

**APPENDIX A – FISH AND WILDLIFE MITIGATION
AND ENHANCEMENT PLAN SUMMARY TABLES**

NORTHERN INTEGRATED SUPPLY PROJECT
FISH AND WILDLIFE MITIGATION AND ENHANCEMENT PLAN

Table A1. Mitigation and Enhancement Plan Summary Table - By Mitigation Action Item

Measure No.	Mitigation and/or Enhancement Measure ¹	Mitigation and/or Enhancement Commitment ²	Resource Considerations (see Table A.2 for complete list of mitigated effects; see text for description of enhanced resources)	Capitalized Cost ³	Cost Note ⁴	Mitigation			Resources Involved																	
						Avoidance	Minimization	Compensation	Enhancement	Aquatic Life	Recreation	Riparian Veg/Wetlands	Special Status Species	Stream Morphology	Terrestrial Wildlife	Water Quality	Wetlands	Other								
Aquatic Life and Stream Morphology																										
AG-01	Stream Channel and Habitat Improvement Plan	Fund stream channel and habitat improvement plan	Compensation for accelerated degradation of channel geomorphology, increased flooding risk downstream of I-25, reduced Poudre River flows, reduced aquatic habitat, reduced water availability for riparian vegetation, reduced habitat for riverine special status species, increased water temperature and DO concentrations; Enhanced and accelerated channel restoration, aquatic habitat, riparian vegetation, riverine special status species, temperature and DO concentrations	\$1,000,000 a			X		X	X	X	X	X	X	X	X	X	X	X							
AG-02	Stream Channel and Habitat Improvements	Construct stream channel improvements (2.4 miles)	Enhanced and accelerated channel restoration, aquatic habitat, riparian vegetation, riverine special status species, temperature and DO concentrations	\$1,800,000 b					X																	
AG-03	Poudre River Adaptive Management Program	Implement and fund Poudre River Adaptive Management Program in coordination with other Poudre River stakeholders	Enhanced and accelerated channel restoration, aquatic habitat, riparian vegetation, riverine special status species, temperature and DO concentrations	\$5,930,000 a					X																	
AG-04	Poudre Valley Canal Diversion Structure Reconstruction	Reconstruct Poudre Valley Canal with improvements in sediment diversion, fish passage, and boating safety	Minimization of reduced sediment transport capabilities; enhance Poudre River connectivity for aquatic migration, enhance boater safety	\$300,000 b																						

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						Avoidance	Minimization	Compensation	Enhancement	Aquatic Life	Recreation	Riparian Veg/Wetlands	Special Status Species	Stream Morphology	Terrestrial Wildlife	Water Quality	Wetlands	Other	
RC-06	Glade Reservoir Poudre River Recreator Parking	Construct parking lot at Glade Reservoir complex for use by Poudre River recreators	Compensation for drive-by traffic at Ted's Place; enhanced regional recreational opportunities	\$40,000 b			X		X										X
RC-07	Glade Reservoir Visitor's Center	Construct Visitor's Center at Glade Reservoir	Compensation for loss of prime farmland, geologic construction disturbance, other general minor environmental effects	\$940,000 a				X											X
Riparian Vegetation																			
RV-01	Riparian Vegetation - Cottonwood Regeneration Areas	Develop cottonwood regeneration areas in 3 specific reaches (58 acres) and adjacent to channel and habitat improvement reaches (2.4 miles)	Compensation for accelerated decline of plains cottonwood, increased water temperatures	\$130,000 b				X											X
RV-02	Riparian Vegetation - Channel Improvements	Reconnect channel to floodplain in channel and habitat improvement reaches, re-establish connection with backwater sloughs in Windsor area	Compensation for adverse effects on plant communities sensitive to alluvial groundwater levels	\$280,000 b				X											X
Special Status Species																			
SS-01	Prebble's	N/A ⁷																	
SS-02	Bald Eagle	Conduct surveys for bald eagles and nests; meet CPW buffer requirements; take actions according to Bald Eagle and Golden Eagle Protection Act and Migratory Bird Treaty Act (MTBA)	Avoidance and minimization of, and compensation for, potential effects to bald eagle	⁵ c				X											X
SS-03	Colorado Butterfly Plant	Conduct surveys of Colorado butterfly plant for 2 years prior to construction, implement conservation measures if needed	Avoidance of and compensation for potential effects to Colorado butterfly plant	⁵ c				X											X

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						Avoidance	Minimization	Compensation	Enhancement	Aquatic Life	Recreation	Riparian Veg/Wetlands	Special Status Species	Stream Morphology	Terrestrial Wildlife

² The description of mitigation commitments is at a summary level - see text for details of the commitment. The text shall take precedent over any discrepancies between this table and the text.

³ Capitalized cost is the sum of the capital cost plus any annual operations and maintenance costs capitalized over the life of the commitment, or 50 years for those commitments that are perpetual.

⁴ Cost notes:
a = cost is a firm not-to-exceed monetary commitment in this amount, see text for details.
b = approximate implementation or construction cost of this commitment
c = implementation cost has not been quantified.

⁵ Implementation cost has not been quantified.

⁶ AC-09 and FW-06 were not carried forward to final mitigation plans - see text for explanation.

⁷ Because Preble's Meadow Jumping Mouse habitat mitigation is covered under federal statute with specific jurisdictional requirements, these mitigation activities are not further covered under this State FWMEP.

Table A2. Mitigation and Enhancement Plan Summary Table - By SDEIS Resource Effect ¹

Row	Resource	Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²	Mitigation Measure No.
Surface Water			
1	Surface Water	<p>Poudre River</p> <ul style="list-style-type: none"> - Average diversion of 35,100 AFY at Poudre Valley Canal (Poudre Valley Canal) to Glade Reservoir. - Flows in 1.48 mile reach between Poudre Valley Canal and Hansen Supply Canal would be greater (average 8,200 AFY) than No Reclamation Action Option. - Due to exchanges with CB-T, average reduction of 7,700 AFY in releases to Poudre River at Hansen Supply Canal. - Flows in Poudre River downstream of Hansen Supply Canal essentially same for Reclamation Action and No Reclamation Action Options due to releases from Glade Reservoir for Reclamation Action Option. - Diversions would primarily reduce peak flows during May and June in years with average to above average flows. - Reduced flows between Poudre Valley Canal and Larimer-Weld and New Cache headgates due to direct flow and storage exchanges during April-October (irrigation season). - Flow augmentation program would release water from Glade Reservoir to maintain flow of 10 cfs at downstream side of Larimer-Weld Canal headgate from November 1 through April 30 and September 1 through September 30. <p>South Platte River</p> <ul style="list-style-type: none"> - Average diversion of 28,400 AFY just downstream of confluence of Poudre and South Platte Rivers. - Diversions would be limited to a maximum of 200 cfs and could occur in all months when water rights are in priority. - Change in flow would be less than 10% of average monthly flows at Kersey Gage. <p>Horsetooth Reservoir</p> <p>Variations in water levels would be similar to existing conditions.</p> <p>Carter Lake</p> <p>Variations in water levels would be similar to existing conditions.</p>	FW-01; FW-02; FW-03; FW-04; FW-05; FW-08
Surface Water Quality			
<i>Poudre and South Platte River Constituents</i>			
2	Nutrients	Ammonia and total phosphorus increases may be measurable below WWTPs due to reduced river flows, may exceed standard at some locations in Segment 12 of Poudre River and 1b on South Platte River (standards are exceeded under Current Conditions for these nutrients).	WQ-03; WQ-04
3	Metals	Increases and decreases in metal concentrations due to flow changes may not be measurable. Medium chance of copper and dissolved manganese standard exceedance in Segment 10 of Poudre River. Medium chance of exceeding total phosphorus standard and a high potential for continued exceedance of selenium standard in Segment 11 of Poudre River. Iron, ammonia, total phosphorus, and selenium concentrations currently exceed standards in Segment 12 of Poudre River and likely to remain above standards. Iron, total phosphorus, and sulfate concentrations remain above standard in Segment 1b of South Platte River. Ammonia and dissolved manganese have a medium chance of exceeding standard in Segment 1b of South Platte River.	FW-03; WQ-01; WQ-04; WQ-07

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Row	Resource	Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²	Summary of Effects	Mitigation Measure No.
4	Temperature	Adverse effects on stream temperature possible in sensitive reaches of Segment 10 and Segment 11 including key months of July and August. Flow augmentation program would provide net benefit in parts of Segments 10 and 11 (from 0.37 miles upstream of Larimer County Canal to Timnath Inlet headgate) in key months of March and September.		AG-01; AG-02; FW-04; WQ-01; WQ-02; WQ-04; WQ-06
5	Dissolved Oxygen	Diversions at Poudre Valley Canal could exacerbate occasionally observed DO issues in July and August in Segment 11. Flow augmentation would likely provide DO benefit November through April and in September. Aeration of releases from Glade Reservoir should also help maintain DO concentrations within standards.		WQ-02; WQ-04
<i>Larimer-Weid and New Cache Canal</i>				
6	Crop Yield	Elevated salinity and selenium concentrations in Galeton Reservoir releases to canals would result in decrease in crop yields where water used for irrigation.		SE-01; SE-02
Channel Morphology and Sediment Transport				
7	Change in flow regime	Mean flow reduced 20-30% mid-April to mid-July. Duration of flows at or above 1,000 cfs reduced 30-35% . 2% flow reduced 10-30%. 10-year flood peak reduced up to 21% . <i>Laporte Reach:</i> 1, 2, and 5% exceedance flows reduced 11-26% . Lower flows (10 and 25% flows) reduced 16-28% . <i>Fort Collins Reach:</i> Winter low flows increased up to 35% from flow augmentation. 1, 2, and 5% flows reduced 13-47% . Lower flows (10 and 25% flows) reduced 12-41% . 2-year flood reduced 19-36% in Fort Collins and upper Timnath reaches. 25-year flood reduced up to 10% in Fort Collins. <i>Timnath, Windsor, Greeley Upstream, Greeley Channelized, and Greeley Reaches:</i> Impact greatest on 5% exceedance flows, reduced 25-42% . Impact on floods up to 25-year flood reasonably uniform, with 2, 10, and 25-year flood peaks all reduced 16-21% .		AG-01; AG-02; FW-08

