
Appendix A

Minimum Instream Flow Targets

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A Minimum Instream Flow Targets

This appendix provides the minimum instream flow targets at City of Santa Cruz (City) diversion facilities identified in the Anadromous Salmonid Habitat Conservation Plan (ASHCP) (referred to in this document as Agreed Flows). The Agreed Flows comprise a schedule of minimum instream flows (bypass flows) that would avoid and minimize effects on steelhead and coho due to operation of the Laguna Creek, Liddell Spring, Majors Creek, Tait Street, and Felton Diversions, as well as the Loch Lomond Reservoir. The minimum instream flow requirements are those flows needed to maintain habitat for steelhead and coho during all freshwater life stages (migration, spawning, incubation, and rearing) over a range of Hydrologic Condition Types (see Table A-1). The Hydrologic Condition Types are based on the record of cumulative daily average flow by water year (October 1–September 30) at the Big Trees gage on the San Lorenzo River. To develop the Hydrologic Condition Types, cumulative flow was calculated for each month in the record (water years 1937–2015), sorted from lowest to highest, and split into five equal parts representing a range of hydrologic conditions from driest to wettest conditions. Operationally, the Hydrologic Condition Type would be determined each month based on conditions for the preceding month, and the bypass flows would be established based on the month and hydrologic condition as described in Table A-1.

Table A-1. Agreed Flows Hydrologic Condition Types

Month	Flow Ranges Used to Determine Monthly Hydrologic Condition Type ¹ (cfs) Using San Lorenzo River End-of-Month Cumulative Daily Flow ²				
	Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)
Oct	≤459	460 – 539	540 – 709	710 – 875	>875
Nov	≤1,186	1,187 – 1,497	1,498 – 1,827	1,828 – 2,485	>2,485
Dec	≤2,397	2,398 – 3,134	3,135 – 5,642	5,643 – 10,196	>10,196
Jan	≤4,322	4,323 – 8,456	8,457 – 16,694	16,695 – 28,019	>28,019
Feb	≤8,442	8,443 – 16,368	16,369 – 29,140	29,141 – 42,995	>42,995
Mar	≤13,004	13,005 – 22,948	22,949 – 35,371	35,372 – 57,968	>57,968
Apr	≤14,203	14,204 – 24,491	24,492 – 39,487	39,488 – 67,884	>67,884
May	≤15,448	15,449 – 25,279	25,280 – 41,659	41,660 – 71,412	>71,412
Jun	≤16,005	16,006 – 26,116	26,117 – 43,123	43,124 – 73,420	>73,420
Jul	≤16,364	16,365 – 26,819	26,820 – 44,073	44,074 – 74,718	>74,718
Aug	≤16,653	16,654 – 27,355	27,356 – 44,799	44,800 – 75,591	>75,591
Sep	≤16,978	16,979 – 27,843	27,844 – 45,398	45,399 – 76,368	>76,368

Notes: cfs = cubic feet per second.

¹ The Hydrologic Condition Types are based on the record of cumulative daily average flow by water year (water years 1937 – 2015) at the Big Trees gage on the San Lorenzo River.

² To implement the Agreed Flows, the Hydrologic Condition type is determined on the first day of each month based upon the previous month's San Lorenzo River end-of-month cumulative flow for the Water Year. Water Year is defined as the 12-month period from October 1 through September 30.

- The end-of-month cumulative daily flow is calculated by adding the San Lorenzo River daily flows, as measured at the Big Trees Gage, from the first day of the Water Year to the last day of the month.
- The flow ranges for the month are then reviewed to determine within which Hydrologic Condition type this end-of-month cumulative daily flow falls.
- This Hydrologic Condition type is used until the first day of the next month to determine bypass flow conditions under the Agreed Flows across all City of Santa Cruz source waters.

Agreed Flows are presented as bypass flows in Tables A-2 through A-7 for each of the City diversions and described in more detail in Section 4.4.2 of the ASHCP. Values in the tables represent a limit for City diversions such that diversions would not reduce flow below these levels. Bypass flow requirements vary by life stage, and the applicable minimum flow is determined by the life stage requiring the highest flow.

All flow above the required level for each time period is available for diversion, up to the diversion capacity for each facility. If the required bypass flow is greater than the available streamflow, then the full streamflow would be bypassed and the City diversion would not operate.

