

**Programs, Projects & Operations  
Subcommittee Meeting  
July 12, 2005  
7:00 p.m.  
Agenda**

**Programs, Projects & Operations:**

John Conley, Chairman  
Rich Tesar, Vice-Chairman  
Fred Conley  
Rick Kolowski  
Joe Neary

**Alternate Members:** Dorothy Lanphier  
Jim Thompson

**Staff Liaison:** Gerry Bowen  
Martin Cleveland \*  
Ralph Puls  
Dick Sklenar  
Paul Woodward

1. Meeting Called to Order – Chairperson John Conley
2. Quorum Call
3. Adoption of Agenda
4. Proof of Publication of Meeting Notice
5. Request from Vicki Fraser and Petitioners for Equestrian Use of Existing Mo-Pac Trail from Springfield South to Louisville – Vicki Fraser and Gerry Bowen
6. Review and Recommendation of Lower Platte River Corridor Alliance Cumulative Impact Study Interlocal Agreement – Frank Albrecht, Nebraska Game and Parks Commission, and Gerry Bowen
7. Review and Recommendation on Amendment #2 to HDR Contract for the West Papillion Creek and Tributaries Floodplain Mapping Project – Laurie Carrette Zook, HDR, and Paul Woodward
8. Adjourn

Memo to: Programs, Projects, and Operations Subcommittees

Subject: MoPac Trail – Equestrian Usage of the Trail

Date: June 30, 2005

From: Gerry Bowen

On May 12, 2005, the Board voted to table this item for 60 days.

In the interim, the District has received several additional letters supporting this proposed usage. These letters are attached for your review.

The staff recommendation remains the same from the May 3, 2005 memo, which is also attached.

**“Management recommends that the Subcommittee recommend to the Board that the District provide 50% cost share on the adaptation of the Mopac Trail corridor for equestrian usage on a separate trail from pedestrian/bicycle trail users, subject to the availability of a equestrian trailhead at the north end of the trail (Springfield), and that a Citizens Equestrian Advisory Committee be formed to assist with fundraising and the adaptation of the trail.”**

July 10, 2005

Mr. Gerry Bowen  
Papio-Missouri Natural Resource District  
8901 S. 154th Street  
Omaha, NE 68138

Re: Equestrian use of the Mo-Pac Trail, Springfield to Louisville

Mr. Bowen:

Attached please find support documentation for our July 12th presentation.

Please contact me with our meeting time as discussed.

Thank you.

A handwritten signature in cursive script, reading "Vicki Fraser". The signature is written in black ink and is positioned above the printed name.

Vicki Fraser  
for the Petitioners

June 24, 2005

Mr. Rich Jansen  
20801 Ruff Road  
Gretna, NE 68028

Re: Mo-Pac Trail South of Springfield

Mr. Jansen:

I had to think long and hard after our last conversation about the trail - you mentioned several times that we "deserve something better".

Well, you're right. We do deserve something better, but not in terms of this particular trail which is as good as it gets for equestrian use. Horse riders deserve fair and equal participation in all of the recreational developments in this NRD district. We deserve an informed Board that does not rely on unfounded statements which have been used to prevent equestrian access for years.

One of the key concerns stated frequently by the Board regarded liability. I am sure the staff and Board are aware of State Statute 37-729 which was specifically designed for entities such as parks and recreational areas so that lands could be provided for recreational use without fear of undue liability. Your staff has stated that equestrian use will not affect your insurance profile.

Concerns about the trail coming too close to the highway and horses potentially spooking when truckers honk their horns are again based on lack of understanding about horses and trail riders. Frequently, trail horses travel close to cars and trucks as well as bicycles, strollers and hikers. Two weeks ago at the Lancaster Event Center in Lincoln, teams of horses from ponies to draft travelled over the open bridge that crosses 84th street. Horses were not only next to cars and trucks, but the cars and trucks were driving underneath the horses without incident.

Regarding damage to the limestone trail, at the event mentioned above, the arena (the same footing as the Mo-Pac trail) was used by 30 competitors with driving horses - in the rain. The surface showed little impact and was groomed after the competition with a tractor and rake. The bicycles used by some volunteers caused more rutting than the horses. The same footing is used on the Valparaiso trail where riders travel over a large open bridge and traverse back and forth across the limestone trail. The Mother's Day trail ride had 90 riders travel the trail coming and going with no damage to the trail. Randy Lee said to me that he anticipated having to groom the Mo-Pac trail in the Spring, after the thaw - which would be now. I asked him if he was going to and he said "the trail appears to be self-healing". This is after a winter and wet spring of bike riders, and many 4-wheelers. We will also document that these same surfaces are used in Colorado and Illinois - dry climate to wet.

We have often heard concerns that horses and other users need to be separated. Throughout the nation equestrian use of trails is integrated with bikers, hikers and others. We'll document this. Lake Zorinsky is unbelievably crowded with walkers, bikers, dogs, moms with strollers, kids on roller blades - and horses. Call Tom Ryan,

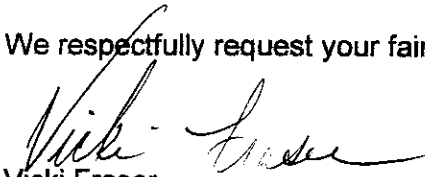
the lake manager, and ask him about his experiences with the equestrian community. The horse people have done such a great job of cleaning up the parking lot and corrals that they don't even know when we're there - we had 20 at a trail ride there last Wednesday night. I ride Walnut Creek several times a week and the cross country team is out running on the same trail. They enjoy seeing the horses, and we love seeing them. Typically we're using the trail at different times of the day and don't see other trail users at all.

With the multiple use of the Mo-Pac trail (instead of separation), the costs go down dramatically. To improve the trail, not just for horses, but for all users, the staff has estimated that less than \$9,000 would be needed to plank the bridges and fence the approaches. The better surface of the bridges will be appreciated by all the users and the fencing of the approaches will go a long way to reduce the unauthorized access to the stream banks. Our tax dollars have been spent for many years for bike trail construction. It is time the money was fairly shared with the other trail users.

Over 440 people in a short time signed clearly worded petitions stating they wanted equestrian use of this trail - and on the trails that will connect it that are to follow. We have agreed to work with your staff and the Board - we respectfully request that you and the Board do the same. While some personally may not like horses (just as others dislike bicycles and roller bladers), the responsibility of the Board is to represent your constituency - many who are horse riders. This is an opportunity for the NRD to look like a hero and extend the Board's legacy of community service. All credit and kudos will go to the NRD, both in the press and across the websites that are dedicated to horse trails locally and nationally.

We will come to the Board meeting with a presentation showing what a day on a multiple-use trail really looks like.

We respectfully request your fair and generous consideration of our request.



Vicki Fraser  
for the Petitioners

**Papio Missouri Natural Resource District Petition**

I support the equestrian use of the Mo-Pac trail from the south edge of Springfield to the Papio/Missouri NRD boundary to facilitate the continuation of the equestrian use of the trail to Lincoln.  
The scenic value of this section of trail is unparalleled in this area.

**SIGNATURE**

**SIGNATURE**

over 250  
Signatures

Please mail completed petition to Vicki Fraser, 3809 S. 127th Street, Springfield, NE 68059 by  
February 15, 2005. Thank you for your support!



# Forest Preserve District of DuPage County

3 S. 580 Naperville Road • Wheaton, IL 60187-8761 • 630.933.7200 • Fax 630.933.7204 • TTY 800.526.0857

June 21, 2005

Ms. Vicki Fraser  
Nebraska Horse Trails Committee  
13809 South 127<sup>th</sup> Street  
Springfield, Nebraska 68059

Dear Ms. Fraser:

Thank you for contacting the Forest Preserve District of DuPage County, Illinois. Besides offering a 140-mile multi-purpose trail system to our 1 million County residents, we own and operate the Danada Equestrian Center. The Center houses 17 riding and seven draft horses, offering a variety of horsemanship courses and recreational equestrian activities.

Regarding equestrian use and issues pertaining to trail maintenance and safety, the District generally receives positive feedback from our trail system users. We publish a Trails Guide along with posting on-site informational signs regarding trail use and etiquette. In the case of ecological damage caused by equestrian use, the District reserves the right to close or re-route trails during wet and/or muddy conditions.

Considering our County's dense population coupled with a high volume of trail users, we experience minimal instances of public conflict and equestrian related safety issues. All in all, our multi-purpose trail system provides a safe and fun recreational experience for our residents.

Enclosed please find our Trails Guide publication that includes a map of the District trail system. If you have further questions or comments, please do not hesitate to contact me.

Sincerely,

Tom Clay, Director  
Office of Education  
Forest Preserve District of DuPage County  
P.O. Box 5000  
Wheaton, Illinois 60189-5000  
(630) 462-5654



Department of Parks  
& Leisure Services

May 23, 2005

Ms. Vicki Fraser  
13809 S. 127<sup>th</sup> Street  
Springfield, NE 68059

Dear Ms. Fraser:

Thank you for your questions concerning multi-use trails in the El Paso County Park system here in Colorado. We currently manage over 50 miles of Regional Trails that are all open to use by pedestrians, bicyclists and equestrians. These trails connect park areas together as well as tie to trail systems managed by other agencies. We also have some 20 miles of multi-use trails within our Regional Parks. Motorized traffic is prohibited on all of our trails.

We have a variety of surfaces that have been used on our Regional Trails as our system has been evolving over the last 25 years. Trails that were constructed earlier were surfaced with granite 3/8" crusher fines. This has been reasonable material, but it tends to wash easier during rain events due to lack of binding materials. For the last five years we have been using a 3/8" limestone fines material that binds up much tighter. Once it is rolled into place it becomes very stable and less prone to erosion. It holds up very well to horse traffic and bicycle use. (We have seen that mountain bikers do much more damage to trails than horses, especially when braking for hills and turns!)

As for your question concerning conflicts on trails between users on our multi-use trails, they have been minimal. In my 21 years with our Department I cannot remember one incident where a horse has kicked anyone. I can recall one incident where a dog that was not leashed caused a horse to throw a young, inexperienced rider, but none where a horse was aggressive. We have had more problems with wild bicyclists not abiding by our trail yield signs than anything. Most conflicts arise from people being inconsiderate of other users.

Manure has not been a large problem when weighed against the volume of horse traffic we have in our system. Our dry climate may be a factor in this. Many equestrians cleanup behind their animals and the rest is handled during routine surface maintenance which is performed using tractor mounted equipment.



I hope this covers your questions. Please feel free to contact me at 719-520-6384 if I can be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Pat Farrell". The signature is written in a cursive, flowing style.

Pat Farrell  
Superintendent of Maintenance  
El Paso County Parks

# State Statute

**37-729**

**Terms, defined.**

For purposes of sections 37-729 to 37-736:

(1) Land includes roads, water, watercourses, private ways, and buildings, structures, and machinery or equipment thereon when attached to the realty;

(2) Owner includes tenant, lessee, occupant, or person in control of the premises;

(3) Recreational purposes includes, but is not limited to, any one or any combination of the following: Hunting, fishing, swimming, boating, camping, picnicking, hiking, pleasure driving, nature study, waterskiing, winter sports, and visiting, viewing, or enjoying historical, archaeological, scenic, or scientific sites, or otherwise using land for purposes of the user; and

(4) Charge means the amount of money asked in return for an invitation to enter or go upon the land.

**Source:**

Laws 1965, c. 193, § 8, p. 590; R.S.1943, (1993), § 37-1008; Laws 1998, LB 922, § 343. Effective date July 15, 1998.

**Annotations:**

Recreation Liability Act does not apply to independent indoor recreational facilities, including indoor swimming pools. *Cassio v. Creighton University*, 233 Neb. 160, 446 N.W.2d 704 (1989).

Recreation Liability Act, the provisions of which apply to urban as well as rural areas, is not limited to private persons; governmental subdivisions are "owners" within meaning of section 37-1003. *Gallagher v. Omaha Public Power Dist.*, 225 Neb. 354, 405 N.W.2d 571 (1987).

A city park which provides camping, picnic, and sports facilities is a recreational facility within the meaning of the act. *Garreans v. City of Omaha*, 216 Neb. 487, 345 N.W.2d 309 (1984).

In order to constitute a charge within the meaning of the act, money must be paid for the right to enter the facility. *Garreans v. City of Omaha*, 216 Neb. 487, 345 N.W.2d 309 (1984).

The term "owner", as used in the Recreation Liability Act, sections 37-1001 et seq., includes a political subdivision as well as a private person. The term "recreational purposes", as used in the Recreation Liability Act, sections 37-1001 et seq., is broad enough to include the normal activities afforded by public parks. *Watson v. City of Omaha*, 209 Neb. 835, 312 N.W.2d 256 (1981).

