LARIMER COUNTY | Community Development

P.O. Box 1190, Fort Collins, Colorado 80522-1190, Planning (970) 498-7683 Building (970) 498-7700, Larimer.org

MEMO

To: Larimer County Planning Commission

From: Community Development Staff

Date: July 8, 2020

RE: **2nd Addendum to Staff Report for File #20-ZONE2657; Northern Integrated Supply Project Enterprise 1041 Application**

Attached to this memo please find all public submittals received in the Community Development office between the June 24th meeting and July 8.

- Citizen comments – Over 20 email correspondences, and several letters
- Letters from the Morgan, Weld and Larimer County and Colorado Farm Bureaus.
- Public testimony received via the website from initial posting through July 8.

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

COVID-19

1 message

Alan Braslau <braslau@comcast.net> Wed, Jun 24, 2020 at 8:39 PM
To: pcboard@larimer.org

I am watching the Planning Commission Board meeting. Is there no concern about contamination of the COVID-19 virus through the shared use of the microphone, pointer, all with presenters speaking without masks?

Thank you

--
Alan Braslau
816 West Mountain Avenue
Fort Collins, CO 80521 USA
mobile: (970) 237-0957

Conserve energy! ;-)

Rob Helmick <helmicrp@co.larimer.co.us>

Fwd: Comments for Planning Commission Meeting July 8, 2020

1 message

Debra Unger <ungerde@co.larimer.co.us> Tue, Jul 7, 2020 at 10:50 AM
To: Rob Helmick <helmicrp@co.larimer.co.us>
Cc: Don Threewitt <threewdl@co.larimer.co.us>, Lesli Ellis <ellislk@larimer.org>, Matthew Lafferty <laffermn@co.larimer.co.us>

Rob, fyi . . .

Debra Unger
Administrative Assistant II

Commissioners' Office
200 W Oak St | 2nd Floor
PO Box 1190, Fort Collins, CO 80522-1190
W: (970) 498-7149
DUnger@larimer.org | www.larimer.org

---------- Forwarded message ---------
From: <dking49326@aol.com>
Date: Tue, Jul 7, 2020 at 10:43 AM
Subject: Comments for Planning Commission Meeting July 8, 2020
To: ungerde@co.larimer.co.us <ungerde@co.larimer.co.us>

Hi, Debra - Please see that our attached Public Comments are provided for the July 8, 2020 Planning Commission meeting regarding the NISP.

If we need to send to someone else, please provide the contact information.

Thank You,
Dan & Evelyn King
6321 W County Road
Loveland, CO 80537
dking49326@aol.com

NISP Comments July 2020.docx
15K

Public Comments Regarding The NISP – File #20-ZONE2657:

Northern Water has worked extremely hard to provide an excellent water project for the 15 supporting members. Even though Northern Water has successfully worked to substantially decrease water consumption, storing water is absolutely critical for our region. We all enjoy the benefits of water projects completed by past visionaries; therefore, we must not allow this excellent project to be declined.

The NISP will provide a reservoir larger than Horsetooth and will include a huge increase in recreational opportunities for the residents of Fort Collins and Loveland. Those entities will receive economic benefit even though they will not be paying for this resource. Fort Collins will also benefit tremendously from the guarantee of the continuous Poudre River water flow through the City for the pleasure and enjoyment of the citizens. Currently, the Poudre is dry in the late summertime and the NISP will provide huge improvement with the continuous flow. This continuous water flow will also benefit and improve the health of the Poudre River, itself, as well as the environment along the waterway.

The City of Fort Collins is also asking to enlarge the Halligan Reservoir, which is a source for their water. Why would Fort Collins' residents oppose the NISP when the City understands the critical need for additional water storage?

Rivers, lakes, reservoirs and waterways define our outdoor experiences, and those experiences are enhanced with all the connecting trails and open spaces in Larimer County. More is better, but only if we complete the NISP.

Larimer County has proven its capabilities in managing other reservoirs, and have promised to require mitigations as are needed for the NISP. The NISP will provide all types of new recreational opportunities which are desperately needed in Northern Colorado because of overcrowding at the current recreational locations.

The dissent and game played by environment groups is fairly simple. They use every tool to drag the project into the courts, raise the cost as much as they can, they hope for an economic downturn and then they hope the project members will throw in the towel. The Glade Reservoir project has taken far too long and at a huge additional cost to the 15 member districts, cities and towns. Please delay no longer.

The 1041 Permit will allow the siting and development of the water storage project, which includes recreational uses, facilities and other items. It also allows the siting and development of four raw water lines to support the project.

We agree with the Development Services Review Team's Recommendation for Approval.

Please approve the NISP so the Glade Reservoir can be built for many to enjoy!

Dan & Evelyn King
6321 W County Rd 18
Loveland, CO 80537

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

The Cache la Poudre River

1 message

DAVID ROY <david.roy@comcast.net> Tue, Jul 7, 2020 at 7:53 AM
To: "pcboard@larimer.org" <pcboard@larimer.org>, "pcboard@larimer.com" <pcboard@larimer.com>

Good morning, Larimer County Planning Commission Board Members;

The Cache la Poudre river is a special natural resource for every person who lives in Colorado, and especially anyone who lives in Fort Collins and Larimer County. It provides water, habitat, recreation, and solace; in short, the magic of nature, right through our backyards here in Northern Colorado.

NISP will destroy it. A flowing Cache la Poudre river and the habitat and wildlife it makes possible is worth protecting and preserving, and will be a legacy that future generations will enjoy.

As the Larimer County Planning Commission, your first responsibility is to the citizens of Larimer Country, and to protect the natural resources of this county. NISP will require 7 miles of new roadway east of the hogbacks, will drain the Cache la Poudre of water, while supporting a purely speculative project for 600,000 people yet to move to the Eastern Plains, largely outside of Larimer County.

The price for the project has risen to astronomical heights, while the science behind the project has not kept up, ignoring the effects of climate change on such a large capital outlay, and that will increase the already profound devastation that this project would cause to our natural environment.

Denying the permit that Northern Water is seeking is the best work you can do as a Board. Exchanging boating for the life of the Cache la Poudre river is a choice that would border on criminal. The high likelihood that Glade Reservoir will take over 30 years to fill, and the added effect of climate change on that number, makes recommending to the BOCC that it go forward an irresponsible choice for the communities downstream, and would still kill the the Cache la Poudre river as it flows through Fort Collins.

When uncertain, the best action is to do no harm. Make the choice that we know preserves the splendor of the Cache la Poudre. Support the investments that local citizens have made to protect and preserve the natural areas along our river. Position Larimer County to be the stewards of this priceless gem of a natural resource. Vote to create a flowing river through an urban setting, a vote that supports habitat and wildlife, and protects and preserves the natural resource for the citizens of Larimer County that is our Cache la Poudre river .

Thank you.

David Roy
2016 Evergreen Court
Fort Collins CO 80521
(970) 493-9201

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

NISP

1 message

Gayla Martinez <gmaxwellmartinez@gmail.com> Tue, Jul 7, 2020 at 6:21 AM
To: pcboard@larimer.org

Dear Commissioners,

The NISP project is a short-sighted, ill-conceived plan that has been a concern to Larimer County residents for many, many years. It is time, once and for all, to remove this ominous threat to the well-being of the Poudre River.

Sincerely,
Gayla Maxwell Martinez

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

NISP Project

1 message

Jessica Elf <jessicaelf@gmail.com> Fri, Jun 26, 2020 at 2:24 PM
To: rhelmick@larimer.org

Dear Mr. Helmick,

I am writing to voice my strong disapproval for the NISP 1041 permit application. I firmly believe that moving forward with this water project would irrevocably damage the health and wellbeing of the Poudre and will diminish the irreplaceable natural value of our Northern Colorado environment. I strongly urge the County to disapprove this application. I believe firmly that the issues and concerns raised in Preston Brown's OpEd in the Coloradoan (https://www.coloradoan.com/story/opinion/2020/06/07/opinion-reject-nisp-to-keep-the-poudre-river-healthy/5313447002/) highlight some of the value of the Poudre and all we have to lose.

Let's be smarter and more progressive about how we approach these very real water challenges moving forward. Putting in the hard, smart work now will be worth it in the future. Let's not make mistakes or take for granted our precious natural resources.

Sincerely,
Jessica Elf
352-672-1268
107 N Hollywood St
Fort Collins, CO 80521

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

NISP project

1 message

Judith Putnam <judy.putnam60@gmail.com> Sat, Jun 27, 2020 at 10:09 AM
To: rhelmick@larimer.org

The fact is we need the water.

As the climate gets hotter and drier, there aren't going to be any trout that can live in the waters here on the plains. Best to do one's trout fishing in the mountains. That is, until they get too hot, too.

I can remember the Cache La Poudre river in the winter here in Fort Collins having a flow so small that I could easily place one dry foot on one side and the other dry foot on the other, spanning the flow. This BS about flow and "preserving" it is a fantasy created by people who haven't been here very long.

Ed Beattie's parents owned the ranch at the mouth of the Poudre. He remembered picking feathers out of his mom's pillows to make flies to fish. There was no road into the canyon at that time. He recalled that he would fish in the pools of the river in the fall. Back then, there wasn't enough flow to fish anywhere else. He recounted this to his fly-tying class, that I attended, back in the 1970s.

The river is and has been for a long time, the way that water gets from the mountains to the thirsty prairie, to farms and ranches and cities. We need the water, therefore the flow is regulated by the river commissioner. Those who propose to regulate it for recreation and esthetics forgot who is paying for the water and what it is really needed for.

All one has to do is watch the river for awhile. See when it rises (during the week) and when it lowers (on weekends). See how the flow can be radically increased for a short time in the winter, and then reduced when there is not a call for the water. This is what the river has been about for over a century: a conduit for water.

Face facts. The river does not access the flood plain that is there, so we can't use the argument that the flow needs to be there for the floodplain ecosystem. It would be a disaster if it was allowed to flood every spring. We try very hard to keep the river in its channel. All the time.

As rainfall gets less predictable, a reliable reservoir is needed. One might suspect that those who oppose NISP, also oppose growth. Once they have settled here, nobody else can, because, gee, we don't have the water. NISP is a well-thought out, responsible and careful way that we can have the water that we desperately need. It supports recreation and would take, just temporarily, some of the recreation pressure off of the river.

I am sure that those who oppose this project have good intentions. They just seem to be ignoring some of the facts. Here in Colorado, water is money and money talks.

Thank you for the opportunity to speak my peace,
Judith D. Putnam, retired

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Letter to County Commissioner's for their upcoming 1041 hearings on NISP

1 message

JDP <jerroldpault@gmail.com> Mon, Jul 6, 2020 at 9:08 AM
To: Rob Helmick <helmicrp@co.larimer.co.us>

Rob,
Could you please forward this email to the County Commissioners or include it in their package when they meet on NISP.
Thank you,
Jerrold Pault

NISP-CCHEARINGS.pdf
52K

July 6, 2020

To: **Larimer County Commissioners** (via email)

From: Jerrold Pault
President - The Hill Community Homeowners Association (HOA)
President – Cobb Lake Preservation & Recreation Association (CLPRA)

Subject: NISP - Commissioners' Hearings

Dear Commissioners,

On behalf of The Hill Community HOA (60 homeowners) and CLPRA (104 members), we strongly oppose the Northern Integrated Supply Project (NISP) and request that you vote against this environmentally devastating project.
The following concerns are cited:

- This project would take additional water from the Poudre River, which is already seriously depleted by agriculture and residential use. The diminished flows would due irreparable harm to the riverbed and its wildlife habitat and the City of Fort Collins beautiful new water park would be rendered virtually useless. We are grateful for the efforts of the **Save The Poudre** organization and support their efforts to protect this precious resource for our children and future generations.
- This project does not own sufficient water rights to be feasible, which will result in NISP purchasing additional water rights, likely from our local farms. While NISP has promised not to "Buy and Dry" farms like Thornton did, we do not believe they will honor this commitment after spending a Billion dollars and then not be able to fill Glade Reservoir. We must protect the rich tradition of family farming in our region before it is lost forever!
- NISP originally planned to run a huge 54" pipeline thru the middle of deeded conservation space owned by The Hill HOA (600 acres of native grasses full of wildlife). Now they are proposing a different route along CR 52, which will impact access and egress to our community along with the many residents who live along this route. Why do we need more massive and disruptive pipelines in Larimer County, when we have nature's solution for moving this water in the Poudre River? We are thankful for the efforts of the **No Pipe Dream** organization in opposition to both NISP and Thornton's Pipeline last year.
- NISP will bring unwanted growth, development and urban sprawl to the areas north west of Fort Collins. These quiet and peaceful rural areas will be forever changed and overrun with traffic, noise and residential and commercial development. We need to preserve the remaining open spaces and rural character of our county. We support **Save Rural NOCO**, another

organization against NISP, and think it is important that we protect the lifestyle of our rural residents.

- Cobb Lake is a pristine recreation and preservation area that is nourished by the clean waters from the Poudre River every year. NISP could be potentially devastating to our lake if they are permitted to utilize water exchanges, which would divert clean Poudre River water from Cobb Lake to Glade Reservoir and replace it with dirty water from the South Platte. **CLPRA is against NISP.**

Why should we agree to all of these environmentally devastating and permanent impacts to Larimer County … just to send water to municipalities and water districts in other counties so that they can develop more housing, water more lawns and grow their tax base? **We feel that it is time to start planning responsible for the future of all of Colorado, live within the constraints of our natural resource and stop enabling developers and unchecked growth to destroy the quality of life that is Northern Colorado.**

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Please oppose the construction of NISP

2 messages

Kevin Cross <jkevin87@comcast.net> Tue, Jul 7, 2020 at 6:24 AM
To: pcboard@larimer.org
Cc: bocc@larimer.org

Dear Members of the Larimer County Planning Commission of Larimer County (with a cc to the Larimer County Board of Commissioners) –

I will not be able to attend your meeting this Wednesday, but wanted to register my strong opposition to the Northern Integrated Supply Project (NISP). A few of the reasons I oppose this project are:

1. It would kill the Cache la Poudre river through Fort Collins, which is already dry in spots at times through the year from being overworked.

2. The models and assumptions of water flows used by Northern Water don't take climate change into account.

3. Fort Collins residents would lose tremendous amounts of the natural resources they have chosen to protect with their sales tax dollars.

4. The destruction of those natural resources would mean the decimation of the riparian edge through Fort Collins, and the wildlife it supports.

Thank you for your consideration.

Sincerely,

Kevin Cross

300 Peterson Street

Fort Collins, CO 80524

Linda Hoffmann <hoffmalc@co.larimer.co.us> Tue, Jul 7, 2020 at 8:07 AM
To: "Helmick, Rob" <helmicrp@co.larimer.co.us>

Rob -- Please include this message in the public record for the application.

Linda Hoffmann
County Manager

Commissioners' Office
200 W Oak St, Fort Collins, CO 80521 | 2nd Floor
W: (970) 498-7004
lhoffmann@larimer.org | www.larimer.org

[Quoted text hidden]

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Do Not Approve NISP 1041 Project No. 20-ZONE 2- Save Our Rural Northern Colorado

1 message

Kit Nielsen <kfn5454@gmail.com> Wed, Jul 1, 2020 at 6:24 PM
To: rhelmick@larimer.org, tdonnelly@larimer.org, swjohnson@larimer.org, jkefalas@larimer.org

Dear Commissioners and Planning Commission:

Commissioner Johnson
Commissioner Kefalas
Commissioner Donnelly
Rob Helmick

We are landowners residing in the area of the proposed Glade reservoir that have concerns with the proposed Glade Project and the negative impacts that would occur if the project moves forward.

The primary benefits of this proposed reservoir would be enjoyed by the 15 subscriber towns or agencies that receive the proposed Glade water. Most of these towns and agencies are outside Larimer County. The most obvious and intense costs would be borne by local and other surrounding communities.

In general, our concerns are that the scope and scale of this proposed project, if approved, would have significant, detrimental, and permanent impact on our rural community, environment, and lifestyle we enjoy today and desire to have in the future.

Specifically, our rural environment we believe would be negatively impacted in the following ways:

1) Noise - The rerouted highway over the most eastern hogback would have an unobstructed view from residences in the foothills, there would be no middle hogback to block truck and auto noise. The NISP publications suggest that recreation would include motorboats and jet skis. Boats and skis are loud, they would likely be louder than current road traffic.

2) Light Pollution – This rural area enjoys fairly dark skies. The proposed recreational activities would generate significant exterior lighting for boats, facilities, camping, pumping facilities, traffic, etc. and headlights from traffic coming down the hogback on the rerouted 287 would shine into the adjacent private property. This could destroy the enjoyment of our night skies.

3) New development - We do not know what sort of development would occur near and north of proposed Glade. The rerouted highway 287 would invite more residential development on the plains. The reservoir would invite more development in the adjacent foothills and valleys. It's not inconceivable that more commercial development catering to visitors would encroach into currently uncommercialized lands, forever altering the rural nature of the area.

4) Trespass – Plans for proposed Glade project almost 400,000 visitors per year. This would include boaters, campers, fishers and hikers and bikers, among others. There is every reason to believe that not all these visitors would stay within the confines of designated recreational areas. Some visitors are likely to explore the inviting foothills that border the reservoir and trespass, however inadvertently, on our private property.

5) Wildlife – Proposed Glade would become a significant barrier to the permanent and migratory herds of deer and elk that reside in our area and would be disruptive to other wildlife. In a world where wildlife and nature are under stress, and is diminishing generally owing to human activities, should we be contributing to those activities for unnecessary purposes? We encourage the county to find alternatives that don't result in the significant loss of open space and wildlife habitat that this project would cause.

6) Wildfires – In this century three major wildfires burned over 100,000 acres on and around Glade. Two of the three forest fires were caused by careless people. Can we rely on the >1000 daily visitors to proposed Glade to be careful?

7) Emergency response – The recreation on the proposed reservoir is projected to be almost 400,000 visitors per year. Such a large increase in recreationalists would likely increase the number of emergency calls thereby further stretching emergency response agency resources. Costs would be borne by Larimer County taxpayers, and emergency services

that are diverted to Glade would not be readily available to serve the local communities.

8) Air quality – Because Glade would have junior water rights, the water level of the proposed reservoir would be highly variable, unlike Horsetooth. The water level frequently would drop precipitously, often changing proposed Glade Reservoir to Glade Mudflats, and could stay that way for years. The large “bathtub ring” that would materialize around the reservoir would become dry soil that would blow in our strong winds causing air quality and visual concerns. The hundreds or thousands of vehicles that would travel to the area emit gases, particulates, and ozone precursors (i.e., health hazards).

9) Climate change – the pumps, the construction vehicles, the recreational vehicles: the project would result in considerable burning of fossil fuels, forever, and the emission of greenhouse gases. The pumping stations alone would emit the equivalent of adding 7000 GHG emitting cars at a time when Colorado is implementing zero emissions vehicle standards.

10) State Land Usage - The large area of state land west of the proposed reservoir is devoted to hunting and cattle grazing. The state and federal lands in this region of northern Colorado provide abundant and easily accessible opportunities for recreation, which we gratefully utilize. Impacts to use of or access to the state land is a negative impact to our communities.

11) Aesthetic - The drive from Livermore to Laporte would no longer be through the heritage rangeland and the familiar hogbacks. Since the proposed reservoir would likely be only partially filled much of the time, instead of beautiful hogbacks and grassy foothills, our viewshed would be marred by the barren sides (bathtub ring) and murky surface of a partially filled reservoir.

12) Lack of combined Project evaluation/coordination - There is no apparent coordination of the NISP or the proposed Seaman’s expansion or the Halligan expansion. All these projects surround our properties and would leave us on a peninsula of land cut from the rural environment we now enjoy. We met with the City of Greeley in August 2018 and learned that they are not planning to cooperate with other cities due to “challenges” and are proceeding on an expansion of Seamen’s reservoir from 5,000 to 80,000 acre-feet. In the 21st century, surface storage just doesn’t make sense; this is a semi-arid climate that is getting drier. Alternatives are available and should be seriously considered.

13) Social justice - While the benefits of proposed Glade would be enjoyed by people who live and work far from the reservoir site, the costs would be borne by those whose quality of life would be severely lessened.

14) Conservation and Alternatives – Conservation is not begin adequately considered. While the Colorado Front Range is land-rich for development, it is semi-arid and thus water-limited. About 2/3 of the Poudre is already taken out, and Glade would take another 40% of what’s left. Yet another reservoir is nothing but a temporary fix for a small portion of the state’s water needs; but one with permanent, destructive impacts on a large part of rural northern Colorado. The time is way past due for developing long-term solutions based on state-of-the-art technologies and widespread education on the absolute necessity to conserve water, and to stop relying on 19th century solutions for 21st century challenges.

The Larimer County Commissioners must save our rural communities and be good stewards of our natural resources by saying no Glade Reservoir!

Sincerely,

--
Mr Kit Nielsen
kfn5454@gmail.com
312 Granite Ridge
Laporte, CO 80535

Save Rural NoCo Member

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Do Not Approve NISP 1041 Project No. 20-ZONE 2- Save Our Rural Northern Colorado

1 message

Lori Nielsen <lorikitnielsen@msn.com> Wed, Jul 1, 2020 at 7:10 PM
To: rhelmick@larimer.org, tdonnelly@larimer.org, swjohnson@larimer.org, jkefalas@larimer.org

Dear Commissioners and Planning Commission:

Commissioner Johnson
Commissioner Kefalas
Commissioner Donnelly
Rob Helmick

Dear Larimer County Commissioners:

I grew up in conservative Oklahoma and have lived in Larimer County for 34 years. I currently reside in the Bonner Peak subdivision. I am a professional Wildlife Biologist and have over 33 years experience in environmental impact reviews. Although my focus has been on wildlife resources as part of my career, I also am familiar with a number of other environmental resource issues. I am not nor have been a member of any local environmental organization, although I have been monitoring the "water wars" throughout the West and in the County.

I have tried to be succinct, given the number of comment letters I anticipate you will be receiving. However, please do not interpret brevity as a lower level of interest. The following points are key to the rural lifestyle Larimer County has come to represent both locally and globally.

I reference the latter, since Bonner Peak supports a diversity of residents, and my first question to them moving from all walks of life and the globe has been, "Why Bonner Peak? Why Larimer County?" The answers are parallel in that this area is unique in many different ways. Quality of life and opportunities are the nucleus. Northern Colorado is rare in merging interests from the far right to the far left, and Bonner Peak is a good example of this diversity.

Now for the substantive comments.

I have reviewed a number of sources and have found Save Rural NoCo as a pretty impressive, science-based constituent. Having worked on National Environmental Policy Act (NEPA) and local permitting for well over 30 years, they provide substantive points. I am providing my own perspective, based on my 30+years in the County, but I also use some of their talking points, where stated.

#1: Direct adverse effects to local landowners and natural resources resulting in direct benefits to communities exterior to Larimer County is negative to all Larimer County residents, no matter their political bent. I'm surprised even conservative constituents would be in favor of this proposal? Using impact terminology, this project would result in irreversible, irretrievable adverse impacts to local residents, water users within Larimer County, and the myriad of natural resources from wildlife to wetlands.

#2: The level of construction and increased noise levels from project construction has not been adequately addressed in the environmental analysis to date.

#3: Operational noise levels from recreational use will forever result in lower property values for homeowners within that noise diameter, reduced wildlife presence, and long-term effects to locals.

#4: The reservoir would present a permanent barrier to terrestrial wildlife east-west movement. This week, we had two bighorn sheep and 12 elk along the Bonner Peak area, moving east. This would prevent free movement all the way north to Cherokee Park and beyond.

#5: The most dangerous thing we do each day is drive Highway 287. However, no matter this level of danger, rerouting the highway as proposed would result in irreversible impacts to residents currently living along Highway 287 as the road would exit the hogback (lights into homes, noise, and no buffer). Additionally, no increased safety would be recognized as the road is currently planned.

#6: Save Rural NoCo mentions light pollution. They are correct, the added effect to this area would essentially extend light pollution north of Fort Collins and Laporte, negating any night sky access until approaching Virginia Dale.

#7: Water is key, obviously. Will the pool size truly fill? With junior water rights, the water level of the proposed reservoir would be highly variable.