A.1 Laguna Creek Diversion

Laguna Creek was given the highest priority of the North Coast streams for restoration of anadromous species during the development of the ASHCP. It is the largest watershed and has the longest reach of anadromous habitat of the North Coast streams from which the City diverts water. It also has the potential to support coho and has a nearly intact lagoon system that can be very productive for steelhead. Instream flow requirements for Laguna Creek are described below and summarized in Table A-2.

The City would provide the following minimum bypass flows in the anadromous reach of Laguna Creek for steelhead:

- For rearing juvenile steelhead, 2.0 cfs at all times;
- For adult migration, a lower threshold of 11.3 cfs and an upper threshold of 15.5 cfs¹ when flow would be at this level without City diversion during December through March and additionally in April for Hydrologic Conditions 1-3;
- For spawning, 9.4 cfs during December through May for 14 days following any adult migration period;
- For egg incubation, 4.0 cfs during January through May for 60 days after the last spawning day or until May 31, whichever is earliest; and
- For smolt outmigration, 3.8 cfs
 - in Hydrologic Condition Types 1–4, during January through May, and
 - in Hydrologic Condition 5, for at least 3 consecutive days per week in March, April, and May.

The required minimum bypass flow in any given month is determined by the life stage requiring the highest flow.

The point of compliance for minimum bypass flows is the City-maintained stream gage in the anadromous reach of Laguna Creek. Other gages would also be used to ascertain effects of diversions by others on flows and habitat availability in the anadromous reach.

¹ When river flows reach the lower threshold, minimum bypass flows would be as follows: when river flows without City diversion are above the upper threshold, the minimum bypass is the upper threshold; when river flow without City diversion is between the lower and upper threshold, the minimum bypass is the natural flow; and when river flows without City diversion fall below the lower threshold again, adult migration bypass flow requirements cease and required minimum bypass flow is determined by the life stage requiring the next-highest flow.

Table A-2. Agreed Flows for Laguna Creek Diversion, as Measured at the Laguna Creek Anadromous Gage¹

Month	Rearing (Base Flow) (cfs)					Adult Migration (cfs)	Spawning ² (cfs)	Egg Incubation ³ (cfs)	Smolt Out-migration ⁴ (cfs)
	Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)				
Jan	2.0	2.0	2.0	2.0	2.0	11.3/15.5	9.4	4.0	3.8
Feb	2.0	2.0	2.0	2.0	2.0	11.3/15.5	9.4	4.0	3.8
Mar	2.0	2.0	2.0	2.0	2.0	11.3/15.5	9.4	4.0	3.8
Apr	2.0	2.0	2.0	2.0	2.0	11.3/15.5 ⁵	9.4	4.0	3.8
May	2.0	2.0	2.0	2.0	2.0	—	9.4	4.0	3.8
Jun	2.0	2.0	2.0	2.0	2.0	—	—	—	—
Jul	2.0	2.0	2.0	2.0	2.0	—	—	—	—
Aug	2.0	2.0	2.0	2.0	2.0	—	—	—	—
Sep	2.0	2.0	2.0	2.0	2.0	—	—	—	—
Oct	2.0	2.0	2.0	2.0	2.0	—	—	—	—
Nov	2.0	2.0	2.0	2.0	2.0	—	—	—	—
Dec	2.0	2.0	2.0	2.0	2.0	11.3/15.5	9.4	—	—

Notes: cfs = cubic feet per second.

¹ The required flow is determined by the life stage requiring the highest flow in any given month.

² Provided for 14-day period after any potential migration event.

³ Provided for 60 days following occurrence of last spawning flow or May 31, whichever occurs first.

⁴ Provided in Hydrologic Conditions 1–4 and for 3 consecutive days per week in Hydrologic Condition 5 in March, April, and May.

⁵ April adult migration flows provided in Hydrologic Conditions 1–3.

A.2 Liddell Spring Diversion

The City's diversion is located at Liddell Spring, which feeds Liddell Creek. NMFS and CDFW gave Liddell Creek lower restoration priority for anadromous species than Laguna Creek and the San Lorenzo River due to limited productive capacity for steelhead, unsuitability of habitat for coho, relatively short anadromous reach, and the relatively small size of the City's diversion. While the Liddell Spring diversion is relatively small, it is an important component of the City's water supply because it is used to improve the quality of the blended water treated at the Graham Hill Water Treatment Plant, and as a spring, it is persistent in dry conditions. Productive capacity for anadromous fish is limited in Liddell Creek due to excessive amounts of fine sediment and a lack of a functional lagoon. Instream flow requirements for Liddell Creek are described below and summarized in Table A-3.