**37-730**

**Limitation of liability; purpose of sections.**

The purpose of sections 37-729 to 37-736 is to encourage owners of land to make available to the public land and water areas for recreational purposes by limiting their liability toward persons entering thereon and toward persons who may be injured or otherwise damaged by the acts or omissions of persons entering thereon.

**Source:**

Laws 1965, c. 193, § 1, p. 589; R.S.1943, (1993), § 37-1001;

Laws 1998, LB 922, § 344. Effective date July 15, 1998.

**Annotations:**

In order to facilitate the purpose of the Recreation Liability Act, a landowner need allow only some members of the public, including the plaintiff, to use his or her land without charge. *McIntosh v. Omaha Public Schools*, 249 Neb. 529, 544 N.W.2d 502 (1996).

The Recreation Liability Act does not require a landowner to fully dedicate his or her property to the public before the landowner comes under the protection of the act. *Holden v. Schwer*, 242 Neb. 389, 495 N.W.2d 269 (1993).

Provisions of Recreation Liability Act apply to urban as well as rural areas. Evidence required a finding that the entire area owned by the defendant was covered by act and had been made available, directly or indirectly, to the plaintiff. *Gallagher v. Omaha Public Power Dist.*, 225 Neb. 354, 405 N.W.2d 571 (1987).

A municipality is an owner within the meaning of the Recreation Liability Act. *Bailey v. City of North Platte*, 218 Neb. 810, 359 N.W.2d 766 (1984).

**37-731**

**Landowner; duty of care.**

Subject to section 37-734, an owner of land owes no duty of care to keep the premises safe for entry or use by others for recreational purposes or to give any warning of a dangerous condition, use, structure, or activity on such premises to persons entering for such purposes.

**Source:** Laws 1965, c. 193, § 2, p. 589; R.S.1943, (1993), § 37-1002; Laws 1998, LB 922, § 345. Effective date July 15, 1998.

**Annotations:**

No duty of reasonable care will be judicially imposed where Legislature has decided there shall be no duty to keep premises safe. *Thies v. City of Omaha*, 225 Neb. 817, 408 N.W.2d 306 (1987).

Owner owes no duty of care to keep premises safe except for willful or malicious failure to guard or warn, and where owner charges a fee for entry as provided by section 37-1005. *Thies v. City of Omaha*, 225 Neb. 817, 408 N.W.2d 306 (1987).

A city park which provides camping, picnic, and sports facilities is a recreational facility within the meaning of the act. *Garreans v. City of Omaha*, 216 Neb. 487, 345 N.W.2d 309 (1984).

**37-732**

**Landowner; invitee; permittee; liability; limitation.**

Subject to section 37-734, an owner of land who either directly or indirectly invites or permits without charge any person to use such property for recreational purposes does not thereby (1) extend any assurance that the premises are safe for any purpose, (2) confer upon such persons the legal status of an invitee or licensee to whom a duty of care is owed, or (3) assume responsibility for or incur liability for any injury to person or property caused by an act or omission of such persons.

**Source:**

Laws 1965, c. 193, § 3, p. 589; R.S.1943, (1993), § 37-1003;

Laws 1998, LB 922, § 346. Effective date July 15, 1998.

**Annotations:**

Evidence required a finding that the entire area owned by the defendant was covered by act and had been made available, directly or indirectly, to the plaintiff. *Gallagher v. Omaha Public Power Dist.*, 225 Neb. 354, 405 N.W.2d 571 (1987).

Recreation Liability Act is not limited to private persons; governmental subdivisions are "owners" within meaning of this section. *Gallagher v. Omaha Public Power Dist.*, 225 Neb. 354, 405 N.W.2d 571 (1987).

**37-733**

**Land leased to state; duty of landowner.**

Unless otherwise agreed in writing, an owner of land leased to the state for recreational purposes owes no duty of care to keep that land safe for entry or use by others or to give warning to persons entering or going upon such land of any hazardous conditions, uses, structures, or activities thereon. An owner who leases land to the state for recreational purposes shall not by giving such lease (1) extend any assurance to any person using the land that the premises are safe for any purpose, (2) confer upon such persons the legal status of an invitee or licensee to whom a duty of care is owed, or (3) assume responsibility for or incur liability for any injury to person or property caused by an act or omission of a person who enters upon the leased land. The provisions of this section shall apply whether the person entering upon the leased land is an invitee, licensee, trespasser, or otherwise.

**Source:**

Laws 1965, c. 193, § 4, p. 590; R.S.1943, (1993), § 37-1004; Laws 1998, LB 922, § 347. Effective date July 15, 1998.

**37-734**

**Landowner; liability; exceptions.**

Nothing in sections 37-729 to 37-736 limits in any way any liability which otherwise exists (1) for willful or malicious failure to guard or warn against a dangerous condition, use, structure, or activity or (2) for injury suffered in any case where the owner of land charges the person or persons who enter or go on the land. Rental paid by a group, organization, corporation, or the state or federal government shall not be deemed a charge made by the owner of the land.

**Source:**

Laws 1965, c. 193, § 5, p. 590; R.S.1943, (1993), § 37-1005; Laws 1998, LB 922, § 348. Effective date July 15, 1998.

**Annotations:**

A finding that an owner of property protected by this act did not act willfully or maliciously as described in this section is a finding of fact which will not be disturbed unless clearly wrong. *Thies v. City of Omaha*, 225 Neb. 817, 408 N.W.2d 306 (1987).

In order for action to be willful or wanton, the evidence must show that one acted with actual knowledge that a danger existed and that he intentionally failed to act to prevent the harm which was reasonably likely to result. *Gallagher v. Omaha Public Power Dist.*, 225 Neb. 354, 405 N.W.2d 571 (1987).

### **37-735**

#### **Sections, how construed.**

Nothing in sections 37-729 to 37-736 creates a duty of care or ground of liability for injury to person or property.

#### **Source:**

Laws 1965, c. 193, § 6, p. 590; R.S.1943, (1993), § 37-1006; Laws 1998, LB 922, § 349. Effective date July 15, 1998.

### **37-736**

#### **Obligation of person entering upon and using land.**

Nothing in sections 37-729 to 37-736 limits in any way the obligation of a person entering upon or using the land of another for recreational purposes to exercise due care in his or her use of such land in his or her activities thereon.

#### **Source:**

Laws 1965, c. 193, § 7, p. 590; R.S.1943, (1993), § 37-1007; Laws 1998, LB 922, § 350. Effective date July 15, 1998.

## PLEASE HELP US GET HORSES ON THE NEW SPRINGFIELD TO LOUISVILLE MO-PAC TRAIL

Submitted by Vicki Fraser

The Papio-Missouri NRD has constructed a beautiful trail from the South end of Springfield (NE) to Louisville. The trail is crushed limestone and is canopied by trees for a great portion of the ride. It ends at Louisville with a ride around a natural wetlands - also heavily treed. It is a 5 mile ride one way - so a great conditioning ride of 10 miles if you go to Louisville and back.

They constructed it with our tax dollars, in our neighborhood, then posted signs saying bikes and walkers only. I started riding this trail when it was under construction and before the signs went up. Obviously, we're not riding it until we are legal - and that's where we need your help. We've already started the process with the NRD, submitted almost 500 signatures to them, and we go back in July 12th. We've answered all their concerns - the only thing we are dealing with now is the "we don't want horses on it" issue. They spend \$400,000 per year on biking trails in this NRD alone - and only what it costs to mow the 3.5 mile equestrian trail at Walnut Creek on horseback riders. They have over 100 miles of bike trails versus the 3.5 of horse use trail

HERE'S WHERE YOU CAN HELP. Please write a short letter - doesn't have to be more than a couple of paragraphs, to: Papio-Missouri River

Natural Resources District

8901 S. 154th St.

Omaha, NE 68138-3621

Attn: Mr. Gerry Bowen

or e-mail Gerry at [gbowen@papionrd.org](mailto:gbowen@papionrd.org)

**Please be polite.** Please be clear. Let these elected officials know that you would like to ride this trail - and others to be constructed. Let them know that our tax dollars have already paid for enough bike and walking trails and that horse people spend a lot of money in our local communities.

Please do this tomorrow morning so you won't lose this under the cereal box...

If you have any questions please e-mail me at [vjfraser@pcisys.net](mailto:vjfraser@pcisys.net) or if you don't do computers call me at (402) 253-2116.

Thank you!

Vicki Fraser

**Bowen, Gerry**

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**From:** Donna Schuette [donnarae@midlands.net]  
**Sent:** Monday, July 11, 2005 11:23 PM  
**To:** Bowen, Gerry  
**Subject:** horsetrails

Hi Gary, Juat a quick note to say how much I enjoy riding my horse on a nice trail. There are a lot of horse people out there and we feel some of our tax dollars should be spent on trails we can use as well as people walking or on bikes. If you haven't tried riding, you don't know what you ar missing. Please put in a good word for us.....Donna Schuette, Herman, Ne

7/12/2005

## **Bowen, Gerry**

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**From:** KAnderson@woodmen.com  
**Sent:** Tuesday, July 12, 2005 6:57 AM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

NRD,

It would be wonderful to be able to share the Mo-Pac Trail, not only for the beauty but also having it close to the Omaha/Council Bluffs areas. To see nature from the back of a horse is a very gratifying event. We as horse trail riders, would be very appreciative of the sharing to the Mo-Pac Trail.

Thank you,

Kathy Anderson  
KathyA@Radiks.net



**Bowen, Gerry**

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**From:** Sharron Ankersen [sankerse@unlnotes.unl.edu]  
**Sent:** Tuesday, July 12, 2005 8:08 AM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

I would appreciate your considering the trails for horse riding. I thoroughly enjoy riding, respect the trails as most riders do, and am always looking for a new place to ride. Thanks for considering the trail access to us horse lovers.

Sharron Ankersen  
Saunders County Extension Office  
1071 County Road G  
Ithaca NE 68033

402-624-8030  
800-529-8030

## **Bowen, Gerry**

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**From:** tovy83@alltel.net  
**Sent:** Tuesday, July 12, 2005 8:13 AM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

Dear Sir or Madam,

I would like to take this time to encourage you to consider allowing horses to use the Mo-Pac trail from Springfield to Louisville. As an equestrian who doesn't live near close trail access, I have found the areas where I can ride and trailer to very limited while hikers and bikers have a plethora of areas available to them inside city limits and surrounding areas.

I just recently started my trail riding endeavor, but from the trails I have gone on with people, everyone was concerned about leaving the area in as good condition if not better condition than when we arrived. I believe the equestrian community realizes that we must do this since our space for riding is slowly deteriorating.

I am somewhat disturbed by attitudes of hikers and bikers (recently having hiked and biked the Mo-Pac from 84th to Elmwood) that they don't want to deal with the horse issue, that they are the only sport that should have use of the trails. Many different people of various sports contributed tax dollars for the construction of those trails and while it is more of a hardship for those of us on horseback to use those trails, (we must train our horses to not be afraid of hikers and bikers, make sure we keep paths clean, give hikers and bikers room and consideration) we are more than willing to share the road so all can enjoy and not discriminate against a group of people.

Again, I hope you consider the Mo-Pac for equestrian use, or at least consider it on a trial basis. Thank you for your time.

Regards,

Christina Gottschall

## **Bowen, Gerry**

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**From:** Tammy Alexander [tammyal@bloomnet.com]  
**Sent:** Monday, July 11, 2005 9:50 PM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

Thank for considering letting horses use the Mo-Pac trail. Horse trail riding is becoming a very popular pastime in eastern Nebraska and western Iowa. The amount of dollars invested in horses for pleasure would probably astound you (I know it does my husband), but it is worth every cent to me. Having a nice trail to ride is a must. Just "riding around the section" gets boring very quickly. I think if you allow horses on Mo-Pac for even a trial period you will see how much having a nice trail to ride means to horse people and we will do what it takes to keep this privilege. I firmly believe you will find us courteous and friendly users of the trail. But you have to give us a chance to prove it!!

It has been proven that trail sharing does work. There are other trails that allow horses and they have not been sorry. Often if extra work needs to be done on trails to make them available to horses you can get volunteers as Valpariso did or get additional funds from trail riders themselves.

Thanks for giving us a chance to be heard!! I hope you will consider opening the trail to horse trail riders.

Sincerely,  
Tammy Alexander  
Wakefield Nebraska

**Bowen, Gerry**

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**From:** Robyn Bartlett [robyn.bartlett@cox.net]  
**Sent:** Monday, July 11, 2005 10:08 PM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

I just became a horse owner 3 years ago and can not tell you how much I've enjoyed the trails in the Lincoln and Omaha areas that are open to horses. It allows us to enjoy this precious resource while acquainting people with horses. We are very conscientious of the privilege given to us in trail use and insure that we adhere to such tenets as 'leave no trace'. I would love to participate in helping to clear a horse trail at the Mo-Pac Trail, between Springfield and Louisville and will personally insure that good trail sharing guidelines are adhered to. Thanks so much for your consideration.