#8: Cultural Resources: the loss of haystack rock

#9: Wildfire risk is ever increasing. We have survived six wildfires in 24 years, with the most destructive being in the last 8 years. Loss of 80+ homes in this overall region would have significant costs to the homeowners, community, and the county. Increased recreational use could be devastating.

#10: The State and County and local utilities all have their renewable energy portfolios and target emission reductions. This project would significantly increase emissions in this region during both construction and operation (pump stations).

#11: I'll reiterate Save Rural NoCo's statement on cumulative effects. It is well state: No apparent coordination of the NISP or the proposed Seaman's expansion or the Halligan expansion. All these projects surround our properties and would leave us on a peninsula of land cut from the rural environment. We met with the City of Greeley in August 2018 and learned that they are not planning to cooperate with other cities due to "challenges" and are proceeding on an expansion of Seamen's reservoir from 5,000 to 80,000 acre-feet. In the 21st century, surface storage just doesn't make sense; this is a semi-arid climate that is getting drier. Alternatives are available and should be seriously considered.

#12 Same for Conservation and Alternatives – Conservation is not begin adequately considered. While the Colorado Front Range is land-rich for development, it is semi-arid and thus water-limited. About 2/3 of the Poudre is already taken out, and Glade would take another 40% of what's left. Yet another reservoir is nothing but a temporary fix for a small portion of the state's water needs; but one with permanent, destructive impacts on a large part of rural northern Colorado. The time is way past due for developing long-term solutions based on state-of-the-art technologies and widespread education on the absolute necessity to conserve water, and to stop relying on 19th century solutions for 21st century challenges.

This Reservoir Project represents a water project that may have been in process for decades, but reflects a time long gone for both inefficiencies and lack of support. It's fairly easy to become angry to think of losing so much in this area to the benefit of other communities. Larimer County is unique, more unique than you may realize. So, I appeal to your common sense and long-term thinking. Please vote no.

Sincerely,
Lori Nielsen

--
Ms Lori Nielsen
lorikitnielsen@msn.com
312 Granite Rdg
Laporte, CO 80535

Save Rural NoCo Member

July 6, 2020

Larimer County Planning Commission
Sean Dougherty, Chair
Re: File #20-Zone 2657
** Submitted electronically via website*

Dear Commissioners,

The members of the Larimer County Farm Bureau urge you to approve the 1041 permit for the Northern Integrated Supply Project. This project is critical for the future of Larimer County, its agriculture industry, and the future of irrigated agriculture across northeastern Colorado.

Water supplies are critical to farmers and ranchers in Larimer County and across the state, and a huge part of our agricultural industry activity relies on surface water that will be managed and protected by NISP. Agriculture and food is the second largest industry in the state of Colorado, so it is imperative that we do everything we can to increase Colorado's water storage capacity and reduce the potential for future conflicts that arise when resources become scarce.

NISP will help provide additional supply for the future growth of Larimer County, ultimately protecting the water resources used to drive production of more than 64,000 acres of irrigated farmland. Our community must work now to provide the resources to fuel our growth and allow other families and businesses to enjoy the quality of life we currently have. The potential for recreational opportunities is also important to our community and the projected economic boost from that activity is far too great to pass up.

Both municipal and agricultural water users in Colorado have made significant strides in improving water efficiency and reducing consumptive use, but we can save enough water to make up for future demand. We must store more water now. After more than a decade its time to build NISP!

We urge you to approve the 1041 permit and help ensure a secure future for Larimer County, and our region.

Sincerely,

Arthur Bee
President
Larimer County Farm Bureau

Rob Helmick <helmicrp@co.larimer.co.us>

Why No Lake Tap Alternative?

3 messages

Mark Heiden <mheiden@eaglelakefchoa.com> Fri, Jun 26, 2020 at 7:48 AM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

Did you know that during the Thornton proceedings currently in court that the Board of County Commissioners felt a lake tap alternative through Reservoir 3 was a routing option that should be considered?

In the County's Answer Brief to Thornton, they say "The Board found the potential use of lake taps **may mitigate significant impacts** on established neighborhoods around reservoirs, such as the Braidwood and Eagle Lake neighborhoods. (R6836 – emphasis added by me) The Board does not dispute that lake taps cost more and have some inherent risks…..The Board agrees that more information about the reasonableness and viability of lake taps is needed."

Has this been forgotten already? The planning department should know this was an option the Board felt was important to explore to save neighborhoods. Why isn't it being requested of Northern?

I look forward to exploring this further with you during my talk on July 8th.

Best regards,

Mark Heiden

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

Matthew Lafferty <laffermn@co.larimer.co.us> Fri, Jun 26, 2020 at 9:23 AM
To: Rob Helmick <helmicrp@larimer.org>

FYI
[Quoted text hidden]
--

Matthew Lafferty, AICP
Principal Planner

Community Development Department
Advanced Planning
200 W Oak Street, Suite 3100
Fort Collins, Co 80521
W: 970.498.7721
mlafferty@larimer.org | www.larimer.org

Lesli Ellis <ellislk@co.larimer.co.us> Fri, Jun 26, 2020 at 9:36 AM
Reply-To: ellislk@larimer.org
To: Rob Helmick <helmicrp@co.larimer.co.us>

FYI

Lesli Ellis, AICP CEP
Community Development Director

Community Development Department
200 W Oak St, Fort Collins, 80521 | 3rd Floor
W: (970) 498-7690
ellislk@larimer.org | www.larimer.org

---------- Forwarded message ---------
From: **Mark Heiden** <mheiden@eaglelakefchoa.com>
Date: Fri, Jun 26, 2020 at 7:48 AM
Subject: Why No Lake Tap Alternative?
To: pcboard@larimer.org <pcboard@larimer.org>

[Quoted text hidden]

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Meet Bonnie and John

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Sat, Jun 27, 2020 at 5:09 PM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

I hope you are all enjoying your weekend at your home, your castle, or whatever you may call your private nesting place. I hope for your peace and tranquility there is no construction in your back yard.

Please meet Bonnie and John Helgeson – one of the property owners in Eagle Lake whose life and property will be greatly disrupted and harmed by the Northern pipeline **through their yard.**

Bonnie and John bought their home in 1999 and have completely remodeled it over the years to meet their vision of life in retirement. Both retired, Bonnie is in her late 70's and John his mid-80's. Bonnie is a master gardener who has put extensive work into their quiet spaces in the yard for their peaceful enjoyment. They have mature bushes and trees as wind and sight breaks that are in the proposed easement for the pipeline on their property that will probably be destroyed in the project. Both their septic and utilities are also located in the proposed easement. If Northern uses the property line separating the Helgeson's from their neighbor also in the pipeline path and it extends half of the easement amount of 50' into their property, it will only be approximately 15 feet from their garage. But some of this is just a guess since no one from Northern has ever spoken to the Helgesons.

It's important to know the people you will be affecting with a vote in favor of the proposed pipeline path so you can ask yourself – how would I feel if this were me?

See you all on July 8th.

Respectfully,

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Don't Be Fooled by Open Spaces

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Sun, Jun 28, 2020 at 6:00 PM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board

The County staff presentation last Wednesday of the Northern Water pipeline routing preferences included pictures of siting in Eagle Lake. The pictures were taken with a wide angle lens from who knows where to make it look like there is nothing but open ground for Northern to plow through our neighborhood. Nothing could be further from the truth.

The pictures below show you the homes that are affected by the construction hauling route Northern is proposing to use on our private roads through the neighborhood to haul materials, pipe sections, excavation and other heavy equipment during the 14+ weeks they project this phase of construction will occur. The first three are in close proximity to where they want to use private land through an easement for a turnaround for trucks.

The fourth is mere feet from Hood Lane where they want ingress and egress on a dirt and gravel ditch road for construction traffic – the owner of which (Hood Lane and the house) they have not even approached or talked to about usage.

I'll share with you more pictures of the home sites they are actually proposing to cross and maps of the area for a better overall understanding of what they are proposing on private roads and property at the July 8 meeting.

The question you have to ask yourselves is, would you want heavy truck traffic maneuvering through your neighborhood and within close proximity to your home for trucks and construction equipement coming and going for weeks on end with the associated noise, dust, diesel exhaust and disruption of your home life when there are better alternatives that don' include going through a neighborhood?

Respectfully,

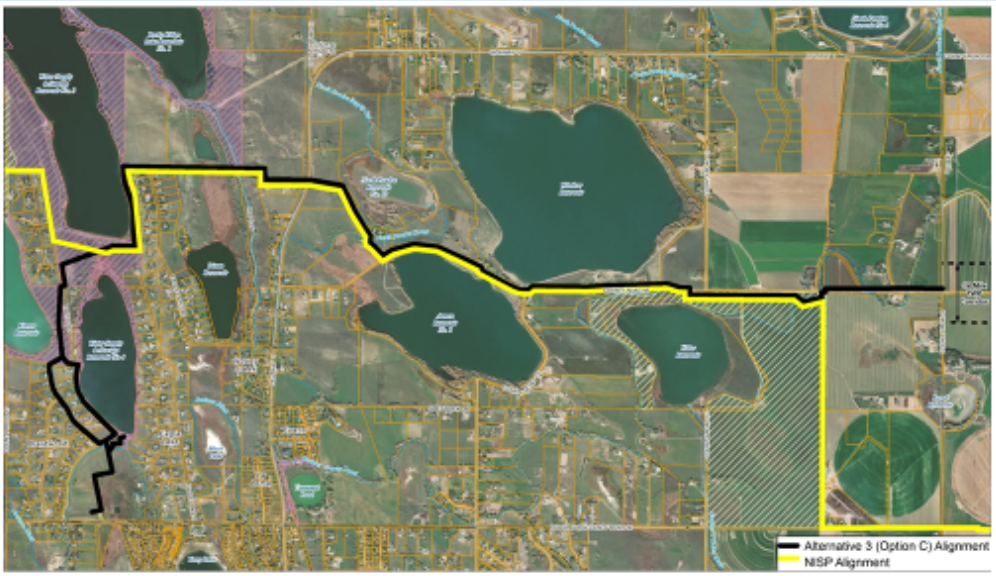
Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

County Road 56 Concept



LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Location, Location, Location

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Mon, Jun 29, 2020 at 1:37 PM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

You've probably heard this 'best practices' saying about retailing success many times. It turns out to be true.

As a variant on that theme, we should be discussing Co-Location, Co-Location, Co-Location as a 'best practices' approach for the siting of pipelines. Especially when you've got the perfect storm in Larimer County's case of two projects very close together in timeframe, and two projects with nearly identical preferred routes through the County.

The attached letter from Brad Wind, General Manager of Northern Water who you heard from at the Planning Commission meeting last Wednesday, details their commitment to cooperate with both Larimer County and Thornton and "supports minimizing impacts to citizens of Larimer County by co-locating the pipelines adjacent and/or overlapping easements in the corridor shown in the attached Exhibit A".

The attached map shows the route that the County, Thornton and NSIP were cooperatively working on to mitigate impact throughout the County to the point where the pipelines directions diverge.

One of the objections the Board of County Commissioners expressed to deny the Thornton pipeline by submitting an application for only one of their proposed pipelines was, **"Thornton deprives the Board and public of the opportunity to consider cumulative impacts and the effectiveness of mitigation. A route that may be appropriate for a single pipeline may be inappropriate for additional pipelines. If this information is not considered now, future pipelines may not be able to co-locate which would result in the disorderly development of Thornton's project and compound the impacts on Larimer County through multiple different pipelines in separate locations."**

The County recognizes the need for evaluating cumulative impacts of multiple projects. The same should hold true for two projects by different entities.

Do your job and plan with vision – the NISP route should not be approved until there is resolution to the Thornton pipeline in the event they receive approval for an overland pipeline route. Everyone – the County, NISP and Thornton – were on board with a co-location best practice for impact mitigation. You should be as well. A mutually agreed upon co-located route can be found, avoiding double the pain for residents in the path of both pipelines.

Respectfully,

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

2 attachments

Co-Location Map.jpg
349K

NISP_Thornton_Colocation_20181217[10527].pdf
916K

Northern Water
Northern Colorado Water Conservancy District
220 Water Avenue Berthoud, Colorado 80513
Phone 1-800-369-7246 • www.northernwater.org

December 17, 2018

Mr. Rob Helmick, Senior Planner
Larimer County Planning Department
200 West Oak Street
Fort Collins, Colorado 80521

Re: Northern Integrated Supply Project and Thornton Water Project Coordination

To Whom It May Concern:

The purpose of this letter is to clarify the commitment and support by the Northern Integrated Supply Project (NISP) to work with the City of Thornton to co-locate conveyance pipelines on the respective projects from the vicinity of Water Supply and Storage Company Reservoir Number 3 along Larimer County Road 56 to approximately the Turnberry Road intersection (see attached Exhibit A).

Larimer County Staff, in response to direction from the Larimer County Commissioners during recent Thornton Water Project hearings, invited Northern Water to participate in the Larimer Water Projects Working Group process along with various community stakeholders and to also participate in several related public meetings. This collaborative process helped inform the pipeline route proposed by the City of Thornton in its 1041 Permit Application Supplement 3 (dated December 10, 2018). By working cooperatively with the City of Thornton, NISP supports minimizing impacts to citizens of Larimer County by co-locating the pipelines adjacent and/or overlapping easements in the corridor shown on the attached Exhibit A. Additionally, NISP supports jointly or cooperatively constructing two segments of this reach with the City of Thornton: 1) from below Water Supply and Storage Company Reservoir Number 3 to north of Eagle Lake; and 2) the reach from southwest of North Poudre Irrigation Company Reservoir Number 10 to Larimer County Road 13. Such cooperation would, however, be contingent upon NISP: 1) securing the appropriate federal, state, and local permits; 2) successfully acquiring easements in the general alignment outlined in Exhibit A; and, 3) that no unforeseen significant challenges are presented throughout the permitting process or encountered during the detailed design and construction phase.

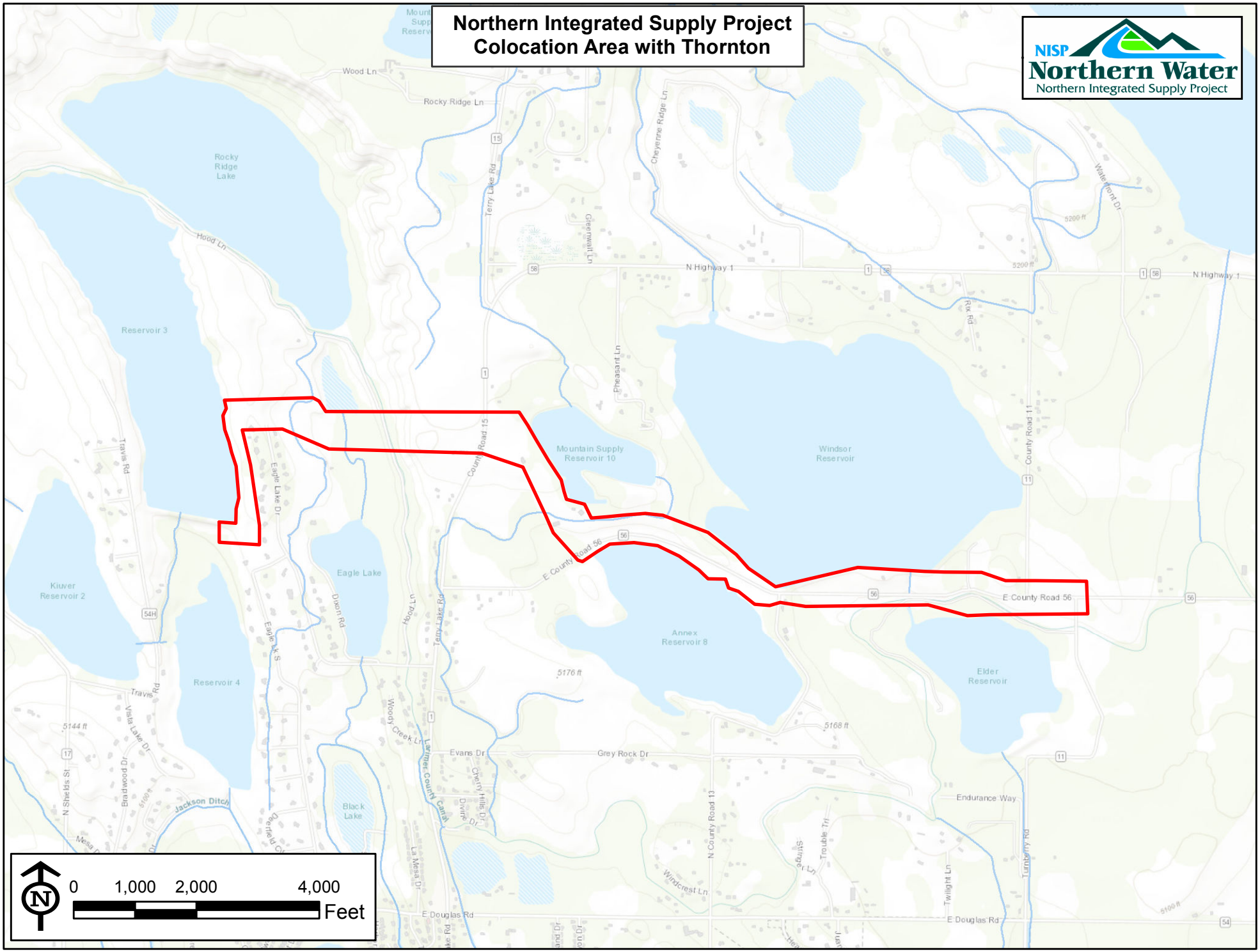
NISP and its participants appreciate the opportunity to work cooperatively with Larimer County Staff & Commissioners, the citizens of Larimer County, and the City of Thornton as these important water projects move forward.

Regards,

Brad

Bradley D. Wind, P.E.
General Manager
Northern Colorado Water Conservancy District

Exhibit A


Northern Integrated Supply Project
Colocation Area with Thornton
NISP
Northern Water
Northern Integrated Supply Project
Rocky Ridge Lake
Reservoir 3
Kiuver Reservoir 2
Reservoir 4
Mountain Supply Reservoir 10
Windsor Reservoir
Annex Reservoir 8
Elder Reservoir
Eagle Lake
Black Lake
Wood Ln
Rocky Ridge Ln
Hood Ln
Terry Lake Rd
Cheyenne Ridge Ln
Greenwalt Ln
Pheasant Ln
N Highway 1
Waterfront Dr
Rx Rd
County Road 11
County Road 15
E County Road 56
Travis Rd
Eagle Lake Dr
Eagle Lk S
Dixon Rd
Hood Ln
Terry Lake Rd
Woody Creek Ln
Larimer County Canal
Evans Dr
Grey Rock Dr
Cherry Hills Dr
Vista Lake Dr
Bradwood Dr
N Shields St
Jackson Ditch
La Mesa Dr
Windcrest Ln
N County Road 13
Trouble Trl
Twilight Ln
Turnberry Rd
Endurance Way
E Douglas Rd
5200 ft
5176 ft
5168 ft
5144 ft
5100 ft
0
1,000
2,000
4,000
Feet

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

Meet Tricia, Jim, Trey, Jace and dog Drake

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Tue, Jun 30, 2020 at 1:13 PM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

NISP is proposing to use the privately owned dirt road along the Larimer Canal behind the Hauan residence as a hauling route during construction of the pipeline from Highway 1 to Eagle Lake. Their house sits below the road (Hood Lane) and is only 20-30 feet from parts of the road.

Tricia and Jim have owned the house for 16 years and have raised their two sons, Trey -13, and Jace -8 there in a quiet, rural setting.

Tricia walks dog Drake every morning down their road where there's an abundance of birds, deer, and the occasional stray cow from the ranch behind their property. The boys frequently ride their bikes there and Tricia is comfortable in the knowledge they are safe from traffic, poor drivers and danger.

It is not a place for construction or truck traffic. Northern hasn't done their homework on this (they maybe have only looked at a map and never visited the site). They have never talked to the Hauans about the usage of their road or how incredibly disruptive it will be to their life for months on end.

Wait until you see the dangerous condition of the road that makes it unsuitable for any truck traffic at all, much less a continuous stream of large construction vehicles hauling material, excavation equipment and construction crews. I'll show you on July 8th. (The two family shots are from the front and back of the house on the road – you can see how close to their house it is.)





Respectfully,

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

Rob Helmick <helmicrp@co.larimer.co.us>

The People Left Out

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Wed, Jul 1, 2020 at 12:02 PM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

No where in the route descriptions that NISP has submitted in their 1041 application do they account for the people and homes that will be impacted by their proposed hauling routes through residential neighborhoods.

The attached map shows the two hauling routes proposed for the Eagle Lake segment of the Northern Tier of pipeline construction – privately owned dirt road Hood Lane (in red) and HOA owned Eagle Lake Drive (in blue) off of our Highway 1 private entrance.

Should our private roads – that are inadequately built for heavy construction truck traffic – be a hauling route and construction staging area for materials, pipeline sections, construction crew traffic, and equipment hauling? Past **29 different residences** with dust, traffic noise, vibrations, and diesel exhaust in a quiet residential neighborhood with children playing, residents coming and going, and retirees enjoying the peaceful time they've earned for a project that has no benefit for its residents and even minimal benefit to Larimer County as a whole?

These 29 residences (from the homes that back to Hood Lane off Highway 1 to all of the residences on Eagle Lake Drive up to and including the ones impacted by the proposed truck turnaround at the north end) are the uncounted casualties of NISP's proposal that only counts 2 or 3 residences directly impacted by construction in their yard. For up to 14 weeks if you believe their timeline estimates.

You have the option to put an end to this untenable proposal by recommending different route options. I'll share those possibilities with you on July 8.

Respectfully submitted,

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

"Demystifying the Process"

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Thu, Jul 2, 2020 at 1:38 PM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

When asked in an interview in the Fort Collins Coloradoan on March 21, 2019, what would be different about the approach NISP was going to take to get their pipeline approved over the process Thornton went through, NISP Project Manager Carl Brouwer said,

“Northern Water leaders hope a "no surprises" approach can shake the shroud of distrust left behind by the contentious Thornton pipeline public review process, Brouwer said. They plan to talk to every resident in the pipeline path and "demystify the process" before county commissioners review the route. Their proposal will also include detailed plans for reducing impacts to wildlife and reclaiming the land disturbed by the pipeline.
Brouwer admitted construction can be “annoying” for residents in the pipeline’s path. But he said individual property owners will only see active construction near their homes for one or two months because of the “train of activity” that moves a few hundred feet a day.”

NISP may yet scramble to talk to people in advance of the Commissioner’s meetings scheduled for August now that this will bring attention to their pledge, but that’s doubtful. To date, here is the list of people affected by the pipeline in our neighborhood who are waiting to be demystified and when they’ve been talked to:

- The two homeowners in Eagle Lake whose property will be crossed for the pipeline: Never.
- The developer of the newly annexed parcels to Eagle Lake (Corey Tips) to cross his property and use his gravel road turnaround for construction staging: Not in ‘years’.
- The 4 homeowners in Eagle Lake whose properties are in close proximity and overlook the proposed pipeline construction and turnaround: Never.
- The 3 property owners of the dirt and gravel road next to the Larimer Canal (Hood Lane) for permission to use it as a hauling route for construction materials and construction vehicle traffic: Never.
- The owner of the open land NISP proposes to cross north of Eagle Lake through wetlands there (Charlie Meserlian): Not in ‘years’.
- The Eagle Lake Homeowner’s Association about the proposed usage of the Association’s private entrance and roads for construction vehicle access throughout the “Construction Approach”: Never.
- The 29 homeowners on Eagle Lake Drive or private roads who will be impacted by the proposed construction vehicle traffic in front of their homes: Never.

The two homeowners who are retired and in their 70’s and 80’s whose land will be crossed are as mystified, worried, anxious, perplexed, uninformed, concerned and sleepless as ever.

Please apply an equal standard to your decision as was applied for Thornton. These folks are worse. At least Thornton talked to us.