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8	<i>Fining of surficial material</i>	<p>At 55% of cross sections duration of flows that flush river bed fines reduced 5-50%. For remaining 45% of cross sections no flushing or no change in duration of flushing flows.</p> <p><i>Laporte Reach</i>: 15 flushing events under Current Conditions lasting 132 days total reduced to 10 flushing events lasting 94 days total (26-year period of record)</p> <p><i>Fort Collins Reach</i>: 23 flushing events under Current Conditions lasting 325 days total reduced to 16 flushing events lasting 222 days total (26-year period of record)</p> <p><i>Timnath, Windsor, Greeley Upstream, Greeley Channelized, and Greeley Reaches</i>: 18 flushing events under Current Conditions lasting 292 days total for Windsor reach reduced to 19 flushing events lasting 218 days total (26-year period of record)</p>	AG-01; AG-02; AG-04; FW-08
9	<i>Loss of morphologic complexity</i>	<p>Duration of bed material movement reduced on average 21% and up to 40% in some locations. Temporal variability of habitats reduced throughout. Spatial variability reduced downstream of I-25.</p> <p><i>Laporte Reach</i>: Channel has barely responded to historical changes in flow regime over last two centuries. Any change predicted to be similarly constrained by lack of sediment supply.</p> <p><i>Fort Collins Reach</i>: Effective discharge of 2,000 cfs remains unchanged from Current Conditions hydrology. Channel capacity similar unless quantity or size distribution of available sediment changes. Current channel still undergoing slow adjustment in response to historical changes in flow regime. Any change would be incremental to that existing response.</p> <p><i>Timnath, Windsor, Greeley Upstream, Greeley Channelized, and Greeley Reaches</i>: Complexity of in-channel morphologic features already low in reaches downstream of I-25 from sand deposition smothering bed and reducing magnitude and frequency of pool and riffle sequences. Further channel contraction would exacerbate this condition.</p>	AG-01; AG-02; FW-08

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10	Channel contraction	<p>Sediment transport potential reduced throughout river. Capability of river to move bed material reduced 12-31% (upstream of I-25) and 8-18% (downstream of I-25). Propensity toward channel contraction throughout system but mainly downstream of I-25 where material of relevant size fraction available for deposition and bio-geomorphic feedback loops would prevail. Likely acceleration of channel contraction would lead to increased frequency of flooding downstream of I-25.</p> <p><i>Laporte Reach:</i> Channel capacity similar to Current Conditions unless quantity or size distribution of available sediment changes.</p> <p><i>Fort Collins Reach:</i> Channel capacity similar under Current Conditions unless quantity or size distribution of available sediment changes.</p> <p><i>Timnath Reach:</i> Channel contraction would occur as extension of processes already underway by deposition on bars, islands, riffles, and channel margins.</p>	AG-01; RV-02; FW-08
11	South Platte River	Minor effects to river morphology and sediment transport. Channel-forming flows (1.5-year peak flows of 3,858 cfs) would be reduced from ~ 3% to less than 1% of the time. Scouring flows equivalent to 25-year peak flows would continue to occur.	N/A
Ground Water			
12	Ground Water	Minimal effects to ground water from reduced river flows and associated changes in river stage. Greatest changes would be within 50 feet of Poudre River. Minimal seepage from reservoir to alluvium could increase water availability to vegetation. No impacts on ground water quality.	
Geology			
13	Geology	Disturbance from construction activities and excavation of sand, gravel, and bedrock for Glade Dam and Galeton Dam embankments, foundation, and rip rap. Excavation and removal of Paleozoic and Mesozoic sedimentary rocks associated with the U.S. 287 realignment. excavation of sand, gravel, and bedrock for Glade Dam and Galeton Dam embankments, foundation, and rip rap.	GC-04; RC-07
Prime Farmland if Irrigated (acres lost)			
14	Prime Farmland if Irrigated (acres lost)	686	RC-07
Vegetation			
15	Permanent impacts on all vegetation (acres)	3,895	N/A

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16	Permanent impacts on native plant communities (acres)	2,857		N/A
17	Irrigated agricultural lands dry up (acres)	0		N/A
Noxious Weeds				
18	Noxious Weeds		Increased distribution and cover by noxious weeds due to construction disturbance. Periods of prolonged low water levels at Glade and Galeton Reservoirs would allow for noxious weeds to colonize the drawdown area to construction disturbance. Periods of prolonged low water levels at Glade and Galeton Reservoirs would allow for noxious weeds to colonize the drawdown area.	NW-01
Wetlands and Other Waters				
19	Wetlands (permanent direct effects) (acres)	44		WL-01; WL-02; WQ-03
20	Wetlands (temporary direct effects) (acres)	8		GC-01
21	Wetlands from Irrigation Dry-up (permanent indirect effects) (acres)	0		N/A
22	Wetlands from Poudre Valley Canal lining (permanent indirect effects) (acres)	0		N/A
23	Wetlands from Poudre River flow changes (indirect effects) (acres)	9		RV-01; RV-02
24	Waters (permanent direct effects) (acres)	12		GC-01
25	Waters (temporary direct effects) (acres)	3		GC-01
Riparian Resources				
26	Riparian shrubland and woodland (permanent direct effects) (acres)	112 (inundation and construction)		AG-01; RV-01
27	Riparian shrubland and woodland(temporary direct effects) (acres)	8		AG-01; RV-01; GC-01

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Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²
Summary of Effects

Row	Resource	Mitigation Measure No.
Wildlife		
<i>Mule Deer</i>		
28	Overall Range (acres)	Permanent – 3,995
29		Temporary – 782
30	Winter Range (acres)	Permanent – 3,789
31		Temporary – 647
32	Winter Range Permanent Local Effect (%)	16
33	Severe Winter Range (acres)	Permanent – 228
34		Temporary – 173
35	Winter Concentration Area (acres)	Permanent – 70
36		Temporary – 152
<i>White-Tailed Deer</i>		
37	Overall Range (acres)	Permanent – 2,057
38		Temporary – 582
39	Winter Range (acres)	Permanent – 416
40		Temporary – 192
41	Winter Range Permanent Local Effect (%)	8
42	Concentration Area (acres)	Permanent – 421
43		Temporary – 203
<i>Pronghorn</i>		
44	Overall Range (acres)	Permanent – 2,256
45		Temporary – 335
46	Winter Range (acres)	Permanent – 2,256
47		Temporary – 295
48	Winter Range Permanent Local Effect (%)	25
49	Severe Winter Range (acres)	Permanent – 2,254
50		Temporary – 256
51	Winter Concentration Area (acres)	Permanent – 1,928
52		Temporary – 204
53	Winter Concentration Area Permanent Local Effect (%)	31

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Row	Resource	Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²	Mitigation Measure No.
<i>E/k</i>			
54	Overall Range (acres)	Permanent – 2,043	TW-01; TW-02;
55	Overall Range Permanent Local Effect (%)	Temporary – 386	TW-06
56	Overall Range Permanent Local Effect (%)	18	
57	Winter Range (acres)	Permanent – 186	
58	Severe Winter Range (acres)	Temporary – 101	
59	Winter Concentration Area (acres)	Permanent – 2	
60	Winter Concentration Area (acres)	Temporary – 8	
61	Winter Concentration Area (acres)	Permanent – 124	
62	Winter Concentration Area (acres)	Temporary – 75	
63	Winter Concentration Area (acres)	13	
64	Winter Concentration Area (acres)		
<i>Migratory birds and raptors, amphibians and reptiles, and other wildlife</i>			
65	Migratory birds and raptors, amphibians and reptiles, and other wildlife (acres)	Loss of 44 acres of wetlands, 12 acres of aquatic habitat, 537 acres of shrublands, 29 acres of riparian woodlands, and 2,929 acres of grassland habitat. Mortality and nest destruction could occur during construction. Temporary impacts include disturbance of vegetation and increased noise and human presence. Reductions in streamflows on Poudre and South Platte Rivers not anticipated to cause loss of riparian and/or wetland habitat. 9 acres of wetland habitat along banks could experience change in species composition.	TW-03; TW-04; TW-05
Aquatic Biological Resources			
<i>Poudre River Fish, Macroinvertebrates, Periphyton, and Plants</i>			
66	Segment A	Fish: Minor adverse impact to adult trout due to reduced runoff flows, negligible impacts to other species/life stages Macroinvertebrates: Minor adverse impact with changes in species composition due to reduced peak flows Periphyton and Plants: Minor adverse impact with increases in filamentous green algae due to reduced peak flows	AG-01; AG-02; AG-04; FW-02; FW-03; FW-04; FW-08; FW-09

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67	Segment B	Fish: Minor to moderate beneficial impact to most species of fish with augmented low flows Macroinvertebrates: Beneficial impact to abundance, minor adverse impact with changes in species composition due to reduced peak flows Periphyton and Plants: Minor adverse impact with increases in filamentous green algae due to reduced peak flows	AG-01; FW-03; FW-04; FW-05; RV-01; RV-02; FW-08; FW-09
68	Segment C	Fish: Negligible impact to most species, moderate adverse impact to trout with reduced runoff flows and higher temperatures Macroinvertebrates: Minor adverse impact with changes in species composition due to reduced peak flows Periphyton and Plants: Minor adverse impact with increases in filamentous green algae due to reduced peak flows	AG-01; FW-02; FW-03; FW-08; FW-09
69	Segment D	Fish: Minor adverse impact for some species with reductions in runoff flows, negligible impact for others Macroinvertebrates: Minor adverse impact with changes in species composition due to reduced peak flows Periphyton and Plants: Minor adverse impact with increases in filamentous green algae due to reduced peak flows	AG-01; FW-03; RV-01; RV-02; FW-08; FW-09
70	Segment E	Fish: Minor adverse impact for most species with reduced runoff flows Macroinvertebrates: Minor adverse impact with changes in species composition due to reduced peak flows Periphyton and Plants: Minor adverse impact with increases in filamentous green algae due to reduced peak flows	AG-01; FW-03; FW-08; FW-09
71	Segment F	Fish: Minor adverse impact for most species with reduced runoff flows Macroinvertebrates: Minor adverse impact with changes in species composition due to reduced peak flows Periphyton and Plants: Minor adverse impact with increases in filamentous green algae due to reduced peak flows	AG-01; FW-03; FW-08; FW-09
<i>South Platte River Fish, Macroinvertebrates, Periphyton, and Plants</i>			
72		Negligible	AG-07