The City would provide the following minimum bypass flows in the anadromous reach of Liddell Creek:

- For rearing juvenile steelhead
 - in Hydrologic Conditions 4–5, 0.25 cfs, and
 - in Hydrologic Conditions 1–3, up to 5.2 cfs, as detailed in Table A-3;

- For adult migration, a lower threshold of 4.9 cfs and an upper threshold of 11.3 cfs² when flow would be at this level without City diversion during December through April in Hydrologic Conditions 1–3;
- For spawning, 7.4 cfs during December through May in Hydrologic Conditions 1–3 for 14 days following any adult migration period;
- For egg incubation, 2.0 cfs during January through May in Hydrologic Conditions 1–3 for 60 days after the last spawning day or until May 31, whichever is earliest; and
- For smolt outmigration, 2.0 cfs
 - in Hydrologic Conditions 1–3 during January through May and
 - in Hydrologic Conditions 4–5 for at least three consecutive days per week during March through May.

The required minimum bypass flow in any given month is determined by the life stage requiring the highest flow.

The point of compliance for minimum bypass flows is the City-maintained stream gage in the anadromous reach of Liddell Creek. Other gages would also be used to ascertain effects of diversions by others on flows and habitat availability in the anadromous reach.

Table A-3. Agreed Flows for Liddell Spring Diversion, as Measured at the Liddell Creek Anadromous Gage¹

Month	Rearing (Base Flow) (cfs)					Adult Migration ² (cfs)	Spawning ³ (cfs)	Egg Incubation ⁴ (cfs)	Smolt Out-migration ⁵ (cfs)
	Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)				
Jan	0.25	0.25	2.9	3.6	4.7	4.9/11.3	7.4	2.0	2.0
Feb	0.25	0.25	4.6	3.9	5.1	4.9/11.3	7.4	2.0	2.0
Mar	0.25	0.25	3.5	4.8	5.2	4.9/11.3	7.4	2.0	2.0
Apr	0.25	0.25	3.0	4.3	4.6	4.9/11.3	7.4	2.0	2.0
May	0.25	0.25	2.6	3.3	4.0	—	7.4	2.0	2.0
Jun	0.25	0.25	2.0	2.4	2.9	—	—	—	—
Jul	0.25	0.25	1.6	1.9	2.2	—	—	—	—
Aug	0.25	0.25	1.4	1.7	1.8	—	—	—	—
Sep	0.25	0.25	1.3	1.5	1.6	—	—	—	—
Oct	0.25	0.25	1.5	1.5	1.6	—	—	—	—
Nov	0.25	0.25	1.8	1.9	1.9	—	—	—	—
Dec	0.25	0.25	2.1	2.6	3.0	4.9/11.3	7.4	—	—

Notes: cfs = cubic feet per second.

¹ The required flow is determined by the life stage requiring the highest flow in any given month.

² Provided in Hydrologic Conditions 1–3 only.

³ Provide for 14-day period after any potential migration event in Hydrologic Conditions 1–3.

⁴ Provided in Hydrologic Conditions 1–3 for 60-day period following occurrence of last spawning flow or May 31, whichever occurs first

⁵ Provided in Hydrologic Conditions 1–3, and for 3 consecutive days per week in March, April, and May in Hydrologic Conditions 4–5.

² When river flows reach the lower threshold, minimum bypass flows would be as follows: when river flows without City diversion are above the upper threshold, the minimum bypass is the upper threshold; when river flow without City diversion is between the lower and upper threshold, the minimum bypass is the natural flow; and when river flows without City diversion fall below the lower threshold again, adult migration bypass flow requirements cease and required minimum bypass flow is determined by the life stage requiring the next-highest flow.

A.3 Majors Creek Diversion

In the development of the ASHCP, NMFS and CDFW gave Majors Creek lower restoration priority for anadromous species than Laguna Creek and the San Lorenzo River due to its relatively short anadromous reach length, unsuitability of habitat for coho, and lack of a developed lagoon. The City also has a relatively small diversion capacity on Majors Creek relative to Laguna Creek and the San Lorenzo River. Instream flow requirements for Majors Creek are described below and summarized in Table A-4.