Respectfully submitted,

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

Rob Helmick <helmicrp@co.larimer.co.us>

Do No Harm

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Fri, Jul 3, 2020 at 10:53 AM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

The Land Use Code was quoted extensively in Larimer County's decision to reject Thornton's 1041 application. One of the criteria in the

code the County used for consideration of their application is Criteria C whose purpose is to "Promote the economic stability of existing

land uses that are consistent with the Master Plan and protect them by incompatible or harmful land uses." The proposed NISP pipeline is

certainly an incompatible and harmful use of the land in the Eagle Lake neighborhood.

We recently annexed three parcels to our HOA (the TIPS Development) whose owner was required by the County to development certain aspects of the land (drainage, roads, etc) to be approved by the County before being allowed to offer the plots for sale and final residential development. The owner has spent thousands of dollars to prepare this land, yet the proposed pipeline path crosses near or on some of the new parcels rendering them virtually unsellable until the pipeline is built and completed.

No buyer will pay a premium price for a parcel with the amount of disruption, uncertainty of building site and septic placement, and ongoing nuisance this project will cause to these three parcels for well over a year. The County is in effect killing the owner's ability to sell his parcels and recoup his already substantial investment that the County has made him invest to get the land ready for development. This is not "promoting the economic stability of existing land uses" (ie. Residential development) or "protecting incompatible and harmful land uses".

Other residents in our neighborhood who may be contemplating or are in the process of listing their property are also economically negatively impacted by the proposed pipeline. Buyers will use every reason to lower the price on a sale and the uncertainty of construction traffic, noise, dirt and dust flying in the neighborhood are good leverage points for them to either not buy at all, or attempt to attain a lower selling price than normal. The County is truly hurting the economic stability of the whole neighborhood with this proposal and hundreds of thousands of dollars in values may be lost if the application is approved.

Please consider these important Land Use points as you assess whether to agree to a pipeline path directly through our neighborhood or ask NISP to consider alternate routes that can avoid negative impacts entirely. I'll share those with you on July 8.

Respectfully,

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

Rob Helmick <helmicrp@co.larimer.co.us>

Meeting Last Night

1 message

Mark Heiden <mheiden@eaglelakefchoa.com> Thu, Jun 25, 2020 at 7:52 AM
To: "pcboard@larimer.org" <pcboard@larimer.org>

Planning Commission Board –

Did anyone else notice that of all the various pictures shown last night of pipeline construction by either Northern or County planning that none of them were in residential neighborhoods – just wide open country spaces? Why?

Because pipelines of this magnitude do not belong in neighborhoods, crossing between homes with only 30 feet to the residence from the easement. There are better alternatives and I'll show you some during my talk on July 8th. Look forward to seeing you then.

Oh, and I'll have some different, more revealing photos to share.

Best regards,

Mark Heiden

Mark Heiden, President

Eagle Lake Association

mheiden@eaglelakefchoa.com

C: 970-988-8433

Rob Helmick <helmicrp@co.larimer.co.us>

Northern Integrated Supply Project

2 messages

Meghan Olafson (tirelesstigress@gmail.com) Sent You a Personal Message Thu, Jun 25, 2020 at 4:31 PM
<automail@knowwho.com>
To: pcboard@larimer.org

Dear Larimer County Commissioners,

I respectfully request that you deny 1041 permit for the proposed Northern Integrated Supply Project based on solid studies that show it would be destructive to the Poudre River and its ecosystem as it flows through Fort Collins and beyond.

Currently, almost 60% of the Poudre?s water is diverted for agricultural, municipal, and industrial uses. If built, during peak flows, NISP could dry up another 71% of the flow through Fort Collins. Studies show that such a reduction would have dire consequences to fish and other aquatic life, riparian ecosystems, water quality, flow volume, and recreation use.

The NISP is expected to cost at least $1.2 billion, although those costs will rise because Northern Water has not obtained enough water rights to date to fill the reservoir. Northern Water must buy ?dozens and dozens? of Larimer and Weld County farms to obtain the water rights needed. Of the 15 communities and water districts that hold shares in NISP, many are outside the Poudre?s watershed.

The NISP is an extremely expensive project that would cause great destruction; disrupt and displace residents around the proposed reservoir, residents along Highway 287, and residents along the proposed pipeline route; and it isn?t needed. There are many conservation actions that would provide all the water proposed to be delivered by Glade, including improved water efficiency by municipal districts, industry, and agriculture; public education and awareness programs; repairs to leaking ditches and pipelines, landscape irrigation improvements, and much more.

The NISP is a controversial project that is of great interest to many people in Larimer County who want full opportunity to comment on the permitting process and to appear at public hearings. Because of the scope and controversy surrounding this proposed project, the Commissioners should wait until the coronavirus pandemic has subsided enough to allow for full in-person public participation.

Sincerely,

Meghan Olafson
3700 Quebec St 384, 19
Denver, CO 80207
tirelesstigress@gmail.com
(720) 431-4167

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at core.help@sierraclub.org or (415) 977-5500.

Matthew Lafferty <laffermn@co.larimer.co.us> Fri, Jun 26, 2020 at 9:23 AM
To: Rob Helmick <helmicrp@larimer.org>

FYI
[Quoted text hidden]
--

Matthew Lafferty, AICP
Principal Planner

Community Development Department
Advanced Planning
200 W Oak Street, Suite 3100
Fort Collins, Co 80521

W: 970.498.7721
mlafferty@larimer.org | www.larimer.org

June 30, 2020

Larimer County Planning Commission
Sean Dougherty, Chair
Re: File #20-Zone 2657
** Submitted electronically via website*

Dear Commissioners,

The Morgan County County Farm Bureau asks you to vote YES to approve the 1041 permit for the Northern Integrated Supply Project. The project is incredibly important to the future success of irrigated agriculture in Morgan County.

NISP will help provide new water storage for the future growth of both Larimer county, and future supply for agriculture production in Morgan County. Easing the pressure on buy-and-dry will help secure the future for irrigated agriculture, both in the area serviced by the NISP project, but also by water users further downstream, like those in Morgan County. New storage is a benefit to all Colorado water users, especially agricultural users who lack the resources to simply purchase needed supplies.

Population growth in Larimer and other Front Range counties will ultimately put pressure on resources in Morgan County. The added storage in Glade Reservoir will help reduce that pressure in the future.

After much study, Northern Water, the NISP participants, and your county staff believe this project can be completed in a way that both protects and benefits residents in Larimer County. And it has the added benefit of helping residents and businesses in downstream communities like ours.

We urge you to approve the 1041 permit in question and help ensure a secure future for Larimer County, Morgan County, and our region.

Sincerely,

Corey Ruple

Corey Ruple
President
Morgan County Farm Bureau

Rob Helmick <helmicrp@co.larimer.co.us>

NISP

3 messages

Larimer.org <noreply@larimer.org> Wed, Jun 24, 2020 at 6:31 PM
Reply-To: Nancy York <nyork@verinet.com>
To: pcboard@larimer.org

Submitted on Wednesday, June 24, 2020 - 6:31pm

Submitted by user: Anonymous

Submitted values are:

Emailing (to) pcboard@larimer.org
Subject NISP
Your Name Nancy York
Phone 970-219-8069
Your Email nyork@verinet.com
Confirm Email nyork@verinet.com
Message
Are the Green House Gas emissions known for this project?
Does the Environmental Impact Statement address this?
Privacy Setting

This form was submitted from a /contact email link on larimer.org.

Lesli Ellis <ellislk@co.larimer.co.us> Thu, Jun 25, 2020 at 9:58 AM
Reply-To: ellislk@larimer.org
To: Lea Schneider <schneils@co.larimer.co.us>, Rob Helmick <helmicrp@co.larimer.co.us>, Don Threewitt <threewdl@co.larimer.co.us>

Hi Lea - I'm directing this question to you as FYI/response at hearings, and Rob we should include it for the record.

Thanks,
Lesli

Lesli Ellis, AICP CEP
Community Development Director

Community Development Department
200 W Oak St, Fort Collins, 80521 | 3rd Floor
W: (970) 498-7690
ellislk@larimer.org | www.larimer.org

[Quoted text hidden]

Lea Schneider <schneils@co.larimer.co.us> Thu, Jun 25, 2020 at 11:57 AM
To: Lesli Ellis <ellislk@larimer.org>
Cc: Rob Helmick <helmicrp@co.larimer.co.us>, Don Threewitt <threewdl@co.larimer.co.us>

Acknowledged.
Thank you!

Lea Schneider
Environmental Health Planner

Environmental Health

1525 Blue Spruce Drive, Fort Collins, 80524 | 2nd Floor
W: (970) 498-6777 | M: (970) 498-6776
lschneider@larimer.org | www.larimer.org/health

[Quoted text hidden]

Rob Helmick <helmicrp@co.larimer.co.us>

Fwd: I strongly oppose NISP

1 message

Linda Hoffmann <hoffmalc@co.larimer.co.us> Tue, Jul 7, 2020 at 5:43 PM
To: "Helmick, Rob" <helmicrp@co.larimer.co.us>

Rob -- Please include this message in the public record for the application.

Linda Hoffmann
County Manager

Commissioners' Office
200 W Oak St, Fort Collins, CO 80521 | 2nd Floor
W: (970) 498-7004
lhoffmann@larimer.org | www.larimer.org

---------- Forwarded message ---------
From: **Peggy LA POINT** <tnplapoint@msn.com>
Date: Tue, Jul 7, 2020 at 3:21 PM
Subject: I strongly oppose NISP
To: bocc@larimer.org <bocc@larimer.org>

Why I oppose the Northern Integrated Supply Project (NISP):

1.) It will kill the Cache la Poudre river through Fort Collins, which is already dry in spots at times through the year from being overworked
2.) It is a speculation project, projected to bring over 600,000 people to the Eastern Plains, increasing green house gas emissions in Northeast Colorado
3.) 7 miles of Highway 287 would be diverted East of the hogbacks
4.) The models and assumptions of water flows used by Northern Water don't take climate change into account
5.) Citizens of Fort Collins would lose tremendous amounts of the natural resources they have chosen to protect with their sales tax dollars
6.) The destruction of those natural resources means the decimation of the riparian edge through Fort Collins, and the wildlife it supports.

Peggy La Point
4437 Starflower Drive
Fort Collins, CO 80526

Katie Beilby <beilbykm@co.larimer.co.us>

Comments for Planning Comm NISP 1041 hearing

Doug Swartz <dswartz@greyrock.org> Wed, Jul 8, 2020 at 2:05 PM
To: beilbykm@larimer.org

Hi Katie,
Attached are my comments for the Planning Commission's hearing this evening. Please include them in the packet.

Thank you,
Doug Swartz
970-222-0962

NISP 1041 - DS comments for Planning Commission hearing.pdf
71K

2232 Sun Rose Way
Fort Collins, CO 80521

8 July 2020

Larimer County Planning Commission
RE: NISP 1041 application

Dear Commissioners:

I am writing to ask that you recommend denial of the 1041 permit application for the Northern Integrated Supply Project.

Please: don't miss the forest for the trees. Northern Water and Larimer County together have severely restricted the scope of what's being considered in the current 1041 application. This is potentially illegal and, in any case, does a huge disservice to LC residents. You're being asked to put blinders on in your deliberations. I encourage you to take off those blinders and look bigger picture. NISP, if approved, will be the biggest construction project in the history of Larimer County.

Don't forget:

- NISP will export large amounts of Cache La Poudre river water out of the watershed.
- NISP will take an additional large portion of the already decimated peak flow from the river (already decimated by existing water diversions). This will have huge negative impacts on many aspects - physical, biological, recreational - of the river and the riparian corridor.
- The so-called "Fish and Wildlife Mitigation and Enhancement Plan" is an example of the "doublespeak" that Northern Water uses to spin this project. The negative peak flow diversion impacts cannot be mitigated. Providing a year-round, 18-to-25 cfs trickle on a short stretch of the river will mean the river behaves even more like a ditch than it has already become. Other touted benefits, such as improved fish passage at existing diversions, can be done independently of a new, billion-plus dollar water diversion project.
- We don't need a huge new reservoir to "bring tourism and economic growth to Larimer County." This has been happening for decades without NISP. Larimer County is already booming. We're seeing visitation to the County's on a steep growth curve, with attendant negative impacts to the Poudre Canyon, wildlife and environment in general. Poudre Canyon residents and other users can bear witness to the damage currently being done by increased visitation during the Covid-19 pandemic.
- Northern Water's presentation of the project vastly overexaggerates project benefits while vastly understating the project's negative impacts on the river and county residents.

Please: don't be dazzled by Northern Water dollars. Please don't sell the Cache la Poudre River, an extremely important part of the county's soul. Once it's gone, we won't have the chance to get it back.

Thank you for recommending denial of the 1041 permit application.

Sincerely,
Douglas Swartz

LARIMER COUNTY

Rob Helmick <helmicrp@co.larimer.co.us>

File #20-Zone 2657- letters of support

3 messages

Martini, Shawn <shawn@coloradofb.org> Wed, Jul 1, 2020 at 11:29 AM
To: rhelmick@larimer.org

Mr. Helmick,

Please include these comment letters from the Colorado Farm Bureau, Weld County Farm Bureau, and Morgan County Farm Bureau to the record for the upcoming Planning Commission meeting.

Thank you,

--

- To help prevent the spread of COVID-19, CFB staff members are working from home. You may reach me on my cell: (303) 895-5070

- For information about COVID-19 and its impact on the agriculture industry, visit www.AgisOpen.com or the CFB website.

Shawn Martini
Vice President, Advocacy
C (303) 895-5070
www.ColoradoFarmBureau.com

DENVER BUSINESS JOURNAL 2019 BPTW Colorado Farm Bureau

- Recognized as One of Denver's "Best Places to Work" in 2018 and 2019

3 attachments

Morgan+NISP+Comment+Letter.pdf
127K

Weld+NISP+Comment+Letter (1).pdf
171K

CFB NISP Comment Letter.pdf
353K

Don Threewitt <threewdl@co.larimer.co.us> Wed, Jul 1, 2020 at 1:16 PM
To: Rob Helmick <helmicrp@co.larimer.co.us>

Kind Regards,

Don Threewitt, AICP
Planning Manager

Community Development Department
200 W Oak St, Fort Collins, 80521 | 3rd Floor
W: (970) 498-7689 |
dthreewitt@larimer.org | www.larimer.org

---------- Forwarded message ---------
From: **Martini, Shawn** <shawn@coloradofb.org>
Date: Wed, Jul 1, 2020 at 11:42 AM
Subject: Fwd: File #20-Zone 2657- letters of support
To: <threewdl@co.larimer.co.us>

Hi Don,

Rob Helmick was listed on the public comment page as the contact, but it looks like he's out of town and I think you may be a better person to send these to.

Please let me know if there is someone else I should send them to in order to get them into the board book.

Thanks.

---------- Forwarded message ---------
From: **Martini, Shawn** <shawn@coloradofb.org>
Date: Wed, Jul 1, 2020 at 11:29 AM
Subject: File #20-Zone 2657- letters of support
To: <rhelmick@larimer.org>

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Shawn Martini
Vice President, Advocacy
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171K

CFB NISP Comment Letter.pdf
353K

Don Threewitt <threewdl@co.larimer.co.us> Mon, Jul 6, 2020 at 3:58 PM
To: Rob Helmick <helmicrp@co.larimer.co.us>

Kind Regards,

LARIMER COUNTY

Don Threewitt, AICP
Planning Manager

Community Development Department
200 W Oak St, Fort Collins, 80521 | 3rd Floor
W: (970) 498-7689 |
dthreewitt@larimer.org | www.larimer.org

---------- Forwarded message ---------
From: **Martini, Shawn** <shawn@coloradofb.org>
Date: Mon, Jul 6, 2020 at 3:56 PM
Subject: Re: File #20-Zone 2657- letters of support
To: Don Threewitt <threewdl@co.larimer.co.us>

Hi Don,

I have one additional letter to submit on behalf of the Larimer County Farm Bureau. Thank you.

On Wed, Jul 1, 2020 at 1:16 PM Don Threewitt <threewdl@co.larimer.co.us> wrote:

> Mr. Martini,
>
> Thank you. Rob and I will make sure to get these into the supplemental packet for the July 8th hearing.
>
> Kind Regards,
>
> LARIMER COUNTY
>
> **Don Threewitt, AICP**
> Planning Manager
>
> Community Development Department
> 200 W Oak St, Fort Collins, 80521 | 3rd Floor
> W: (970) 498-7689 |
> dthreewitt@larimer.org | www.larimer.org
>
> On Wed, Jul 1, 2020 at 11:42 AM Martini, Shawn <shawn@coloradofb.org> wrote:
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> > Hi Don,
> >
> > Rob Helmick was listed on the public comment page as the contact, but it looks like he's out of town and I think you may be a better person to send these to.
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> >
> > Thanks.
> >
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> > From: **Martini, Shawn** <shawn@coloradofb.org>
> > Date: Wed, Jul 1, 2020 at 11:29 AM
> > Subject: File #20-Zone 2657- letters of support
> > To: <rhelmick@larimer.org>

Mr. Helmick,

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Thank you,

--

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Larimer+NISP+Comment+Letter.pdf
167K

COLORADO FARM BUREAU
Promoting and protecting the future of agriculture and rural values.

June 30, 2020

Larimer County Planning Commission
Sean Dougherty, Chair
Re: File #20-Zone 2657
** Submitted electronically via website*

Dear Commissioners,

On behalf of the Colorado Farm Bureau, I write in support of granting a 1041 permit to Northern Water and the Northern Integrated Supply Project. The reservoir and pipelines subject to the permit are an extremely important part of future water storage and management in the Northeast region of the state, and will benefit all Coloradans upon its completion.

The Colorado Farm Bureau is the state's largest agricultural organization with more than 24,000 members across Colorado. We have a long history of engagement in water-related activities in Colorado and have been strong supporters of the NISP project from its inception. Production agriculture is responsible for more than $20 billion in economic activity and more than 200,000 jobs in Colorado. A strong water supply is critical to the current and future success of agriculture in the state of Colorado

We believe that the construction of Glade Reservoir and its attendant pipelines will help significantly improve water management in the South Platte River Basin. The project will help to achieve the Colorado State Water Plan's goal of constructing 400,000 acre-feet of new storage capacity while protecting water quality and the ecosystems that water nourishes. NISP will help provide additional supply for the future growth of the region and protect water resources used to drive production on more than 64,000 acres of irrigated farmland, which in turn generates hundreds of millions of dollars in economic activity, tax payments and payrolls to the region.

In addition to protecting the economic activity associated with historic irrigated agriculture production, the project will also generate an estimated $13-$30 million in new economic activity, in Larimer County alone. Overall the project will drive economic growth and sustain irrigated agriculture across the South Platte River Basin, far beyond where the reservoir itself is to be situated. Both municipal and agricultural water users in Colorado have made significant strides in improving water efficiency and reducing consumptive use. But future population growth necessitates the need for additional storage capacity.

Without NISP, tens of thousands of acres of productive farmland in Colorado's most productive agricultural region would be dried, as municipalities would be forced to purchase water from agricultural users. Entire segments of the local economy would shutter and thousands of employees would lose their jobs. All while thousands of acre-feet of Colorado's water ran out of the state to be put to use by others.

303.749.7500 (phone) | 303.749.7703 (fax) | 9177 E. Mineral Circle, Centennial, CO 80112 | www.ColoradoFarmBureau.org

COLORADO FARM BUREAU
Promoting and protecting the future of agriculture and rural values.

After more than a decade of study, research and planning, the NISP Project is ready for construction. We know this project can be done in a way that minimizes impacts to the community and the environment while providing lasting benefits to both. This is why the project enjoys broad support from federal, state and local leaders, industry groups, farmers, ranchers, business owners, and residents.

We urge you to approve the 1041 permit in question and help ensure a secure future for Larimer County, the surrounding region and the entire state of Colorado.

Sincerely,

Donald J Shawcroft

Don Shawcroft
President

303.749.7500 (phone) | 303.749.7703 (fax) | 9177 E. Mineral Circle, Centennial, CO 80112 | www.ColoradoFarmBureau.org

June 30, 2020

Larimer County Planning Commission
Sean Dougherty, Chair
Re: File #20-Zone 2657
** Submitted electronically via website*

Dear Commissioners,

The Weld County Farm Bureau urges you to grant the needed 1041 permit to Northern Water and the Northern Integrated Supply Project. The project is incredibly important to the future success of irrigated agriculture in Weld County.

Production agriculture is responsible for more than $20 billion in economic activity and more than 200,000 jobs in Colorado. Water supplies are critical to farmers and ranchers in Weld County and across the state. Weld makes up more than $2 billion in agricultural sales, which is more than one-quarter of total agricultural sales in Colorado. The vast majority of that agricultural activity relies on surface water that will be managed and protected by NISP.

NISP will help provide additional supply for the future growth of both Larimer and Weld counties, ultimately protecting the water resources used to drive production of more than 64,000 acres of irrigated farmland. The project will help to achieve the Colorado State Water Plan's goal of constructing 400,000 acre-feet of new storage capacity. While much more will be needed, this project is shovel ready and a great way to advance the overall storage goal.

Both municipal and agricultural water users in Colorado have made significant strides in improving water efficiency and reducing consumptive use. But future population growth necessitates the need for additional storage capacity. After more than a decade its time to build NISP!

We urge you to approve the 1041 permit in question and help ensure a secure future for Larimer County, Weld County, and our region.

Sincerely,

Tom Honn
President
Weld County Farm Bureau

Rob Helmick <helmicrp@co.larimer.co.us>

Supplemental comment letter-NISP 1041

4 messages

John Barth <barthlawoffice@gmail.com> Tue, Jul 7, 2020 at 3:03 PM
To: pcboard@larimer.org, Rob Helmick <helmicrp@co.larimer.co.us>

Dear Planning Commissioners and Mr. Helmick:

Attached please find a supplemental comment letter and 2 exhibits submitted by No Pipe Dream Corporation, Save Rural NoCo Corporation, and Save the Poudre. The attached letter and exhibits highlight significant deficiencies with the recreational benefit analysis of Glade reservoir in Northern's 1041 permit application. Please confirm receipt of the attached and please review before tomorrow night's Planning Commission hearing. Please include the letter and exhibits into the Administrative Record for this permit proceeding. Thank you.

--
John Barth
Attorney at Law
P.O. Box 409
Hygiene, CO 80533
(303) 774-8868
barthlawoffice@gmail.com

3 attachments

Supplemental comment letter Final 07072020.pdf
90K

Rodger Ames CV 2020.pdf
165K

SRN Rec analysis FINAL.pdf
4055K

Rob Helmick <helmicrp@co.larimer.co.us> Tue, Jul 7, 2020 at 3:06 PM
To: Katie Beilby <beilbykm@co.larimer.co.us>, Lesli Ellis <ellislk@larimer.org>, Don Threewitt <threewdl@co.larimer.co.us>

I can add this to the directory of katie can now it is set up i will need to modify the memo
[Quoted text hidden]
--

Robert Helmick
Senior Planner

Community Development Department
200 West Oak Street, Suite 3100
PO Box 1190
Fort Collins, CO 80521
970-498-7682
rhelmick@larimer.org
https://www.larimer.org/planning

3 attachments

Supplemental comment letter Final 07072020.pdf
90K

Rodger Ames CV 2020.pdf
165K

SRN Rec analysis FINAL.pdf
4055K

Rob Helmick <helmicrp@co.larimer.co.us> Tue, Jul 7, 2020 at 4:47 PM
To: John Barth <barthlawoffice@gmail.com>

John,
Received
We will provide the information to the PC
[Quoted text hidden]
[Quoted text hidden]

John Barth <barthlawoffice@gmail.com> Tue, Jul 7, 2020 at 4:47 PM
To: Rob Helmick <helmicrp@co.larimer.co.us>

Thank you Rob,

Sent from my iPhone
[Quoted text hidden]

No Pipe Dream Corporation
Save Rural NoCo Corporation
Save the Poudre

July 7, 2020

By email
Larimer County Planning Commission (pcboard@larimer.org)
Rob Helmick (helmicrp@co.larimer.co.us)
Larimer County Planning Department
200 West Oak Street, Suite 3100
Fort Collins, Colorado 80521

Re: Supplemental comment letter to the Larimer County Planning Commission regarding the Northern Integrated Supply Project (NISP) Pending 1041 Permit Application, Project No. 20-ZONE 2657

Dear Mr. Helmick and Planning Commissioners:

On behalf of No Pipe Dream Corporation, Save Rural NoCo Corporation, and Save the Poudre (collectively "Larimer County NGOs"), we submit the following supplemental comment letter regarding Northern Colorado Water Conservancy District's ("Northern") pending 1041 permit application ("1041 application") for the Northern Integrated Supply Project ("NISP").