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Special Status Species			
73	<i>Preble's meadow jumping mouse</i>	Permanent loss of 53 acres of known Preble's habitat. Temporary disturbance to 24 acres of Preble's habitat. Potential disturbance of Preble's behavior due to increased noise and human presence and physical harm to individual Preble's from construction machinery and future recreational activities at Glade. Changes in flows in Poudre River unlikely to affect Preble's habitat.	SS-01
74	<i>Bald eagle</i>	Permanent impacts of 21 acres and temporary impacts of 13 acres of winter concentration area. Less than 1 acre of nest buffer permanently affected and 8 acres temporarily affected. Pipeline construction impacts could result in nest abandonment or decreased nesting success if conducted during sensitive breeding and nesting periods. Glade Reservoir could provide additional summer foraging habitat, especially if stocked with fish. Galeton Reservoir could provide additional summer foraging habitat.	SS-02
75	<i>Colorado butterfly plant (CBP)</i>	No effect. No known populations occur in study area and is unlikely to occur in study area. Changes in flows in Poudre River unlikely to affect CBP.	SS-03
76	<i>Ute ladies'-tresses orchid (ULTO)</i>	No effect. None found during surveys of study area. No known populations occur in study areas and is unlikely to occur in SPWCP pipeline study area. Glade to Horsetooth pipeline route less than 1 mile from currently known populations of ULTO. Prior to construction, ULTO habitat assessments and/or final surveys would be conducted for potentially impacted suitable habitat not previously evaluated. Changes in flows in Poudre River unlikely to affect ULTO.	SS-04
77	<i>Black-tailed prairie dog and burrowing owl</i>	Permanent impacts on 367 acres of prairie dog habitat, mostly from construction of Galeton Reservoir.	SS-07; SS-09
78	<i>Swift fox</i>	Permanent impacts on 1,928 acres of overall swift fox range (0.3 to 1.0 home ranges/pair).	SS-08
79	<i>Common gartersnake and northern leopard frog</i>	Permanent loss of 44 acres of wetland habitat, 11 acres of aquatic habitat, and 28 acres of riparian woodland habitat (gartersnake only). Temporary impacts on 8 acres of wetland habitat, 3 acres of aquatic habitat, and 8 acres of riparian woodland (gartersnake only).	SS-10
80	<i>Smokey-eyed brown butterfly, two-spotted skipper, and American curren</i>	No effect.	SS-10
81	<i>Bell's twinpod</i>	Permanent loss of 29 acres and temporary impacts on 45 acres from western realignment of U.S. 287.	SS-11
82	<i>Brassy minnow and common shiner</i>	No effect	N/A
83	<i>Iowa darter</i>	Negligible except Segment B, which would be moderate beneficial	FW-03; FW-04

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Recreation Resources			
84	<i>Boating (kayaking and canoeing)</i>	<p>If Glade is managed for recreation, new flat water boating opportunities would exist, a major beneficial effect.</p> <p>No public access planned at Galeton Reservoir.</p> <p>Poudre River Segment A: Negligible effects.</p> <p>Poudre River Segment B: Moderate to major effects with 3 to 7 fewer boating days per month (total of 19 fewer days over May-August period) based on target flows of 150 cfs or greater.</p> <p>Poudre River Segments C, D, E, and F: No effects.</p>	FW-02; FW-03; FW-04; RC-06; FW-08
85	<i>Fishing</i>	<p>If Glade is managed for recreation, would provide a new fishery, a major beneficial effect.</p> <p>No public access planned at Galeton Reservoir.</p> <p>Poudre River Segment A: Reductions in habitat for brown and rainbow trout would be a minor adverse effect on fishing.</p> <p>Poudre River Segment B: Augmented winter flows would result in minor beneficial effects on recreational fishing.</p> <p>Poudre River Segments C, D, E, and F: Negligible effects.</p>	AG-02; FW-02; FW-03; FW-04; RC-06; FW-08
86	<i>Hunting</i>	<p>Loss of 340 acres of Poudre River State Trust Land, which is managed for hunting and fishing by CPW. Construction of Glade Reservoir may improve habitat, therefore improving hunting opportunities.</p> <p>Loss of 21 acres of Mitani-Tokuyasu SWA. Mule deer and white-tailed deer winter range may be affected at SPWCP forebay, thus affecting nearby big game hunting.</p> <p>Pronghorn winter and severe winter range and mule deer winter range affected at Galeton Reservoir and may have an effect on nearby big game hunting. Construction of Galeton Reservoir may improve waterfowl habitat in area, which may improve nearby hunting opportunities.</p>	RC-02; RC-04; RC-05
87	<i>Other Recreational Activities</i>	<p>Construction of Glade to Horsetooth pipeline would temporarily disrupt dispersed recreational uses along its alignment.</p> <p>Reductions in flows on Poudre River not expected to affect aesthetic qualities of riparian habitat of Poudre River, Poudre River Trail, or natural areas.</p> <p>Construction of Galeton Reservoir may improve habitat in area, which may improve nearby wildlife viewing or photography opportunities.</p> <p>Construction of SPWCP pipelines is not expected to affect recreation resources.</p>	N/A

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Row	Resource	Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²	Mitigation Measure No.
Cultural Resources			
88	<i>Cultural Resources</i>	<p>2 known cultural resources and an estimated 35 NRHP eligible sites affected by construction of Glade Dam and Reservoir and associated facilities or would be inundated by reservoir.</p> <p>7 known cultural resources and 7 unrecorded cultural resources would be affected by western realignment of U.S. 287. Of the known cultural sites, 3 of these are eligible sites, 1 is not eligible, and 3 have not been assessed.</p> <p>15 known cultural resources occur within areas that would be disturbed by construction of Galeton Dam and Reservoir and associated facilities or would be inundated by reservoir. Of these 15 sites, 13 have not had an official determination and may be eligible for listing in NRHP and two are not eligible.</p>	CR-01; CR-02; CR-03
Paleontological Resources			
89	<i>Paleontological Resources - U.S. 287</i>	Adverse impacts on subsurface fossils in areas underlain by Class 5 geologic units (Morrison Formation). Adverse impacts on potentially substantial vertebrate, invertebrate, plant, and trace fossils possible in Class 3 geologic units (Niobrara Formation, Benton Group, Dakota Group, Undivided Jelm, and Sundance Formations). Adverse impacts on potentially substantial vertebrate, invertebrate, plant, and trace fossils unlikely but possible in Class 2 geologic units (Lykins Formation). Adverse impacts consist of destruction of fossils by breakage and crushing during construction-related ground disturbance.	CR-04; CR-05
Aesthetics and Visual Resources			
90	<i>Aesthetics and Visual Resources</i>	<p>Change in landscape from terrestrial to open water for Glade and Galeton Reservoirs. Reservoir dams would change current visual character of sites.</p> <p>One-third of Mitani-Tokuyasu SWA would be replaced by Galeton forebay resulting in substantial reduction in scenic quality.</p> <p>Realignment of U.S. 287 would create contrast in scenic quality elements where it cuts through hogback formation.</p>	VS-01
Traffic and Transportation			
91	<i>Traffic Volumes</i>	Existing traffic patterns not expected to change so reduced traffic volumes along SH 14 between Overland Trail and Ted's Place. If recreation provided at Glade Reservoir minor seasonal fluctuations in vehicle volumes can be anticipated. reduced traffic volumes along SH 14 between Overland Trail and Ted's Place.	GC-03
92	<i>Existing Roadways</i>	If recreation provided at Glade Reservoir minor seasonal fluctuations in vehicle volumes can be anticipated.	
		7-mile portion of U.S. 287 relocated. New alignment 2.3 miles shorter. Location of Galeton Reservoir would not infringe on or disturb any existing roadways. 2.3 miles shorter. Location of Galeton Reservoir would not infringe on or disturb any existing roadways.	GC-05

NORTHERN INTEGRATED SUPPLY PROJECT
FISH AND WILDLIFE MITIGATION AND ENHANCEMENT PLAN

Table A2. Mitigation and Enhancement Plan Summary Table - By SDEIS Resource Effect ¹

Row	Resource	Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²	Mitigation Measure No.
93	<i>Current Travel Patterns</i>	New U.S. 287 alignment would be about 2.3 miles shorter. Access to Bonner Spring Ranch Road may be affected by realignment and new access would be provided. Pipeline construction would potentially temporarily disrupt some transportation, depending upon alignment.	GC-01; GC-03
94	<i>Site Access</i>	Construction of Galeton Reservoir would require extension an existing roadway or construction of a private drive for purposes of accessing and maintaining facility.	GC-01
Land Use			
95	<i>Agriculture</i>	Portion of Munroe Canal inundated by Glade Reservoir. Canal would be realigned with Poudre Valley Canal or routed under Glade Reservoir.	GC-01
96	<i>Grazing</i>	Grazing permittee would lose use of District lands at Glade Reservoir. 26 acres of BLM land used for grazing inundated by Glade Reservoir. About 36 acres of grazing lease affected on State Land Board lands at Galeton Reservoir site.	GC-01
97	<i>Access</i>	CSU and Poudre School District access road into State Trust Land inundated. Existing access to Bonner Springs Ranch residential area from south altered by U.S. 287 realignment. Construction of SPWCP forebay would inundate a portion of access road and parking area of Mitani- Tokuyasu SWA.	RC-02; GC-03; RC-04
98	<i>Utilities</i>	Two towers on Platte River Power Authority 230-kV transmission line relocated. Realignment of four H- frame structures and 0.6 miles of a 69-kV electric transmission line owned by Poudre Valley REA. Proposed Cheyenne-Totem gas pipeline is shown to partially parallel SPWCP pipelines and cross proposed Galeton Reservoir forebay. Thirty-one producing oil and gas wells are within Galeton Reservoir footprint. District would relocate any well that would interfere with reservoir operations. District anticipates all wells would be abandoned by operator before Galeton Reservoir was built.	GC-01; HZ-02
99	<i>Natural Areas</i>	Reservoir Ridge Natural Area temporarily affected during construction of Glade to Horsetooth pipeline.	GC-01
100	<i>Urban/Residential</i>	2 residences inundated during construction of Glade Reservoir and 1 residence located within 500 feet of the reservoir. Construction of Glade to Horsetooth pipeline and other pipelines could potentially temporarily affect some urban and residential uses, depending upon final alignments.	LU-01; GC-01