The City would provide the following minimum bypass flows in the anadromous reach of Majors Creek for steelhead:

- For rearing juvenile steelhead,
 - in Hydrologic Conditions 4–5, 0.25 cfs, and
 - in Hydrologic Conditions 1–3, up to 4.7 cfs, as detailed in Table A-4;
- For adult migration, a lower threshold of 9.0 cfs and an upper threshold of 16.0 cfs³ when flow would be at this level without City diversion during December through April in Hydrologic Conditions 1–3;
- For spawning, 12.1 cfs during December through May in Hydrologic Conditions 1–3 for 14 days following any adult migration period;
- For egg incubation, 2.9 cfs during January through May in Hydrologic Conditions 1–3 for 60 days after the last spawning day or until May 31, whichever is earliest; and
- For smolt outmigration, 3.4 cfs
 - in Hydrologic Conditions 1–3 during January through May and
 - in Hydrologic Conditions 4–5 during March through May for at least three consecutive days per week.

The required minimum bypass flow in any given month is determined by the life stage requiring the highest flow.

The point of compliance for minimum bypass flows is the City-maintained stream gage in the anadromous reach of Majors Creek. Other gages would also be used to ascertain effects of diversions by others on flows and habitat availability in the anadromous reach.

³ When river flows reach the lower threshold, minimum bypass flows would be as follows: when river flows without City diversion are above the upper threshold, the minimum bypass is the upper threshold; when river flow without City diversion is between the lower and upper threshold, the minimum bypass is the natural flow; and when river flows without City diversion fall below the lower threshold again, adult migration bypass flow requirements cease and required minimum bypass flow is determined by the life stage requiring the next-highest flow.

Table A-4. Agreed Flows for Majors Creek Diversion, as Measured at the Majors Creek Anadromous Gage¹

Month	Rearing (Base Flow) (cfs)					Adult Migration ² (cfs)	Spawning ³ (cfs)	Egg Incubation ⁴ (cfs)	Smolt Out-migration (cfs)
	Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)				
Jan	0.25	0.25	2.2	2.7	4.1	9.0/16.0	12.1	2.9	3.4
Feb	0.25	0.25	4.1	3.0	4.4	9.0/16.0	12.1	2.9	3.4
Mar	0.25	0.25	2.4	4.3	4.7	9.0/16.0	12.1	2.9	3.4 ⁵
Apr	0.25	0.25	1.7	3.1	3.2	9.0/16.0	12.1	2.9	3.4 ⁵
May	0.25	0.25	1.4	1.8	2.4	—	12.1	2.9	3.4 ⁵
Jun	0.25	0.25	1.0	1.2	1.6	—	—	—	—
Jul	0.25	0.25	0.8	1.0	1.1	—	—	—	—
Aug	0.25	0.25	0.7	0.8	0.9	—	—	—	—
Sep	0.25	0.25	0.6	0.7	0.7	—	—	—	—
Oct	0.25	0.25	0.8	0.9	0.8	—	—	—	—
Nov	0.25	0.25	1.1	1.2	1.2	—	—	—	—
Dec	0.25	0.25	1.5	1.9	2.1	9.0/16.0	12.1	—	—

Notes: cfs = cubic feet per second.

¹ The required flow is determined by the life stage requiring the highest flow in any given month.

² Provided in Hydrologic Conditions 1–3 only.

³ Provide for 14-day period after any potential migration event in Hydrologic Conditions 1–3.

⁴ Provided in Hydrologic Conditions 1–3 for 60-day period following occurrence of last spawning flow or May 31, whichever occurs first.

⁵ Provided in Hydrologic Conditions 1–3, and for 3 consecutive days per week in March, April, and May in Hydrologic Conditions 4–5.

A.4 Tait Street Diversion, San Lorenzo River

NMFS and CDFW gave the San Lorenzo River a high priority for restoration of anadromous species in the development of the ASHCP. It has a large watershed with extensive habitat in both the main stem and its tributaries. The San Lorenzo River supports steelhead and potentially coho. Its lagoon is important for rearing juvenile steelhead. Instream flow requirements for the San Lorenzo River below Tait Street Diversion are described below and summarized in Table A-5.