-- Robyn Bartlett  
3622 S. 100th Avenue  
Omaha, NE 68124  
(402) 290-9076

**Bowen, Gerry**

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**From:** laroseequine@inebraska.com  
**Sent:** Monday, July 11, 2005 10:34 PM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering ho

I would like to encourage you to allow horses along your trails. I live in Lincoln and the NRD here and the horsetrailriders get along fine.

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This message was sent using IMP, the Internet Messaging Program.

**Bowen, Gerry**

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**From:** coppertopcowboy@netzero.net  
**Sent:** Monday, July 11, 2005 10:33 PM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

Just wanted to drop you a note asking for your suport for a horse access on your trail feel free to call 680-2257 or write me back with any questions.... horse trainer and trail rider Mark Lyon

**Bowen, Gerry**

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**From:** RaySerafini@aol.com

**Sent:** Monday, July 11, 2005 10:36 PM

**To:** Bowen, Gerry

**Subject:** trails

There are so few horse trails and horse folks spend lots of money which helps the economy.

We also are some of the folks whose tax dollars go to build these trails.

In south Dakota many trails are open to bikes, hiers and horses, please consider this from springfield to Louisville.

Thanks for your time,

Juanita Serafini

**Bowen, Gerry**

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**From:** Katbalu96@aol.com  
**Sent:** Monday, July 11, 2005 10:40 PM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

My family and I enjoy trail riding together in Nebraska. Since we live in Gretna, the Mo-Pac trail between Springfield and Louisville that is under consideration for trail sharing with horses would be a great place for us to ride. I lead a 4-H group and teach courteous riding etiquette and rules for trail sharing. I would love for more trails to be opened to horses in this area, and we would make an extra effort for this to be a good experience for all involved. Please allow us the chance to share this beautiful trail.

Thank you!

Shari Parys  
Gretna, NE



## **Bowen, Gerry**

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**From:** Larry Chesnut [larrychesnut@sentco.net]  
**Sent:** Monday, July 11, 2005 10:53 PM  
**To:** Bowen, Gerry  
**Subject:** Papio-MO trail

I was just made aware that a trail has been made from Springfield to Louisville for bikes and walkers but not horses and riders. I have ridden the Wabash Trail at Council Bluffs and saw no problems with the variety of users using the trail. More horse trails in Nebraska are needed. I find myself leaving the state on a regular basis to ride. Please consider this option seriously. a trail rider, beverly a chesnut 1024 Wilson Street Falls City, Nebraska 68355.

**Bowen, Gerry**

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**From:** Ken and Virg at ViKen Acres [vikenacres@yahoo.com]

**Sent:** Monday, July 11, 2005 11:14 PM

**To:** Bowen, Gerry

**Subject:** Thank you for considering horse trail rider access!

To whom it may concern,

I'm a avid horse rider and have been trailering to ND, IA and KS due to those staes having a more horse friendly approach to trails and access. I would love to keep my dollars in Ne if more trails and horse camping were available. Set ups like KS- At Kanopolis or IA - Waubonsie and Brushy Creek would be used extensively if provided for here in NE. Please consider allowing horses use of the trail system. Thank you for your time! Sincerely, Virginia Prey

The language of friendship is not words but meaning. Henry David Thoreau

~ViKen Acres~  
Waverly, Ne.

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## **Bowen, Gerry**

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**From:** B Broughton [abbroughton@cox.net]  
**Sent:** Monday, July 11, 2005 7:58 PM  
**To:** Bowen, Gerry  
**Cc:** Vicki / Kirk Fraser  
**Subject:** MOPAC Trail

Gerry Bowen:

I am writing this letter in support of the proposal to allow horseback riding on the MOPAC Trail from Springfield southward. My wife and I own and stable our horses at Cheradon Acres which is located on Fairview between 120th and 132nd streets. The acreage for Cheradon Acres consists of 20 acres and 90% of that acreage is for pastures of horses and not for trail riding. Consequently, we are limited to a very small area. We occasionally ride off the property on Fairview, 120th and 132nd. From experience we can verify that riding on these gravel roads is very unsafe for us and our horses. The speed and the lack of courtesy by today's drivers makes it so unsafe I would not recommend a person to walk or bike ride on these roads. If you are interested in the danger, come walk these gravel roads. My wife and I have lived at the same address for 20 years. We have supported all issues pertaining to our civic duties. Now that we are retired, our primary interest is to ride horses.

The Cowboy Recreation and Nature Trail begins in Norfolk and it runs to Chadron, Nebraska. Not all of this trail is complete, but it is in the process of being completed. It also at one time was a railroad line and now it is in use for hikers, bikers and horseback riders. One of the rules for riding horses on this trail is to stay off of the main trail and ride to the side. If the State of Nebraska can fund and develop a 321 mile trail for this use, why can't it be accomplished from Springfield to Lincoln? We know we are not alone in our desire to ride. There must be any number of interested riders in this area that are capable of getting to Springfield but not of getting to Norfolk. For our safety and the safety of others we are asking that the board support the idea for horseback riders to use this MOPAC Trail.

Again, we hope you will support this issue and accommodate the trail riders in this area.

Allen and Barbara Broughton

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## Trail Rules and Regulation

- ❖ **Trail Hours:** Open ½ hour before sunrise to ½ hour after sunset.
- ❖ No motorized vehicles allowed.
- ❖ Obey traffic signs. Vehicles have right of way at road crossings.
- ❖ Stay to the right. Pass slower traffic on the left. Yield to oncoming traffic.
- ❖ **RIGHT OF WAY:** Cyclists yield to all other trail users; hikers yield to horseback riders.
- ❖ Cyclists should wear a helmet at all times.
- ❖ All pets must be on a leash no longer than 6 feet.
- ❖ Drinking alcoholic beverages is prohibited.
- ❖ Littering is subject to \$100 fine.
- ❖ Camping, fires, hunting and use of firearms are prohibited.
- ❖ Horseback riders should dismount when crossing bridges and road intersections.
- ❖ Horseback riders shall NOT use the main trail surface.
- ❖ Avoid disturbing natural features, wildlife, and farm animals. Leaving the trail right-of-way except at public crossing could subject you to trespassing violations and prosecution.
- ❖ Report fire or medical emergency by dialing 911.
- ❖ To report vandalism or violators, call 1-800-742-7627.

Under federal and/or state law, discrimination is prohibited on the basis of race, color, religion, age, gender, marital status, national origin, disability or political affiliation. If you think you have been discriminated against in any program, activity or facility or want more information, contact the Affirmative Action Officer, Nebraska Game and Parks Commission, Lincoln, NE, 402-471-0641, the Equal Opportunity Commission, Lincoln, NE, 402-471-2024, TTY: 1-800-402-471-4693.

## Nebraska Game and Parks Commission District Offices:

**Central Office**  
2200 N. 33<sup>rd</sup> St. / PO Box 30370  
Lincoln, NE 68503-0370  
402-471-0641

**Omaha Metro Office**  
1212 Bob Gibson Blvd.  
Omaha, NE 68108-2020  
402-595-2144

**Ark-Sar-Ben Aquarium**  
21502 W. Hwy 31  
Gretna, NE 68028-7264  
402-332-3901

**District I**  
299 Husker Rd. / PO Box 725  
Alliance, NE 68301-0725  
308-763-2940

**District II**  
524 Panzer St. / PO Box 508  
Bassett, NE 68714-0508  
402-684-2921

**District III**  
2201 N. 13<sup>th</sup> St.  
Norfolk, NE 68701-2267  
402-370-3374

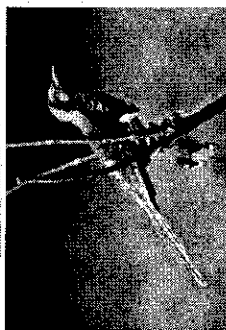
**District IV**  
301 E. State Farm Rd.  
North Platte, NE 69101-0430  
308-535-8025

**District VI**  
1617 First Ave.  
Kearney, NE 68847-6057  
308-865-5310

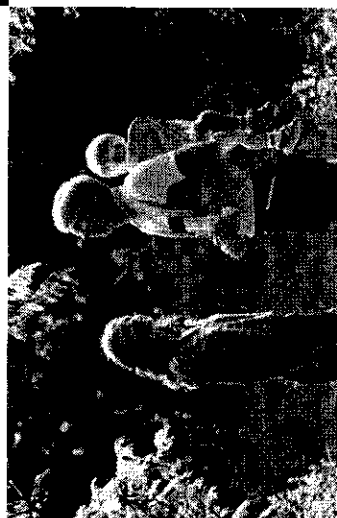
## For more information please call:

Lincoln Office: 402-471-5511  
Bassett Office: 402-684-2921

For more information on trails in Nebraska, check out the Nebraska Game and Parks Commission Web site at:  
[www.outdoornebraska.org](http://www.outdoornebraska.org)



**C** Come enjoy the Cowboy Trail!



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105

# Cowboy Recreation and Nature Trail

The Longest Rails to Trails Conversion in the Nation



Nebraska Game and Parks Commission

# Nebraska's First Recreational Trail

The nation's longest rail to trail conversion and Nebraska's first state recreational trail, was accepted as a donation from the Rails To Trails Conservancy on December 5, 1994. Acceptance of the gift was authorized by law through the Nebraska State Legislature under the provisions of Federal Railbanking Statutes.

The historic Chicago and Northwestern Railroad right-of-way, now the Cowboy Recreation and Nature Trail, passes through spectacular Nebraska scenery as it travels from Norfolk west through the Elkhorn River Valley with its companion route U.S. 275. Farmsteads, cropland, and timber-covered riverbanks dot the landscape.

At O'Neill a trailhead is provided at the Old Historic Railroad Depot, which is on the National Register of Historic Places. Parking, restroom facilities, water and trail information are available to the public.

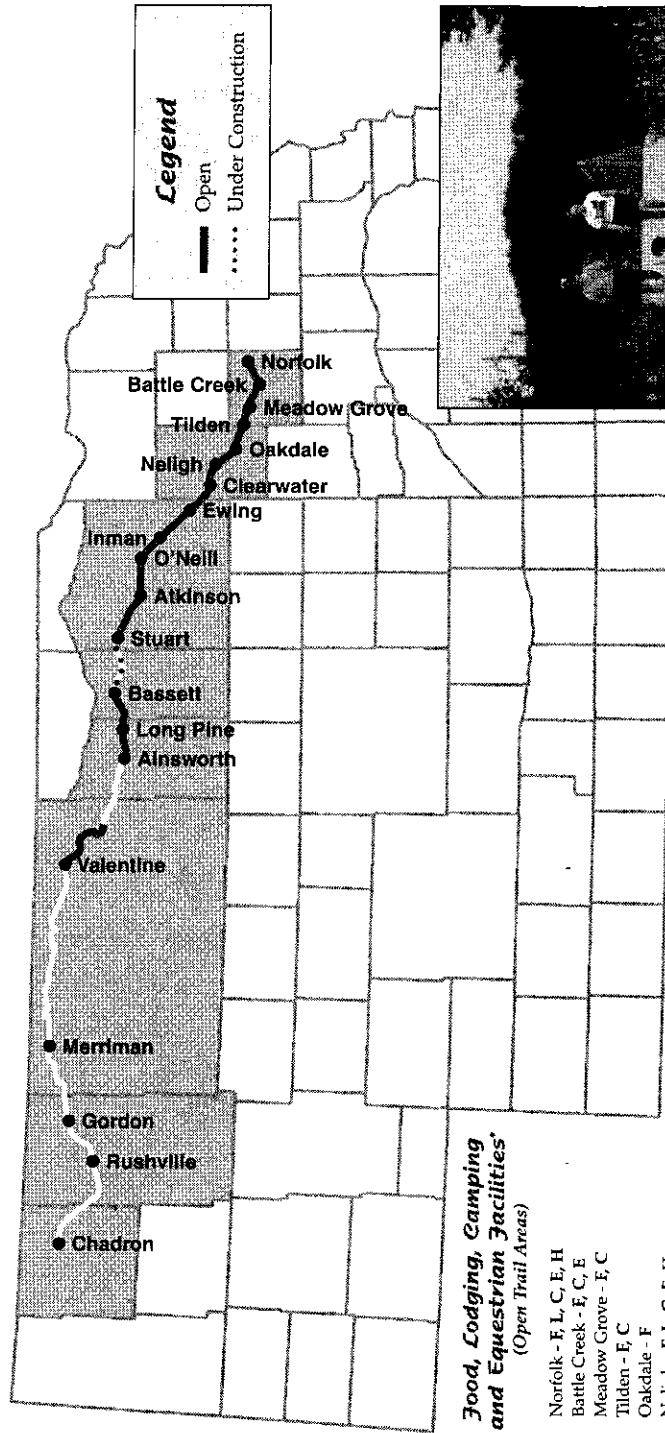
West from O'Neill the trail parallels ranching, hay and native prairie along U.S. 20. At Long Pine, the trail enters Nebraska's unique and renowned Sandhull country. Except for an oasis containing a quarter mile-long bridge crossing the Niobrara River Valley at Valentine, one of the nation's top 10 canoeing rivers, these vast grass-covered dunes border the trail enroute to the Pine Ridge country near Chadron.