The purpose of this supplemental comment letter is to convey the attached report entitled, "A review and independent analysis of the feasibility of recreation at the proposed Glade Reservoir" authored by Rodger Ames in coordination with Save Rural NoCo. Mr. Ames resume is also attached.

As the title suggests, Mr. Ames report analyzes whether the promised recreational benefits to Larimer County from the proposed Glade Reservoir will be realized. Mr. Ames scrutinizes Northern's evidence and analysis that Glade will add $13 to $30 million dollars annually to the Larimer County economy. Mr. Ames applies a statistical model used to estimate a range of likely future operations of Glade that were not addressed in the federal Environmental Impact Statement process. Mr. Ames concludes that Northern's economic benefit estimates are highly overestimated and its analysis is highly speculative. Mr. Ames concludes that, at best, the recreational revenue from Glade would be approximately $1.2 million per year, possibly less than the cost of operation.

Below is a summary of the deficiencies with Northern's recreational benefit analysis:

1) **Without evidence, Northern's analysis assumes Glade's initial water storage would be 100,000 acre-feet, instead of <u>zero</u> acre-feet.**

After Northern completes construction of Glade, it will be a large, dry basin. Yet Northern's analysis assumes the initial water storage in Glade will be 100,000 acre-feet. Northern states that the initial fill will come from Horsetooth Reservoir. However, the details of this water transfer are lacking from Northern's 1041 application. Horsetooth's capacity is only 151,750 acre feet of water, so system and recreational impacts using water from Horsetooth to fill Glade must be evaluated and disclosed in the 1041 process. Ames Report, p. 8.

2) **Northern's junior Grey Mountain water right will not provide dependable flow to Glade.**

Northern's Grey Mountain Water right is a junior water right. Accordingly to Northern's own EIS, "[u]ntil the SPWCP in online, Glade Reservoir will be wholly dependent on the Grey Mountain water right. The water right has the capability of yielding water in about 4 out of 10 years. Modeling indicates that there can be several years in a row of divertible flow followed by as many as 8 years with no flow available." NISP DEIS, 2008, Section 2.4.1.3. Northern's South Platte River water rights are also relatively junior water rights. Eight years of no flows from Grey Mountain water rights could empty the reservoir in less than eight years. Combined, Northern's analysis of flow to Glade Reservoir from junior Grey Mountain and South Platte water rights is very speculative and could adversely impact recreational opportunities at Glade. Ames Report, p. 7.

3) **Northern's Water Secure Program is very <u>Insecure</u>.**

Implementation of NISP is wholly dependent on Northern's ill-defined Water Secure Program. Northern has failed to provide any detailed information on its Water Secure Program in its 1041 application. We know however that, to date, Northern has only acquired a small fraction (less than 1%) of the land and/or water rights agreements, necessary for the SPWCP. Future uncertainties, such as the high cost of land purchased and/or water rights agreements required to bring the SPWCP online, were also not evaluated in the NISP FEIS. Failure to fully implement the Water Secure Program will severely limit recreational opportunities at Glade. Ames Report, p. 7.

4) **Recreational benefits at 40,000 AF are inaccurate.**

Northern claims that recreation on Glade is viable at water storage levels higher than 40,000 AF. This claim is misleading and inaccurate. At this level, the reservoir's surface area would be 663 acre-feet (roughly 40% of the maximum surface area) and the water line would be 122 feet below the high water line. The proposed boat ramp and fishing pier would be unusable, and opportunities for hand-launched watercraft limited. For example, hand launching from the northern access road would require carrying a

watercraft across more than 1.5 miles of the lake bed to reach the reservoir's north shore. Ames Report, p. 10.

5) **The stream flow data used by Northern is not current and is incomplete.**

Northern's analysis uses historical stream flow data from 1950-2005 for the Cache la Poudre River. These data are not current and are also incomplete. For example, drought conditions that produced historic low stream flows in the early 2000s continued through 2005 and after. As such, levels of water in Glade would have been extremely depleted. Further, flows in the years following 2005 were also extremely low, resulting in a long period of time to replenish the reservoir. However, because Northern did not provide readily available flow data post-2005 its analysis intentionally hides these facts and their implications for Glade reservoir levels. Ames Report, p. 12.

6) **Northern failed to adequately consider drought and climate change.**

It is widely accepted in the scientific community that climate change will result in longer, and more pronounced, drought in the Interior West, including in the Cache la Poudre basin. The combination of climate change and drought were not adequately considered in Northern's FEIS process or 1041 application. As noted above, Northern's reliance on pre-2006 river flow data further ignores the recent evidence of drought and reduced flows in the Cache la Poudre River over the last two decades. Northern's EIS and 1041 application ignored the inconvenient truth that its junior water rights creates significant future uncertainty of the viability of NISP.

Conclusion

For the reasons stated herein, the NISP 1041 application should be denied because Northern has failed to comply with the following Land Use Code criteria:

A) Criteria #1- Northern has failed to prove that Glade is consistent with the County Master Plan and Recreation Plan because the recreational opportunities are unlikely to be realized.
B) Criteria #2- Northern has failed to present any alternative to Glade Reservoir.
C) Criteria #8- Northern has failed to prove that there will be adequate water in Glade and thus has failed to prove there will be adequate public facilities for the promised recreational benefits.
D) Criteria #10- Northern has failed to meet its burden of proving that the recreational benefits of Glade will be realized.
E) Criteria #11- Northern defers much of the mitigation measures to a later planning process and thus fails to comply with this criteria at the time of submission of the 1041 permit application.

Please ensure that the Planning Commissioners receive this letter and the exhibits prior to July 8, 2020 Planning Commission hearing. Also, please include this letter and the attached exhibits in the Administrative Record for this permit proceeding. Thank you.

Sincerely,

s/ Robert Kitchell, President

No Pipe Dream Corporation

s/ John Dettenwanger, Chairman

Save Rural NoCo

s/ Gary Wockner

Save the Poudre

Exhibits:

1) "A review and independent analysis of the feasibility of recreation at the proposed Glade Reservoir" by Rodger Ames in coordination with Save Rural NoCo;
2) CV of Rodger Ames.

A review and independent analysis of the feasibility of recreation at the proposed Glade Reservoir

Prepared by Rodger Ames in coordination with Save Rural NoCo

Table of Contents

Executive Summary

This report provides additional information to inform Larimer County's decision making process regarding Northern Water's 1041 application for the Northern Integrated Supply Project (NISP). Northern's claim of economic benefits to the County, and the assertion that Glade would provide additional recreation services to meet future demand in Larimer County, is speculative.

Extended periods of low water levels, lasting years to decades, are likely future scenarios at Glade. There is overwhelming scientific consensus that runoff will decrease in response to regional climate warming. Despite this evidence, hydrological modeling for the NISP relies on historical streamflows to predict future operations at Glade. Impacts of low water levels on recreation use, and potential adverse local and environmental impacts from prolonged severe water drawdowns at Glade, are not addressed in Northern's 1041 application.

Water supplies to Glade are extremely vulnerable to droughts

- Glade would rely on junior water rights on the Cache la Poudre to fill. Severe water drawdowns could last years to decades during which water-based recreation would not be available, revenues would be a fraction of operation and maintenance budgets, and Glade's reputation as a reliable recreation venue would suffer.

Glade will not provide another recreation venue similar to Horsetooth

- Horsetooth, and other reservoirs operated by Larimer County, are supplied by water from the Colorado - Big Thompson System, which is much larger and more drought resilient than the Poudre in part because of the more reliable water rights.
- Junior Rights to Poudre water supplies would severely limit Glade's ability to support consistent recreational use. During droughts access to the proposed boat ramp would be limited, and often curtailed altogether, for years to decades.

The management priority of Glade is to deliver water to NISP participants, not recreation or river health

- As water levels at Glade drop, recreation access would also drop, and purported benefits the NISP Alternative 2M, such as flow augmentations through the stretch of the Poudre that runs through Fort Collins, would be tiered out.

Hydrological modeling for the NISP is based on outmoded assumptions

- Northern's modeling neglects recent science that predicts declines in future runoff in response to climate warming.
- modeling assumes an initial storage volume of 100,000 acre-feet, rather than 0, creating a false impression of initial fill times.
- modeling omits the past 15 years Poudre streamflow data, denying the county valuable information on refill characteristics of Glade following severe water drawdowns.

Estimates of the economic value of proposed recreation at Glade are overestimated

- Northern Water claims economic benefits of $13-$30 million per year from recreation at Glade.
- In contrast, recreation at Horsetooth generated $2.5 million for Larimer County in FY 2019.
- Actual revenue to the County from recreation at Glade could be much less than at Horsetooth due to reduced visitation and limited recreation access during droughts.

Northern's water rights are relatively junior, adding to risk and uncertainty

- NISP relies on a 1980 storage right on the Poudre River and a 1992 water right on the South Platte River, in addition to exchanges with two local ditch companies. Given that the most senior water rights in Colorado date to the 1860s, these are very junior rights
- Adding to the uncertainty and risk, NISP relies on *both* the South Platte and the Poudre River receiving "average" or high flows in any given year to work. Prolonged drought in either basin will affect the ability to fill Glade.

1. Introduction

This report fills a knowledge gap regarding the feasibility of recreation at the proposed Glade Reservoir. Northern Water promises Glade will provide Larimer County with a “high-quality” recreation venue, and claims recreation, most prominently the lure of more flat water recreation, will pump 13 to 30 million dollars per year into the local economy (NISP FEIS, 2018). However, Northern’s 1041 application lacks evidence to support this revenue projection. Uncertainties in future water supplies to Glade make estimates of recreation value highly speculative. Informed estimates of potential recreational use and realistic assessments of adverse environmental and local impacts are important considerations as Larimer County reviews Northern Water’s 1041 permit application.

This report reviews operational characters at Glade presented in the NISP FEIS. A simple statistical model is used to estimate a range of likely future operations that were not addressed in the FEIS. This analysis suggests that Northern’s estimates of recreational use at Glade are likely to be highly overestimated. We show that prolonged low water levels, resulting from realistic estimates of the time required for the initial fill; the time required for Glade to refill following severe water drawdowns; inclusion of recent Cache la Poudre streamflow data; and consideration of plausible risks to future water supplies, combine to significantly reduce estimates of recreation use at Glade.

Cyclical droughts, which are common throughout this climate region, are increasing in frequency and duration in response to climate warming (Udall and Overpeck, 2017; Williams, 2020). Hydrological modeling conducted for the NISP DEIS indicates that water levels at Glade are particularly sensitive to prolonged droughts. For example, in the year 2005 of the NISP modeling simulation, storage volumes at Glade dropped to 11% of maximum capacity, causing predicted water levels to plummet 160 feet below the high water line. Unfortunately, hydrological modeling for the NISP ended in the same year, thus refill characteristics following this severe water drawdown were not evaluated. Since streamflow data are readily available, it is particularly concerning that recent Cache la Poudre streamflow data were not included in hydrological modeling for the NISP FEIS.

Neither the NSIP FEIS nor this analysis consider the full range of water supply risks to Glade. To date, Northern Water has obtained only half of the water rights required for the NISP. Northern’s Grey Mountain Right is estimated to provide half of the required water supplies, with the remainder coming from the proposed South Platte Water Conservation Project (SPWCP) exchanges. Until the SPWCP is online and at full projected yields, NISP will fall well short of its water delivery commitments, and Glade will rarely, if ever, fill.

The lack of a robust water supply vulnerability study that evaluates plausible water supply vulnerabilities denies the public and the county valuable information on future operational characteristics at Glade. The City of Fort Collins recently commissioned a comprehensive water supply vulnerability study (Stanec, 2019), which concluded that climate change is the most significant risk facing the CIty’s future water supplies. However, hydrological modeling for the NISP relies on the outdated assumption that past water supplies can be used to predict future hydrology. As it stands, Northern Water’s 1041 application fails to provide adequate information for the county to make informed decisions on recreation value and overall feasibility of Glade as a new recreation venue for Larimer County.

2. Conformity with Larimer County's 1041 Issuance Criteria

The list below summarizes deficiencies that Save Rural NoCo (SRN) has identified in Northern Water's (the Applicant) 1041 permit application. The full list of issuance criteria is specified in Sec. 14.10 of the Larimer County Land Use Code (Larimer County, 2020). Because this technical document focuses on the proposed Glade Reservoir, recreation components, and siting issues related to Glade are highlighted.

Criterion 1. Conformity with Larimer County's Comprehensive Plan: Northern's application does not demonstrate how the project protects air and water quality, cultural and natural resources, minimizes fragmentation of the landscape; it does not consider the natural terrain in its design and siting to minimize environmental impacts; it does not adequately mitigate risks and reduce economic costs of natural hazard events to increase resiliency; it does not conform with the county's vision for environmental stewardship, and it does not promote "overall community interests" because most of the benefits of the project would accrue to communities outside Larimer County. **Proposed recreational benefits would likely never materialize because the water to fill the reservoir will not be available to keep the reservoir at levels suitable for boat access in most years. Adverse environmental impacts resulting from persistent low water levels at Glade are at odds with the County's Resiliency Framework. Rather than promote resiliency, NISP would increase Larimer County's exposure to the impacts of a rapidly changing climate.**

Criterion 2. Reasonable siting and design alternatives: No alternatives are presented. The applicant refers to the alternatives analysis conducted for the federal process, which is unnecessarily limited to a water storage project and is out of date. There are many less costly and less environmentally destructive alternatives for water development now available. Alternatives must be presented in the 1041 application to Larimer County consistent with the land use code and 1041 review provisions. Finally, the application is for an alternative that involves both the Glade Reservoir and a farm-buying scheme which has not been evaluated in any of the environmental documents. Analysis of the farm-buying scheme in the existing 1041 application falls short of providing adequate information to meet the review criteria. In addition, NISP admits that the farm acreage needed to implement this scheme has yet to be obtained, a fatal deficiency. **Pointing to alternatives presented to or developed by a federal agency subject to different legal frameworks than County law and policy is an admission that the 1041 proposal is incomplete.**

Criterion 4. Environmental impacts: The application does not adequately identify environmental impacts. Analysis of key impacts to the land and natural resources is incorrect or inadequate, is not specific enough for local land-use decision-making, or is deferred to some later permitting/approval process. Adverse impacts, including **increased noise levels from recreation activities at Glade and Highway 287 realignment; visual, aesthetic and potential air quality degradation during prolonged (multi-year) water drawdowns at Glade;** increased wildfire and trespass risks, increased GHG emissions from pumping operations and inundation, are either dismissed, not addressed, or mitigation plans for environmental impacts are either inadequate or not provided.

Criterion 5. Cultural sites: The Final EIS states there are 82 eligible or potentially eligible cultural sites present in the Glade Reservoir APE. The County cannot approve a proposal that will adversely affect any sites and structures listed on the State or National Registers of Historic Places. Sites that would be inundated by the proposed reservoir or highway location would be entirely lost. They must be fully surveyed, identified and analyzed prior to obtaining a permit. Criterion 5 is not met because the sites have only been generally listed, but not specifically evaluated, inventoried or disclosed.

Criterion 6. Public health and safety: Wildfire hazard will increase, and Northern cannot ensure adequate mitigation. Furthermore, the **public health and aesthetic issues surrounding fugitive dust from exposed lake bed during prolonged water drawdowns, as noted above, and increased ozone precursors from motorized boating,** are not addressed**.** Wildfires are a very real risk that threaten homes and private property adjoining the reservoir as well as natural resources (forests, grasslands, rangeland and forage for wildlife).

Criterion 8. Adequate public facilities and services: The Applicant should commit the full amount of financial resources required to develop proposed recreation facilities at Glade, rather than having the county and its taxpayers pay for one-quarter of the development costs. Furthermore, the application fails to disclose how the siting, construction, and operation of a massive facility in a rural setting will impact sheriff, fire, and other emergency services. Budgetary analysis needs to include total costs, breakdowns and funding; including analysis in light of the fiscal challenges to County and other budgets resulting from Covid. Finally, the proposed recreation facilities are designed to accommodate levels of visitation that may be grossly overestimated. **The Applicant has not demonstrated that water supplies to Glade would be adequate for the proposed recreation use, particularly during prolonged droughts.**

Criterion 10. Cost benefits: **The benefits of this proposed Project likely cannot be achieved because the water to support prosed recreation activities is not available in the quantities and number of years asserted by Northern.** Reduced recreational use during prolonged droughts could significantly undermine revenue to the county, rendering Glade financially unsustainable over the Project's lifespan. Risks to future water supplies to Glade make estimates of recreation value at Glade highly speculative. The Applicant's estimates of the economic value of recreation at Glade are overestimated, based on unsupported assumptions about future flows, precipitation and runoff that fails to account for climate change. A robust evaluation of risks facing water supplies to Glade should be part of Larimer County's decision-making process when considering Northern's 1041 permit application. **Currently, the application is incomplete and/or based on flawed data and analysis.**

Criterion 11. Reasonable balance between costs to mitigate significant adverse affects and the benefits achieved by such mitigation: The application defers much mitigation planning to a later permit or process, so for many resources, insufficient information has been provided to assess whether this criterion is met. The applicant must provide concrete, not conceptual, mitigation plans, and the costs thereof and the benefits to be achieved. The application should also disclose which adverse effects cannot be mitigated.

3. Hydrological Modeling

1. Water supplies

Northern Water proposes delivering 40,000 acre-feet of water to NISP participants each year, mainly to municipal water districts outside Larimer County (12/15 participants are outside the County). Water supplies for the NISP would come from a combination of Northern's Grey Mountain Right and proposed SPWCP exchanges. The junior status of Northern's Grey Mountain Right allows for water diversions to Glade only during high flow conditions. During dry years, water supplies to Glade would be wholly dependent on SPWCP exchanges. As noted in the NISP DEIS:

> "*Until the SPWCP is online, Glade Reservoir will be wholly dependent on the Grey Mountain water right. This water right has the capability of yielding water in about 4 out of 10 years. Modeling indicates that there can be several years in a row of divertible flow followed by as many as 8 years with no flow available."* (NISP DEIS, 2008)[1]

Reliance on the junior Grey Mountain Right, and relatively junior South Platte Rights from proposed SPWCP exchanges, represent significant risks to the NISP's water supplies. To date, Northern Water has acquired only a small fraction (less than 1%) of the land necessary for the SPWCP (AKA, Water Secure). Future uncertainties, such as the high cost of land purchases required to bring SPWCP online, were not evaluated in the NISP FEIS (STP 2019).

8 years of no flows from Grey Mountain water rights would empty the reservoir in less than 8 years, depending on the water level before the sustained drought resulting in these water deficits. To the extent that projection dates to the 2008 DEIS, 12 subsequent years of climate science and hydrological understanding all contributes to a mountain of evidence (including Udall and Overpeck 2017) that droughts and aridification will be far in excess of what hydrological modeling for the NISP EIS predicted.

Furthermore, because hydrological modeling for the NISP is based on historical water availability, and due to uncertainties associated with Northern's proposed SPWCP exchanges, actual operations at Glade may provide significantly lower levels of service than predicted by Northern's modeling.

2. NISP modeling

The Common Technical Platform (CTP) modeling system (CDM Smith and DiNatale, 2018) was used to estimate operational characteristics of the NISP. Streamflows below the Poudre Valley Canal (PVC), the proposed diversion point for water to fill Glade, and operational characteristics at Glade were simulated for three scenarios.

Hydrological modeling for the NISP Preferred Alternative (Alternative 2M) includes "current conditions (NISP run 3a2)", "future conditions" (NISP run 4a2), and "cumulative effects" (NISP run 5a2) simulations. All modeling performed for the NISP use historic (1950-2005) naturalized Poudre River streamflows. Run 3a2 assumes 2010 water demands; Run 4a2 assumes demands projected to the year 2050; and Run 5a2 includes both 2050 demands and Reasonable Foreseeable Future Actions (RFFAs) of the Halligan and Seaman Reservoir Water Supply Projects (HSWSP).

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[1] NISP DEIS, 2008, Sec 2.4.1.3.

Hydrological modeling for the NISP assumes that historical (1950-2005) naturalized streamflows can be used to predict future water supplies. Other assumptions are an initial storage volume of 100,000 AF, and that the SPWCP is both online and operating at maxim yield throughout the simulation period.

We raise the following questions regarding assumptions in Northern's hydrological modeling:

- **Why was the initial water storage in Glade assumed to be 100,000 AF, rather than 0?** Northern states that water for the initial fill will come from Horsetooth, however details on the conveyance of water to Glade, and broader systems impacts, such reduced water supplies and recreation opportunities at Horsetooth, were not evaluated. Analysis of direct, indirect and cumulative impacts to Horsetooth and all rivers and reservoirs on both sides of the Divide that would be impacted by a fill from Horsetooth is lacking from the 1041 application. Also lacking from Northern's 1041 application is a legal analysis of whether water rights now stored in Horsetooth could be diverted to and stored in Glade for use by the Participants. Horsetooth's capacity is 151,750 acre feet, so the system impacts of using water from Horsetooth, or other supplies, for Glade's initial fill must be evaluated.
- **Why are recent Poudre River streamflow data not included in hydrological modeling?** The importance of recent streamflow observations cannot be understated because hydrological modeling following predicted severe low water levels in year the 2005 of the modeling simulation provides valuable information on the refill characteristics of Glade following severe water drawdowns. Absent current and updated streamflow data from the Poudre, the application is incomplete.
- **Why does hydrological modeling for the NISP rely solely on historical (1950-2005) streamflows to predict future operations?** The assumption that historical streamflows can predict future flows and be relied on for future water development projects and operations is outdated and neglects current scientific consensus on impacts of climate change on future runoff.

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a. Water levels

Figure 1 shows water levels at Glade predicted from hydrological modeling performed for the NISP EIS. Streamflows measured at the Cache la Poudre Canyon Mouth station[2], the minimum water level for recreational boat access via the proposed boat ramp[3], and cyclical droughts are superimposed on Figure 1.

[2] Colorado Department of Water Resources, https://dwr.state.co.us/surfacewater/

[3] Assuming a 35 vertical foot boat ramp (Northern Water, 2019)

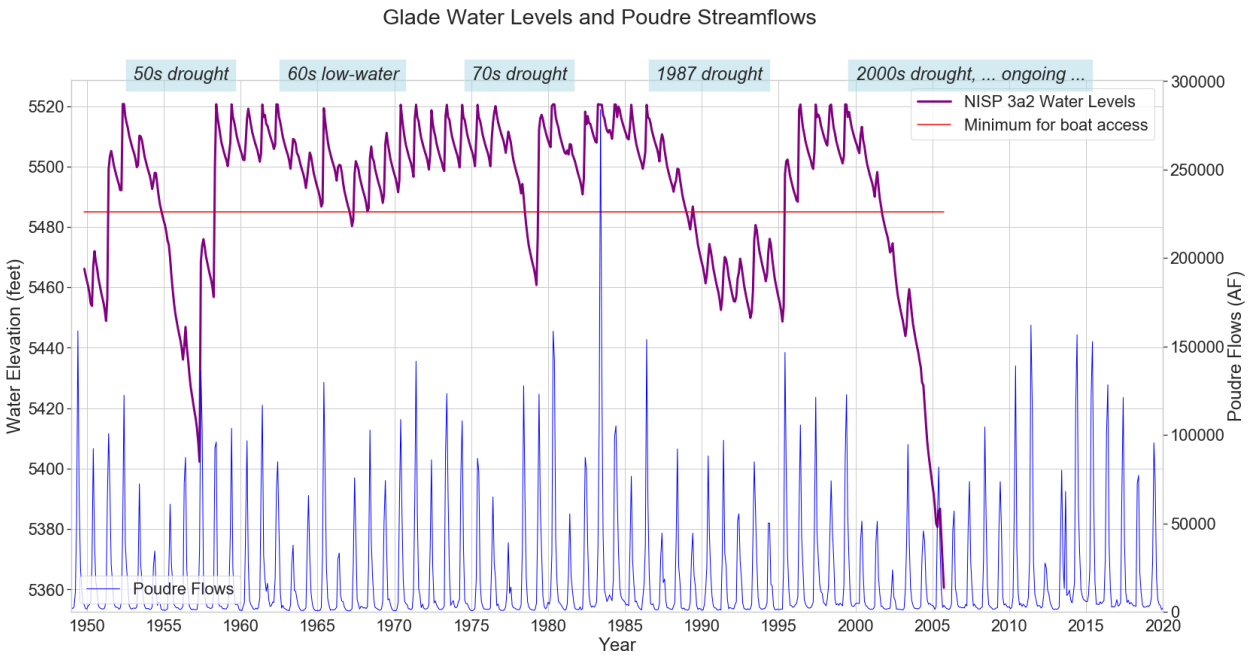

Figure 1. Predicted monthly water levels at Glade (NISP run 3a2) and streamflows at the Poudre Canyon Mouth. The horizontal red line indicates the minimum water level required for recreational boat access via the proposed boat ramp.