The City would provide the following minimum bypass flows downstream of Tait Street Diversion on the San Lorenzo River for steelhead and coho:

- For rearing juvenile steelhead,
 - in Hydrologic Conditions 4–5, 8.0 cfs, and
 - in Hydrologic Conditions 1–3, up to 18.5 cfs, as detailed in Table A-5;
- For adult migration, a lower threshold of 17.0 cfs and an upper threshold of 25.2 cfs⁴ when flow would be at this level without City diversion in December through April in Hydrologic Conditions 1–3, in December through March in Hydrologic Conditions 4 and 5, and with the following exceptions:

⁴ When river flows reach the lower threshold, minimum bypass flows would be as follows: when river flows without City diversion are above the upper threshold, the minimum bypass is the upper threshold; when river flow without City diversion is between the

- May be reduced to 3 consecutive days a week if storage levels in Loch Lomond Reservoir fall below the following levels in million gallons (mg): December—1,900 mg, January—2,000 mg, February—2,100 mg, and March—2,200 mg.
- May be reduced to 5 consecutive days after each storm event that exceeds 17 cfs if storage levels in Loch Lomond Reservoir fall below the following levels: December—1,600 mg, January—1,700 mg, February—1,800 mg, and March—1,900 mg.
- For smolt outmigration, 10 cfs
 - in Hydrologic Conditions 1–4 during January through May, and
 - in Hydrologic Condition 5 during March through May for at least 3 consecutive days per week.

The required minimum bypass flow in any given month is determined by the life stage requiring the highest flow.

The point of compliance for minimum bypass flows is the City-funded United States Geological Survey-maintained stream gage in the San Lorenzo River immediately downstream of Tait Street Diversion.

Table A-5. Agreed Flows for Tait Street Diversion on the San Lorenzo River, as Measured at the City Gage immediately downstream of Tait Street Diversion¹

Month	Rearing (Base Flow) (cfs)					Adult Migration ² (cfs)	Spawning ³ (cfs)	Egg Incubation ³ (cfs)	Smolt Out-migration (cfs)
	Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)				
Jan	8.0	8.0	15.8	16.4	17.5	17.0/25.2	—	—	10.0
Feb	8.0	8.0	15.9	16.7	18.0	17.0/25.2	—	—	10.0
Mar	8.0	8.0	16.3	17.3	18.2	17.0/25.2	—	—	10.0 ⁴
Apr	8.0	8.0	17.2	17.9	18.4	17.0/25.2 ⁵	—	—	10.0 ⁴
May	8.0	8.0	17.7	18.2	18.5	—	—	—	10.0 ⁴
Jun	8.0	8.0	16.6	18.1	18.5	—	—	—	—
Jul	8.0	8.0	12.4	15.8	18.2	—	—	—	—
Aug	8.0	8.0	9.8	11.9	16.4	—	—	—	—
Sep	8.0	8.0	9.0	11.1	13.3	—	—	—	—
Oct	8.0	8.0	9.8	11.4	13.3	—	—	—	—
Nov	8.0	8.0	12.5	14.1	16.4	—	—	—	—
Dec	8.0	8.0	15.1	16.2	17.6	17.0/25.2	—	—	—

Notes: cfs = cubic feet per second.

¹ The required flow is determined by the life stage requiring the highest flow in any given month.

² May be reduced to 3 consecutive days a week if storage levels in Loch Lomond fall below the following levels in million gallons (mg): Dec-1900 mg; Jan-2000 mg; Feb-2100 mg; Mar-2200 mg. Further, adult migration flows may be reduced to 5 consecutive days after each storm event that exceeds 17 cfs if storage levels in Loch Lomond fall below the following levels: Dec-1600 mg; Jan-1700 mg; Feb-1800 mg; Mar-1900 mg.

³ No spawning or incubation occurs in this reach.

⁴ During Hydrologic Conditions 5, provided at least 3 days per week.

⁵ April adult migration flows provided only in Hydrologic Conditions 1–3.

lower and upper threshold, the minimum bypass is the natural flow; and when river flows without City diversion fall below the lower threshold again, adult migration bypass flow requirements cease and required minimum bypass flow is determined by the life stage requiring the next-highest flow.

A.5 Felton Diversion, San Lorenzo River

As described above, NMFS and CDFW gave the San Lorenzo River a high priority for restoration of anadromous species in the development of the ASHCP. Instream flow requirements for the San Lorenzo River below Felton Diversion are described below and summarized in Table A-6. No diversions are permitted at Felton Diversion during June through August.

The City would provide the following minimum bypass flows downstream of Felton Diversion on the San Lorenzo River for steelhead and coho:

- For rearing juvenile steelhead, egg incubation, and smolt migration
 - during October, 25 cfs,
 - during November through May, 20 cfs, and
 - during September, 10 cfs;
- For adult migration, 40 cfs during December through April when flow would be at this level without City diversion and the river mouth is open; and
- For spawning, 40 cfs during December through May for 14 days after any adult migration period.