When finished this hiking, biking, and equestrian trail will stretch 321 miles across Nebraska. The trail will pass over 221 bridges and through 29 communities nicely spaced about 10 to 15 miles apart. These communities will provide Cowboy Trail users with camping, restroom and shower facilities.

Over 136.5 miles of trail are now open, including a continuous 102.5-mile stretch from Norfolk to Stuart, and 16 miles from Bassett to Ainsworth.

In 2005 an additional 21.5-miles will be added between the communities of Stuart and Bassett.

[www.outdoornebraska.org](http://www.outdoornebraska.org)



## Food, Lodging, Camping and Equestrian Facilities\* (Open Trail Areas)

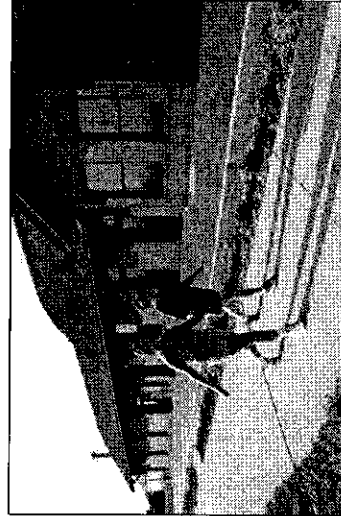
Norfolk - F, L, C, E, H  
Battle Creek - E, C, E  
Meadow Grove - E, C  
Tilden - E, C  
Oakdale - F  
Neligh - E, L, C, E, H  
Clearwater - F  
Ewing - F, L, C  
Inman - E, C, E  
O'Neill - E, L, C, E, H  
Bassett - E, L, C, E, H  
Long Pine - E, L, C, E  
Ainsworth - E, L, C, H  
Valentine - E, L, C, E, H  
Smith Falls State Park - C

### Key

F - Food E - Equestrian Facilities  
L - Lodging H - Hospital  
C - Camping

\* Many communities where the trail is not yet complete, also have facilities available to travelers.

† Long Pine has lodging available in the old R&R crew quarters by the trail. Contact the City Office, 402-273-4129, or the Chamber of Commerce, 402-273-4129. After hours contact Beverly Newport, 402-273-4212, or Betty Morgan, 402-273-4161.



Trail users pass the O'Neill Depot Trailhead.

## Improved Sections Open For Use\*

1. Norfolk to Stuart - 102.5 miles
2. Bassett to Ainsworth - 16 miles
3. Valentine East to Arabia Ranch Road - 18 miles

\* A number of individual communities have trails that are not yet connected to the trails listed above.

## Section Now Under Construction

Stuart to Atkinson

**Bowen, Gerry**

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**From:** Sheila Christiansen [papio1@earthlink.net]

**Sent:** Tuesday, July 12, 2005 4:17 PM

**To:** Bowen, Gerry

**Subject:** horse trails

Dear Mr. Bowen,

I am writing to ask that you please consider offering trails to horse riders in the Springfield area. Although there are many wonderful trails for hikers and bikers in the area, horsebackriding is becoming an increasingly popular pasttime and we are in need of public trails on which we are welcome. The horse people's community consists of persons from all walks of life and all are eager to do whatever they can to help make and keep trails for their horses.

Thanks for you consideration!

Sincerely,

Sheila and Mark Christiansen

[papio1@earthlink.net](mailto:papio1@earthlink.net)

Why Wait? Move to EarthLink.

7/12/2005

## **Bowen, Gerry**

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**From:** bs31220@alltel.net  
**Sent:** Tuesday, July 12, 2005 5:21 PM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

I have my gaited horses, and have loved riding since young. We need to be able to have access to more trails for our ventures. It's such a pleasurable, fulfilling hobby, and it is as close to nature as possible. I have friends in MO and KS who like to try out new trails, and more accessible horse trails would bring them to our area (Nebraska), which would only benefit our community.

Thank you

**Bowen, Gerry**

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**From:** Dianna Noonan [vegafoxtrot@yahoo.com]

**Sent:** Tuesday, July 12, 2005 10:48 AM

**To:** Bowen, Gerry

**Subject:** Sharing trails with horses

It is my understanding that there are only 3.5 mi. of horse trails that we are able to ride on. I believe that horse people i have met are very courteous and cooperative and would be very responsible trail riders. We enjoy the privledge of riding some various places that are very interesting and would hope to be able to share the trails with the hikers and bikers on these pretty trails. There are more and more horse enthusiasts all of the time and we would hope that we could have the same privledges that the bikers have. In other states there are a lot of trails and it would be nice to have more access in our own state. I beleive that the horse industry brings in a lot of revenue and tax dollars, and not to mention that our tax dollars also go to these trails. As i said the horse people that i know, are very responsible and courteous and wish to have more trail access. There are a lot of people in Ne. that do trail riding for a relaxing way to spend time with family and friends. It is a good clean sport. I beleive the horse people would be good partners to get along with on the trails. I do believe that this should be something that we should be able to enjoy, also along with everyone else. Thanks for letting me give my input, I appreciate it. I hope that we will get to ride the trails. Sincerely, Dianna Noonan

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**Bowen, Gerry**

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**From:** Jim & Leigh Freeman [freeman@diodecom.net]  
**Sent:** Tuesday, July 12, 2005 10:28 AM  
**To:** Bowen, Gerry  
**Subject:** HORSES ON THE NEW SPRINGFIELD TO LOUISVILLE MO-PAC TRAIL

Mr. Gerry Brown,

Please consider allowing the trail for equestrian use also. Other states (such as Missouri) have extensive equine trails in addition to their biking/walking/combo trails and they seem to be in constant use. My family looks forward to using additional trails that provide a comfortable and safe riding environment. We understand safe and conscientious riding and expect to follow the trail rules to keep it safe and clean for everyone. Thank you for your time.

Leigh Freeman  
Beatrice, NE

7/12/2005

## **Bowen, Gerry**

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**From:** Patty Scott [pattyscott@gmail.com]  
**Sent:** Tuesday, July 12, 2005 10:28 AM  
**To:** Bowen, Gerry  
**Subject:** Horse trail riding

I would like to include my name as showing support for horse riders on the Mo-Pac trail! I believe there is such growing support of people who are enjoying horses and trail riding in and around Omaha. I go on alot of large trail rides and we usually have 150-200 riders easily show up on these. The rides we have around Omaha are well attended and we always look for new sites to ride at. Please allow riders to use the Mo-Pac trail.

Thank You,  
Patricia A Scott  
Yutan,NE

**Bowen, Gerry**

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**From:** Carlos Monzon [Carlos\_Monzon@fd.org]  
**Sent:** Tuesday, July 12, 2005 9:23 AM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

Please allow me to thank you in advance for allowing horse trail rider access on the Mopac trail in the Springfield area. It is a wise decision to allow access to horses. Every user of the trail adds to the necessity of the trail and further gives a purpose to the existence of your office and specifically to the position you hold.

Horse trailriders, in Nebraska, contribute millions of dollars to our State's economy. Horse trailriders are conscientious and in many instances have shown their appreciation to the trails by sponsoring cleanup days and or trail enhancement and beautification activities.

Again, thank you for your wise decision and for equal access.

Carlos A. Monzón, Esq.

7/12/2005

## **Bowen, Gerry**

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**From:** Belitz, Pattianne [pattianne.belitz@dexmedia.com]  
**Sent:** Tuesday, July 12, 2005 10:04 AM  
**To:** Bowen, Gerry  
**Subject:** Equine Trail Sharing on the Mo Pac Trail/Vicki Fraser

I would like to express my support for Vicki Fraser, and her request for equine trail sharing on the MoPac trail. As farm and natural lands are eaten up by economic growth, the places for Americans to horseback ride are rapidly declining. Our founding father explored these lands on horseback, and we would like to continue this unique way of experiencing and enjoying our countryside.

I understand the need to protect these lands, and will respect the rules and regulations set in place, if only given the chance.

Respectfully,

Pattianne Belitz  
13523 Redwood Street  
Omaha, Nebraska 68138  
402-334-1255

Personal equine memberships/affiliations  
Nebraska Horse Council  
Nebraska Horse Council Trails Committee, current Secretary  
Crescent (Iowa) Outlaws Saddle Club, current Vice-President, President 2002-2003  
Pony Express Riders of Iowa

**Bowen, Gerry**

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**From:** Christina Miller [admin@heartlandhorserescue.com]  
**Sent:** Tuesday, July 12, 2005 3:04 PM  
**To:** Bowen, Gerry  
**Subject:** mopad trail

My name is Christina Miller and I run Heartland Horse Rescue. My parents and I live on a stretch of property that has the mopac trail running across the back of it, so I just wanted to put my two cents in and say that I think the trail should be equestrian as well as walking and bikes. There is no part of that trail that my horses won't go on without a problem. Also, it would get more use as an equestrian trail than anything else. I have not noticed many people walking on it, however there are any number of horse people around here that would love to use it. It seems like right now the only people using it are people running 4 wheelers on it. We'd really like to see it used by horse people as well.

Thanks,  
Christina Miller  
Director  
Heartland Horse Rescue

7/12/2005

**Bowen, Gerry**

---

**From:** Boothillranch@aol.com  
**Sent:** Tuesday, July 12, 2005 11:56 AM  
**To:** Bowen, Gerry  
**Subject:** Thank you for considering horse trail rider access!

Please consider letting horses on the MO-Par trails .

Thank you,

Lonnie Smith

7/12/2005

**Bowen, Gerry**

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**From:** Carla Faulkner [carla.faulkner@oracle.com]  
**Sent:** Tuesday, July 12, 2005 11:55 AM  
**To:** Bowen, Gerry  
**Subject:** Please open Mo-Pac to horse trail rider access!

Please open the Mo-Pac trail for horseback riding. There are so few public trails open to horseback riding local to the Omaha area and I'm sure this is an awesome trail with its proximity to the river.

Along with serving more of the public in their recreational pursuits, I'm sure you will open up a whole new cadre of volunteers to help maintain trails, should that fit into the interests of the NRD.

Thank you for your consideration,

Carla Faulkner  
18110 18th St  
Plattsmouth, NE 68048  
402.296.3772

**Bowen, Gerry**

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**From:** T Vasa [tvasa@nntc.net]  
**Sent:** Thursday, July 07, 2005 7:16 PM  
**To:** Bowen, Gerry  
**Subject:** Horse trails - Springfield to Louisville

Dear Mr. Bowen,

I understand that in the near future the NRD will be considering the request of equestrians for the use of the trail constructed between Springfield & Louisville. I hope your consideration will be FOR horse riders.

Nebraska has less than 2% public land, even less than that is available for horse trail riders. Horses, rich in western tradition, are quietly working to gain access to more public land. Horse clubs and trail organizations have been working with park officials over the last few years and we are proud of those partnerships. An example is of trail sharing is with the Lower Platte South NRD. They partnered with trail riders to successfully allow trail sharing with equestrians on the Oak Creek Trail & portions of Mo-Pac. We hope you will provide us the same privilege.

My web site, [www.horsetrailriders.com](http://www.horsetrailriders.com) receives up to 100 hits per day from Nebraska trail riders. We are truly a large and growing group, just looking for more trails in our state. Thank you for considering horses on this trail.

In the spirit of partnerships & trail sharing,

Tammy Vasa

Weston, NE

[www.horsetrailriders.com](http://www.horsetrailriders.com)

**Visit [www.horsetrailriders.com](http://www.horsetrailriders.com)**

A Virtual Horse Riding Club



## **Bowen, Gerry**

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**From:** Vicki Fraser [vjfraser@pcisys.net]  
**Sent:** Friday, June 24, 2005 5:50 PM  
**To:** Bowen, Gerry  
**Subject:** Re: Letter to Rich Jansen...

June 24, 2005

Mr. Rich Jansen

20801 Ruff Road

Gretna, NE 68028

Re: Mo-Pac Trail South of Springfield

Mr. Jansen:

I had to think long and hard after our last conversation about the trail - you mentioned several times that we "deserve something better".

Well, you're right. We do deserve something better, but not in terms of this particular trail which is as good as it gets for equestrian use. Horse riders deserve fair and equal participation in all of the recreational developments in this NRD district. We deserve an informed Board that does not rely on unfounded statements which have been used to prevent equestrian access for years.