NORTHERN INTEGRATED SUPPLY PROJECT
FISH AND WILDLIFE MITIGATION AND ENHANCEMENT PLAN

Table A2. Mitigation and Enhancement Plan Summary Table - By SDEIS Resource Effect ¹

Row	Resource	Alternative 2 (Proposed Action Glade and SPWCP – Reclamation Action Option) ²	Mitigation Measure No.
101	Industry	No impact to industry.	N/A
Socioeconomic Resources			
<i>Study area</i>			
102	Water Rates/Affordability	Minor impact on rates and affordability for some Participants.	RC-07
103	Population growth	No effect.	N/A
<i>Poudre River Communities</i>			
104	Recreation Resources	Major impact on boating recreational value in Fort Collins. Moderate impact on recreational value of Poudre River Trail in Fort Collins. No effect on fishing recreation values.	FW-02; FW-03; FW-04
105	Property Values	No effect in Fort Collins. Potential minor effects downstream of I-25 due to changes in flood risks.	AG-01
106	Water/Wastewater Treatment Costs	No effect.	N/A
107	Other Socioeconomic Effects	Likely no additional effect on Fort Collins economy/economic development. Potential major impact on nonuse values associated with Poudre River for Fort Collins residents.	FW-03; FW-04
<i>Broader Study Area</i>			
108	Regional Recreation Resources	Major benefit from recreation at Glade Reservoir.	N/A
109	Irrigated Agriculture-Related Economy	No effect under average conditions. Minor effect under potential worst-case conditions due to increased salinity associated with the SPWCP ditch exchange.	SE-02
110	Road Relocation Effects	Moderate to major impact on gasoline station and campground at Ted's Place. No net effect on value of residential properties.	RC-06
111	Construction Effects	Construction stimulus paid for by regional residents over future years. No net effect.	N/A
112	Agricultural-related economy	Estimated annual impact on agricultural-related economic output in the study area of approximately \$34 million and an estimated reduction in agriculture-related employment of about 291 jobs associated with growth onto agricultural lands and their conversion to municipal uses.	N/A
Hazardous Sites			
113	Hazardous Sites	Proposed Glade Reservoir forebay located near Atlas "E" Missile Site 13 and known TCE plume associated with missile site. Currently no detectable TCE within footprint of proposed forebay. Soil containing TCE not expected within proposed footprint of forebay. As contaminant mass continues to naturally attenuate TCE plume will continue to decrease in size.	HZ-01

NORTHERN INTEGRATED SUPPLY PROJECT
FISH AND WILDLIFE MITIGATION AND ENHANCEMENT PLAN

Table A2. Mitigation and Enhancement Plan Summary Table - By SDEIS Resource Effect ¹

Row	Resource	Summary of Effects	Mitigation Measure No.
Noise			
114	Noise	Increased noise associated with reservoir and pipeline construction and realignment of U.S. 287 would occur in localized areas temporarily.	GC-01
Air Quality			
115	Air Quality	Same as Alternative 1.	AQ-01; GC-01
Energy Use/Greenhouse Gases			
116	Energy Use/Greenhouse Gases	Electrical energy used to pump water up to reservoirs and for conveyance of water and for SPWCP exchange; includes additional pumping of water to Carter Lake. Projected annual electricity requirements at full utilization = 48,135,987 kWh Projected annual carbon dioxide emissions at full utilization (English tons) = 37,259	EG-01
Construction Duration			
117	Construction Duration	6 years.	GC-01; GC-02; GC-03; GC-04
Other CPW Effects ³			
118	<i>Townsend's big-eared bat</i>	The inundation by Glade Reservoir of approximately seven miles of U.S. Highway 287, includes the 'loss' by flooding of the State Land Board parcel (T9N, R70W, S36) which contains a known roost site for the Townsend's big-eared bat (Corynorhinus townsendii), a State Species of Special Concern. CPW suggests that further ground surveys for additional roost sites should be conducted across the area to be inundated, and compensatory mitigation for loss of these sites should be considered if the project is approved.	SS-12

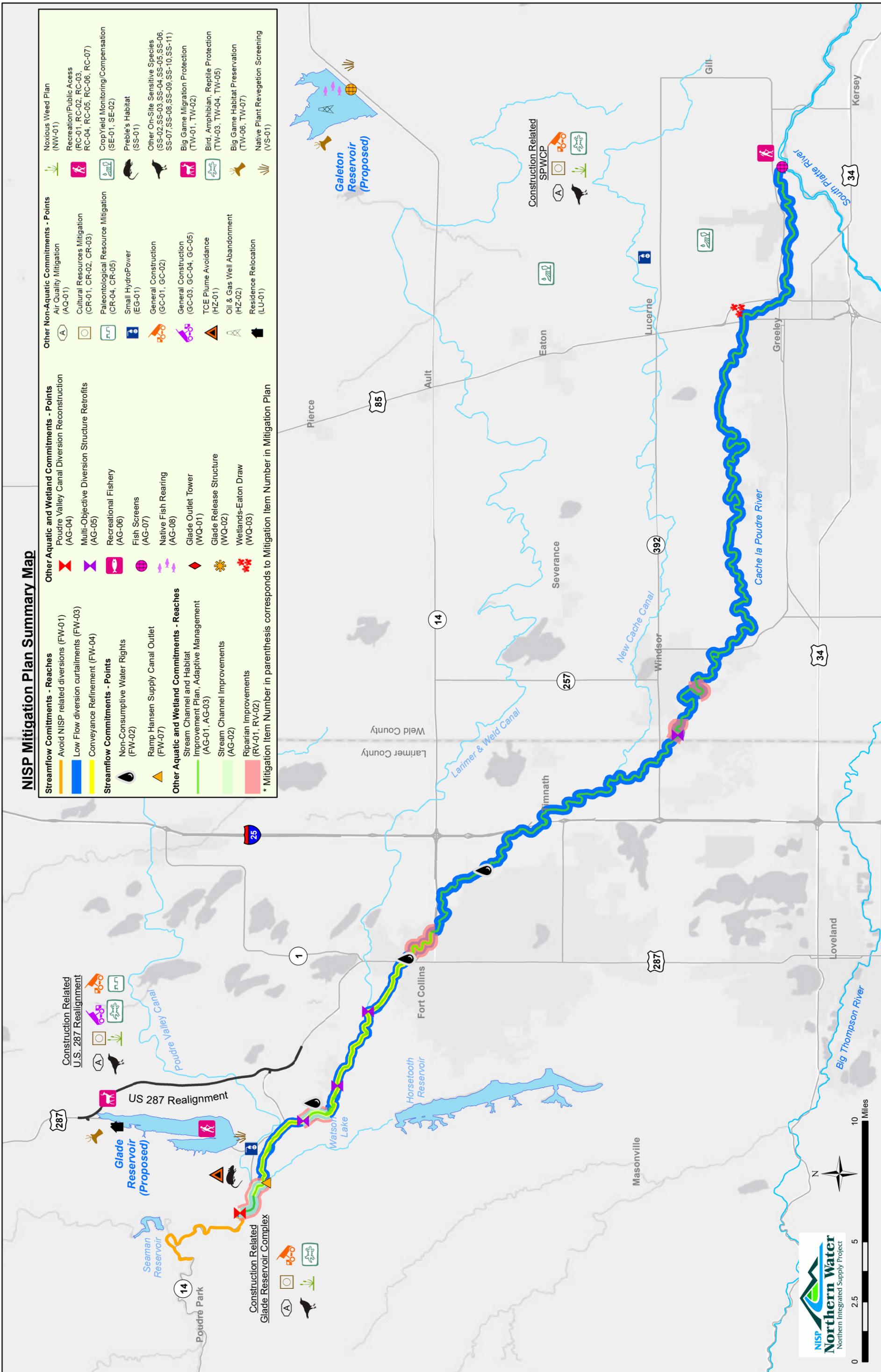
Notes:

- ¹ Source of table is SDEIS Table 4-109 for Alternative 2 (Northern Water's Preferred Alternative)
- ² Dark gray shading indicates those effects from SDEIS 4-109 that are not covered under this Fish and Wildlife Mitigation and Enhancement Plan. See Conceptual Mitigation Plan (SDEIS Appendix F) for mitigation information on these items.
- ³ Effects were not included in the SDEIS, but were comments and/or proposed mitigation measures by CDNR.