The required minimum bypass flow in any given month is determined by the life stage requiring the highest flow.

The point of compliance for minimum bypass flows is the U.S. Geographical Survey–maintained stream gage near Henry Cowell Redwoods State Park entrance (Big Trees Gage).

Table A-6. Agreed Flows for Felton Diversion on the San Lorenzo River, as Measured at the Big Trees Gage¹

Month	Rearing (Base Flow) (cfs)					Adult Migration ² (cfs)	Spawning ³ (cfs)
	Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)		
Jan	20.0	20.0	20.0	20.0	20.0	40.0	40.0
Feb	20.0	20.0	20.0	20.0	20.0	40.0	40.0
Mar	20.0	20.0	20.0	20.0	20.0	40.0	40.0
Apr	20.0	20.0	20.0	20.0	20.0	40.0	40.0
May	20.0	20.0	20.0	20.0	20.0	—	40.0
Jun	No Diversion						
Jul							
Aug							
Sep	10.0	10.0	10.0	10.0	10.0	—	—
Oct	25.0	25.0	25.0	25.0	25.0	—	—
Nov	20.0	20.0	20.0	20.0	20.0	—	—
Dec	20.0	20.0	20.0	20.0	20.0	40.0	40.0

Notes: cfs = cubic feet per second.

¹ The required flow is determined by the life stage requiring the highest flow in any given month.

² Provided when river mouth is open and natural flow would occur at this level without diversion.

³ Provided for 14 days following any potential migration event.

A.6 Newell Creek Diversion

Operation of the Newell Creek Diversion (also referred to as Newell Creek Dam) and Loch Lomond Reservoir alters the natural hydrograph of Newell Creek except during periods when the reservoir is spilling. There is an agreed minimum release of 1 cfs in Newell Creek below Loch Lomond Reservoir. When Loch Lomond Reservoir storage is low enough to result in supply shortages, an exception minimum of 0.25 cfs would be released in place of the 1 cfs. A flow of 1 cfs below Newell Creek Dam exceeds unimpaired flows at certain times. Loch Lomond storage levels that would result in the 0.25 cfs exception minimum bypass flow are provided in Table A-7. Instream flow requirements for Newell Creek below Newell Creek Dam are described below and summarized in Table A-7.

The City would provide the following minimum bypass flows to Newell Creek downstream of Newell Creek Dam for steelhead:

- For rearing juvenile steelhead, 1.0 cfs, unless storage in Loch Lomond Reservoir is insufficient and triggers the exception minimum as detailed in Table A-7.

The point of compliance for minimum bypass flows is the City-maintained stream gage in Newell Creek immediately downstream of Newell Creek Dam.

Table A-7. Agreed Flows for the Newell Creek Dam, as Measured at the City Gage immediately downstream of Newell Creek Dam

Month	Exception Minimum (cfs) ¹	Base Flow (cfs)				
		Hydrologic Condition 5 (driest)	Hydrologic Condition 4 (dry)	Hydrologic Condition 3 (normal)	Hydrologic Condition 2 (wet)	Hydrologic Condition 1 (very wet)
Jan	0.25	1.0	1.0	1.0	1.0	1.0
Feb	0.25	1.0	1.0	1.0	1.0	1.0
Mar	0.25	1.0	1.0	1.0	1.0	1.0
Apr	0.25	1.0	1.0	1.0	1.0	1.0
May	0.25	1.0	1.0	1.0	1.0	1.0
Jun	0.25	1.0	1.0	1.0	1.0	1.0
Jul	0.25	1.0	1.0	1.0	1.0	1.0
Aug	0.25	1.0	1.0	1.0	1.0	1.0
Sep	0.25	1.0	1.0	1.0	1.0	1.0
Oct	0.25	1.0	1.0	1.0	1.0	1.0
Nov	0.25	1.0	1.0	1.0	1.0	1.0
Dec	0.25	1.0	1.0	1.0	1.0	1.0

Notes: cfs = cubic feet per second.

- ¹ Exception minimum flows are triggered and would supersede base flow requirements when storage in Loch Lomond Reservoir falls below the following level: 2000 million gallons (mg) during January through June, 1800 mg during July, 1500 mg during August through November, or 1700 mg during December.

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