One of the key concerns stated frequently by the Board regarded liability. I am sure the staff and Board are aware of State Statute 37-729 which was specifically designed for entities such as parks and recreational areas so that lands could be provided for recreational use without fear of undue liability. Your staff has stated that equestrian use will not affect your insurance profile.

Concerns about the trail coming too close to the highway and horses potentially spooking when truckers honk their horns are again based on lack of understanding about horses and trail riders. Frequently, trail horses travel close to cars and trucks as well as bicycles, strollers and hikers.

Two weeks ago at the Lancaster Event Center in Lincoln, teams of horses from ponies to draft travelled over the open bridge that crosses 84th street.

Horses were not only next to cars and trucks, but the cars and trucks were driving underneath the horses without incident.

Regarding damage to the limestone trail, at the event mentioned above, the arena (the same footing as the Mo-Pac trail) was used by 30 competitors with driving horses - in the rain. The surface showed little impact and was groomed after the competition with a tractor and rake. The bicycles used by some volunteers caused more rutting than the horses. The same footing is used on the Valparaiso trail where riders travel over a large open bridge and traverse back and forth across the limestone trail. The Mother's Day trail ride had 90 riders travel the trail coming and going with no damage to the trail. Randy Lee said to me that he anticipated having to groom the Mo-Pac trail in the Spring, after the thaw - which would be now. I asked him if he was going to and he said "the trail appears to be self-healing". This is after a winter and wet spring of bike riders, and many 4-wheelers. We will also document that these same surfaces are used in Colorado and Illinois - dry climate to wet.

We have often heard concerns that horses and other users need to be separated. Throughout the nation

equestrian use of trails is integrated with bikers, hikers and others. We'll document this. Lake Zorinsky is unbelievably crowded with walkers, bikers, dogs, moms with strollers, kids on roller blades - and horses. Call Tom Ryan, the lake manager, and ask him about his experiences with the equestrian community. The horse people have done such a great job of cleaning up the parking lot and corrals that they don't even know when we're there - we had 20 at a trail ride there last Wednesday night. I ride Walnut Creek several times a week and the cross country team is out running on the same trail. They enjoy seeing the horses, and we love seeing them. Typically we're using the trail at different times of the day and don't see other trail users at all.

With the multiple use of the Mo-Pac trail (instead of separation), the costs go down dramatically. To improve the trail, not just for horses, but for all users, the staff has estimated that less than \$9,000 would be needed to plank the bridges and fence the approaches. The better surface of the bridges will be appreciated by all the users and the fencing of the approaches will go a long way to reduce the unauthorized access to the stream banks. Our tax dollars have been spent for many years for bike trail construction. It is time the money was fairly shared with the other trail users.

Over 440 people in a short time signed clearly worded petitions stating they wanted equestrian use of this trail - and on the trails that will connect it that are to follow. We have agreed to work with your staff and the Board - we respectfully request that you and the Board do the same. While some personally may not like horses (just as others dislike bicycles and roller bladers), the responsibility of the Board is to represent your constituency - many who are horse riders. This is an opportunity for the NRD to look like a hero and extend the Board's legacy of community service. All credit and kudos will go to the NRD, both in the press and across the websites that are dedicated to horse trails locally and nationally.

We will come to the Board meeting with a presentation showing what a day on a multiple-use trail really looks like.

We respectfully request your fair and generous consideration of our request.

Vicki Fraser

for the Petitioners

## **Bowen, Gerry**

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**From:** Tom Cramer [cramer\_tom@hotmail.com]  
**Sent:** Monday, June 27, 2005 12:44 PM  
**To:** Bowen, Gerry  
**Subject:** horse trails

Just wanted to send you a quick note asking for your cooperation in establishing and maintaining horse trails in the Omaha & Lincoln areas. It seems ridiculous to trailer horses to Colorado and other places to ride trails where horses are permitted, when we have so many active trail riders and horse people in our community. Horse people generally spend a fair amount of money for their hobby, and thus tend to be fairly affluent people who generate a lot of tax revenue.

Please consider doing whatever you can to expand the local trail system for horse use.

Thanks,

Tom Cramer  
Elkhorn, NE

**Bowen, Gerry**

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**From:** GARY C COKER [cokerhill@msn.com]  
**Sent:** Monday, June 27, 2005 11:50 AM  
**To:** Bowen, Gerry  
**Subject:** Horse Trail

Mr. Bowen,

My name is Sandra Coker and I live off Capehart Road at 124th Avenue.

I have been at your NRD meetings regarding the horse trail that is now being discussed and is yet to have more discussion.

I would personally like to plead with you for a horse trail from Springfield to Louisville. There is an existing trail already, that has been constructed for bike riders as well as walkers which is a wonderful thing and I know a costly one. I would ask you to allow me to 'beg if I must' for the same pleasure for horseback riders enjoyment. I cannot say enough good things about people who ride horseback...not to say less about anyone who does not. We are good people and will respect every inch of the ground we hope you will allow us to use.

I thank you for your time and consideration.

Happy Trails,  
Sandra Coker

6/30/2005

**Bowen, Gerry**

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**From:** SRoth415@aol.com  
**Sent:** Monday, July 11, 2005 12:20 AM  
**To:** Bowen, Gerry  
**Subject:** Request for consideration of proposal

Dear Mr. Bowen:

As concerned citizens and taxpayers of Sarpy County, my wife & I would like to request that the NRD board of directors and staff take into consideration the desires of a certain group of people who would like to utilize the benefits of the MoPac trail that our taxes helped to pay for. This trail runs along Highway 50 in Sarpy County, and currently we are being denied the right to use it the way we want to. We just recently moved to the country to have horses and to be able to ride them. We were very excited to see a trail going in so near our property. We were very disappointed to find out that riding horses on the trail was prohibited, and we don't understand why.

There are many individuals in the Sarpy County area that would like to utilize the trail between Louisville and Springfield but cannot because there are currently prohibitions against doing so. We believe that we should have as much, if not more, opportunity to utilize the benefits of this trail out in the country that is currently being used by very few bikers and walkers, but could provide a safe environment for us to ride our beloved horses. Most bikers are currently using the shoulder of Highway 50 to ride their bikes and there are few walkers in this area. This trail runs, in our case, within a few hundred yards of our property; and in the case of one of our friends, directly through their property. There may have been little or no thought given to the needs of the equine public when this trail was approved and built but there should have been. If there was thought given to this sector of the public, but the needs were discounted or there was concern that the trail would be littered with excrement, we feel confident that we can assure the NRD board that as responsible citizens that if we are allowed to utilize this portion of the MoPac trail, that there would be little to no problem with excrement being left upon the trail. As horse owners and lovers, we take care of our horses needs and clean up after their messes because we appreciate the opportunity to ride where there is little or no danger of "spooking" our horses with loud noises, and no danger of becoming a traffic hazard to the motoring public. The county's roads are becoming much more traveled and it is becoming increasingly difficult to find a place to ride our horses without fear of a car, pickup, truck, tractor or ATV coming up from behind us and "spooking" our horses. We want to be able to just walk out of our house, saddle up our horses, and go ride; not have to go to all the trouble to put tack and horses in a trailer and drive several miles to a park with an equine trail--of which there are very few.

We would like to see modifications made to the MoPac trail including a "horse friendly" bridge or would like a an equine trail in close proximity to the current trail, where we could ride. The "horse friendly" bridge would need to be planked rather than the "diamond" steel mesh that is currently on the bridge. We don't believe that this would be too costly or asking too much to consider.

Please take our concerns and desires under advisement and consider amending the rules of the MoPac trail to specifically allow horse riding along this trail. Thank you for hearing our hearts.

Sincerely,

Sheldon L. & Diane C. Roth  
13875 Buffalo Road  
Springfield, NE 68059

7/11/2005

## **Bowen, Gerry**

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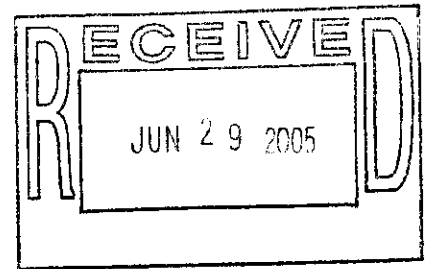
**From:** Debra Kuhn [debra\_kuhn@hotmail.com]  
**Sent:** Monday, June 27, 2005 10:44 AM  
**To:** Bowen, Gerry  
**Subject:** trails

I am writing to ask your support of area horse trailriders in adding us to have permission to ride the new Springfield to Louisville Mo-PAC trail. It sounds absolutely gorgeous and we would love to have that opportunity. It would be great to have more trails open to us and have the same treatment as the bike riders and hikers since we, too, are taxpayers. So if you can help, we would appreciate it.

Debra Kuhn  
Nebraska City, NE

June 25, 2005

Papio-Missouri River  
Natural Resources District  
8001 S 154 St.  
Omaha, Ne 68138-3621



Attention: Mr. Gerry Bowen

Dear Sir:

I just have a question regarding the restriction of horses on the trail from Springfield to Louisville. We love to trail ride with our family members and feel pushed out by this restriction. I'm sure you must have a good reason.

We feel like there is so much money spent on bike and walking trails that we have been omitted in your planning.

Please consider this.

Vaneeta Nigro  
23402 Harrison  
Gretna, Ne 68028  
(402)332-5671

# Memo

To: Programs, Projects, and Operations Subcommittees

Subject: MoPac Trail – Equestrian Usage of the Trail

Date: May 3, 2005

From: Gerry Bowen

At the April 14, 2005 Board meeting, staff was asked to prepare a cost estimate for adapting the Mopac Trail between Springfield and the Platte River for equestrian usage (see attachment).

The conversion is estimated to cost approximately \$66,000. This includes selective clearing on an additional 1.4 miles of the right-of-way (12 feet wide), replacing the two bridge decks with planks, adding railing to direct users onto the bridges, installing drainage structures to facilitate equestrian usage, and fencing the east side of the right-of-way north of Buffalo Road (Springfield Creek forms a natural barrier on the west side).

Several factors were considered and are listed as follows.

1. The separate equestrian trail would be located on the east side of the District's trail corridor. Springfield Creek forms a natural barrier on the west side north of Buffalo Road.
2. In six locations, additional drainage work is needed to create a better transition between the District's trail corridor and adjacent properties.
3. The Sarpy County Fair Board has voted to not allow use of the fairgrounds as a staging area for equestrian use. A trail head would be needed at the Springfield end (north) of the trail.
4. The District's parking lot will have limited use as a trailhead for equestrian use due the reluctance of horses to cross under Highway 50 on the existing trail, and the dangers of crossing Highway 50 at-grade.
5. Both the Springfield and Buffalo Creek channels are too steep to allow a creek crossing. Erosion of the creek bank may adversely affect the bridge stability at these locations.
6. It is proposed that the trail utilize the same surface through the Ash Grove property. Additional right-of-way would be necessary, some wetlands would have to be filled and mitigated if a separate surface were to be created.

Staff recommends that the District provide 50% cost sharing for the adaptation of the Mopac Trail for equestrian usage. The equestrian community will be asked to raise the other funds privately. Also, it is recommended that a Citizens' Equestrian Advisory Committee be formed to raise the private funds necessary for the adaptation of the Mopac for equestrian uses, and for advising the District on other equestrian issues. It is recommended that the committee be no larger than five members.

**Management recommends that the Subcommittee recommend to the Board that the District provide 50% cost share on the adaptation of the Mopac Trail corridor for equestrian usage on a separate trail from pedestrian/bicycle trail users, subject to the availability of a equestrian trailhead at the north end of the trail (Springfield), and that a Citizens Equestrian Advisory Committee be formed to assist with fundraising and the adaptation of the trail.**



5/2/2005				
Mopac Trail Equestrian Usage Cost Estimate				
Item	Units	\$/unit	Amount	Estimated cost
Clearing & Grubbing	acres	\$6,250.00	1.4	\$ 8,750.00
Drainage Structures	number	\$5,000.00	6	\$ 30,000.00
Bridge Resurfacing (replace with planks)	number	\$2,500.00	2	\$ 5,000.00
Bridge approach railing	feet	\$20.00	120	\$ 2,400.00
Fencing	feet	\$1.50	7700	\$ 11,550.00
Seeding	acres	\$1,000.00	1.8	\$ 1,800.00
Signage	lump sum	\$1,000.00	1	\$ 1,000.00
Sub Total				\$ 60,500.00
Contingency (10%)				\$ 6,050.00
Total				\$ 66,550.00

Memo to the Programs, Projects and Operations Subcommittee

Subject: Lower Platte River Cumulative Impact Study (CIS) – Phase 2

Date: July 6, 2005

From: Gerry Bowen

The District, through the Lower Platte River Corridor Alliance (LPRCA), has cost-shared with the Nebraska Game and Parks Commission and others to develop a scope of services (Phase 1) for a Cumulative Impact Study of the Lower Platte River in eastern Nebraska. NGPC contracted with the Corps of Engineers (COE) to conduct a Section 22 Planning study to develop this scope of services. The District contributed \$2,000 towards the \$40,000 contract, as did the following partners:

- Nebraska Game and Parks Commission (NGPC)
- Lower Platte South NRD (LPSNRD)
- Lower Platte North NRD (LPNNRD)
- Nebraska Department of Natural Resources (NDNR)
- Nebraska Department of Roads (NDOR).