NISP Mitigation Plan Summary Map

Streamflow Commitments - Reaches	Other Aquatic and Wetland Commitments - Points	Other Non-Aquatic Commitments - Points	Noxious Weed Plan
Avoid NISP related diversions (FW-01)	Poudre Valley Canal Diversion Reconstruction (AG-04)	Air Quality Mitigation (AQ-01)	Recreation/Public Access (RC-01, RC-02, RC-03, RC-04, RC-05, RC-06, RC-07)
Low Flow diversion curtailments (FW-03)	Multi-Objective Diversion Structure Retrofits (AG-05)	Cultural Resources Mitigation (CR-01, CR-02, CR-03)	Crop Yield Monitoring/Compensation (SE-01, SE-02)
Conveyance Refinement (FW-04)	Recreational Fishery (AG-06)	Paleontological Resource Mitigation (CR-04, CR-05)	Preble's Habitat (SS-01)
Non-Consumptive Water Rights (FW-02)	Fish Screens (AG-07)	Small HydroPower (EG-01)	Other On-Site Sensitive Species (SS-02, SS-03, SS-04, SS-05, SS-06, SS-07, SS-08, SS-09, SS-10, SS-11)
Ramp Hansen Supply Canal Outlet (FW-07)	Native Fish Rearing (AG-08)	General Construction (GC-01, GC-02)	Big Game Migration Protection (TW-01, TW-02)
Stream Channel and Habitat Improvement Plan, Adaptive Management (AG-01, AG-03)	Glade Outlet Tower (WQ-01)	General Construction (GC-03, GC-04, GC-05)	Bird, Amphibian, Reptile Protection (TW-03, TW-04, TW-05)
Stream Channel Improvements (AG-02)	Glade Release Structure (WQ-02)	TCE Plume Avoidance (HZ-01)	Big Game Habitat Preservation (TW-06, TW-07)
Riparian Improvements (RV-01, RV-02)	Wetlands-Eaton Draw (WQ-03)	Oil & Gas Well Abandonment (HZ-02)	Native Plant Revegetation Screening (VS-01)

* Mitigation Item Number in parenthesis corresponds to Mitigation Item Number in Mitigation Plan



Handouts from NISPWAE

Northern Water and the NISP participants are also exploring various options to keep supplies in the ditch systems and available for these exchanges, to help ensure a **WaterSecure** future for Northern Colorado.

To avoid water permanently leaving farms in the New Cache and Larimer & Weld systems, **Northern Water and the NISP participants are exploring purchases of land and water from willing sellers** in the two systems, as well as looking at various other avenues to keep water on the farms. This will help ensure those supplies remain available for the NISP exchanges.

Rather than “buy-and-dry,” this is an **outside-the-box, “buy-and-supply” approach** to address tightening supplies.

Farms in the New Cache and Larimer & Weld systems purchased by Northern Water and the NISP participants will remain in production through:

- **Limited land-use easements on the property**
- **Lease-back agreements**
- **Other arrangements that will require continued irrigation on those farms**

Furthermore, the purchase of any irrigated lands will be done with the goal to eventually **return the operations to private ownership**.

We are also exploring agreements in which New Cache and Larimer & Weld shareholders could be compensated for giving Northern Water and the NISP participants first priority in buying their land and water assets if they are planning to sell them in the future.



Water quality questions addressed

Water quality and agronomy experts have examined the water quality issues, and with proper water blending, no impacts on crop yields would occur in nearly all anticipated operating conditions, and only minor impacts on specific crops in some instances. NISP participants would certainly factor any such impacts on crops into mitigation and compensation packages, and Northern Water will also continue monitoring water quality long into the future to address any potential issues.

We encourage anyone who wants to learn more to go to www.gladereservoir.org, or contact **Greg Dewey** at Northern Water at **970-622-2300** or gdewey@northernwater.org.

NISP: Striving to develop a **WaterSecure** future for Northern Colorado’s communities and farms



Collaborating in a shift away from the ‘buy-and-dry’ approach that has stressed our agriculture communities

As part of a long-term strategy that’s consistent with the goals and principles established in the Colorado Water Plan, Northern Water and the NISP participants are working to implement various measures – including a collaborative effort with the New Cache and Larimer & Weld ditch systems – that will provide supplemental water to approximately 500,000 residents in Northern Colorado while also helping preserve tens of thousands of irrigated farm acres.

Without these innovative approaches, the region is on pace to see hundreds of thousands of irrigated acres dried up by mid-century.



NISP at a glance

Once constructed, the **Northern Integrated Supply Project** will consist of:

- **Glade Reservoir** northwest of Fort Collins, which will divert water from the Poudre River
- **Galeton Reservoir** east of Ault, which will store water piped from the South Platte River
- Pipelines, pump plants and other infrastructure needed for operations

40,000 acre-feet

of additional water will be made available annually for

15 rapidly growing communities and water districts

across northern Colorado

A key component of NISP will be **water substitutions and exchanges**, in which Northern Water and the NISP participants will work with the New Cache and Larimer & Weld ditch systems. NISP will provide new water supplies to the ditch systems in order to allow Glade Reservoir to store water, by exchange, for the communities in need of those supplies.

In return, the NISP participants will provide **compensation for the two participating ditch systems, including:**

- **Monetary payments**
- **Additional water supplies from Galeton Reservoir**
- **Ditch-system improvements**

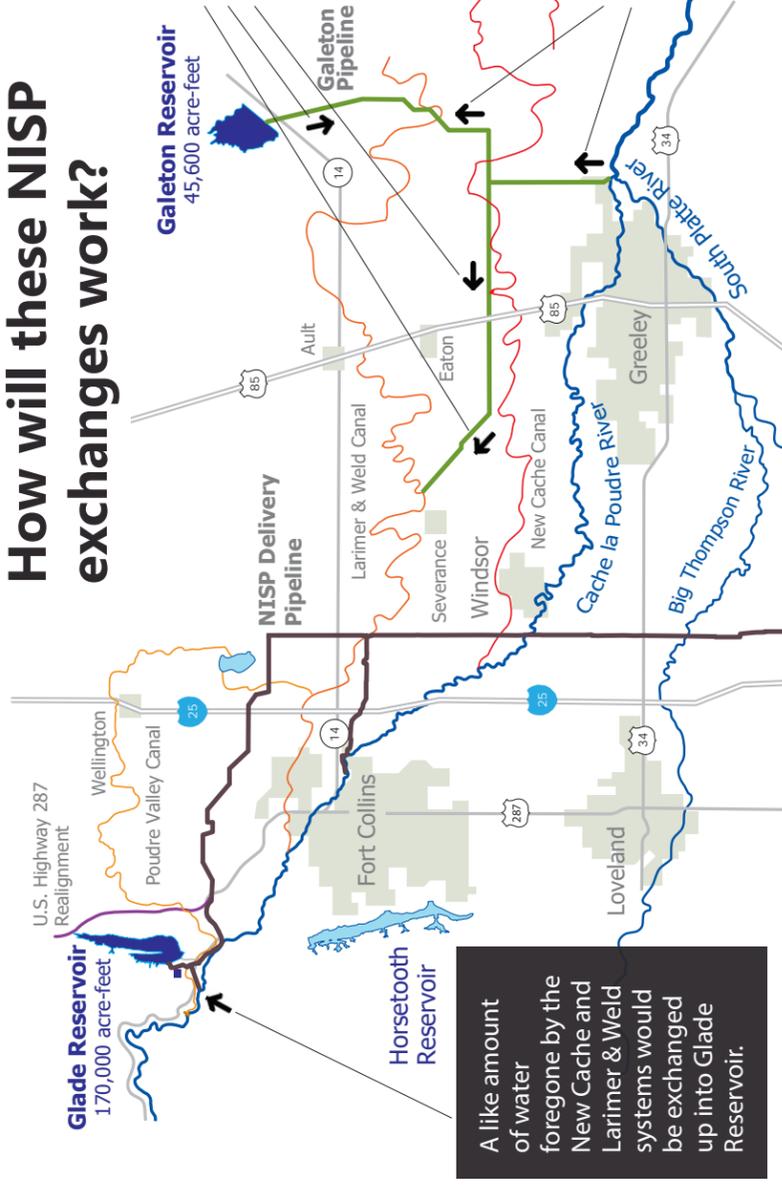
The NISP exchanges: A win-win for the farms

The NISP water exchanges are designed to be a win-win for the farms in the two ditch systems, in that:

- **Shareholders maintain control of their water, and water will continue flowing to the farms**
- **Compensation from the NISP participants will enhance the long-term viability of those ag operations**
- **The ditch systems will receive additional water later in the growing season**
- **These exchanges will not reduce the value of their water shares**
- **These exchanges have been adjudicated and approved by the water court, and will not subject the two systems' water rights to a change case**

Furthermore, **without NISP**, the communities participating in the project will most likely be left to purchase more water from existing farms and ranches – needing to **dry up over 64,000 acres** of irrigated farmground to attain the amount of water that NISP would provide.

How will these NISP exchanges work?



A like amount of water foregone by the New Cache and Larimer & Weld systems would be exchanged up into Glade Reservoir.

In addition to filling Galeton Reservoir, a new pipeline system will also deliver Galeton water to the New Cache and Larimer & Weld canals, to compensate the farms in those systems.

Water will be diverted via pipeline from the South Platte River to fill Galeton Reservoir.

About 25,000 acre-feet would be exchanged annually between the ditch companies and NISP participants.

This is **NOT** an alternative transfer method, or ATM, as they're often called. **Farms participating in the NISP exchanges will receive water each and every year.**

With this arrangement, the New Cache and Larimer & Weld shareholders **could receive more water for irrigation than they currently receive.**

NISP is expected to receive its Record of Decision from the Army Corps of Engineers in 2020, and following final design and construction, **the exchanges could be operational by about 2027.**

The approximately 90,000 irrigated acres under the New Cache and Larimer & Weld systems are estimated to provide **more than \$300 million in agricultural production annually.**

All of northern Colorado will benefit from keeping more irrigated acres in production.

Our agriculture industry employs thousands of local residents and feeds even more, while our farms and ranches also offer quality-of-life and environmental enhancements with open space and wildlife habitat – all of which Northern Water and the NISP participants want to preserve for future generations.



NISP's 401 Water Quality Certification

As part of NISP's approval process, the State of Colorado granted a 401 Water Quality Certification to the project in January 2020. The state concluded that no significant water quality degradation is expected because of NISP, and **"the commitments for mitigation and water quality improvement measures are sufficient to result in positive net effects."**

The 401 Water Quality Certification was issued following the State's year-long review of an extensive NISP application, which considered public comments.

