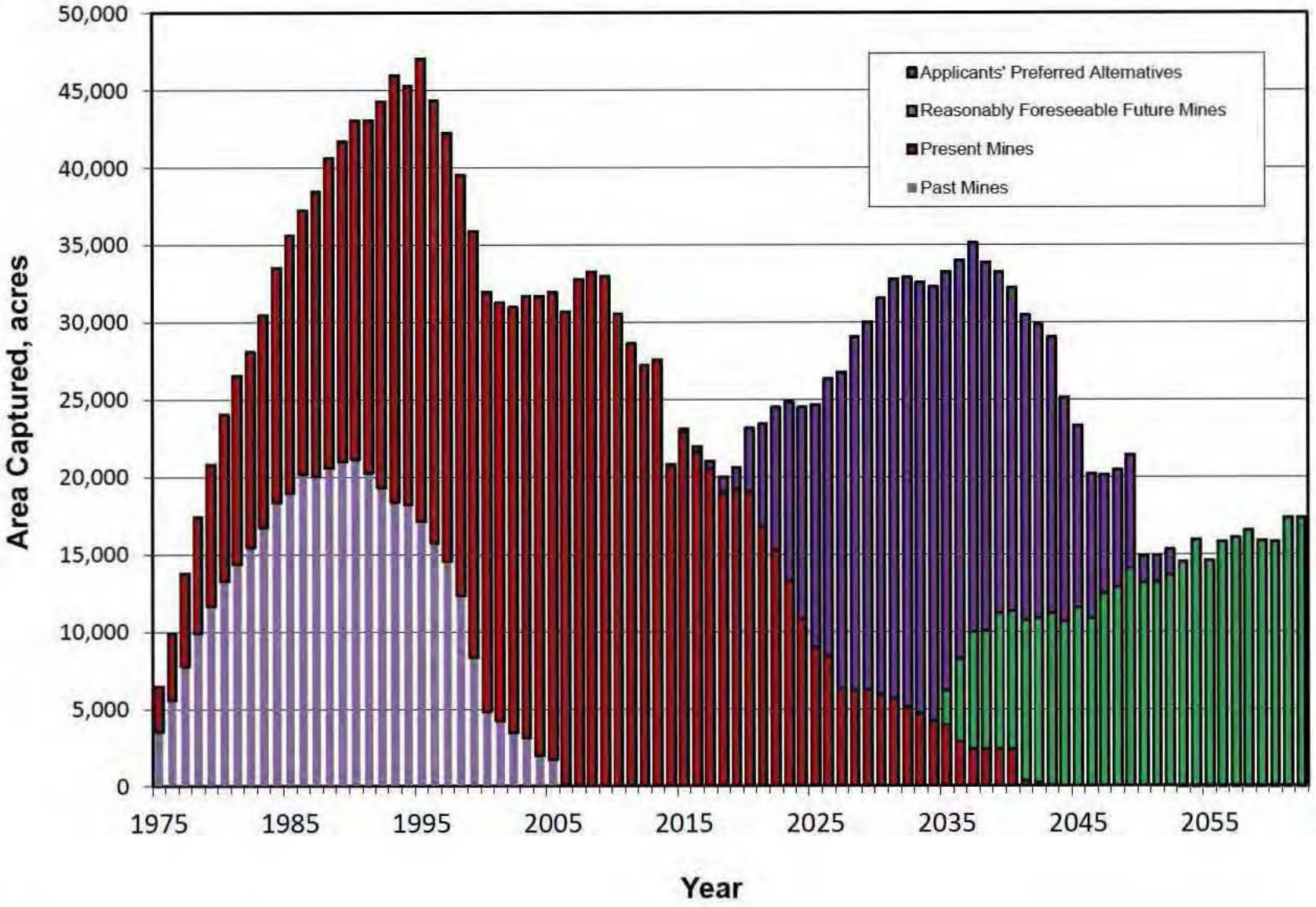


Table 2-3(a) Figure 2

Area Captured by Phosphate Mining

Peace and Myakka River Basins



Ardaman & Associates, Inc.

Updated Figure 4-24

Updated Table 4-113

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 100 Percent Capture at the Horse Creek Flow Station with Three Current Actions and Two Foreseeable Actions within the Horse Creek Subwatershed

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	171	0%	78	0%	404	0%
2020	169	-1%	76	-2%	404	0%
2030	147	-14%	66	-15%	353	-13%
2035	145	-15%	65	-16%	350	-14%
2040	154	-10%	69	-11%	371	-8%
2050	171	0%	77	-1%	412	2%
2060	171	0%	77	-1%	410	1%

Updated Table 4-114

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 50 Percent Capture at the Horse Creek Flow Station with Three Current Actions and Two Foreseeable Actions within the Horse Creek Subwatershed

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	171	0%	78	0%	404	0%
2020	171	0%	77	-1%	408	1%
2030	160	-6%	72	-7%	385	-5%
2035	160	-6%	72	-8%	385	-5%
2040	164	-4%	74	-5%	393	-3%
2050	173	1%	78	0%	417	3%
2060	174	2%	78	1%	417	3%