The scope of services is now complete and is attached for your review. The US Geological Service's (USGS) pre-proposal is also a part of the scope.

The NGPC intends to proceed with the implementation of Phase 2 of the study, which is to gather the available data over six time periods (2004, 1993, 1971, 1955, 1938, and 1850) and to convert the data into a geographic information system (GIS). Two contracts are anticipated; one with the USGS for hydrological and geomorphic (depth and velocity) data, and one with the COE for the various habitat and land use indices. The total cost of Phase 2 is estimated to be \$450,000, of which \$169,800 (\$125,000 from the COE, and \$44,800 from the USGS) is federal funds. The non-federal match is proposed to be distributed as follows:

• NGPC	\$15,000
• LPSNRD	\$15,000
• LPNNRD	\$15,000
• NDOR	\$15,000
• P-MRNRD	\$15,000
• Metropolitan Utilities District (MUD)	\$15,000*
• Lincoln Water System	\$15,000*
• In-Kind Contributions	\$15,000
• NE Environmental Trust (NETF)	<u>\$165,200</u>
	\$280,200

MUD and LWS contributions are tentative. If these entities choose not to participate, the request to the NETF will be increased to complete the non-federal match for the project.

In order to accomplish the above, the interlocal agreement needs to be amended (Amendment 1) to include new partners (both funding and non-funding), and a new addendum (Addendum B)

showing partner financial contributions (see attached). The LPSNRD will become the contracting entity with coordination through the LPRCA. The new partners in the interlocal agreement are:

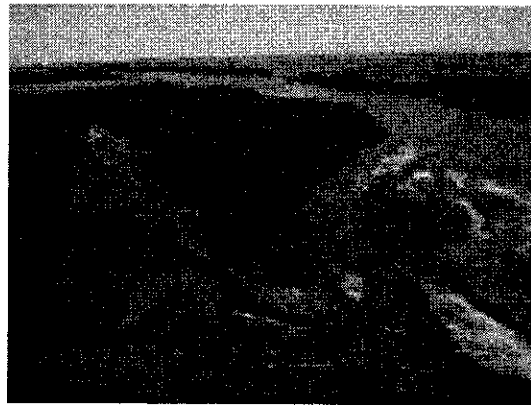
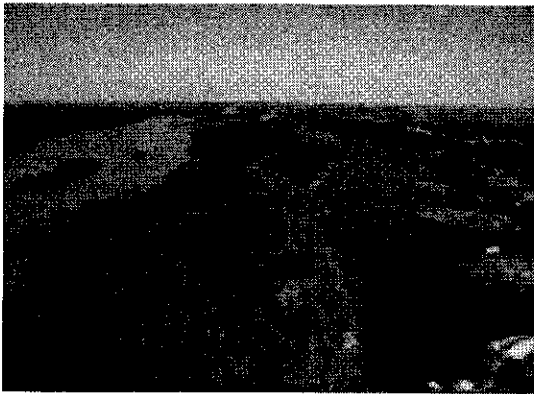
- Lower Platte River Corridor Alliance (LPRCA)
  - Nebraska Land Trust (NLT)
  - USGS
  - US Fish and Wildlife Service (USF&WS)
  - University of Nebraska – Lincoln (UNL)
  - Center for Advanced Land Management Information Technologies (CALMIT)
  - MUD
  - LWS
- 
- **Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the proposed Amendment 1 and Addendum B to the multi-agency revised Lower Platte River Cumulative Impact Study Interlocal Agreement, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.**

# **Lower Platte Cumulative Impact Study**

## **Scope of Work**

### **For Phase 2**

**June 2005**



#### **A Collaborative Effort by the Participants**

**Nebraska Game and Parks Commission, Cost-sharing with the US Army Corps of Engineers**

**In Cooperation with: Papio-Missouri Natural Resource District, Lower Platte North Natural Resources District, Lower Platte South Natural Resources District, US Geological Survey, Lower Platte River Corridor Alliance, Nebraska Department of Environmental Quality, Nebraska Department of Natural Resources, University of Nebraska at Lincoln, Nebraska Department of Roads, Nebraska Land Trust**

# **Lower Platte Cumulative Study**

## **Phase 2 Scope of Work**

### **June 24, 2005**

#### **Introduction**

The Lower Platte River Corridor is a unique area in eastern Nebraska with a wealth of resources. The corridor supports exceptional biodiversity and is important for a multitude of reasons such as providing habitat for the endangered pallid sturgeon, least tern, and threatened piping plover, as well as a variety of other fish and wildlife species. It stretches nearly 110 river miles from Columbus to the mouth of the Platte River near Plattsmouth and serves as one of the few remaining contiguous natural corridors in the eastern part of Nebraska. The area includes all or portions of 8 counties and 24 communities and provides drinking water to nearly 50% of the state's population. The natural resources of the area, inherent beauty, proximity to large metropolitan centers, good transportation, numerous recreation and tourist destinations, and desirability for residential and commercial development ALL provide the setting for unprecedented growth and development both now and into the future.

The Cumulative Impacts Study (CIS) project, a geographically-based project, seeks to manage and protect the unique and valuable Lower Platte River Corridor ecosystem by collecting and organizing the necessary data and information to evaluate ecosystem and land use changes over time. Future phases of this project will look at developing predictive models and tools for evaluating/predicting the impacts of future activities and projects. To do this, geospatial analysis methods will be employed to assess long-term ecosystem changes and determine the risk and impacts associated with individual large-scale infrastructure and development projects, as well as the combined effect of the many activities in the Lower Platte River Corridor.

The CIS project is multi-faceted in nature, focusing on the interaction of the land, water, and biological communities, and how changes have shaped the ecosystem of the Lower Platte River Corridor. This proposal has the support of, and is coordinated with, federal, state, and local agencies as well as NGO's in an attempt to provide a regional framework to understand and evaluate the impact of growth, land use, and habitat changes in the river corridor, while protecting the ecological integrity of the area.

To undertake this task, the Cumulative Impacts Study Working Group was created through a cooperative agreement signed in September of 2003 between the U.S. Army Corps of Engineers and the Nebraska Game and Parks Commission. An interlocal agreement was formed between the NGPC and participants in the study including NDOR, 3 NRDs - LPNNRD, LPSNRD, PMRNRD, DNR (although they are member of LPRCA). Other partners who have joined since then include LPRCA, Nebraska Land Trust, USGS, USF&WS, CALMIT, and UNL. The group has held a series of meetings designed to clarify the goals and parameters of the study.

#### **Theme of Study**

The overall questions to be answered are: *What are the changes over time in infrastructure, land use, and water issues/hydrology? AND How do each of these affect or are affected by: the River, the Floodplain, and the Bluffs Corridor?* After considerable discussion and many

meetings by the CIS Working Group, the following parameters were identified to help answer these questions:

**Infrastructure** – This category will include, but not be limited to, the following:

- Bridges (existing, about to be built, remnants such as pilings, supports, etc.)
- Bank stabilization (bank lining – rip rap, items protruding into river – jetties, hardpoints, revetments)
- Levees (alignments, msl elevations, average levee height, owner, estimated overtopping flood event, levee condition, FEMA certification)
- Roads (classification, surface type, elevations, culverts/overflow bridges)
- Utilities (power poles/lines – major ones which cross the river, gas lines, fiber optic, water pipelines, well fields)
- Towers
- Trails -Major trails - not foot trails. Generally along RR corridors.
- Railroads
- Airports

#### **Land Use**

- Agricultural land (row crop, pasture, feedlots).
- Commercial/Industrial
- Residential (including individual homes and wells) – Excluding farmsteads
- Recreation (State Parks, State Recreation Areas, Wildlife Management Areas)
- Woodlands, Wetlands, Grasslands
- Zoning/Comprehensive Plans
- Aggregate mining - active, completed, reclaimed, projected
- Protected Lands

#### **Water Issues**

1. Stream Flow (Hydrological) Statistical Analysis
  - Using long term gauge data
2. Trends in the river
  - Width of channel
  - Connectivity (e.g., side channel, backwater, etc.)
  - Cross sections of Platte River valley
  - Analysis of discrete vertical data

#### **Study Boundary**

The boundary for this study was determined during the June 29, 2004 meeting as follows: *The edge of the Lower Platte River 100-year floodplain or 5 miles (2.5 miles on each side from the center of the Platte River), whichever is greater from Columbus to the mouth near Plattsmouth.* The floodplain is very wide near the Elkhorn River confluence; it was agreed that north of the Douglas County line, only the Platte River drainage would be included. The CIS Working Group may also identify priorities areas and focus efforts in these areas.

## **Data Time Steps & Aerial Photography**

Datasets will be acquired for the following time steps – 1850s, 1938, 1950s, 1971, 1993, and 2004. Datasets for these time steps were selected by the group based on which year or years had either accurate mapping or clear aerial photography available for the project area. To best study this area, digital ortho photography will be rendered in 1-meter resolution.

## **Purpose of Study**

Study of the parameters identified above and their associated datasets for each of the five identified time steps will provide the basis for evaluating and analyzing past and present changes to the Lower Platte River Corridor ecosystem. This study will also provide the foundation for future research and analytical studies through the creation of a Geographic Information System (GIS) accessible via the internet. This would help resource agencies identify past and current conditions and changes along this corridor. There are some questions we hope to address including:

*What do the datasets tell us?*

*What are the trends?*

*Can we predict future changes based on trend analysis?*

## **Project Description & Timetable**

The Cumulative Impact Study project will be implemented in three phases: (1) Scoping; (2) Data Acquisition, Information System Development; and Progress Report; and (3) Development of Predictive Models/Tools.

→ **PHASE 1 – Scoping** – Current phase. Determination of goals, objectives, and outcomes for the project. Also, further refinement of data needs and costs. Completion of scoping by July 2005.

→ **PHASE 2 - Data Acquisition, Information System Development, Trend Analysis, and Progress Report** - Acquire datasets for specified time steps. Create database(s) and GIS and make available online for use by partners. A basic trend analysis will be tabulated and included in the progress report. The progress report will present the information gathered in Phase 2, in a manner accessible to the general public.

***1850's Dataset*** – Will require acquisition of transect data, organization of information, addition to database(s) and GIS, and coordination with UNO.

***1938 Dataset*** – Will need to acquire including any missing pieces, digitize, rectify, and classify. UNK has 9 x 9 aerials that can be scanned.

***1950s Dataset*** – Will need to digitize, rectify, and classify.

***1971 Dataset*** – Will need to digitize, rectify, and classify.

***1993 Dataset*** – Should be readily accessible and already rectified. Would need to be digitized and classified. Matter of acquisition and organization of data.

***2004 Dataset*** – Should be readily accessible and already rectified. Would need to be digitized and classified. Matter of acquisition and organization of data.

→ **PHASE 3 – Development of Predictive Models/Tools** – The idea of developing a tool or tools to predict outcomes of projected activities, projects, and landscape modifications have been discussed. This component would be the next step once the databases, GIS, and other

information systems were completed. Further scoping of this phase would be required. Projected completion date would be completed at a later date.