The certification outlines 30 conditions in which Northern Water and the NISP participants will implement a wide array of measures and processes to ensure, for years to come, that the project's operations won't negatively affect the Poudre River's health, and that any potential impacts can be mitigated.



The commitments outlined in the NISP 401 Certification include long-term **MONITORING, REPORTING and MODELING**, to help maintain and even enhance the health of the Poudre River.



We'll collaborate with local and regional partners to implement **MITIGATION and ADAPTIVE MANAGEMENT** measures that will further enhance the Poudre River – an ecologically vibrant stream – for local residents and wildlife.



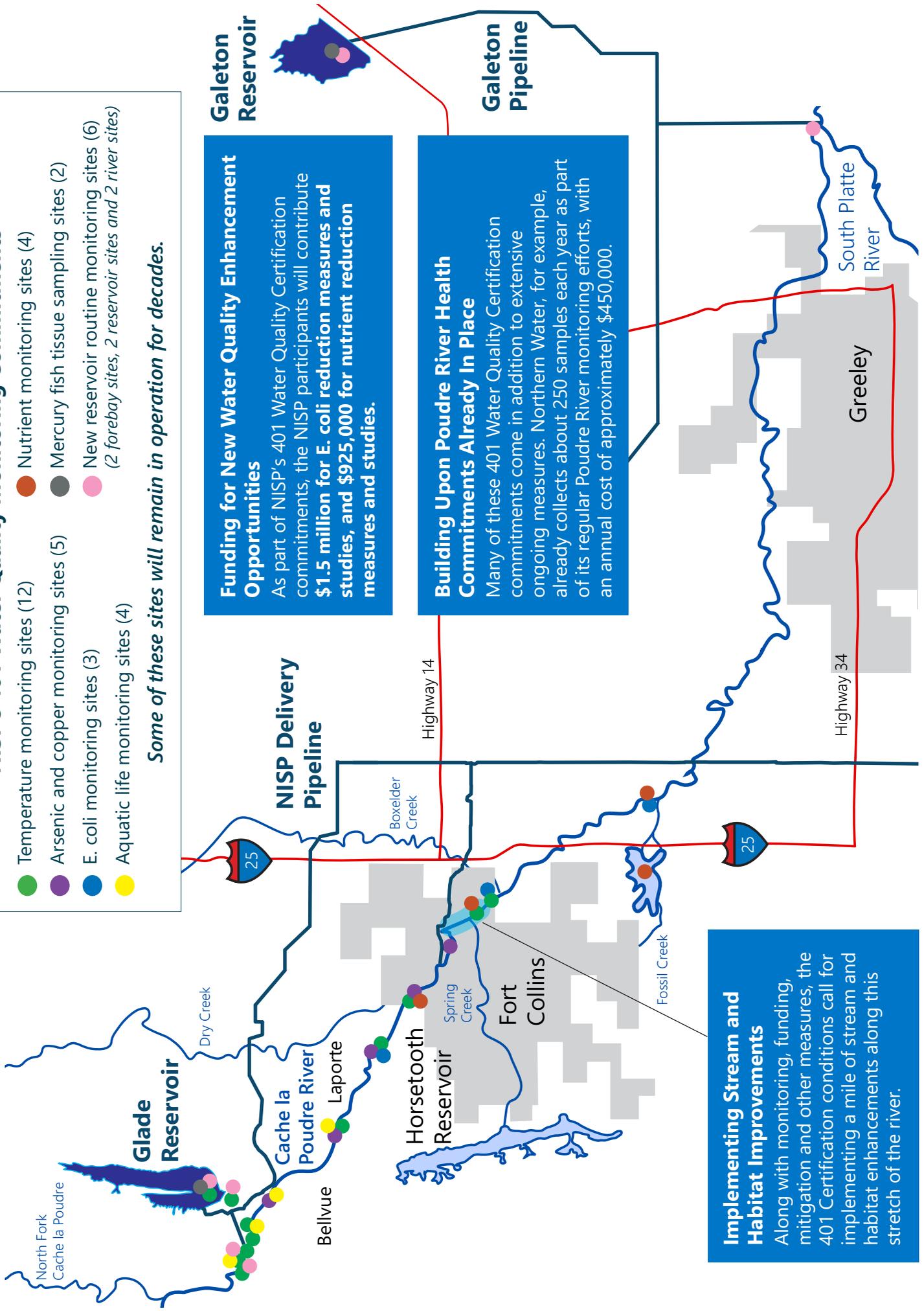
The NISP participants are committed to contributing millions of dollars in **FUNDING** to implement these efforts, as well as others, so the Poudre River can continue serving as a reliable and safe water supply for years to come.

Learn more at
gladerereservoir.org

NISP's 401 Water Quality Monitoring Commitments

- Temperature monitoring sites (12)
- Arsenic and copper monitoring sites (5)
- E. coli monitoring sites (3)
- Aquatic life monitoring sites (4)
- Nutrient monitoring sites (4)
- Mercury fish tissue sampling sites (2)
- New reservoir routine monitoring sites (6)
(2 forebay sites, 2 reservoir sites and 2 river sites)

Some of these sites will remain in operation for decades.



Funding for New Water Quality Enhancement Opportunities
As part of NISP's 401 Water Quality Certification commitments, the NISP participants will contribute **\$1.5 million for E. coli reduction measures and studies, and \$925,000 for nutrient reduction measures and studies.**

Building Upon Poudre River Health Commitments Already In Place
Many of these 401 Water Quality Certification commitments come in addition to extensive ongoing measures. Northern Water, for example, already collects about 250 samples each year as part of its regular Poudre River monitoring efforts, with an annual cost of approximately \$450,000.

Implementing Stream and Habitat Improvements
Along with monitoring, funding, mitigation and other measures, the 401 Certification conditions call for implementing a mile of stream and habitat enhancements along this stretch of the river.

NISP's Adaptive Management Program



As part of measures outlined in NISP's 401 Water Quality Certification and its Fish and Wildlife Mitigation and Enhancement Plan, an Adaptive Management program will be implemented, in which Northern Water will collaborate on river health initiatives with Colorado Parks and Wildlife, the Colorado Water Quality Control Division, and other partners.

An unprecedented opportunity for collaboration focused on the health of the Poudre River

The Northern Integrated Supply Project is a water-storage endeavor that will help rapidly growing Front Range communities meet their future water needs, while also implementing protections for the environment and wildlife, creating new recreation opportunities, and helping preserve our local farms. Additionally, through this Adaptive Management program, NISP will also implement an array of components that will help further develop an ecologically vibrant and resilient Poudre River corridor, by utilizing existing and new partnerships in a holistic approach to the river's health.

Learn more at gladereservoir.org



Improved Water Quality • Enhanced Poudre River Recreation • Better Aquatic Health
Increased Flood Resilience • Improved Wildlife Habitat

The Adaptive Management program's various monitoring, funding, mitigation and enhancement measures will be **implemented across a 42-mile stretch of the Poudre River**, from its mouth at the canyon to its confluence with the South Platte River.

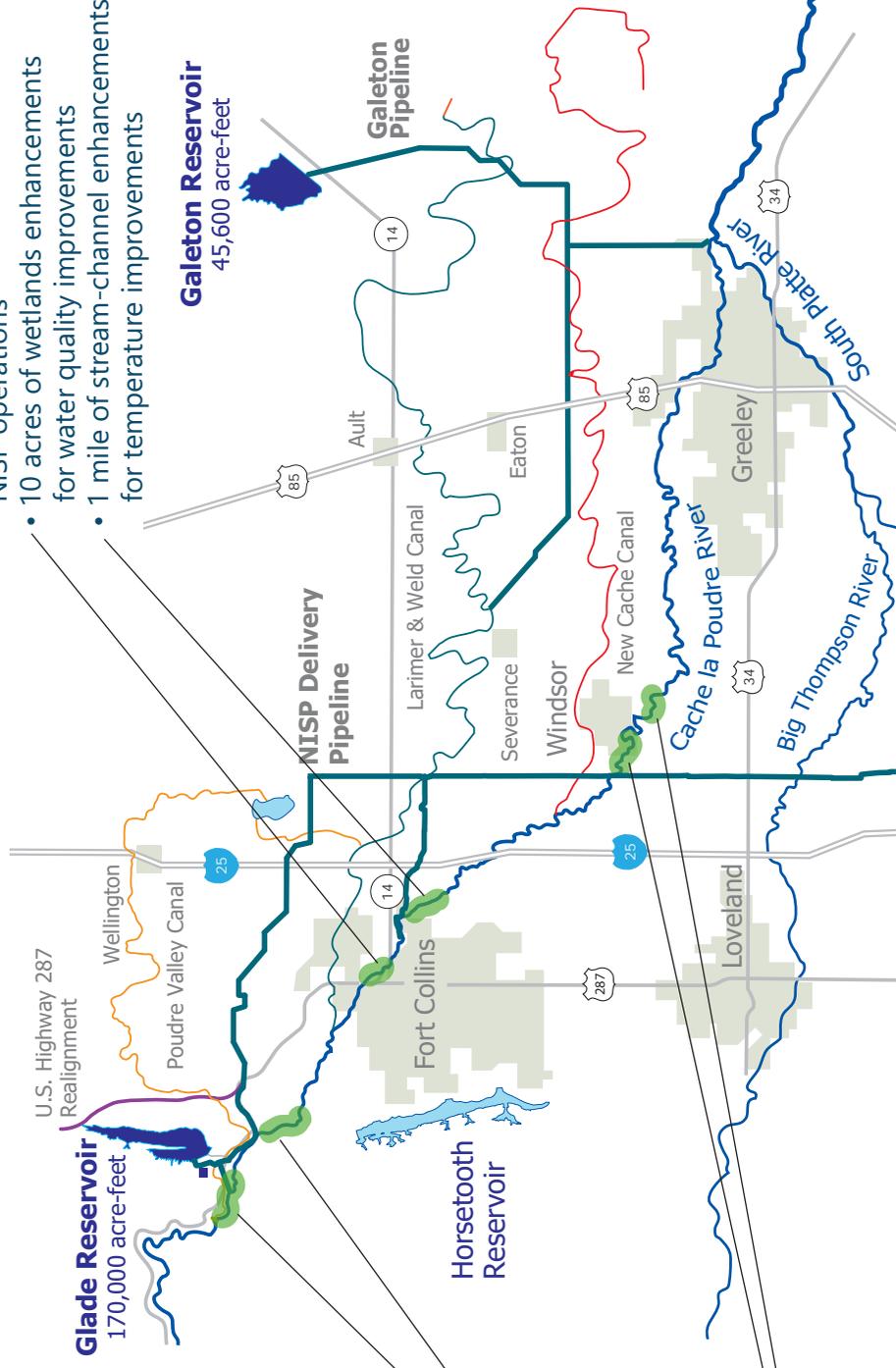
Key Adaptive Management Commitments from NISP's 401 Water Quality Certification