Figure 1 demonstrates the sensitivity of water levels at Glade to droughts. Due to their junior status, the NISP's water rights quickly fall out of priority during dry years. With inflows to Glade quickly outpaced by demands during drought conditions, water levels plummet and often remain low for multiple years. The refill characteristics of Glade following major water drawdowns, such as what is predicted at the end of 2005, are critical to the informed assessment of recreation value at Glade. Since streamflow data are readily available, it is particularly concerning that recent Cache la Poudre streamflow data were not included before the publication of the NISP FEIS in 2018.

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b. Surface area

A map view illustrates the relationship between water storage and water surface area at Glade. Figure 2 shows water surface area at three operational levels: full capacity, 70% storage (which corresponds to 35 feet below the high water line), and 11% storage (the level predicted in the year 2005 of Northern's hydrological modeling for the NISP). The low water level, shown in orange, represents a 75% reduction in the water surface area, which would expose 1183 acres of the lakebed.

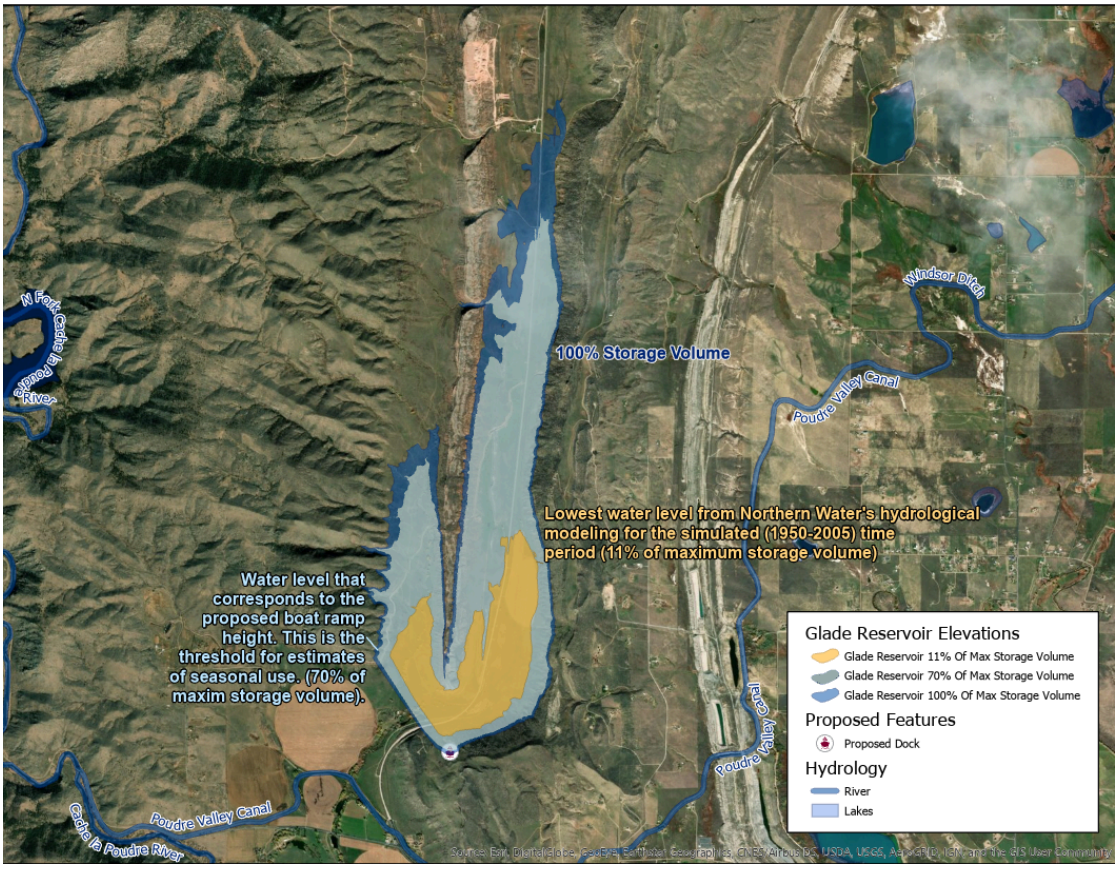

Figure 2. Map of simulated Glade water levels at capacity (dark blue), the water level corresponding to the bottom of the proposed boat ramp (35 feet below the high-water line) (light blue), and the lowest water level predicted from Northern Water's hydrological modeling (orange).

Northern Water claims that recreation at Glade would be viable when storage is higher than 40,000 AF. At this level, the Reservoir's surface area would be 663 AF (roughly 40% of maximum surface area), and the water line would be 122 ft below the high water line. The proposed boat ramp and fishing pier would be unusable, and opportunities for hand-launched watercraft limited. For example, hand launching from the northern access road would require carrying a "watercraft" across more than 1.5 miles of the lake bed to reach the Reservoir's north shore.

3. SRN modeling

A simple statistical approach is presented to estimate a range of likely future operations at Glade. The model used for this analysis is based on results from the NISP hydrological modeling run 3a2. Thus, the statistical analysis's underlying data model is based on historical hydrology used for the NISP simulation.

Furthermore, this analysis adopts the assumption from the NISP modeling that the SPWCP is online and operating at full projected yields throughout the simulation period. However, the NISP FEIS states that the SPWCP will not be online until after Glade is constructed. Thus, water supplies to Glade would be further limited until the SPWCP is online. Without SPWCP online, it would be virtually impossible for water levels at Glade to support viable recreation, and the reservoir would likely never fill during this period. Nonetheless, this analysis assumes the SPWCP is online from the start of the simulation. Goals for this analysis:

1. Estimate diversions, or inflows, to Glade for 1950 to 2019 (e.g., for a 70 year simulation vs. the 56 year period modeled in the NISP FEIS), and

2. evaluate the effects of alternative streamflow scenarios (i.e., inflows) and operations (e.g., different initial storage volumes) on predicted operational characteristics at Glade.

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a. Inflows

i. 1950-2005

Northern Water provided monthly storage volumes at Glade corresponding to the NISP Run 3a2.[4] Inflows were derived from monthly storage volume changes (dS). First, monthly demand was estimated by taking the minimum dS and assuming the absolute value, $|dS_{min}|$, equals monthly demand. Applying the resulting monthly demand profile across all years yields monthly inflows:

$$\text{Eqn. 1: Inflow} = dS + \text{demand}$$

This approach yields an annual average inflow of 43,500 AF per year, which is close to the 43,400 AF per year annual average diversion to Glade reported in the NISP FEIS (NISP FEIS, 2018)[5]. Storage volumes can be estimated from the inflows by rearranging Eqn. 1, and assuming an initial storage volume:

$$\text{Eqn. 2: } S(i) = S(i-1) + \text{inflow}(i) - \text{demand}(i)$$

Where S is the storage at time step *i*. Figure 2 shows diversions to Glade from the NISP 3a2 run (Figure 3a) and inflows calculated for this analysis (Figure 3b). Annual, 10-year running mean, and long-term mean inflows for the two simulations are virtually identical.

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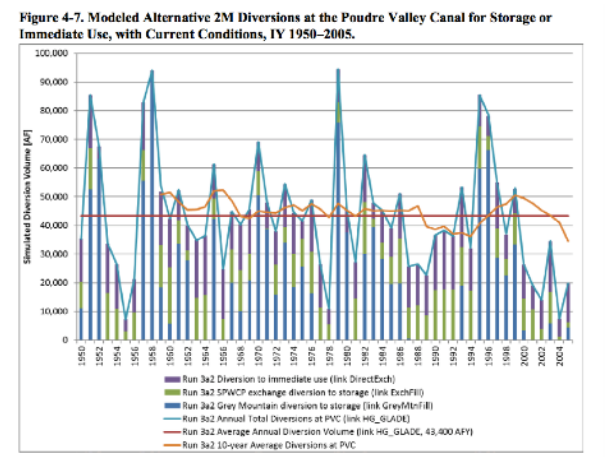
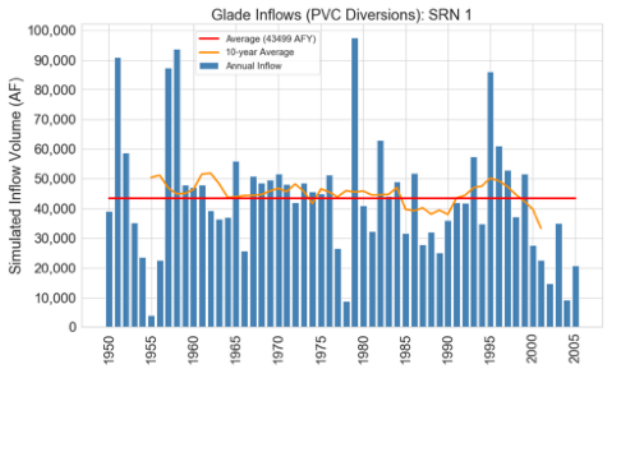
[4] A request to Norther Water to confirm that the storage volume data provided for this analysis corresponded to NISP run 3a2 was not received. Additional requests to Northern for other modeling results, including results from NISP Runs 4a2 and 5a2, were deferred to the USACE.

[5] NISP FEIS (2018), Ch. 4, pg. 4-31.



a. NISP run 3a2 annual diversion to Glade



b. SRN run 1 annual inflows to Glade

Figure 3. Predicted diversions to Glade from the NISP 3a2 modeling simulation (a) and the inflows used for this analysis (b) for 1950-2006. The 10-year running mean for the NISP data reflects the average of the previous 10-years of inflows, while in the SRN plot the 10-year running mean is positioned over the midpoint of the averaging period.

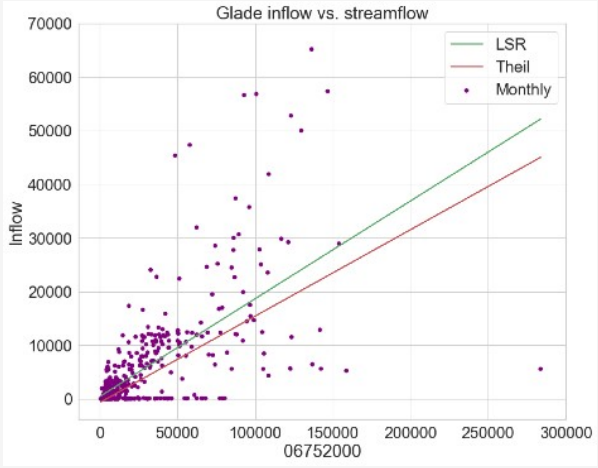
Note that the long term average diversion at the PVC from the NISP modeling is 43,400 AF. That is, Northern has used the entirety of its combined Grey Mountain and projected SPWCP exchange water rights. At the end of 2005, when Glade is predicted to be nearly empty, there is no “money in the bank” to refill Glade, maintain water deliveries to NISP Participants, and sustain water levels sufficiently for “high-quality” flat water recreation. To fill Glade by 2019, Northern would need to borrow heavily against future year allocations.

ii. 2006-2019

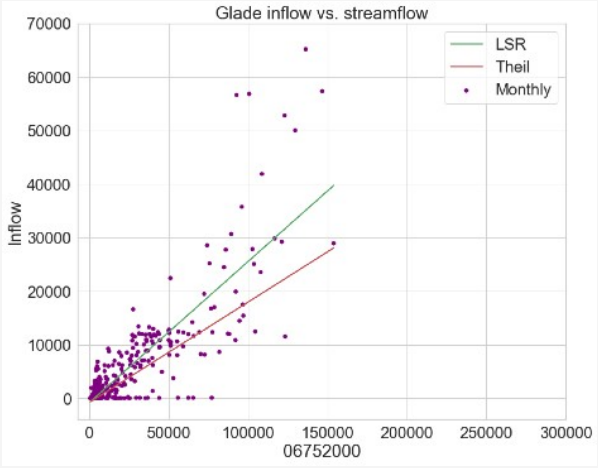
Glade inflows from 2006 - 2019 were estimated from streamflows measured at the Cache la Poudre Canyon Mouth station. Monthly streamflow observations from 1950-2005 were fit to inflows from Eqn. 1 over the same period using linear regression. Observed 2006-2019 streamflows were then scaled to inflows.

Two regression methods were used for this analysis: the nonparametric Theil regression and a least squares regression (LSR). Figure 4a shows 1950-2005 monthly inflows vs. Poudre streamflows. LSR and Theil recreation lines are superimposed as green and red lines, respectively. Figure 4b shows monthly inflows vs. streamflows from a subset of years (43 out of the 56 year simulation period) where the annual LSR regression coefficient is highly significant (p-value < 0.05). The regression slopes in Figure 4b maximize monthly inflow estimates, and likely corresponding to operational conditions where NISP water rights are in priority and inflows are not constrained (e.g., times when storage volumes are low enough that predicted inflows would not exceed reservoir capacity).

SRN 1. Estimated inflows for the SRN 2005 - 2019 simulation period



a. SRN 1a Inflows



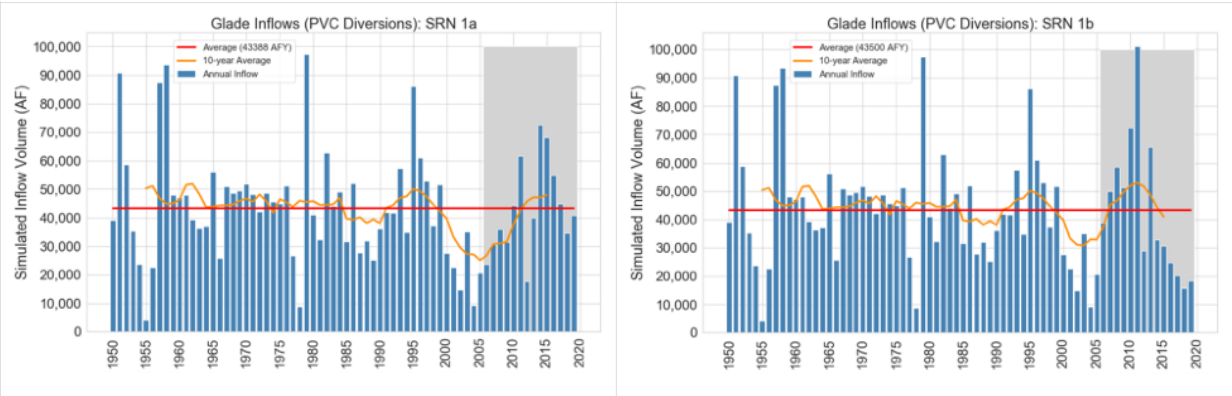
b. SRN 1b inflows

Figure 4. Monthly inflow vs. Poudre streamflows (AF per month). Figure 3a shows Theil and LSR fits to all data for the 1950-2005. Figure 3b shows data and corresponding regression slopes from years where annual coefficients are highly significant (p value < .05).

Inflows derived from Eqn. 1 (1950-2005) and inflows derived from the respective regression methods (2006 - 2019) are shown in Figure 5. Inflows predicted from the Theil estimator (Figure 5a, shaded region) predicts average inflows for 2006-2019 that closely match the 43,400 AF per year annual average for the 1950-2005 data.

On the other hand, the LSR method described above over-predicts average inflows for 2006-2019 (70,280 AF per year). To keep the average inflows in line with the NISP water right, while also maximizing inflows following 2005, inflows from 2006-2013 were prescribed from the LSR coefficient, and inflows from 2014-2019 were reduced so that the long-term annual inflow equaled 43,500 AF per year. Inflows corresponding to the LSR method are shown in Figures 5b.

In Figure 5, inflows using the Theil method are referred to as "SRN 1a", and inflows derived from the LSR are referred to as "SRN 1b”.



a. SRN 1a **b.** SRN 1b

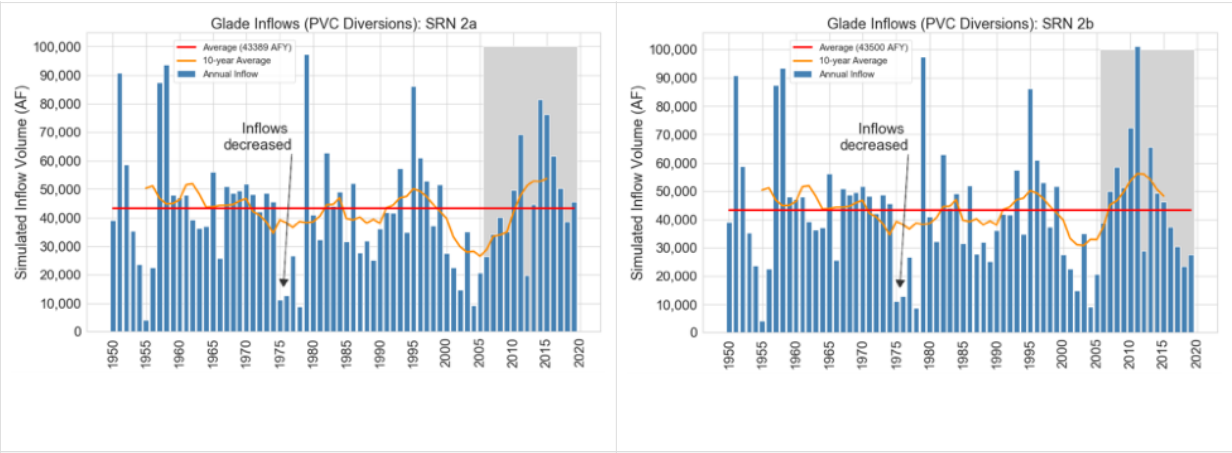
Figure 5. Estimated inflows for 1950-2019. Inflows for 2006-2019 (grey background) are estimated from streamflows measured at the Poudre Canyon Mouth. 10-year running mean (orange line) and long-term annual mean (red line) inflows are superimposed.

iii. Simulated drought

Cyclical droughts, which are common throughout this climate region, are increasing in frequency and duration in response to climate warming (Udall and Overpeck, 2017; Williams, 2020). Hydrological modeling for the NISP FEIS does not address future water availability scenarios. This analysis attempts to fill this gap by simulating impacts of “additional” drought frequency, while not decreasing average inflows.

To simulate the effects of increased droughts on storage at Glade, inflows during two years of the 70-year simulation were reduced by 75%. Inflows for 1975 and 1976 were reduced to create a four-year drought interval (1975-1978). The simulated inflows are consistent with inflows during other droughts in the historical record (e.g., 1954, 1978, 2002, and 2004). To maintain long-term annual average inflows at 43,500 AF per year, inflows during the later part of the 2006-2019 simulation (e.g., 2014-2019) were increased to compensate for the reduced inflows.

Figure 6 shows the modified inflows for the “SRN 2a” and “SRN 2b” “drought” simulations. As with the SRN 1 simulations, SRN 2a uses the Theil method to estimate 2006-2019 inflows, and SRN 2b uses the LSR method described above.



a. SRN 2a Inflows

b. SRN 2b Inflows

Figure 6. Annual inflows for the SRN 2 simulations. Inflows for 2006-2019 (grey background) were estimated from Cache la Poudre streamflows. Inflows during 1975 and 1976 were artificially reduced to simulate effects of more frequent prolonged droughts on storage volumes. Inflows during 2014-2019 were increased so that long-term average inflows were consistent with the SRN 1 simulations.

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b. Stochastic model

A “bootstrap” statistical model was developed to evaluate operational characteristics at Glade for a range of likely future operations and streamflow sequences. The model presented here follows other data-driven stochastic approaches for streamflow modeling (Laal and Sharma, 1996; Nowak et al., 2010).

The model developed for this analysis generates an ensemble of inflow “traces” by randomizing inflows (e.g., from Eqn. 1). Storage traces are built from individual inflow traces (e.g., using Eqn. 2). The ensemble of storage traces can be used to calculate statistics, including confidence intervals, for specific operational characteristics. Model criteria:

1. Statistics of simulated storage volumes profiles should reproduce characteristics of the *a posteriori* data (e.g., storage volumes from the NISP 3a2 run), such as mean storage volume, and

2. the model should have the flexibility to mimic reservoir operations in response to alternate conditions or hydrological scenarios, such as changes in initial storage volume or simulated droughts.

Inflows from Eqn. 1 were used as inputs (e.g., the a posteriori data). Inflow traces were generated by disaggregating annual inflows using a K Nearest Neighbor (K-NN) approach (Nowak et al., 2010) to create monthly inflows. Inflow traces were then converted to storage traces following Eqn. 2. As the storage traces evolved in time, storage was confined to the lower and upper storage limits for Glade (2005 AF, or the “dead pool” volume, and 170000 AF, or “maximum storage capacity”, respectively).

The K-NN disaggregation effectively randomized monthly inflows, generating an ensemble of traces with statistics that matched those of the a posteriori distribution (K=7 was used based on literature values). However, the disaggregation approach did not sufficiently randomize annual inflows to satisfy the second model criteria, above. For example, the storage traces could not reach full capacity if the initial storage volume was lower than what was used in the NISP simulation.

To create a model that satisfied the second model criteria, two modifications were made to the K-NN disaggregation approach. First, a moving window was placed on the annual inflows by selecting the K nearest neighbors for each annual inflow value. Second, a subset of storage traces was selected by selecting traces with means within 10% of the a posteriori mean. This modification essentially “self selects” traces that maximize storage volume within the range of simulated inflows.

Unlike naturalized streamflows, reservoir inflows (and hence, storage volumes) cannot necessarily be represented by a fully stochastic process. The first modification (describe above) provides sufficient randomization to allow the model to respond to alternate scenarios, while the second modification allows the model to mimic likely reservoir operations. Ideally, a stochastic approach would be applied to naturalized streamflows. The randomized streamflow sequences would then be used as inputs to decision support tools, such as the CTP used for the NISP hydrological modeling. However, such modeling was beyond the scope of this analysis.

Figure 6 shows storage traces generated with the SRN statistical model. In this example, the initial storage volume was set to 100,000 AF to match the NISP 3a2 simulation. Individual storage traces from the SRN model are shown in green, and the median of all traces from the SRN model is shown in red. The NISP 3a2 simulation is shown in blue. Annual mean storage from the NISP and SRN simulations are within 3%. This “SRN benchmark” simulation indicates that the SRN model can reproduce statistics of the NISP run, while also providing a range of expected storage volumes to estimate confidence intervals for specific operational characteristics.