## **Subsequent Phases Cost Breakdown per Category**

### **→ PHASE 2**

#### ***Infrastructure***

• <b>Bridges</b> (See detailed description above)	700.00
• <b>Bank Stabilization</b> (Described above)	6000.00
• <b>Levees</b> (Described above)	15000.00
• <b>Roads</b> (Described above)	3000.00
• <b>Utilities</b> (Described above)	60.00
• <b>Towers</b> (Described above)	800.00
• <b>Trails</b> (Described above)	400.00
• <b>Railroads</b> (Described above)	30.00
• <b>Airports</b> (Described above)	200.00
• <b>Floodplain</b> (New category, added 1-18-05)	<u>800.00</u>
<b>Subtotal</b>	<b>\$26,990.00</b>

#### ***Land Use***

• <b>Agricultural lands</b>	\$200.00
• <b>Commercial/Industrial</b> (Described above)	1000.00
• <b>Residential, Homes and Wells</b> (Described above)	200.00
• <b>Recreation</b> (Described above)	30.00
• <b>Woodlands, Wetlands, and Grasslands</b>	30000.00
• <b>Zoning, Comprehensive Plans</b> (Described above)	2000.00
• <b>Gravel Mining</b> (Described above)	800.00
• <b>Protected Lands</b>	<u>2500.00</u>
<b>Subtotal</b>	<b>\$36,730.00</b>

#### ***Water Issues***

• Analysis of discrete vertical data and hydrologic analysis (long-term gauge data)-USGS	<b>112,000.00</b>
• <b>Trends in the River</b> (Continued)	<u>30,000.00</u>
-Width of channel	
-Side channel and backwater connectivity	
-Cross sections of Platte River	
<b>Subtotal</b>	<b>\$142,000.00</b>

#### ***Other Costs***

- Data Input - In addition to these costs, the LPNNRD cost estimate included two additional subjects, not included as part of the Scope of Work. They are as follows:
  - Reprojecting and clipping data – 150 hours \$ 3,000.00
  - IMS Development/deployment – 300 hours 6,000.00



• Data Extraction for 1850s Transect Data	30,000.00
• Digitizing of 1938 Aerials – UNK estimate	50,000.00
• Digitizing of 1950s Aerials	50,000.00
• Digitizing of 1971 Aerials	50,000.00
• Project Management - Corps Project Mgmt Costs (5%)	21,386.00
• Progress Report	15,000.00
• Development of Contracts	15,000.00
• Contracting Division costs	<u>3,000.00</u>
<b>Subtotal</b>	<b>\$243,386.00</b>
<b>Sub. All</b>	<b>\$449,106.00</b>
<b>Round to</b>	<b>\$450,000.00</b>

<b>Grand Total</b>	<b>\$450,000.00</b>
<b>Minus USGS segment</b>	<b><u>-112,000.00</u></b>
	<b><u>338,000.00</u></b>

**Proposed Corps Match**

Federal	125,000
Non-Federal	213,000

**Proposed USGS Match**

Federal – 40%	44,800
Non-Fed – 60%	67,200

- ✓ **PHASE 3** – We will need to re-evaluate Phase 3 once we have completed Phase 2 to determine needs and subsequently costs.

## Pre-proposal

# **Hydrologic Analysis of Daily Discharge and Discrete-Vertical Data from Historical Measurements at Lower Platte River Gaging Stations**

Prepared by Ronald B. Zelt and Ben Dietsch

### **Problem**

The National Research Council recently completed a review of the science underlying the U.S. Fish and Wildlife Service instream flow recommendations and habitat suitability guidelines concerning the Platte River threatened and endangered species and the Bureau of Reclamation conclusions about the interrelations among sediment, hydrology, vegetation, and channel morphology. The NRC committee identified several gaps in our current understanding of this nationally significant ecosystem, including: (a) The need to broaden the research and management perspective from single-species focus to an ecosystem view emphasizing integration of biotic and abiotic processes to support a natural assemblage of species and habitats; (b) lack of integration of water-quality data with physical and biological understanding of habitats; (c) the lack of monitoring to assess the effects of prescribed flows on river morphology and riparian vegetation; (d) lack of adequate monitoring of both sediment mobility and repeated sampling at a common set of river cross sections; and (e) multi-decadal analysis of climatic influences has yet to be used as a basis for interpretation of short-term change in understanding climate-ecosystem interactions (National Research Council, 2004).

Concurrently, a consortium of Federal, State, and local agencies has formed a committee to address improved understanding of the cumulative impacts of infrastructure, land use, hydrology, and river management on the lower Platte River ecosystem (LPRCA, 2003). The committee has by consensus initiated and nearly completed the scoping phase of a cumulative impacts study (CIS), to be undertaken incrementally beginning with compilation of geo-spatial data and analysis of a time series of maps, aerial photography, and other available data. The CIS committee has targeted compilation from six specific time periods, centered on years for which accurate mapping or aerial

photography are available: ca. 1856, 1938, ca. 1955, 1971, 1993, and 2004. The goals of the CIS are to analyze present and future changes in infrastructure, land use, river management, and hydrology, to understand how each of these general factors is interrelated to the river, its floodplain, and the bluff-to-bluff corridor (U.S. Army Corps of Engineers and Nebraska Game and Parks Comm., written commun., entitled “Lower Platte Cumulative Impact Study Scope of Work For Phase 2,” June 2005).

A recent USGS workshop concluded that new streamflow and habitat prediction models are needed for the Western United States to assist resource managers facing increasing complexity and uncertainty in water management decision-making. Water-resources managers need to (a) understand the natural variability of streams and related systems; (b) predict streamflow and habitat conditions over a range of climatic conditions; (c) assess the implications of possible management options on streamflow, habitat, and biological populations; and (d) incorporate ecosystem-level understanding into management of watersheds. Further, many existing models address single-species problems (e.g., endangered fish), but few have taken a broader perspective that links water, the physical environment, and ecosystem response. An example of broadly integrating physical, biological, and chemical factors into the conceptual model of stream ecological integrity proposed by Karr and Chu (1999) who identified five key components of stream systems that must be understood both for undisturbed or normative conditions as well as for present conditions as affected by human activities: (1) flow regime, (2) physical habitat structure, (3) water quality, (4) energy source, and (5) biological interactions. A variety of indicators for hydrologic alteration by humans have been proposed recently (Richter et al., 1996, 1997; Olden and Poff, 2003) to assist in comparing the flow regime of a stream before and after some period of disturbance.

A temporal trends analysis by Lins and Slack (1999) of daily discharge at 395 climate-sensitive streamgaging stations across the conterminous United States found that, during 1944-1993, baseflows and median streamflows were increasing (which suggests that drought was decreasing) at about 30 percent of the gaging stations, but annual maximum flows (including floods) were neither increasing nor decreasing. Although general, national-scale findings may suggest hypotheses for further study in individual river basins, they yield little information to guide water management in local and complex river systems. One key challenge is deciding how to link existing tools into a useful hydrologic/habitat model that can be applied to a specific system, taking into consideration local environmental conditions, local data sets, and existing networks that supply streamflow and other data. The CIS framework provides

an opportunity to assemble the requisite information and explore system responses through time and variable climate conditions, in relation to large changes in water management and the extent of channel stabilization.

## **Objective and Scope**

As part of this consortium, the USGS proposes to compile and analyze hydrologic and channel cross-sectional information at its long-term gaging stations on the lower Platte River to (1) determine whether any time trends or step changes between the targeted time periods are statistically significant, and (2) interpret any significant changes in relation to changes in climatic conditions, water management, or other factors. The first objective will be addressed by analysis of the available daily discharge data for long-term gaging stations on the lower Platte River, and by analysis of available historical data from discharge measurements at those gaging stations. The latter analysis will involve using newly developed capabilities of the USGS National Water Information System (NWIS) to automate and store velocity, depth, and locational data from the individual vertical stations across the channel that have been collected routinely by hydrographers in the course of making stream discharge measurements. Heretofore, these data, recorded on original paper field forms, have not been stored electronically. Rather only the measurement summaries have been entered into NWIS, and those generally only for measurements made since about 1984. The second objective will be addressed by analyses incorporating the temporal series of ancillary data sets that is being compiled by other members of the CIS consortium.

The proposed project is intended to recover archived and historical USGS data from available discharge measurements, automate those data by storing them electronically in the USGS NWIS data base, and analyze the cross-sectional data (i.e., values from individually measured verticals) to identify temporal patterns of changes in depth and velocity at each selected stream gaging station on the lower Platte River. The analysis will focus on stations that have comparable measurement data from at least three of six time periods common among all sites selected--1895, 1938, 1955, 1971, 1993, and 2004. Comparisons will be made for each of three hydrologic conditions--low, average, and high (i.e., near bankfull) flows. Measurements may be included from years adjacent to the target years as needed to compile a set of at least 4 comparable measurements (preferably 5 or more) per time period for each hydrologic condition at each station.

## Approach

Initial tasks include inventorying the period of record for daily discharge and available discharge measurements at gaging stations along the lower Platte River to identify candidate sites for inclusion in the study; identifying the archival location of each station's original discharge measurement notes; and retrieval of a set of comparable measurements for each station for each time period. For older periods where measurement summaries are not stored in NWIS, all archival measurement notes may need to be retrieved for each candidate station.

Initial cursory review of the NWIS data base suggests that only five USGS gaging stations may have adequate records to be included in the proposed study (Table 1); however, prudence will dictate that a more thorough inventory be completed during the data compilation phase of the study. If no additional records are found, and all water years listed in Table 1 are selected for analysis, as few as 20 station-time-period combinations may be included in the scope of study. Additional station-time-period combinations likely would result from application of record-extension techniques that are readily available. For example, the USGS computer model, CONROUT, based on convolution methods of hydrologic routing, has been successfully used to synthesize long-term streamflow records for stations in Nebraska (Fischer, 1987). Synthesized daily values of streamflow could be used for statistical characterizations as described in the Hydrologic Analyses section below, but few (if any) streamflow measurements would be expected to be found for the corresponding station-time-period combinations.

**Table 1.—Preliminary inventory of stations having discharge records for each year targeted for the cumulative impact study.**

[STAID, station identifier; --, no discharge records appear to exist for indicated year; Y, discharge records exist for indicated year.]

Station Name	STAID	Water Year						
		1850s	1895	1938	1955	1971	1993	2004
Platte R nr Duncan, Nebr.	06774000	--	Y	Y	Y	Y	Y	Y
Platte R at North Bend, Nebr.	06796000	--	--	--	Y	Y	Y	Y
Platte R nr Leshara, Nebr.	06796500	--	--	--	--	--	Y	Y
Platte R. nr Ashland, Nebr.	06801000	--	--	Y	Y	--	Y	Y
Platte R. at Louisville, Nebr.	06805500	--	--	--	Y	Y	Y	Y

## Discrete-Vertical Measurements of Hydraulic Conditions

Comparability of measurements will require that a set of measurements were made at about the same channel cross-section (i.e., within 50-100 feet of each other along the streamwise direction). Comparable measurements also

will correspond to a narrow range of discharge (i.e., within 20 percent of the average value for the set). For example, a set of comparable measurements for one gaging station would correspond to one of the targeted hydrologic conditions, say low flow, and might correspond to discharges of 1200, 1320, 1100, 1300, and 1080 cfs, all within 10 percent of 1200 cfs. This set of measurements all would have come from the same time period, but additional sets of measurements for the same station and hydrologic condition from other time periods also would need to correspond to the same flow-range criterion. Thus about 24-30 measurements (6 time periods times 4-5 measurements each) would comprise a complete set of measurement cross-sectional data for one hydrologic condition for one gaging station. However, it appears that only one gaging station may have a complete set of measurements for all time periods (table 1).

Details from comparable measurements will be entered into NWIS using the new capability for storing cross-sectional station vertical data. At a minimum, all required fields will be populated for each record thus created. These basic data will be reviewed to assure the quality of data entry, and will then be made available to cooperators and the public as a new component of the USGS family of available NWIS data products.

Analysis of the time series for each hydrologic condition at each station will seek to answer a series of questions:

- 1) What pattern of temporal change is evident in:
  - a) the percentage of channel width having shallow water depth (< 1.5 feet), where fish cover is generally negligible, temperature potentially higher, and benthic algal production potentially is large?
  - b) the percentage of channel width having deep, slow water (> 3 feet and < 1 ft/s), where fines settle and fish can rest?
  - c) the percentage of channel width having deep, swift water (> 3 feet and > 3 ft/s), where sediment transport is generally greatest?
  - d) the wetted width, maximum depth, thalweg position, number of wetted channels, mean depth, median depth, mean velocity, and median velocity?
  - e) the variance of water depths and velocities across the channel?
  - f) the mean bed elevation as inferred from river stage and mean depth?
- 2) Looking at the at-a-station hydraulic geometry, albeit as represented by only three hydrologic conditions, is there evidence of temporal change?

3) What changes in water management or climate conditions appear to be related to patterns of change in channel geometry or hydraulic geometry?

## Hydrologic Analyses

As was done for the analysis of stream discharge measurements, the hydrologic analyses also will focus on the selected set of stream gaging stations (e.g., those listed in table 1). Many of the hydrologic indicator variables will be summarized for a series of 10-year periods, each including one of the CIS target years. Use of a period <10 years would not capture an adequate range of climatic variability to be representative of the extremes of the flow regime, whereas using a period >10 years would result in overlapping periods for the latter 2 CIS target years, precluding comparisons of independent estimates of the indicators. Thus, streamflows will be summarized for the periods 1895-1904, 1934-1943, 1951-1960, 1967-1976, 1987-1996, and 1997-2006. The record of daily streamflow values for each time period will be reviewed, and any missing values will be estimated using the standard USGS missing streamflow data estimation routine (program MISTE; U.S. Geological Survey, 2005).