- \$1.5 million for E.Coli reduction measures and studies
- \$925,000 for nutrient reduction measures and studies
- Monitoring of potential impacts from Adaptive Management measures and NISP operations
- 10 acres of wetlands enhancements for water quality improvements
- 1 mile of stream-channel enhancements for temperature improvements

Fish Ladders • Cottonwood Regeneration • Creation of Wetlands to Improve Water Quality Stormwater System Upgrades • Channel Reconfiguration for Habitat Enhancements Sediment Management • Development of a Temperature Refuge

Key Adaptive Management Commitments from NISP's Fish and Wildlife Mitigation and Enhancement Plan

- \$1 million for River Master Plan development
- \$5.9 million in total costs to implement various Adaptive Management measures
- Monitoring of potential impacts from Adaptive Management measures and NISP operations
- 2.4 miles of stream-channel improvement projects (two 1.2-mile stretches), where flood plain-channel connectivity restoration will take place, as well as 54 total acres of riparian vegetation improvements in the surrounding area, including cottonwood regeneration
- 48 total acres across two sites of riparian vegetation improvements



The measures identified in the Adaptive Management program only account for a portion of the NISP components that will benefit the region's watershed and ecosystem. Through all of its various programs, NISP is all together committing nearly \$60 million toward mitigation and enhancement for the local environment and wildlife.

Two reservoirs that will help Northern Colorado meet its future water needs

NISP will supply 15 water providers with **40,000 acre-feet of new, reliable water supplies**. Northern Water is pursuing permitting, design and construction of this estimated **\$1.2 billion project** on behalf of the participants, who will be providing water to nearly half a million residents by 2050.

The project's main components include:

- Two new reservoirs (Glade Reservoir northwest of Fort Collins, and Galeton Reservoir northeast of Greeley)
- Pipelines to deliver water to the participants and for water exchanges with two irrigation companies
- Five pump plants

Glade Reservoir

5 miles long • 280 feet at its deepest
170,000 acre-foot capacity (slightly larger than Horsetooth Reservoir)



- Glade will be located northwest of Fort Collins near the intersection of U.S. Highway 287 and State Highway 14.
- The reservoir will divert water from the Poudre River during mostly high-flow times.
- The project will use the already existing Poudre Valley Canal near the canyon mouth to divert water from the river to the Glade Reservoir forebay. As part of NISP, the PVC's diversion structure will be upgraded.
- The reservoir site is divided by U.S. Highway 287, and therefore, about seven miles of the highway will be relocated to the east.

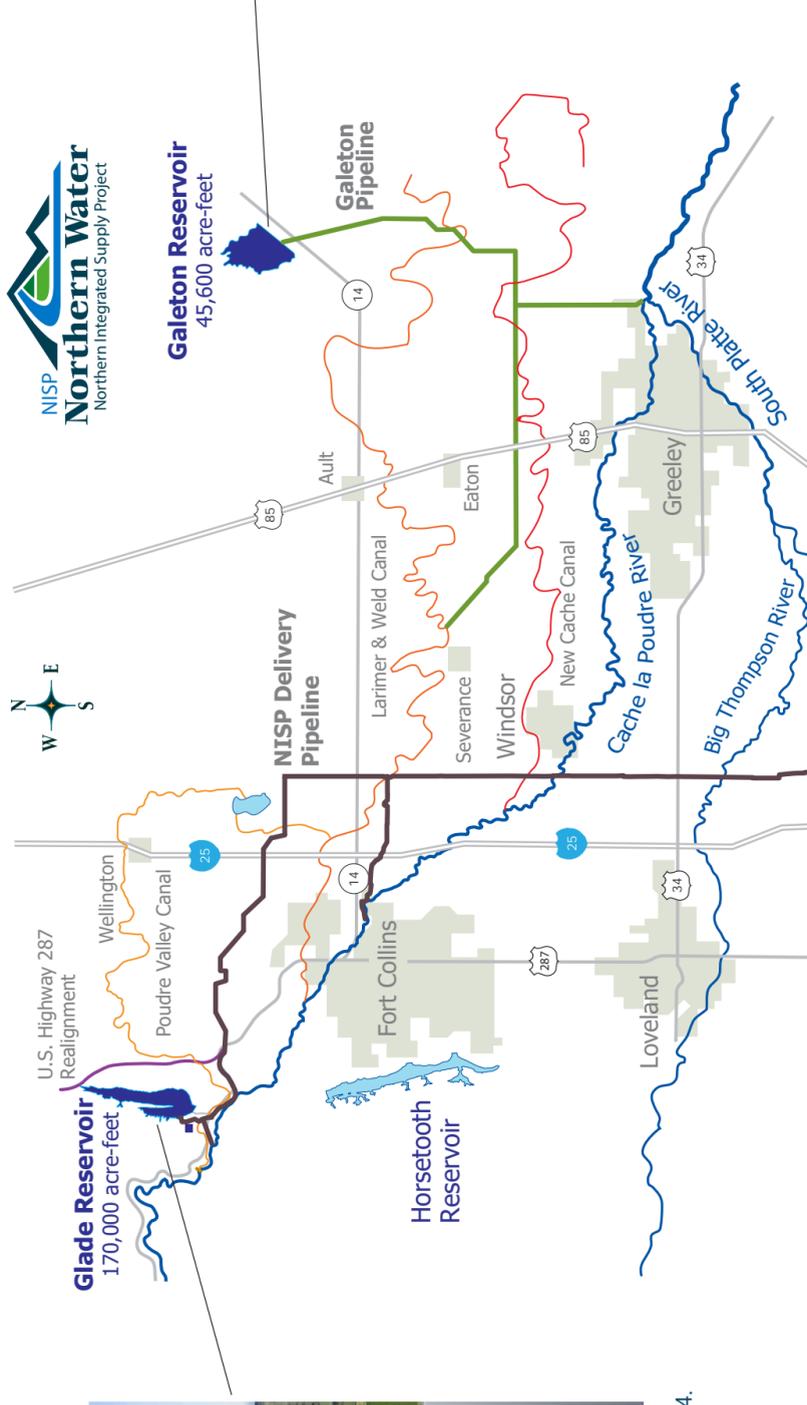
Bringing new recreation opportunities to the region

In addition to needed water storage and environmental-protection measures, NISP will bring new recreation opportunities to Northern Colorado, with a recreation concept plan that calls for **motorized and non-motorized boating, fishing, camping, hiking and biking at Glade Reservoir**.

Growing communities taking diverse steps to meet future demands

Central Weld County Water District • Dacono • Eaton • Erie
 Evans • Firestone • Fort Collins-Loveland Water District • Fort Lupton
 Fort Morgan • Frederick • Lafayette • Left Hand Water District
 Morgan County Quality Water District • Severance • Windsor

These 11 fast-growing communities and four water districts **currently serve water to about 250,000 residents, with that expected to double by 2050**. In addition to NISP, they are embracing conservation efforts, reuse and other opportunities to meet their future water demands, **having already collectively reduced their per capita water consumption by nearly 30 percent** since 2000.



You can learn more about NISP at www.gladereservoir.org.

Current status and upcoming timeline

- 2017 – Approval of Fish and Wildlife Mitigation and Enhancement Plan
- 2018 – Final Environmental Impact Statement released
- 2020 – Anticipated 401 Water Quality Certification Permit from the State of Colorado
- 2020 – Anticipated Record of Decision and 404 Permit from the U.S. Army Corps of Engineers
- 2019-2022 – Project design to be finalized
- 2023-2027 – Anticipated construction dates
- 2028 – First water stored in Glade Reservoir

A project that aligns with the goals of the Colorado Water Plan

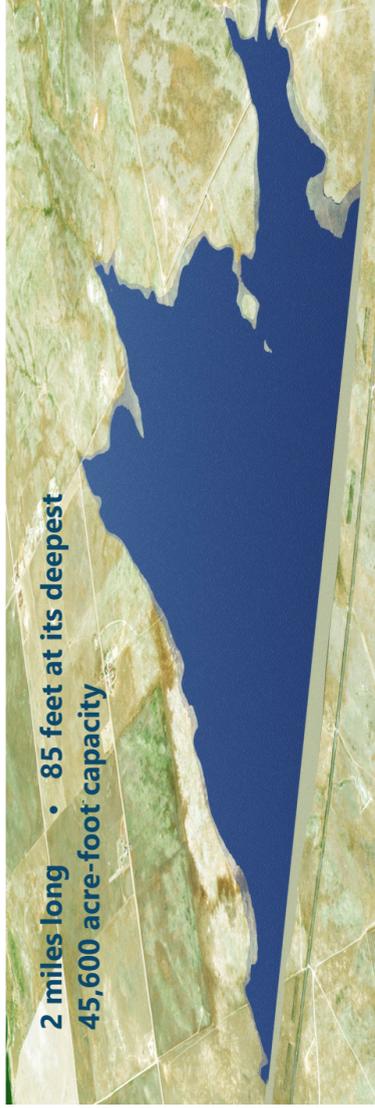
The Colorado Water Plan reinforced the necessity of additional water storage to help meet the state's future water gap. The gap is the difference between the estimated future water demands and existing supplies by the year 2060.