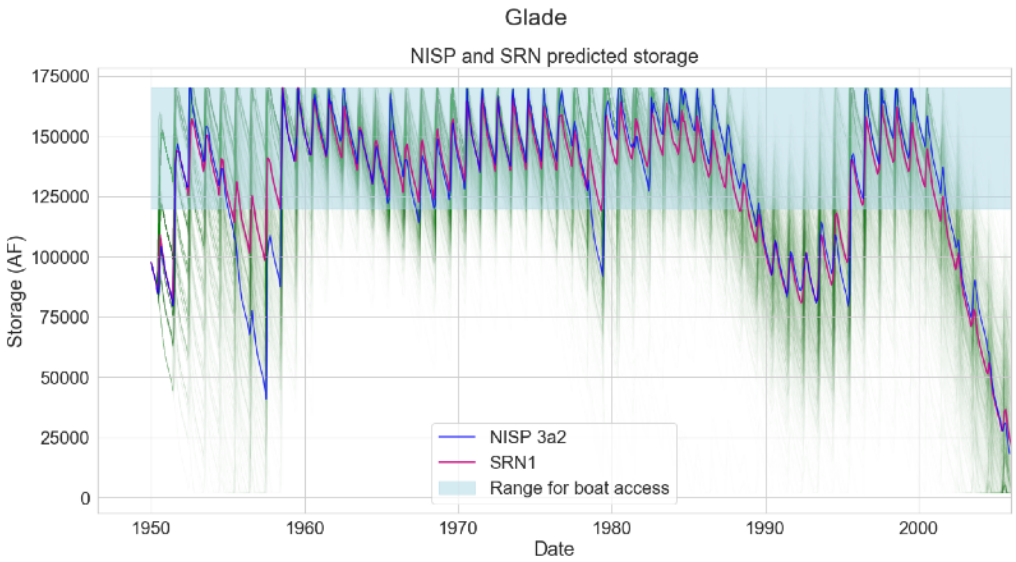


Figure 7. Storage volumes from the NISP 3a2 simulation (blue) and SRN “benchmark” simulation. Individual traces from the SRN simulation are shown in green and the median of all storage traces is shown in red. Initial storage is 100,000 AF for NISP and SRN simulations.

c. Predicted storage volumes

Figure 8 shows predicted storage volumes for the SRN modeling scenarios. The "SRN 1" simulations (top row) includes 1950-2019 hydrology, and the "SRN 2" simulations (bottom row) includes a simulated drought during 1975 and 1976. Versions "a" and "b" correspond to the method used to estimate 2006 - 2019 inflows.

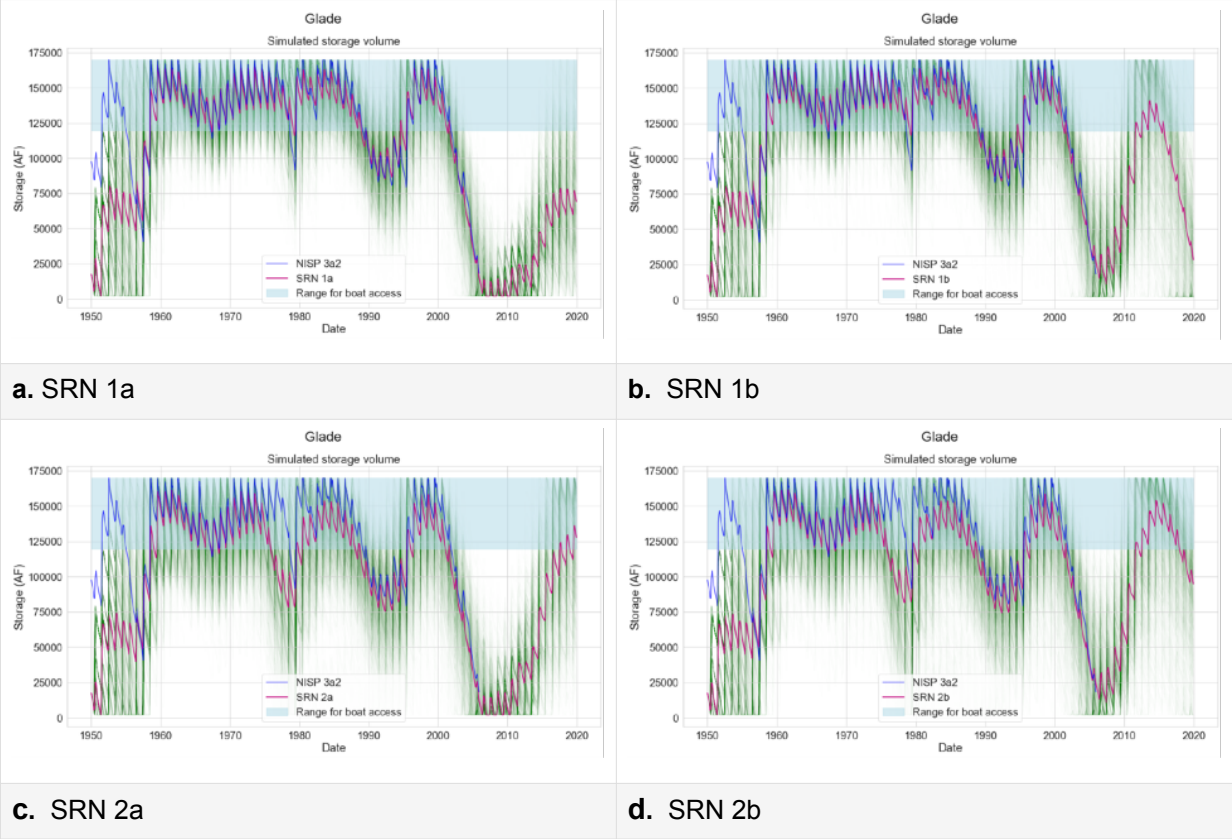
All SRN simulations shown in Figure 8 assume an initial storage volume of 20,000 AF. The NISP 3a2 simulation, which assumes initial storage is 100,000 AF, is shown for comparison. The SRN model demonstrates "realistic" operational characteristics, allowing simulated storage to reach capacity. Confidence intervals for specific operational characteristics, such as the time to fill, are estimated from the ensemble of storage traces.

The top row of plots in Figure 8 shows storage trajectories corresponding to the "SRN 1" inflows shown in Figure 5. The bottom row shows storage trajectories corresponding to the "SRN 2" inflows.

All four SRN simulations have nearly identical initial fill profiles, which is expected because the inflows and initial storage volumes are the same. The median fill time is approximately ten years, with initial storage of 20,000 AF.

"SRN 1a" and "SRN 1b" simulations differ in their refill characteristics following the severe water drawdown predicted in 2005. In the "SRN 1a" simulation (Figure 8a), storage hovers near the Glade's "dead pool" volume following 2005 and remains below 50% of capacity through 2019. In the "SRN 1b" simulation (Figure 8b), which has larger inflows following 2005 to allow Glade to refill as quickly as possible, storage volumes were able to reach the minimum required for boat ramp access. However, storage volumes declined at the end of the simulation because inflows were reduced to keep average diversions within NISP's allocation.

The bottom row of plots in Figure 8 (Figure 8c and 8d) show storage trajectories for simulations where inflows were artificially reduced in 1975 and 1976 to simulate an extended drought. Average diversions for the SRN simulations were set to match average diversions in the NISP simulations. The amount of flow reduction during the "induced" drought was added to the 2014-2019 inflows to maintain this balance. The additional inflow at the end of the simulation period explains why storage for the "SRN 2" simulations ends higher than the corresponding "SRN 1" simulations.



a. SRN 1a **b.** SRN 1b

c. SRN 2a **d.** SRN 2b

Figure 8. Storage volumes from the NISP 3a2 simulation (blue) and four SRN simulations. Individual traces from the SRN simulations are shown in green and the median of all traces is shown in red. Initial storage is 100,000 AF for the NISP Run and 20,000 AF for the SRN simulations. SRN 1 (top row) uses 1950-2019 hydrology, and SRN 2 (bottom row) includes an artificial drought during 1975 and 1976.

All simulations in Figure 8, including the NISP Run, use the same annual average inflows across the simulation period. Differences in the individual storage profiles result primarily from the temporal sequence of storage and available inflows. The SRN 1 simulations show that a possible refill characteristic following the 2005 water drawdown is a prolonged operational mode in which Glade is unable to accumulate storage. The SRN 2 simulations reveal another possible operational mode, where refill is more rapid following 2005. However, water rights limitations cause storage to decline at the end of the simulation. In any of the SRN simulations, Glade would be unable to reach full capacity following 2005 without borrowing heavily against future year's water allocations.

4. Recreation

1. Levels of Service

Neither Northern's Recreation Plan for Glade nor their 1041 permit application, address ***Levels of Service*** for recreation at Glade. For example, ***how often*** would water levels be high enough to provide access for motorized boating, ***how long*** would low water levels last, and ***how severe*** would water drawdowns be during droughts? This analysis attempts to answer these questions by evaluating four specific metrics:

1. How often would water levels be high enough to provide access for motorized boating via the proposed boat ramp,
2. how often would water levels be high enough to provide fishing from the proposed fishing pier,
3. how severe would water drawdowns be, and 4. how long would severe low water levels persist?

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a. Boat ramp and fishing pier use

To address the first two metrics, the SRN simulations were evaluated to determine the amount of time water levels at Glade would support boat ramp access and fishing pier use during the peak recreation season (May - August). Boat ramp access is determined from the number of months water levels are within the height of the proposed 35 (vertical) foot boat ramp[6]. Fishing pier use assumes water levels are within 25 feet of the high water line[7].

Table 1 shows levels of service for Metrics 1 & 2 for the NISP and SRN simulations. The SRN benchmark and NISP simulation predict similar boat ramp access (roughly 73% of peak seasons months, or 41 out of 56 years). However, if the initial storage volume is reduced to 20,000 AF (from 100,000 AF as assumed in the NISP simulation), and recent Cache la Poudre streamflows are included, boat ramp access drops to 54%-59% (38-41 years out of 70). Adding two additional drought years further reduced boat ramp access to 47%-51% (33-36 years out of 70).

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[6] The proposed boat ramp height is taken from the Glade Recreation Plan (Northern Water, 2019).

[7] Water level required for the fishing pier were estimated from drawings in the May 2020 NISP E-Water News.

Level of Service Metrics: Boat ramp and fishing pier use				
Simulation (description)	**Simulation period**	**Initial storage volume (AF)**	**Peak season months with motorized boat access**	**Peak season months with fishing pier access**
NISP Run 3a2	1950-2005	100,000	73%	68%
SRN 1 “Benchmark” (initial storage = 100,000 AF)	1950-2005	100,000	74%	63%
SRN 1a (Theil regression to estimate 2006-2019 inflows)	1950-2019	20,000	54%	45%
SRN 1b (LSR regression to estimate 2006-2019 inflows)	1950-2019	20,000	59%	50%
SRN 2a (Run 1a with simulated drought in ’76 and ’77)	1950-2019	20,000	47%	37%
SRN 2b (Run 1b with simulated drought in ’76 and ’77)	1950-2019	20,000	51%	40%

Table 1. Estimated levels of service for motorized boat and fishing access via the proposed Glade boat ramp and fishing pier. The fishing pier requires higher water levels, thus estimated use is less than for the boat ramp.

As mentioned earlier, the NISP and SRN simulations assume the proposed SPWCP is online and at full yield throughout the modeling period. Because the SPWCP is not expected to come online until after Glade begins operation, actual levels of service would be lower than shown in Table 1, particularly during initial operations.

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b. Time to fill

Hydrological modeling for the NISP assumes an initial storage volume of 100,000 AF. In practice, the initial storage volume would be close to zero, and the time required for the initial fill would be significantly longer than indicated by the NSIP modeling.

The SRN simulations were used to estimate the time required for Glade to fill assuming initial storage volumes of 20,000 and 100,000 AF. 20,000 AF was chosen because it is a reasonable proxy for filling an “empty” reservoir. 100,000 AF matches the initial storage used in the NISP modeling. Initial fill times are six years when initial storage is 100,000 AF, and ten years when storage is initialized at 20,000 AF. Table 2 shows the median time for the initial fill from 1000 traces in each SRN simulation. Note that the upper confidence intervals suggest the initial fill could take decades.

Time required for initial fill			
Simulation	**Starting Volume**	**Median**	**Range (95% Confidence Interval)**
SRN 1a. (Years to reach full storage starting in year 1950)	20,000	9.7 years	4.7 - 30 years
	100,000	4.7 years	1.7 - 15 years

Table 2. The number of years required to reach full storage from initial storage volumes of 20,000 and 100,000 AF. The median time in years, and 95% confidence interval, are estimated from 1000 storage volume traces.

Figure 9 shows the time required for traces to reach full storage (170,000 AF) starting from an initial storage volume of 20,000 AF. Note that fill times shown in Figure 9 and Table 2 are tied to the hydrological sequence used for the modeling simulation.

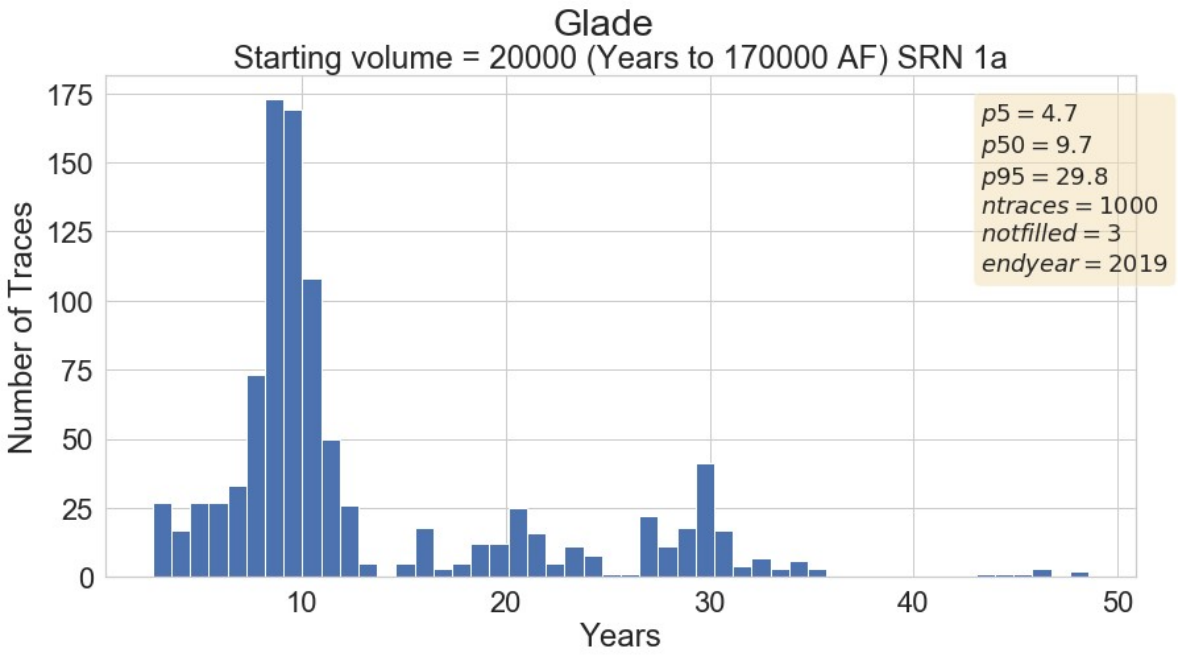

Figure 9. Time to reach full capacity assuming an initial storage volume of 20,000 AF and hydrological sequence starting in 1950.

Estimated refill characteristics following the severe water drawdown predicted at Glade in 2005 are shown in the series of plots in Figure 8. The SRN simulations indicate that low water levels would likely be an ongoing operational mode for Glade from 2000 through 2019.

An accurate evaluation of refill times based on 2000s hydrology would require a longer simulation period. Ideally, hydrological modeling for the NISP would include a robust modeling study that evaluates impacts on recreation levels of service from a range of plausible risks to water supply at Glade.

5. Economic Value

The Glade Recreation Plan (Northern Water, 2019) states that Glade will provide a “high quality” recreation experience. Estimates of annual visitation at Glade range from 45,000 to 379,000 visitors per year (Headwaters, 2017). The FEIS mentions only the high end of this estimate:

> “*Visitation at Glade Reservoir is estimated to be 379,000 visitors annually at full development (Headwaters 2017). Visitation at Horsetooth Reservoir is currently near 660,000 visitors annually. Based on the ranges identified for possible visitation and its value, total economic effects of Glade Reservoir would be a major benefit under any combination and may range from about $13 million per year to $30 million per year.”* (NISP FEIS, 2018)[8]

The FEIS does not provide documentation to support the $13 to $30 million per year range of economic value. The economic analysis referenced in the NISP FEIS (BBC and Honey Creek, 2015) estimates economic value using a "unit-day approximation of willingness-to-pay" approach, which is roughly $39 per visitor day. Applying this daily rate to the Headwaters Report's visitation range yields a range of annual recreation revenue from $1.8 to $15 million per year. The proposed broader economic value of recreation at Glade is not addressed in the NISP FEIS or Northern’s 1041 application.

In comparison, Larimer County's FY 2019 revenue from recreation at Horsetooth Reservoir was $2.5 million. Since visitation at Glade is estimated to be roughly half that of Horsetooth, a reasonable estimate of the county's revenue from recreation at Glade, assuming similar operational characteristics for the two reservoirs, would be in the neighborhood of $1.2 million per year.

However, the assumption of operational similarities between Glade and Horsetooth is misleading, and leads to potential overestimates of recreation value at Glade. Supplemental documents to the NISP FEIS point out the vulnerability of recreation vulnerability at Glade due to low priority water rights. "… Glade's recreation value may diminish toward the end of prolonged dry periods." (BBC and Honey Creek, 2015). Actual revenue to the County from recreation at Glade could be much less than at Horsetooth due to reduced visitation and reduced levels of service for recreation during droughts.

Northern's 1041 application does not account for diminished recreation value due to prolonged droughts. As climate warming advances, more frequent prolonged droughts will add additional stress to Glade water supplies. A robust evaluation of the risks facing water supplies to Glade should be part of Larimer County's decision-making process when considering Northern's 1041 permit application.

Are Larimer County residents better served by investments in traditional open space and conserving natural resources with natural habitat and ecosystem values that compliment recreational values? Climate change will increasingly stress natural resources and landscapes, necessitating greater investments and more intensive management for existing holdings. Climate change adaptation and resiliency makes it important to better protect the Poudre River ecosystem and corridor, the most valuable natural asset in the County; as well as to connect existing protected areas including federal lands, state parks and wildlife areas, and local government-owned or managed conservation properties.

[8] NISP FEIS, 2018. Ch. 4, Sec 4.16.3.5

6. What About the Future?

There is overwhelming scientific consensus that temperatures in the Colorado and Cache la Poudre River Basins have increased during the last part of the 20th Century, and that warming will continue in the 21st Century. (WRF, 2012; Cook et al., 2015). Streamflows across the U.S. Southwest are in decline, and some of the most severe droughts on record have occurred in recent years. While some climate models predict increases in precipitation, overall projections for the next Century are uncertain. Furthermore, recent studies show that regional climate warming would largely offset any future increases in precipitation.

> "*Moreover, we make a novel—and important—case that there is a high likelihood that the impacts of continued atmospheric warming will overwhelm any future increases in precipitation because prolonged dry periods lasting multiple decades are likely to negate the beneficial impacts of additional precipitation during other times."* (Udall and Overpeck, 2017).

A recent USGS study found natural flows in the Upper Colorado River Basin have decreased by 20% in the past century, with declines of 16% during 2000-2017. The study suggests that evapotranspiration will moderate moisture added from increased precipitation.

> "*Projected precipitation increases likely will not suffice to counter fully the robust, thermodynamically induced drying. Increasing risk of severe water shortages is expected."* (Milly and Dunne, 2020).

Recent droughts stand out in the long-term hydrological record. Analysis of tree ring data shows that droughts in the late 1990s and 2000s are the two driest in the historical record, going back to Medieval times.

> "*Temperatures keep going up," said Meko, of the University of Arizona tree ring lab.* "*We keep breaking records year after year. It's additional stress on the water system." Meanwhile, the two driest years all the way back to the 1200s occurred in 1996 and 2002.* "*It's a little worrisome to see the most extreme years right near the present,"* (Robbins, 2019).

> "*Anthropogenic trends in temperature, relative humidity, and precipitation estimated from 31 climate models account for 47% … of the 2000–2018 drought severity, pushing an otherwise moderate drought onto a trajectory comparable to the worst [Southwest] megadroughts since 800 CE."* (Williams et al., 2020)

Storage volumes at reservoirs in the Colorado River Basin are at record lows, and the threat of a "compact call" looms over Front Range water projects (Aspen Times, 2019; Childs, 2020; Denver Post, 2019, STC, 2019). In recent testimony to Congress, Dr. Brad Udall emphasized the severity of the current water shortage in the Upper Colorado River Basin and the vulnerability of Front Range reservoirs to Colorado River water supplies.

> "*Were [a compact call] to occur, the Upper [Colorado] Basin would have been in serious drought for a number of years and its reservoirs would likely be empty. In addition, water to meet such a* '*compact call*' *would come disproportionately from already suffering Upper Basin municipalities including Colorado*'*s Front Range, Albuquerque, and Salt Lake City."* (Udall, 2019).

The City of Fort Collins Utilities (FCU) recently commissioned a Water Supply Vulnerability Study to evaluate the vulnerability of the City's water supplies to a range of future risks, including climate change:

> "*Uncertain future hydrology is the most significant threat to FCU's future water supply, as global climate models have a wide range of predictions for the Poudre River and Upper Colorado River basins."* (Stanec, 2019)

We face a different climatological landscape than when NISP was conceived over 20 years ago. The omission of recent streamflow data, the reliance on historical water supplies to predict storage volumes at Glade, and the lack of a robust water supply vulnerability study deny the public and the County valuable information on likely operational characteristics at Glade. The current application is incomplete. The missing data and analysis goes to the heart of viability. As presented, the proposal is deficient under the 1041 review criteria.

7. Local and Environmental Impacts

The NISP FEIS also fails to adequately address local impacts from future operations at Glade, including construction, proposed recreation activities, and impacts of severe water drawdowns during droughts.

Local impacts include noise from motorized watercraft, pumping facilities, increased vehicle noise from the proposed realignment of highway 287 (Tschirhart 2020a), increased likelihood of trespass, and increased risk of wildfires (Tshirhart 2020b). Mitigation plans for these impacts are either lacking from Northern's 1041 application or are woefully inadequate.

Hydrological modeling, both for the NISP FEIS and from this report, indicate that low water levels at Glade levels could persist for multiple years, rendering the proposed Reservoir a vast dry lake bed and an eyesore to local residents. Local impacts resulting from persistent low water levels include adverse air quality from windblown dust, reduced property values, and degradation of the natural environment. These impacts must be thoroughly disclosed through analysis by an independent expert.

Adverse environmental impacts related to persistent low water levels at Glade are at odds with the the County's climate resiliency planning. Larimer County's 2016 Resiliency Framework (Larimer County, 2016) identifies droughts as a significant natural hazard facing Larimer County. The Framework's Resilient Natural and Built Infrastructure section recommends projects that have a system-wide ecosystem benefit. However, rather than promoting resiliency, the NISP would increase Larimer County's exposure to the impacts of a rapidly changing climate.

An overarching themes of the County's Comprehensive Plan (Larimer County, 2019) calls for Environmental Stewardship:

> *"Valuing, identifying, protecting, and responsibly managing its natural and cultural resources to minimize impact and protect our air, soil, open spaces, watersheds, water supply, and other ecosystem services."* (Larimer County, 2019)

Pumping activities alone would add the equivalent of 7000 fossil fuel burning vehicles to the County's GHG emissions inventory. Potential local air quality impacts of exposed lake beds are inadequately addressed, and a robust assessment of risks to water supplies are serious omissions from Northern's 1041 Application.

8. Conclusion

This report fills a knowledge gap regarding the feasibility of recreation at the proposed Glade Reservoir. Northern Water promises Glade will provide Larimer County with a "high-quality" recreation venue, and claims recreation, most prominently the lure of more flat water recreation, will pump 13 to 30 million dollars per year into the local economy (NISP FEIS, 2018). However, Northern's 1041 application lacks evidence to support this claim. Uncertainties in future water supplies to Glade make estimates of recreation value highly speculative. Northern either ignores or gives little or no credence to an emerging body of science that undercuts core assumptions for the NISP.

We review hydrological modeling from the NISP FEIS to illustrate the potential impacts of historical droughts on recreation at Glade, including several prolonged dry periods that would have severely limited, and at times curtailed, access to flatwater recreation for multi-year periods. Furthermore, because the NISP modeling is based on historical water availability, and due to lingering uncertainties associated with Northern's proposed SPWCP exchanges, actual operations at Glade may in fact provide significantly lower levels of service the predicted by Northern's modeling.