Updated Table 4-115

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 100 Percent Capture at the Horse Creek Flow Station with Three Current Actions and Two Foreseeable Actions within the Horse Creek Subwatershed

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	84	0%	38	0%	199	0%
2020	83	-1%	37	-2%	198	0%
2030	72	-14%	32	-15%	174	-13%
2035	71	-15%	32	-16%	172	-14%
2040	76	-10%	34	-11%	182	-8%
2050	84	0%	38	-1%	202	2%
2060	84	0%	38	-1%	202	1%

Updated Table 4-116

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 50 Percent Capture at the Horse Creek Flow Station with Three Current Actions and Two Foreseeable Actions within the Horse Creek Subwatershed

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	84	0%	38	0%	199	0%
2020	84	0%	38	-1%	200	1%
2030	79	-6%	35	-7%	189	-5%
2035	79	-6%	35	-7%	189	-5%
2040	81	-4%	36	-5%	193	-3%
2050	85	1%	38	0%	205	3%
2060	85	2%	38	1%	205	3%

Updated Table 4-117

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 100 Percent Capture at the Peace River at Arcadia Flow Station with Three Current Actions and One Foreseeable Action

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	713	0%	328	0%	1,657	0%
2020	724	2%	331	1%	1,695	2%
2030	732	3%	332	1%	1,733	5%
2040	749	5%	340	4%	1,777	7%
2050	769	8%	349	6%	1,824	10%
2060	776	9%	352	7%	1,846	11%

Updated Table 4-118

Projected Flows and Percent Change from 2009 Flows during Average Rainfall Year and 50 Percent Capture at the Peace River at Arcadia Flow Station with Three Current Actions and One Foreseeable Action

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	713	0%	328	0%	1,657	0%
2020	725	2%	332	1%	1,699	3%
2030	736	3%	335	2%	1,738	5%
2040	753	6%	342	4%	1,781	8%
2050	771	8%	350	7%	1,826	10%
2060	780	9%	354	8%	1,852	12%

Updated Table 4-119

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 100 Percent Capture at the Peace River at Arcadia Flow Station with Three Current Actions and One Foreseeable Action

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	330	0%	152	0%	766	0%
2020	336	2%	154	1%	784	2%
2030	340	3%	154	2%	803	5%
2040	348	5%	158	4%	824	8%
2050	357	8%	162	7%	846	10%
2060	361	9%	163	8%	856	12%

Updated Table 4-120

Projected Flows and Percent Change from 2009 Flows during Low Rainfall Year and 50 Percent Capture at the Peace River at Arcadia Flow Station with Three Current Actions and One Foreseeable Action

Year	Annual Average Flow (cfs)	Annual Average Percent Change from 2009 Flows	Dry Season Average Flow (cfs)	Dry Season Average Percent Change from 2009 Flows	Wet Season Average Flow (cfs)	Wet Season Average Percent Change from 2009 Flows
2009	330	0%	152	0%	766	0%
2020	336	2%	154	1%	786	3%
2030	341	3%	155	2%	805	5%
2040	349	6%	159	5%	826	8%
2050	358	8%	163	7%	847	11%
2060	362	10%	164	8%	859	12%

Updated Table 4-130

Table 4-130. Combined Currently Proposed Impacts of Applicants' Preferred Alternatives on Ecological Resources[a]

Ecological Resource	Existing	Impacted
Total Wetlands[b] (acres)	11,965	7,978
Total Stream Length[b] (linear feet)	461,374	197,852
Total Native Uplands[c](acres)	14,110	11,301
Total Upland Wildlife Habitat[d] (acres)	38,770	31,529

Notes:
[a] Based on the applications and approvals as of June 2017. Values subject to change.
[b] USACE-jurisdictional (natural and ditched natural streams)
[c] Rangelands and Upland Forests
[d] Native Uplands and Pasturelands

Updated Table 4-137. Net Impacts for Hardee County with Ona and South Pasture Extension Mines and the Pioneer Tract			
	No Action	**With Mines**	**Difference**
Average Annual Employment	840	2157	1317
Present Value Labor Income	$3,296,500,000	$7,283,300,000	$3,986,800,000
Present Value, Value Added	$6,798,600,000	$14,950,900,000	$8,152,300,000
Present Value Output	$11,459,900,000	$25,189,000,000	$13,729,100,000

Updated Table 4-139. Net Impacts based on Desoto, Wingate East, South Pasture Extension, and Ona Mines plus the Pine Level/Keys and Pioneer Tracts Compared to the No Action Alternative			
	No Action	**With Mines**	**Difference**
Average Annual Employment	2053	7853	5800
Present Value Labor Income	$6,706,500,000	$20,313,200,000	$13,606,700,000
Present Value, Value Added	$13,180,900,000	$39,784,100,000	$26,603,200,000
Present Value Output	$22,704,500,000	$68,594,600,000	$45,890,100,000
Note: No changes were made to the original No Action Alternative found in the Final EIS.			