The Colorado Water Plan identifies the need for 400,000 acre-feet of additional storage statewide. NISP can play a role in meeting a portion of the impending water gap in Colorado.

The plan also identifies water conservation and increased water transfers between the agricultural and municipal sectors as additional solutions to help meet the impending gap.

Galeton Reservoir

2 miles long • 85 feet at its deepest
45,600 acre-foot capacity



- This reservoir will be located east of Ault and northeast of Greeley.
- Water will be diverted from the South Platte River downstream from Greeley at high flow times.
- Galeton Reservoir water will be delivered to the Larimer-Weld and New Cache ditch companies in exchange for a portion of the Poudre River water they currently use. (About half of NISP's planned diversion from the Poudre River includes water that's already been diverted for decades by these two ditch companies.)

A project that will also help protect local farms

In order to fill Glade Reservoir, NISP will strategically utilize water exchanges with the Larimer-Weld and New Cache ditch companies in Weld County, both of which have senior rights on the Poudre River. In return, the NISP participants will provide compensation for the two participating ditch companies, including:

- **Monetary payments**
- **Additional water supplies from Galeton Reservoir**
- **Ditch-system improvements**
- **Additionally, the ditch-company shareholders will maintain control of their water and water will continue flowing to their farms and ranches, while the compensation from the NISP participants will enhance the long-term viability of those ag operations.**

Furthermore, without NISP, the communities participating in the project will most likely be left to purchase more water from existing farms and ranches — needing to dry up more than 64,000 acres of irrigated farmland to attain the amount of water that NISP would provide.

A project that will help maintain the Poudre River's streamflows and protect our environment and wildlife

The NISP Fish and Wildlife Mitigation and Enhancement Plan – approved by the Colorado Parks and Wildlife Commission, Colorado Water Conservation Board and Gov. John Hickenlooper in 2017 – includes an array of components that will benefit our environment and local wildlife. Northern Water has also made additional environmental commitments in its Conceptual Mitigation Plan that are included in the Final Environmental Impact Statement.

Overall, NISP is committing nearly \$60 million toward mitigation and enhancement for the local environment and wildlife. These measures include:

Streamflow Commitments

- Water releases from Glade Reservoir of 18 cubic feet per second in the winter and 25 cfs in the summer, which will eliminate existing dry-up points in the river through downtown Fort Collins and improve streamflows year-round.
- Curtailing diversions when Poudre River flows are less than 50 cfs in the summer and less than 25 cfs in the winter.



Flushing Flow Commitments

- Commitments in which Glade Reservoir won't divert Poudre River water during peak flows in 2/3 of years, and will bypass diversions for up to three days – equivalent to as much as 6,000 acre-feet in most years.
- The project's streamflow commitments will result in little to no diversions during peak flow conditions in 90 percent of years.

Stream Channel Commitments

- Building bypass/fish passage structures at four diversion dams through Fort Collins and at the Poudre Valley Canal diversion at the canyon mouth.
- Stream channel improvements on two reaches that cover 2.4 miles.
- Commitments of nearly \$8 million for channel and riparian vegetation improvements.



Other Commitments

- Wildlife habitat conservation covering about 1,400 acres around Glade Reservoir.
- Wetlands and endangered species mitigation.
- Recreation/fishery benefits at Glade Reservoir.

NISP Endorsements

With NISP bringing so many benefits to the region, the project has earned support from numerous entities and individuals.

PUBLIC OFFICIALS

U.S. Sen. Cory Gardner • U.S. Rep. Ken Buck • State Sen. Randy Baumgardner
 State Sen. John Cooke • State Sen. Don Coram • State Sen. Kevin Grantham • State Sen. Cheri Jahn
 State Sen. Kevin Lundberg • State Sen. Vicki Marble • State Sen. Kevin Priola • State Sen. Jerry Sonnenberg
 State Rep. Jon Becker • State Rep. Perry Buck • State Rep. Steve Humphrey • State Rep. Hugh McKean
 State Rep. Bob Rankin • State Rep. Lori Saine • State Rep. Yeulin Willett
 Former U.S. Sen. Hank Brown • Don Ament, former state agriculture commissioner

LOCAL PUBLICATIONS

Erie Review • Fort Collins Coloradoan • Fort Morgan Times • Greeley Tribune
 Lafayette News • Longmont Times-Call • Lost Creek Guide • Louisville Times
 Loveland Reporter-Herald • Windsor Beacon

CHAMBERS OF COMMERCE

Berthoud Area Chamber • Carbon Valley Chamber • Erie Chamber • Evans Area Chamber
 Fort Collins Chamber • Fort Lupton Chamber • Fort Morgan Chamber • Greeley Chamber
 Lafayette Chamber • Longmont Area Chamber • Mead Area Chamber • Windsor Chamber

BUSINESS ORGANIZATIONS

Accelerate Colorado • Action 22 • Associated General Contractors of Colorado
 Colorado Association of Commerce & Industry • Colorado Contractors Association
 Fort Collins Board of REALTORS • Front Range District, Colorado Counties, Inc.
 Morgan County Economic Development Corporation • Northern Colorado Home Builders Association
 Northern Colorado Legislative Alliance • Poudre Valley REA • Progressive 15 • United Power
 Upstate Colorado Economic Development • Weld Community Development Group
 Weld County Builders Association Inc. • Weld County Council

COUNTY COMMISSIONS

Morgan County Commissioners • Weld County Commissioners

AGRICULTURE ORGANIZATIONS

Colorado Farm Bureau • Rocky Mountain Farmers Union • Colorado Livestock Association
 Colorado Corn Growers Association • Colorado Cattlemen's Association
 Rocky Mountain Agribusiness Association • Western Sugar Cooperative
 Colorado Sugarbeet Growers Association • Boulder-St. Vrain Valley County Farm Bureau
 Colorado Association of Wheat Growers • Colorado Egg Producers Association
 Colorado Pork Producers Council • Larimer County Farm Bureau • Weld County Farm Bureau

WEST SLOPE ORGANIZATIONS

Colorado River District • Club 20 • Southwestern Water Conservation District • Ute Water Conservancy District

CONSERVATION DISTRICTS

Boulder Valley Conservation District • Longmont Conservation District • West Greeley Conservation District
 Big Thompson Conservation District • Fort Collins Conservation District

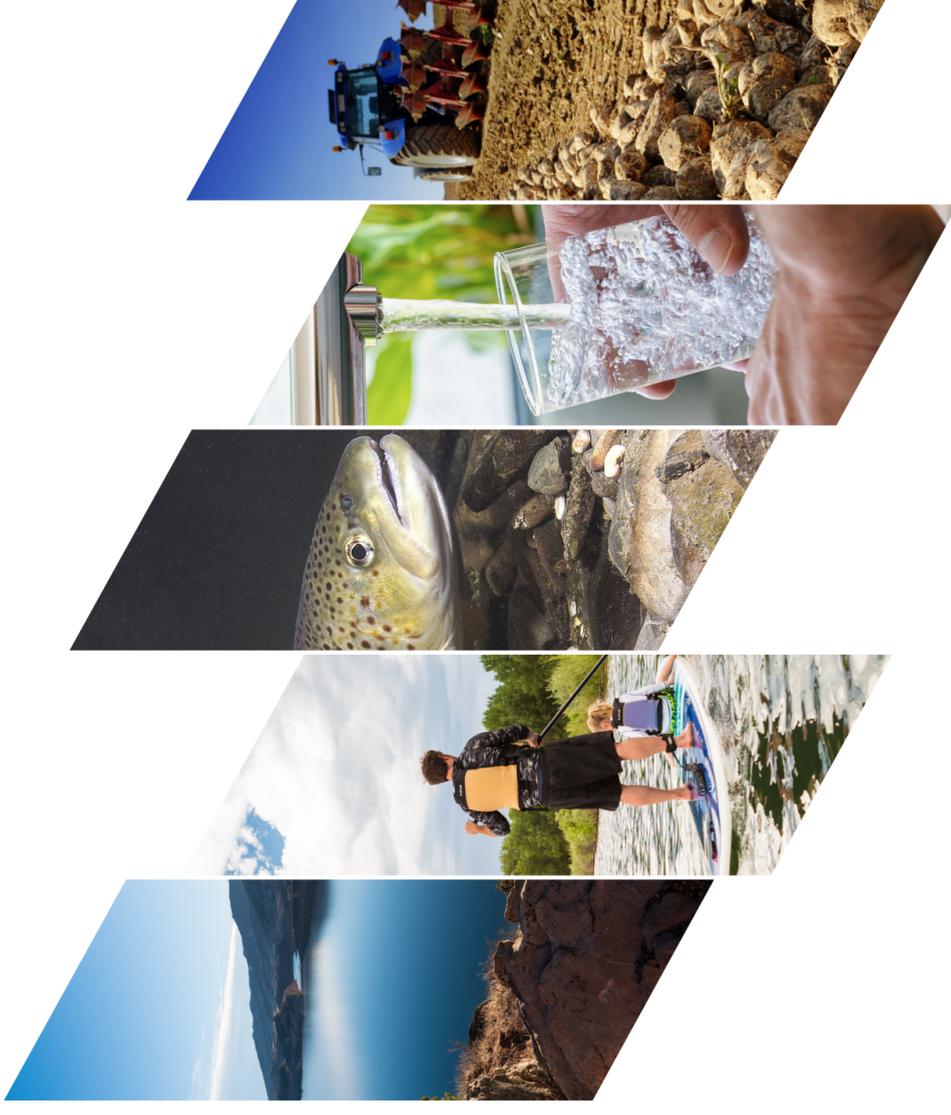
WATER DISTRICTS

Central Colorado Water Conservancy District • Lower South Platte Water Conservancy District
 Northern Colorado Water Conservancy District • St. Vrain & Left Hand Water Conservancy District



Northern Water

Northern Integrated Supply Project



The Northern Integrated Supply Project:

A water-storage project that will help rapidly growing Front Range communities meet their future water needs, while also implementing protections for the environment and wildlife, creating new recreation opportunities, and helping preserve our local farms and ranches.