There is overwhelming scientific consensus that impacts of regional climate change will add additional stress on future water supplies. Despite this evidence, modeling for the NISP relies on historical streamflows to predict future operations at Glade. A landmark paper by USGS scientists points out the fallacy of this assumption in light of the current scientific understanding of climate change and its impacts on natural water supplies:

> *"Projected changes in runoff during the multi-decade lifetime of major water infrastructure projects begun now are large enough to push hydroclimate beyond the range of historical behaviors."* (Milly et al., 2008).

We present results from a simple statistical model that considers recent Cache la Poudre streamflows, realistic initial fill conditions, and plausible future hydrologies. Under these scenarios, our analysis indicates levels of service for specific recreation metrics, such as access to the proposed boat ramp, would be significantly lower than those claimed by Northern Water.

It speculative at best to portray the proposed Glade Reservoir as a boon for recreation in Larimer County. This massive water storage project's management priority is to deliver water to growing municipalities, the majority of which are outside Larimer County. Recreation is not a priority, and Larimer County residents could get left holding the bag for costs of recreational facilities that sit idle when water levels are too low to provide boat access and attract other feepaying visitors.

A robust water supply vulnerability study that considers the range of plausible risks to water supplies at Glade, akin to the recent Fort Collins Water Supply Vulnerability Study (Stanec, 2019), should be part of the County's review process. As it stands, Northern Water's 1041 application does not provide decision-makers and the public the information necessary to evaluate the feasibility and potential value of proposed recreation at Glade. It should be denied because it fails to meet the County’s review criteria.

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Rodger B. Ames, M.S.

1638 N. Greyrock Rd. Laporte, Colorado 80535 | 970-231-2572 | rodger.b.ames@gmail.com

Overview

I am passionate about promoting evidence-based understanding of environmental science. I have extensive experience in climate and atmospheric science, data analysis, air quality modeling and evaluation, and statistical methods.

Education

- M.S., Atmospheric Science, Colorado State University (CSU)
- B.A., Chemistry, the University of California at Santa Cruz (UCSC)

Postgraduate Courses & Trainings

- Global Carbon Cycle, Chemical Kinetics and Photochemistry of the Atmosphere, Atmospheric Boundary Layer, Remote Sensing, General Circulation (CSU Atmospheric Science Department)
- Applied Remote Sensing Training in scenario-based ecological forecasting (NASA/ARSET)
- Renewable Energy and Photovoltaic Systems (Solar Energy International)

Employment

Cooperative Institute for Research in the Atmosphere (CIRA), Fort Collins, CO

Research Associate III, 2014 – 2019

My recent work focused on providing support for air quality modeling studies sponsored by the National Park Service Air Resources Division. Other roles included project coordination, data analysis, and stakeholder interactions to ensure high-quality and timely deliverables.

- I worked on a National Park Service sponsored air quality modeling study that will contribute to exploring Rocky Mountain National Park's vulnerability to Front Range pollution sources;
- Worked on air quality projects to support regulatory planning for the National Ambient Air Quality Standards and Haze Regulations;
- Engaged with state, local, tribal and federal air agencies, led multi-stakeholder working groups, and provided policy-relevant analysis to project stakeholders;
- Proven track record developing innovative tools to analyze and visualize large air quality datasets.

Center for Multiscale Modeling of Atmospheric Processes (CMMAP), CSU Atmospheric Sci. Department

Knowledge Transfer Manager, 2007 – 2014

I managed Knowledge Transfer (K.T.) activities for a National Science Foundation (NSF) funded Science and Technology Center based at CSU. I worked closely with the Center's Directors to advance the Center's K.T., education and climate science outreach goals.

- I contributed to the Center's annual reporting to NSF, participated in the Center's annual NSF reviews, and helped organize the Center's Science Team Meetings;
- Helped advance the scientific publication projects, including a new peer-reviewed journal, and book on the history of climate models;
- Mentored student interns on projects to support climate science education and curriculum development for global carbon cycling, climate warming and adaptation;
- Co-founded a nonprofit organization to sustain the Center's education and outreach activities, and organized public events to increase public awareness of climate science. I currently serve as the organization's Director.

Cooperative Institute for Research in the Atmosphere, Fort Collins, CO

Research Associate II, 2001 – 2007

I performed research to support air quality policy development and regulatory compliance. I developed data driven decision support systems. I published research results in peer-reviewed journals and presented research results at conferences and workshops.

Cooperative Institute for Research in the Atmosphere, NPS Air Resources Division, Fort Collins, CO

Research Coordinator, 1996 – 2001

I researched ambient air quality monitoring networks and participated in fieldwork at Grand Canyon and Great Smoky Mountains National Parks.

CSU Atmospheric Science Department, Fort Collins, CO

Graduate Research Assistant, 1994 – 1996

I conducted research in atmospheric chemistry and participated in the 1995 Southeastern Aerosol and Visibility Study (SEAVS) field program.

Ocean Genetics, Superior Analytical, and Glycomed, Santa Cruz, Martinez and Alameda, CA

Chemist, 1990 – 1996

I headed a laboratory teams for environmental analysis and performed chemical analysis and processes development.

Department of Earth Sciences, UCSC

Research Assistant/Geophysical Field Assistant, 1985 – 1987

I conducted research leading to my undergraduate thesis. I utilized electron microscopy and X-ray fluorescence facilities at UCSC, UC Berkeley and Cal Tech, and participated in fieldwork in the Los Padres State Forest and Point Reyes National Seashore.

Selected Publications & Conference Presentations

Ames, R.B., Novel Tools for Emissions Inventory Development and Verification, Presented at the EPA International Emission Inventory Conference, Dallas Texas, July 30-August 2, 2019.

Ames, R.B., Intermountain West Data Warehouse Overview and Data Products, Presented at the Western U.S. TEMPO Early Adopters Workshop, Fort Collins, Colorado, April 10-11, 2018.

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Reports

- EPA Guidance Document, *Estimating Natural Visibility Conditions Under the Regional Haze Rule*, EPA 2003
- IMPROVE Report,CIRA ISSN No. 0737-5352-47, Colorado State University, 2000
- Project MOHAVE Final Report, EPA, 1999

Theses

Optical Measurements of Aerosol Size Distributions in Great Smoky Mountains National Park. *M.S. Thesis, Department of Atmospheric Science, CSU.*

Origins of Natural Remanent Magnetization in Miocene Monterey Dolomite. *Senior Research Thesis, Department of Chemistry, UCSC.*

Community Service

- Recently appointed to the Larimer County Environmental and Science Advisory Board
- Board Member for *SaveRuralNoCo*, a Colorado nonprofit that focuses on local environmental issues,
- Board Member and Director of Reach, a local nonprofit organization that promotes climate science education
- CSU *Little Shop of Physics* (primary and secondary science education organization) volunteer

Record ID	DateSubmitted	LAST NAME	FIRST NAME	EMAIL	COMMENTS
6	6/19/2020 8:57	Bieritz	Serena	serenaservicesco@gmail.com	We are Terry and Serena Bieritz. We have lived at 4835 Eagle Lake Drive in Fort Collins 80524 for 10 years. We are in our 70's and this is our retirement home. We both worked full time for 50 years to save for a happy and peaceful retirement. Our home is located in Segment 4 of the NISP "Construction Approach" document. That document states they expect to interrupt our lives for 16 weeks of construction. From the south wall of our home to the southern property line is 92.5 feet. That south wall is where our master bedroom and office are located on the first floor. That south wall is where two more bedrooms are located on the second floor. That south wall is where the finished portion of our basement is located. Another south wall on the first floor is our sunroom which is all glass on 3 sides. These rooms constitute the majority of our daily living area. From our south wall to our southern property line is 92.5 feet. NISP proposes an easement of 100 feet running west to east along the ENTIRE south side of our property, from our back yard through our front yard to the street. That path includes fruit trees, irrigation, our septic system, and underground utilities. That is in essence ONE-THIRD of our 2.6 acre lot!!! We would not be able to plant trees or build anything EVER AGAIN on that easement. We would be required to have NISP maintenane people on our property regularly and in perpetuity. We are concerned about subsidence issues as a result of drilling so close to our home. NISP should not be allowed to plow through someone's yard in a private neighborhood. PERIOD There are many empty lots of 10 to 100 acres North of our neighborhood, some of which are for sale right now. They can easily find another route with no improvements. PLEASE do not allow NISP to ruin our retirement years and disrupt our neighborhood. You are welcome to come and see our lot for yourself.... call us at 970.672.3772 ... leave a message and we will return your call. And by the way, Northern Water has never contacted us to discuss their plans. As a resident of the Eagle Lake neighborhood, I am writing you to ask that Larimer County not approve the 1041 Application that is before you for a pipeline through the county by Northern Water (NISP). The issues revolving around this application and the reasons it should be denied closely mirror that of the City of Thornton 1041 pipeline application that was rejected by the Board of County Commissioners.

10	6/22/2020 9:47	Bartecchi	David	dbartecchi@gmail.com	I can't believe it's 2020 and after all we know about the impacts and inefficiencies of dams, we're here debating building another one northern Colorado. The science is clear but what is not clear is the political economy behind dam construction. NISP is not driven by science and best practices but rather the short-sighted selfish interests of housing developers and municipalities through unplanned and unsustainable growth - building dense communities of McMansion in some of the most prime farmland in Northern Colorado. And now they want to tax payers to reward them and ensure the continuation their unsustainable growth by building a dam. When will it stop? Are we going to drain every last drop of Colorado's only Wild and Scenic River while we make virtually no sacrifices to better utilize and conserve the water we already have.

17	6/24/2020 11:52	Finnman	Doug	dfinnman72@yahoo.com	Dear County Commissioners, I ask that you oppose the NISP and the related 1041 permit. My reasoning? Allow me to put into context the negative environmental impacts, risks, and sacrifices the people of Larimer County (especially those who reside in the immediate vicinity of the proposed Glade Reservoir), will end up bearing for NISP. -Residents and landowners in rural areas and communities in the vicinity of Glade (including myself, a resident of the Bellvue area) will endure an estimated 4-6 year massive construction project with the attendant noise, traffic, pollution, and overall disruption of a quiet lifestyle residents enjoy in this area. It is likely that some will experience a de-valuation of their property as a result of NISP. -Most Larimer County residents value our wildlife resources very highly. Make no mistake about it: NISP will adversely impact the wildlife that now flourishes in and around the Glade site. Construction of the dam, forebay, , the reservoir, the re-routed highway, and related pipelines will negatively affect the movement of deer and elk herds that reside in the footlhills. Other animals and birds will also suffer through loss of habitat. -As a result of NISP, residents will witness the degradation of the Poudre River itself, as well as existing Natural Areas that are part of the river corridor. Fish, plants, and animals that depend on this riparian habitat will be irreparably harmed or destroyed by further de-watering of the Poudre. These concerns have been clearly articulated by the City of Fort Collins Land Conservation and Steward Board in a memo they issued earlier in June 2020. -If NISP is approved and moves forward, County residents will also witness violations of several elements of the Larimer County Comprehensive Master Plan for the mountains, foothills, and natural resource areas that Glade would occupy. -County residents are well aware of climate change impacts. Yet the architects of NISP seem to conveniently ignore the realities climate change. The recreation and water resource benefits touted for the NISP will likely not be realized if Glade cannot be filled in an era of frequent droughts. The price of NISP is way too steep for Larimer County in terms of the negative impacts on its people, land, water, and wildlife. For Larimer County NISP is simply a lousy deal. As stewards of this County, please make a bold and courageous statement by voting 'No' on NISP. Thank you for your consideration, Doug Finnman, Bellvue, CO
23	6/29/2020 5:40	Sondrup	Carole	Scooter-pookie@hotmail.com	This pipeline is scheduled to go down Larimer County Road 1 (aka: Weld County Road 13, Colorado Blvd and Latham Parkway) Have ANY of the commissioners driven this little two lane road? Currently we have a large electrical line and fiber optics line down the side of the road. With the massive Thornton water pipeline coming with in the next 18 months. This little Road and the surrounding property owners can not take another public utilities project! Please reconsider this route...Thank you.
26	6/30/2020 16:14				
27	6/30/2020 16:14				

29	7/1/2020 11:56	Pixler	Dennis	dpbendur38@gmail.com	The Poudre River should not be damned. It is one part of what makes Colorado great, it's beauty. Northern Colorado is beautiful and damming the Poudre River takes away that natural beauty. Why should the enjoyment of all Coloadoans, especially us in the north, be sacrificed to water the lawns in the Denver area. The Denver area needs to learn to live with what the water resources they already have. If they have a right to this water, figure out another way to get it without imposing their will on us to the north. Thanks for letting me have a voice.
35	7/3/2020 9:53	Aravis	Dori	dori.aravis@gmail.com	I am Dori Aravis, 49 years a resident of Fort Collins, Larimer County, and I can't believe that I am once again having to stand up to save the Poudre from the vested interests that would destroy it. Glade Reservoir, Glade freaking reservoir - a monster that should have been laid to rest many, many years ago. It is an ill-conceived disaster that would destroy not only the land it would go on, the Poudre River, who's water would be stolen, but the lives of the people who live around it and the people whose land would be stolen by pipe lines needed to deliver water to communities beyond Larimer County. But like a Walking Dead Zombie, it's rearing its ugly head again. And like a zombie we need to shoot this thing in the head - get rid of it once and for all. It is the ONLY right thing to do. Thank you.
42	7/5/2020 11:43	Madsen-Pixler	Stephanie	stephaniegmp@gmail.com	Please do not allow the Poudre to be dammed in this way to feed the interests of other communities. It will be Northern Colorado that pays the price in lost water, land, recreation, not the communities that the dam will serve. The cost is too great.

46	7/6/2020 7:59	Pault	Jerrold	jerroldpault@gmail.com	July 6, 2020 To: Larimer County Planning Commissioners (via email) From: Jerrold Pault President - The Hill Community Homeowners Association (HOA) President – Cobb Lake Preservation & Recreation Association (CLPRA) Subject: NISP Planning Commissioners' Hearings Dear Commissioners, On behalf of The Hill Community HOA (60 homeowners) and CLPRA (104 members), we strongly oppose NISP and request that you vote against this environmentally devastating project. The following concerns are cited: • This project would take additional water from the Poudre River, which is already seriously depleted by agriculture and residential use. The diminished flows would due irreparable harm to the riverbed and its wildlife habitat and the City of Fort Collins beautiful new water park would be rendered virtually useless. We are grateful for the efforts of the Save The Poudre organization and support their efforts to protect this precious resource for our children and future generations. • This project does not own sufficient water rights to be feasible, which will result in NISP purchasing additional water rights, likely from our local farms. While NISP has promised not to "Buy and Dry" farms like Thornton did, we do not believe they will honor this commitment after spending a Billion dollars and then not be able to fill Glade Reservoir. We must protect the rich tradition of family farming in our region before it is lost forever! • NISP originally planned to run a huge 54" pipeline thru the middle of deeded conservation space owned by The Hill HOA (600 acres of native grasses full of wildlife). Now they are proposing a different route along CR 52, which will impact access and egress to our community along with the many residents who live along this route. Why do we need more massive and disruptive pipelines in Larimer County, when we have nature's solution for moving this water in the Poudre River? We are thankful for the efforts of the No Pipe Dream organization in opposition to both NISP and Thornton's Pipeline last year. • NISP will bring unwanted growth, development and urban sprawl to the areas north west of Fort Collins. These quiet and peaceful rural areas will be forever changed and overrun with traffic, noise and residential and commercial development. We need to preserve the remaining open spaces and rural character of our county. We support Save Rural NOCO, another organization against NISP, and think it is important that we protect the lifestyle of our rural residents. • Cobb Lake is a pristine recreation and preservation area that is nourished by the clean waters from the Poudre River every year. NISP could be potentially devastating to our lake if they are permitted to utilize water exchanges, which would divert clean Poudre River water from Cobb Lake to Glade Reservoir and replace it with dirty water from the South Platte. CLPRA is against NISP. Why should we agree to all of these environmentally devastating and permanent impacts to Larimer County ... just to send water to municipalities and water districts in other counties so that they can develop more

48	7/6/2020 8:35	Williams	Dolores	tinytornado@mac.com	NISP simply would kill a wild and science river -- one of the last wild rivers in the US. The huge pipeline required to carry this off would be a huge disruption in Larimer County and of little benefit to the people of Fort Collins. Conservation in all of the cities hoping to benefit from this disruption and death of the river has not been implemented. The necessary drying up of farmland to acquire irrigation rights (not domestic drinking water rights) should not be allowed because agriculture is second to tourism it the State. Staying sustainable locally required keeping farming land in use into the future. Please use the 1041 law to deny this killing of the Poudre River and let it run through Fort Collins and along to contribute to natural waterways as in the past.
54	7/6/2020 9:18	Eisenberg	Cailea	caijeis1092@gmail.com	The migratory and native bird populations would be decimated, if NISP was confirmed. Birds evolved and adapted to every continent before the humans were even bipedal! Let us be better than the original settlers of Northern Colorado who came in, massacred the Native peoples and claimed the area through "Manifest Destiny". Please break the cycle of raping the land of its resources. If the region does not have enough water it should not be building human communities to further destroy the natural habitats of creatures that have been there for thousands of years.

55	7/6/2020 10:40	Rothe	Jan	lemmule@gmail.com	As a retired wildlife ecologist, who has lived in Larimer County for over 35 years, I cherish our beautiful rural landscapes and incredible natural resources. I believe that all of us living here do. Therefore, we all must carefully consider the long term, cumulative effects of the Glade Reservoir development project on the natural resources of Larimer County. I am asking you to read my testimony and please reject Northern Irrigated Supply Project's (NISP) 1041 application. Section 8.4.1 of the Larimer County Land Use Code states that all developers are obligated to "maintain and enhance diversity of wildlife species and habitat in Larimer County and to plan and design land uses to be harmonious with wildlife habitat and the species that depend on that habitat....". And in NISP's Wildlife Conservation Plan (Technical Memorandum No. 7), they state the purpose of their plan is "to document impacts to wildlife, identify strategies for avoiding, minimizing, mitigating and enhancing wildlife...". Clearly, the NISP project will not be maintaining or enhancing any existing wildlife, nor their habitat. They will, in fact, be flooding well over 1600 acres of land and taking even more water out of the Poudre River than is currently being diverted, causing unforeseen damage to the riparian corridor and all the wildlife species residing there, including the federally-listed Preble's Meadow Jumping Mouse. I also fail to see how they will be "avoiding or minimizing" damage to wildlife species in general, when they will most likely be killing large numbers of small mammals, ground-nesting birds, and reptiles by drowning, digging them up, or driving over them with heavy machinery during the construction of this project. According to Webster's Dictionary, to mitigate is "to cause to become less harsh or hostile". The NISP planners, designers, and engineers all appear to be either completely oblivious or totally insensitive to the huge environmental and aesthetic destruction they will be causing. The devastation they will cause is impossible "to mitigate"! The Glade Reservoir project cannot be mitigated because its effects are too serious and far-reaching. It will be an enormous undertaking, which will include flooding 1600 acres of a relatively pristine valley, moving 7 miles of federal highway, installing miles and miles of water pipeline, digging a 2,000 acre foot forebay, building a visitor center, paving parking lots for up to 500 cars, and building a 40,000 horsepower electrical pumping station to transfer water from the forebay up and over a 275 foot dam. How is it possible to mitigate all that incredible damage and destruction? NISP states, as one of the key components in their enhancement plan, that they will be "protecting additional lands west of Glade Reservoir for wildlife habitat". I fail to see, exactly, how protecting land, which I'm assuming means buying and holding for perpetuity, that wildlife is currently using (I'm guessing wild animals don't really understand real estate ownership and probably think the land they inhabit belongs to them already) will "enhance" all the thousands of acres of habitat that will

57	7/6/2020 13:20	REDMOND-OTT	randy	randyredmondott23@gmail.com	Water storage and availability will continue to be a growth limiting factor in Colorado and the West. NISP has always been a poorly conceived on many levels, especially that of putting a burden on Larimer County residents without benefit to them. Degradation of water quality was one of the primary reasons the City of Fort Collins was historically opposed to this project, both in stream flow and drinking water quality. The impact on private landowners in Northern Fort Collins for forced easements is reprehensible, considering the availability of both water transfers and the use of existing easements for development of this project. The scope of the proposed reservoir, the rerouting of US 287 and associated costs seem out of touch with reality in this current time. The amount of water lost to evaporation will be significant. Data is available from the cooling pond at the Rawhide Power Plant that can easily be extrapolated to this project to demonstrate just how much of the diverted flow would never be realized at the destination. This project is not a "win" for Larimer County or its citizens. I urge you to deny it as it exists. Thank You.
58	7/6/2020 13:30	Pierro	Dennis	dpierro437@gmail.com	I am in favor of the NISP project and their submitted application with one major condition: The route of the pipeline. Please divert the pipeline around the Eagle Lake Subdivision. There is plenty of undeveloped land to the north of this community. it would be an unfair burden on the community if homes are disrupted due to construction and long-term easements if this open land is not used. If diversion to the north is not technically feasible, please force the approval of the NISP pipeline to be conditional on co-location with the Thornton pipeline if their route is ultimately approved through Eagle Lake as well.

61	7/6/2020 14:28	Fankhauser	Terry	terry@coloradocattle.org	On behalf of the beef producing families and businesses throughout Colorado, our 5,000 members have affirmed and then reaffirmed our policy in support for the Northern Integrated Supply Project. Colorado is need of additional water storage in order to meet demands associated with population growth, specifically in north central Colorado. Without increased storage, inevitable harm will come to our business and environmental interested in the region and state. Without said storage, an exacerbated trend toward permanent buy and dry of agriculture irrigation water will become the norm. Agriculture irrigation water returns a broad spectrum of ecosystem services that currently are not reflected as beneficial uses per Colorado Water Law, such as return flows in the fall of the year, stream temperature, wetlands, wildlife habitat, etc. Without agriculture actually irrigating in Colorado, those uses will cease to exist and have a fundamental impact on the naturally function environment and economy in Colorado. In short, there exists a choice. Maintain the viability of water consumers in NE Colorado with smartly planned storage projects like the Northern Integrated Water Supply Project or place Colorado's water resources in direct harm due to the manifestation of concerns that have been adequately debunked by the Northern Colorado Water Conservancy District. In closing, CCA requests that Larimer County illustrate its public support of agriculture, business the environment and our economy by endorsing the Northern Integrated Supply Project. Sincerely Terry R. Fankhauser, EVP Colorado Cattlemen's Association
62	7/6/2020 15:04	Kerig	Daniel	dankerig@yahoo.com	The proposed pipeline path along Greyrock rd. would cut right through the back of our property. Our property is a Designated Wildlife Habitat for migrating birds and butterflies. The proposed area for the pipeline would wipe out the 25 trees that we planted twelve years ago to provide food and shelter for visiting and permanent wildlife. We've spent a lot of time and money to establish this habitat and don't believe NISP have come close to proving that pipeline route is the best option. Please do what's best for our community as well as the Poudre River and have their water taken out down stream. Thank you for your attention.

63	7/6/2020 17:10	Kopp	Charles	charleskop@centurylink.net	Dear Planning Commissioners: I strongly urge you to NOT support the NISP application, because I, like most of the people I know in the county, are staunchly opposed to it. There's really nothing in it that will benefit Larimer County, unless you think we need another big recreational reservoir in such proximity to Horsetooth---which we don't. And I'm sure you've heard enough, and will be reminded more, that maintaining a water level in proposed Glade Reservoir suitable for recreation is very dicey in our semi-arid climate, especially considering the latest patterns; and that Glade would look terrible as a puddled mud hole. If providing recreation is a factor in the whole issue, NISP will degrade the Poudre River to the point that it's recreational uses downstream will greatly suffer----despite claims about "mitigation" of these destructive effects. The potential "mudhole" seems to me like a classic boondoggle of enormous expense pushed by vested outside interests. And please put Larimer County's interests first! I could go on to enumerate many very practical, evidence-based objections to NISP, which I'm sure are very familiar. But instead I'll conclude with what I see as the real driving force behind it, which is pretty obvious. Namely, the excessive development in NOCO that's behind the demand for increasing water supply. Contrary to popular opinion,this high degree of anticipated development is not inevitable, but a choice we make and have control over. Unfortunately, it seems that the big profit-driven development companies who are behind it have found allies with many municipal planning boards, and city and state officials. And I hope that your board will not succumb to their influence and be an enabler of NISP. I"m certainly not against all development, and even think that much that's been happening in NOCO for years has had a lot of very positive results. But I believe that we're reaching a tipping point where if it continues to projected levels, it will ruin not just a lot of our great natural resources in the county---like the Poudre River---but also our quality of life. I came from northern New Jersey, and would absolutely hate to see the over- development and crowding that has plagued that state for so long happen in our still spectacular part of Colorado. So please be good stewards of our environment in your planning. Lastly, if NISP is rejected----like I certainly hope and wish---I believe the outside communities who need more water to continue with their growth plans can still find ways to supply it if they really want it through more innovative ways than 19th and 20th Century projects like dams and reservoirs----starting with simple, sensible, and practical conservation measures, which are also a helluva lot cheaper. Please-------NO TO NISP!! Let's discourage over-development and not encourage it. Sincerely, Charles Kopp Fort Collins

64	7/6/2020 18:27	Webber	Sheila	13sheilaw@gmail.com	Dear Planning Commission, I deeply oppose the NISP project. The Cache La Poudre is a treasure right here is Fort Collins. We are losing our natural treasures at an alarming pace. Please do not allow the Poudre to be drained further and ruined. Real water conservation effort should be made. The Poudre can sustain our communities without the NISP project. Some conservation is being done, I am sure, but not enough. The conservation efforts Northern Water presented in the hearing on June 24th were very feeble. Everywhere I look, thirsty grass is being planted in new subdivisions. Lawns are being watered in rainstorms and there are always some sprinklers spraying utility boxes and the street with abandon. There is not enough effort to put into native, xeric landscapes. We live in an arid climate, not the tropics!! If we would have the wisdom to use our water carefully, we would avoid more devastating harm to the ecosystems on which we rely. The Poudre River is an Important Bird Area. There are birds that do not occur outside this corridor in Larimer County. Birding contributes to the economy of Fort Collins in the tourism it brings. The river is the lifeblood for our wildlife. We have lost 3 billion birds since 1970, and we cannot afford to ruin this IBA. As an Important Bird Area, "The River Corridor sustains some of the most important bird habitat in the region," remarked Joel Hurmence, President of FCAS, the local chapter of the National Audubon Society. "This IBA nomination seeks to preserve this important resource for our children and grandchildren." (FCAS Save the Poudre December 11, 2007) I love the Cache La Poudre River. I enjoy hiking and bird watching along every stretch! The biodiversity along this riparian habitat is breathtaking and life giving. I love the Fort Collins Natural Areas. The river and Natural Areas are the reason I loved moving here. I will be heartbroken if this project moves forward. I would not visit Glade or recreate anywhere near it. It would be the loss of what I love. Respectfully, Sheila Webber
65	7/6/2020 19:30	Lauritzen	Mariah	mariah.lauritzen@gmail.com	This is an ineffective band-aid on the water crisis. Why haven't we looked to things like water recycling, that would actually be a sustainable solutions? A dam is choosing an ecologically destructive solution in the face of a problem which is already exacerbated by the ecological destruction of global warming. We can't keep choosing destruction of natural processes. We should instead work with natural processes and join the reset of the earth in the natural water cycle. Instead we think we are special. Invest in water recycling where we clean the water we have already used. Learn from nature for once and pick a sustainable solution.
67	7/7/2020 4:40	Tornatzky	Jacob	jake.tornatzky@gmail.com	The economic, natural and cultural value of a healthy Poudre river is immense. I would encourage the stakeholders to seek other alternatives to the NISP project.

70	7/7/2020 8:16	McCall	Dale	dale.mccall@rmfu.org	Rocky Mountain Farmers Union (RMFU) supports those water projects that retain water use in the State of Colorado and encourage construction of additional projects which are directly beneficial to agriculture and the economy of our state, such as the Northern Integrated Supply Project (NISP). The Colorado Water Plan identifies the need for 400,000 acre-feet of additional storage. The Northern Integrated Supply Project, with its two new reservoirs, would help meet that demand while also implementing about $60 million in mitigation and enhancement measures for local wildlife and the environment, and creating new recreation opportunities, along with numerous other benefits for northern Colorado. Recreation at Glade Reservoir will provide an estimated $13-$30 million in additional economic activity annually for Larimer County – yet another one of NISP's extensive benefits to Larimer County and rest of the region. The 15 municipalities and water districts participating in NISP have collectively reduced per capita water use by about 30 percent since 2000 and continue exploring ways to be more efficient. But with populations expected to double by mid-century, water-storage projects like NISP will also be vital to meet their demands. 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 farmground to attain the amount of water that NISP would provide. In addition to NISP helping slow the ongoing buy-and-dry trend, we'll also be collaborating with and compensating local farmers who take part in NISP's water exchanges and the project's WaterSecure program, which will help enhance the long-term viability of those ag operations. Because NISP is widely recognized as a project that will provide much-needed water storage, benefit local wildlife and the environment, bring new recreation opportunities to region, and help protect local farms, it's been endorsed by numerous public officials, organizations, publications and others. Northern Water has worked with local, state and federal entities for decades to responsibly supply the vital resource that grows northern Colorado's food, arrives at local residents' taps, offers recreation and more. And we trust them to continue that legacy with NISP – a project our region's future generations desperately need. Dr. Dale McCall President Rocky Mountain Farmers Union
74	7/7/2020 11:00	easton	robert	robert.easton@colorado.edu	I am concerned that the RailTieWind project in combination with the Glade Resevoir project could open Larimer County Colorado to a massive explosion of population and unwelcome development. The Rail Tie Wind project is a proposal to build a massive wind farm in Albany County Wyoming close to the Colorado border. Water and energy are the key ingredients that developers need to build housing. While the developers prosper, the natural environment is destroyed.

76	7/7/2020 12:29	Caswell	Margaret	margiemc214@aol.com	I have been a resident of Larimer County for over 55 years. I have deep concerns about the NISP Project. I am concerned about the effects on the historic Poudre River as it flows through Fort Collins. Peak flow would be taken to fill Glade, thus eliminating the high flow necessary to cleanse the Poudre River. Fort Collins has invested in bike trails, natural areas, and a water park that also requires this flow for recreational, aesthetic, ecological, and historical benefits for it users. Reduced flow levels will decrease the water quality as less water is available to dilute the pollution.. The native trout population would be threatened and more fish kills would occur. It would also impact Public Health as low flows and stagnant water pooling would create habitats in the river and at Glade Reservoir for the Culex mosquito that carry West Nile virus. The dam is proposed along a fault line that will require extra building precautions to protect the dam again movement along the fault. It will require relocating US 287 and cutting through a hog back. I appreciate the time your committee is taking to hear testimony via in-person, Zoom, and written comments.

78	7/7/2020 14:15	Caswell	Larry	lcasbike@aol.com	I am against the Glade Reservoir water project for the following reasons. This project assumes that the current rate of run away growth in the Front Range is inevitable and will continue . More analysis needs to be done on the effects of this type of growth on the economics, quality of life, and environment of the region as a whole. There needs to be a discussion amongst the citizens of the northern Front Range concerning the type and extent of growth and sprawl that we wish to enable with a project of this type and the discussion should be followed by a vote of the citizens. The justification that the project will serve to preserve irrigated agriculture in northern Colorado in the face of continued urban growth is unsubstantiated. There needs to be an analysis of this project on the regional agricultural economy. Specifically, I question whether agriculture will be able to compete for water considering the effect on overall water values resulting from the costs of constructing this project. Due to urban growth in Larimer County and its effect on water prices, for example, farmers can no longer compete for irrigation water on the market, and must instead rely on short term leasing of city of Fort Collins surplus water to keep all the remaining farmland irrigated. It is also important to consider the effect on the agricultural sector of the loss of thousands of acres of farmland to the urban development which will result as the communities realize the projected population growth mentioned in the EIS. There needs to be serious discussion of possible alternatives. We need to evaluate how the alternative of no action would compare to this project . How would the effects on agriculture in Northern Colorado from building the Glade alternative compare to the effects if this project were not built? There are a number of cheaper alternatives that could be combined to meet the needs of this region. In fact there are other mixes of alternatives that haven't even been considered. The EIS only considered alternatives that would individually yield 30% of the needed firm yield of 40,000 acre feet from the project. This left out numerous alternatives, that when aggregated, might also provide the same yield with much smaller negative impacts and costs than other alternatives considered. An example might be some combination of area-wide increased levels of conservation in urban water use, improvements in irrigation efficiency, changes to more appropriate crops that would yield more income per unit of water applied, and gravel mine storage ponds. The far-reaching environmental effects on the ecosystems which depend upon the river below the takeout point need to be given the weight they deserve. We need to give proper emphasis to all of the effects on the riparian and aquatic environments of the Poudre River below the point where the water is extracted. Many of these effects will be gradual, occurring over a long period of time with potential detrimental effects on the very nature of the aquatic ecosystems and the species found there. We are experiencing a change in climate, the effects of which we aren't certain. Climate

79	7/7/2020 14:20	Madsen	Laurel	Laurel2m@comcast.net	It is evident from myriad studies over many years that the NISP plan to dam and drain huge amounts of water from the Poudre River to fill a reservoir will essentially destroy the river as it runs through Fort Collins and northern Colorado. Our beautiful river, useful for many purposes, already suffering from diversion of much of its water, must be protected and preserved, not only for the present population but for future generations as well. Once gone, it cannot be replaced. The need for water can be met by carefully planned conservation methods at a tremendously lower cost. Please do not allow the destruction of the Poudre River, as well as the beautiful valley along Highway 287, where people live, for a massively expensive and unnecessary dam and reservoir.

83	7/7/2020 19:07	McCulough	Ken	k.mcculough1231@gmail.com	Dear Planning Commision, Commissioner Johnson, Commissioner Kefalas, and Commissioner Donnelly, My name is Ken McCullough, I am a life-long resident of Larimer County and a third-generation alfalfa farmer. My 45-acre farm is irrigated with water diverted directly out of the Cache la Poudre River via a canal operated by the Larimer and Weld Irrigation Company. This canal is located just east of Taft Hill Road and is downstream of the diversion point for the proposed Glade Reservoir. As someone with deep ties to the agricultural economy and rural culture of the Fort Collins area, I am opposed to the Northern Integrated Supply Project (NISP) being pushed by the Northern CO. Water District. For many reasons, I urge you as Commissioners and County Staff to oppose this God-awful project. Let me explain why I am so strongly opposed to this project and believe you should be too. My farm diverts about 30-acre feet of water from the river annually, primarily June through September. This is a reliable water right, although my water rights are not senior to many upstream and downstream users, I have never suffered from an inadequate supply when I needed it most. There have been many years when I don't get my full 30-acre feet, but my alfalfa operation has always received enough water, even in the driest years of 2000-2006, to get a reliable crop and stay in the black. After review of the NISP project and discussions with others in the agricultural economy, including leadership Larimer and Weld Irrigation Company, the NISP project will not benefit me at all, in fact, it could make me lose my farm. The NISP project does not supply any new additional water to irrigators, agricultural users, or farmers in Larimer County. However, the water diverted into Glade Reservoir would be water that is already allocated and exists in paper water rights with farms in Larimer and Weld Counties. A major problem with NISP is that the water to be stored in Glade would need to be purchased in order to be allocated to the project, which it isn't, and unless Northern Water and NISP customers purchase thousands of acres of farmland, that water will never make it to Glade except for years with incredibly exceptional runoff. Since most of the water NISP is hoping to capture is already allocated for downstream users, NISP would need to purchase the farmland where the water rights are held in order to divert and eventually sell that water to customers. This issue was pointed out in the 2018 Final Environmental Impact Statement for the NISP project produced by the United States Army Corps of Engineers. Despite this incredibly problematic detail, Northern Water thinks they can purchase these farms eventually over the next 30-40 years. Frankly, that is unrealistic, this is a billion-dollar pipe dream that won't likely operate at full capacity unless billions of more dollars are sourced to purchase farmland. The issue I fear most that could jeopardize my farm is if Northern Water begins purchasing farmland and water rights in Larimer and Weld Counties. If farms are purchased for their water rights, the value of the

84	7/7/2020 19:09	Brown	Preston	pbrown.eco@gmail.com	Dear Commissioner Johnson, Commissioner Kefalas, Commissioner Donnelly, and Planning Commission: I am writing to express my opposition to the Northern Integrated Supply Project NISP and encourage the Larimer County Planning Commission and County Commissioners to reject the 1041 County permit for the project. Let me explain why I do not support this project and encourage you to reject the permit. This annual spring "rise" on the Cache la Poudre River is a sacred event, a living pulse of water that lasts just about a month but refreshes and re-nourishes the entire river ecology. As the Poudre reaches Fort Collins these floodwaters spill the banks, filling secondary channels where frogs, birds, and fish rear and lay eggs. Fresh layers of sediments drop out over the floodplains, nourishing the deep, lush cottonwood forests and marshes. Something unique about the Poudre is that despite roughly 2/3 of the flow already diverted out, there is still enough of a spring "rise" to flood the banks, clean out the river of lingering sediments, redeposit nutrients, and refresh the ecology. This is rare, nearly all of the rivers and creeks along Colorado's Front Range have been dammed or diverted where the natural rhythm of the spring "rise" is gone, turning the echoing drumbeat of the river into a muted whine. The Poudre still has its spring heartbeat, but not for long if the Northern Colorado Water Conservancy District builds their gluttonous Northern Integrated Supply Project (NISP). If this project is built it will take 71% of the water out of the river during the spring "rise", flat-lining the river and putting it on life support. My expertise is in river restoration and geomorphology, it's my job to know how river and stream mechanics respond to changes in flow. A major problem that NISP would have on the river is that by reducing the spring "rise", the river will not be able to redistribute and transport sediments out of the river channel where they can deposit onto floodplains and wetlands. By eliminating the peak flow and eliminating the annual flushing effect, those sediments will stack up in the channel year after year, eventually raising the channel higher and higher to a point that will create regular flooding problems. The annual flush is needed to improve hydraulic conveyance and move sediments downstream. Not allowing this annual pulse will create a clog, similar to a blood clot. Additionally, if NISP were built and the sediments are not annually flushed out with large spring pulses, the water quality will greatly suffer. This will occur because the sediment and nutrients trapped in the channel will decompose and consume oxygen levels within the water, thereby decreasing dissolved oxygen available for fish and other wildlife. The annual spring "rise" is not "extra unused water", it's the force that cleans the river environment, flushing sediments and nutrients out and distributing them on floodplains. Taking the last of the peak flow and storing it behind a dam to feed sprawling suburbs, while turning the river into a putrid algae-filled ditch, is not a good starting point. This is not my vision for the
86	7/7/2020 21:27	Brunswig	Lori	lbrunswig@comcast.net	Please don't allow this project in Larimer County. We have nothing to gain and everything to lose. Thank you, Lori Brunswig

91	7/8/2020 9:25	Fisher	Rich	ben993q@gmail.com	NISP hearing I am Rich Fisher. I have a small irrigated organic farm near Wellington Colorado. I am very strongly opposed to NISP. NISP will encourage additional water usage that we can ill afford. This is an arid region that is getting drier. Every drop of water needs to be reserved for the highest and best use and that includes keeping riparian areas sufficiently watered especially on the public lands. Growth that requires additional water along and near the Front Range should be discouraged. Water intensive growth in this country should instead be placed in relatively water rich areas in the midwest. Better water conservation requirements here in Colorado can be a source of available water to replace a predicted decline in precipitation and earlier and more rapid mountain snow melt. We are destroying dams in other parts of the country because we have discovered just how destructive they are to the entire ecosystem. Creating yet another one here in Colorado is narrowly self-serving, short-sighted and ignores decades of knowledge about dams and stored water. In sum, I urge the County leadership to vote against NISP, a very bad idea.

92	7/8/2020 9:28	Cruse	Pamela	pjody@lpbroadband.net	The NISP idea began almost 2 decades ago adhering to the age old concept of the destruction of nature for an unsustainable growth and development along the Front Range. It is now 2020 and what is happening in Ft. Collins and surrounding communities is beyond normal population growth. When will the leaders in our communities see what they are doing to the livability and quality of life that we once had here in Northern Colorado? Traffic, pollution, and non-stop development of what was once open space is everywhere we look now. Nothing about that is healthy for mind or body. Why are "we" wanting to destroy what we have been given by nature and what brought many of us here to enjoy? When is enough, enough? What good does supplying more precious water to nearby towns for their future growth when all it will do is bring in more traffic, pollution, and ruin of the last open spaces in our towns? I believe we are at a critical point right now where we must stand up to development and unchecked growth and stop the madness! Envision what we want to see in the future for us and our children and ask ourselves if this is really what we want to do to this amazingly beautiful area that we live in. Because what we are doing and considering doing with NISP can never be repaired. The damage to the Poudre River, the valley, wildlife, and residents who call this area home will never be able to be undone. My husband and I live in a home that was built 101 years ago in Pleasant Valley, in Bellvue. The people who built it were obviously appreciative of the natural beauty here and positioned the windows to frame as much of that beauty as possible. They would not have framed the kitchen window to look out at a mile long dam! Nor can we watch that process happen from our window for 5 years. We are in our 60's and have lived in the area for over 49 years. In the 15 years we've lived in our home we have remodeled every room, added gardens, outbuildings and landscaping. Our son and his family live in town. We love them. We love much about Ft. Collins. But the Front Range is on a fast track to ruination. I am hoping that our county commissioners will listen to the science and to the people who are against NISP and what it will do to the environment of Northern Colorado. We will move out of the home we love and away from the Front Range if NISP is allowed to happen. But thousands more will come. It will not be pretty.

93	7/8/2020 9:29	Young-Buckert	Patricia	singingdolphin9@aol.com	My husband and I have owned our home at 4612 North Highway1 for over 32 years. Our property is listed to encompass 2.2 acres of land. To give an overview of easements already on the property, we need to look at the west and north property lines. More than two thirds (2/3) of the west property dimension gives a twenty (20) foot easement for a water supply ditch line. The entire length of the north property line gives a thirty (30) foot easement for CR56E as well as the actual space for power lines down this road. The pipeline project would impact the entire length of the eastern property line. This seems to be a burden on our civic duty to allow easements on a limited acreage. The thirty (30) foot proposed removal of land use land use has a number of impacts which I will list from north to south. 1) Windbreak trees planted along property line. 2) An existing leach field. 3) A storage building. 4) A two (2) stall garage. 5) A 36' x 12 1/4' horse or equipment metal structure. 6) A twenty (20) foot shipping container for hay storage. 7) An existing well used for irrigation.

95	7/8/2020 10:09	Desheart	Ann	ann11desheart@gmail.com	Dear County Commissioners, I am writing to strongly urge your board to REJECT the NISP Permit. The Cache la Poudre river is a unique gem, and the peak spring flows are the most important element of the river. Removing the peak flows would negatively affect the river environment. Smaller peak flows would not transport sediments out and distribute them on the floodplains, harm fish including at least two threatened species, and negatively affect water quality by leading to warmer temperatures and excessive nutrients.NISP would also reduce peak flows in the Platte River, where endangered sandhill cranes depend on the high flows to create sandbars. NISP would also be to be more expensive than other reasonable water supply alternatives, such as water sharing agreements between farms and cities, efficiency upgrades, lawn removal, water conservation, recycling, and re-use. NISP would cost upwards of one billion dollars, burdening participant community ratepayers, stimulating the need for cities to grow more and grow faster to pay off utility debts. This would lead to urban sprawl and conversion of farmland to subdivisions. Additionally, NISP is opposed by the City of Fort Collins and highly questioned by the City of Greeley for a variety of reasons, including water and wastewater treatment costs, water contamination issues, increased flooding rise, and many others mentioned above. River recreation is a critical component of the Larimer County economy and way of life. The Poudre River is regarded for fantastic boating, floating, rafting and kayaking. NISP would reduce the length and magnitude of the recreational; boating/floating season through Fort Collins, Windsor, and Greeley, as well as degrade water quality for body contact sports during that season Lastly, NISP would ultimately harm our region's agricultural community through accelerated salinization, more rapid suburban development, and most of NISP's water would benefit people outside the Poudre basin, while most of the impacts would be left for people inside the basin to deal with. The Poudre River is a treasure and should be maintained in its current state to benefit the ecological, economic, and social conditions of Larimer County. Sincerely, Ann Desheart

96	7/8/2020 10:26	Lipstrue	Jeff	j.lipstrue49@gmail.com	Hello Commissioners, Please consider these comments when making the decision regarding NISP. I am urging you as Larimer County Commissioners, to reject the NISP Permit! The Cache la Poudre river is a unique gem, and the peak spring flows are the most important element of the river. Removing the peak flows would negatively affect the river environment. Smaller peak flows would not transport sediments out and distribute them on the floodplains, harm fish including at least two threatened species, and negatively affect water quality by leading to warmer temperatures and excessive nutrients.NISP would also reduce peak flows in the Platte River, where endangered sandhill cranes depend on the high flows to create sandbars. NISP would also be to be more expensive than other reasonable water supply alternatives, such as water sharing agreements between farms and cities, efficiency upgrades, lawn removal, water conservation, recyclung, and re-use. NISP would cost upwards of one billion dollars, burdening participant community ratepayers, stimulating the need for cities to grow more and grow faster to pay off utility debts. This would lead to urban sprawl and conversion of farmland to subdivisions. Additionally, NISP is opposed by the City of Fort Collins and highly questioned by the City of Greeley for a variety of reasons, including water and wastewater treatment costs, water contamination issues, increased flooding rise, and many others mentioned above. Free-flowing River Recreation is a critical component of the Larimer County economy and way of life. The Poudre River is regarded for fantastic boating, floating, rafting and kayaking. NISP would reduce the length and magnitude of the recreational; boating/floating season through Fort Collins, Windsor, and Greeley, as well as degrade water quality for body contact sports during that season Lasly, NISP would ultimately harm our region's agricultural community through accelerated salinization, more rapid suburban development, and most of NISP's water would benefit people outside the Poudre basin, while most of the impacts would be left for people inside the basin to deal with. The Poudre River is a treasure and should be maintained in its current state to benefit the ecological, economic, and social conditions of Larimer County. Thank you, Jeff

97	7/8/2020 10:53	Terry	Nancy	nterry@pmglending.com	The County should decline NISP's 1041 application for the same reason Thornton's 1041 was denied: County Commissioners first sent Thornton back to the drawing board because they (the County) said Thornton had not sufficiently researched other routes. The County denied the final 1041 application citing "the project's anticipated impact on private lands." Thornton's preferred route along Douglas Rd. was largely in the public right-of-way or road easements. NISP's 1041 application is primarily through private land: Hood Lane, owned by Hauan, Tips and Miserlian, Eagle Lake, owned by our neighborhood, through the Bieritz and Helgeson lots, across Tips' land, impacting his three new lots, just north of Belcher's lot, etc. And the planned route presented by NISP now is the same route they identified 3 or 4 years ago when we first learned of NISP's plans. Where is their serious vetting of alternative routes?
98	7/8/2020 11:37	Madsen Rubilar	Lisa	lisa.m.rubilar@gmail.com	I am writing as a citizen who has loved the Poudre River, as well as and the land along the Highway 287 corridor, for over fifty years. Our family has a small cabin in the Crystal Lakes area, so we travel frequently through the corridor that will be under water if NISP is allowed to go forward. We never tire of the pristine beauty of the landscape. We also frequently enjoy the beauty and tranquility of the Poudre River in various locations in and near Fort Collins. It breaks my heart to think of the river withering, wetlands turning to desert, wildlife disappearing, and natural habitats lost forever. And for what? So that Denver suburbs can continue to expand without consideration for water resources? If Thornton needs more water, the place to look is water conservation. Population growth in the area MUST depend on decreased water use through water-saving technologies, watering restrictions and xeriscaping using native plants. These are sustainable, realistic alternatives to a plan that would decimate natural areas in Northern Colorado. There is absolutely NO NEED and NO JUSTIFICATION for NISP, which will have a direct, negative impact on the quality of life of those living in its path.