The list of hydrologic indicator variables is given in table 2, and includes measures related to each of the five components of the flow regime identified by Poff et al. (1997): magnitude of high, average, and low flows; frequency of high and low flows; duration of high and low flows; timing or seasonality of hydroperiod and xeriperiod; and rate of change or “flashiness” of the hydrograph.

**Table 2.**—*Proposed indicators of Platte River flow regime for the cumulative impact study.*

Flow component	Average flow conditions	Low flow conditions	High flow conditions	All flow conditions
Magnitude	Mean annual, median annual	Mean 1-, 3-, 5-, 7-, 14-, 30-, 60-, 90-, and 365-day	Mean 1-, 3-, 5-, 7-, 14-, 30-, 60-, 90-, and 365-day	
Frequency		1.5-, 2-, 5-, 10-, and 20-year min.	1.5-, 2-, 5-, 10-, and 20-year peak	
Duration		Mean length of low “pulse”	Mean length of high “pulse”	Flow-duration curves
Timing		Mean Julian day of min.	Mean Julian day of max.	Median daily flow hydrograph
Rate of change	Mean number of	Mean rate of	Mean rate of	

	reversals between > and < daily median	decrease	increase	

The Kendall's tau test (Kendall, 1970) will be used to test for the presence of temporal trends in key indicator variables for the selected set of stream gages, including, at a minimum, annual mean discharge, annual peak discharge, and annual 7-day low flows. A statistical significance (p-value) threshold of 0.01 will be used to determine whether temporal trends are significant; p-values measure the “believability” of the null hypothesis of the statistical test (Helsel and Hirsch, 2002).

## References Cited

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## Products

1. Data tables of measured velocity and depth at individual verticals across channel, for each selected station and time period. These tables would be provided electronically to the CIS consortium collaborators to allow them to be linked into GIS attribute tables.
2. Data tables of calculated hydrologic indicators for each selected station and time period. These tables would be provided electronically to the CIS consortium collaborators to allow them to be linked into GIS attribute tables.
2. Interpretive Report (likely a USGS Scientific Investigations Report), e.g., "Changes in channel morphology, hydraulic geometry, and hydrologic indicators of the lower Platte River, 1895-2006."

## Timeline

**Table 2.—***Summary of project timeline and tasks.*

<u>Date</u>	<u>Task</u>
1/06	Grant notification. Complete workplan.
5/06	Complete topical outline and list of figures.
6/06	Complete compilation of daily discharge data sets (thru WY05).
7/06	Complete compilation/review of available measurements data.
8/06	Finalize data entry procedure and train student technician.
10/06	Complete data entry of V and D from measured verticals.
----- change of federal FY -----	
11/06	Complete compilation of daily discharge data sets for WY06.
1/07	Complete first draft of data tables section of report.
2/07	Data tables sent to cooperators for review.
3/07	Complete analysis of time series changes at each station.
4/07	Complete first draft (all sections).

6/07      Colleague reviews completed.

7/07      Submit for regional approval.

9/07      Report approved; sent to printer.

## Budget and Funding

Budget and funding details are listed in Table 3. USGS will provide 40 percent Federal cost-share funds each year, as shown in Table 3. The consortium of State agencies (NGPC, NDOR, NDNR, NDEQ), municipal agencies (MUD, City of Lincoln), and NRDs (Lower Platte North NRD, Lower Platte South NRD, and Papio-Missouri NRD) will provide the remainder.

**Table 3.—Summary of project expenses and funding budget by fiscal year.**

<b>Cost</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
Salaries and benefits	\$ 47,800	\$ 38,500	\$ 86,300
Vehicle mileage	250	200	450
Supplies	200	100	300
Travel	950	600	1,550
Postage and Shipping	250	750	1,000
Report Processing	0	3,350	3,350
Communications	100	100	200
Printing	100	2,000	2,100
Fixed costs (facilities)	9,650	7,100	16,750
<b>Total</b>	<b>\$ 59,300</b>	<b>\$ 52,700</b>	<b>\$ 112,000</b>
<b>Funding source</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Total</b>
CIS consortium	\$ 35,580	\$ 31,620	\$ 67,200
USGS	23,720	21,080	44,800
<b>Total</b>	<b>\$ 59,300</b>	<b>\$ 52,700</b>	<b>\$ 112,000</b>

**INTERLOCAL COOPERATION ACT AGREEMENT  
LOWER PLATTE CUMULATIVE IMPACT STUDY  
AMENDMENT 1  
(6/28/05 DRAFT)**

**This “Amendment 1”** (hereinafter referred to as “Amendment 1”) to the original Interlocal Cooperation Act Agreement (hereinafter referred to as “Agreement”) dated 14 day of April 2003, is for the purpose of expanding the original list of Partners to the Agreement. Original and new Partners are listed below are hereinafter referred to collectively as “Partners”

**Original Agreement Partners:**

Lower Platte North Natural Resources District (LPNNRD)  
Lower Platte South Natural Resources District (LPSNRD)  
Papio-Missouri River NRD (PMRNRD)  
Nebraska Game and Parks Commission (NGPC)  
Nebraska Department of Natural Resources (NDNR)  
Nebraska Department of Roads (NDOR)

**New Agreement Partners:**

Lower Platte River Corridor Alliance (LPRCA)  
Nebraska Land Trust (NLT)  
United States Geological Survey (USGS)  
United States Fish & Wildlife Service (USF&WS)  
University of Nebraska (UNL)  
Center for Advanced Land Management Information Technologies (CALMIT)  
Metropolitan Utilities District (MUD)  
Lincoln Water Systems (LWS)

**Where as:**

The Partners agree that the Platte River has experienced many changes over the years due to development in and adjacent to the flood plain. Inventories of various development or modifications associated with these changes have been addressed in specific reports generated by multiple agencies and stakeholders within the basin, however this information has not been combined to determine cumulative effects of these changes.

The Nebraska Game and Parks Commission (NGPC) and the U.S. Fish and Wildlife Service (USFWS) initiated the idea for forming a committee to develop and execute a study to determine the cumulative effects of impacts along the Lower Platte River.

The original Partners joined together with the United States Army Corps of Engineers (USACE) to complete a Phase I scoping study (Addendum “A” to the Agreement) to study the cumulative effect or changes to the Lower Platte River.

All original and new Partners listed above desire to join together and cooperate on future efforts by being a part of the original Agreement, and work with each other toward obtaining data and information for inputting into a Geographic Information System (GIS), with the goal of acquiring data sets to be used in a GIS format. The GIS data will be beneficial for future project efforts along the Lower Platte River Basin to include a long range goal of developing a predictive modeling tool for determining the cumulative impacts of past and future projects along the River Basin.

**Therefore**, in consideration of the foregoing recitals and their mutual covenants hereinafter expressed, the Partners agree as follows:

1. **Authority:** This Amendment to the Agreement is made pursuant to authority provided in the Nebraska Interlocal Cooperation Act ( Neb. Rev. Stat. 13-801, R.R.S., 1943, et seq.), without a separate entity being created, and whenever possible, this agreement shall be construed in conformity therewith.
2. **Purposes:** The purpose of this amendment is to expand the list of partners for acquiring GIS data sets to aid in determining the cumulative effects of changes to the Lower Platte River.
3. **Addendums:** This amendment commits no Partner to specific funding amounts at this time. The scope and costs associated with the various components of future study efforts will be outlined and approved in the form of Addendums to the Agreement by all or a portion of the Partners.
4. **Additional duties of parties:** Each Partner will designate a contact person to assist the Committee for completion of the study and other required work.
5. **Effective Date:** This Amendment becomes effective upon execution by all Partners.
6. **Duration of Amendment:** This Amendment shall remain in effect for an indefinite period of time until termination, by one or more Partners, upon giving the other partners a 30-day written notice. Should one or more Partners withdraw from this amendment, the remaining Partners may continue with future project efforts as agreed upon.
7. **Execution of Amendment:** Separate copies of this Amendment will be executed by the partners with the understanding that when all Partners have executed separate copies of the document, all partners shall be bound by this Amendment to the same extent as though all of the partners had simultaneously signed a single master copy. The original copy of this Amendment 1 will be maintained as part of the records of the Lower Platte North NRD, with copies being mailed to all Partners.

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Lower Platte North Natural Resources District on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Lower Platte North Natural Resources District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Lower Platte South Natural Resources District on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**Lower Platte South Natural Resources District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Papio-Missouri River Natural Resources District on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**Papio-Missouri River Natural Resources District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Nebraska Game and Parks Commission on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Nebraska Game and Parks Commission**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_



**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Nebraska Department of Natural Resources on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Nebraska Department of Natural Resources**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Nebraska Department of Roads on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**Nebraska Department of Roads**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Lower Platte River Corridor Alliance on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Lower Platte River Corridor Alliance**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Nebraska Land Trust on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Nebraska Land Trust**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the United State Geological Survey on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**United States Geological Survey**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the United States Fish & Wildlife Service on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**United States Fish & Wildlife Service**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the University of Nebraska on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**University of Nebraska**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Center for Advanced Land Management Information Technologies on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Center for Advanced Land Management Information Technologies**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_



**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by Metropolitan Utilities District on this \_\_\_\_\_ day of \_\_\_\_\_, 2004.

**Metropolitan Utilities District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Amendment "1" to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by Lincoln Water Systems on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Lincoln Water Systems**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**INTERLOCAL COOPERATION ACT AGREEMENT  
LOWER PLATTE RIVER CUMULATIVE IMPACT STUDY- PHASE 2  
DATA ACQUISITION & INFORMATION SYSTEM DEVELOPMENT  
ADDENDUM B  
(6/28/05 DRAFT)**

**This Addendum “B”** to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is made and entered into by the Funding Partners to Addendum B as listed:

**Funding Partners to Addendum B:**

Lower Platte North Natural Resources District (LPNNRD)  
Lower Platte South Natural Resources District (LPSNRD)  
Papio-Missouri River NRD (PMNRD)  
Nebraska Game and Parks Commission (NGPC)  
Nebraska Department of Roads (NDOR)  
Metropolitan Utilities District (MUD)  
Lincoln Water Systems (LWS)

**Other Supporting (Non-Funding) Partners:**

Lower Platte River Corridor Alliance (LPRCA)  
Nebraska Department of Natural Resources (NDNR)  
Nebraska Land Trust (NLT)  
United States Geological Survey (USGS)  
United States Fish & Wildlife Service (USF&WS)  
University of Nebraska (UNL)  
Center for Advanced Land Management Information Technologies (CALMIT)

**Where as:** Addendum B is entered into pursuant to number three (3) of the Interlocal Cooperation Act Agreement for the Lower Platte Cumulative Impact Study dated April 14, 2003, for purpose of studying the cumulative effects of changes to the Lower Platte River; AND

**Where as:** There are various data sets that are available to the Partners that will help determine the cumulative effects of change to the Lower Platte River; AND

**Where as:** The United States Army Corps of Engineers (USACE) has approximately \$125,000 of federal funds remaining from the completed Lower Platte River and Tributaries Feasibility Study and is offering these funds toward the Lower Platte Cumulative Impact Study Phase 2 - Data Acquisition & Information System Development, which requires 50% non-federal matching funds; AND

**Where as:** the United States Geological Survey (USGS) has approximately \$44,800 for use toward the Hydrological Analysis and Discrete-Vertical Data portion of the Study, which will require 60% non-federal matching funds.

**Therefore**, it is agreed by the Funding Partners listed above, to provide the non-federal matching fund requirements on specified segments of the Lower Platte Cumulative Impact Study Phase 2 - Data Acquisition & Information System Development and the Hydrological Analysis and Discrete-Vertical Data portion of the Study.

1. **Purpose:** The purpose of Addendum B is to outline the Funding Partner's financial commitments toward matching the U.S. Army Corps of Engineer's and U.S. Geological Survey's federal funds for Data Acquisition & Information System Development for the Lower Platte River Cumulative Impact Study - Phase 2 as outlined in the "Lower Platte Cumulative Impact Study Scope of Work for Phase 2-June 2005" and the "Hydrologic Analysis of Daily Discharge and Discrete-Vertical Data from Historical Measurements at Lower Platte River Gaging Stations Pre-proposal-June 26, 2005", both attached hereto (Attachment 1 & Attachment 2) and incorporated herein by reference. Data to be acquired includes digitizing aerial photographs and transect information from six time steps starting with the most recent data set and continuing backward in the following order as funding allows: Data Set 2003; Data Set 1993; Data Sets 1970's Data Sets, 1950's Data Sets, 1938, and 1850's Transect Data Sets.

2. **Costs:** The maximum amount of \$105,000 non-federal cash and \$20,000 non-federal in-kind contributions from the Contributing Funding Partners will be as follows:

	<u>Cash</u>	<u>In-Kind</u>
Lower Platte North Natural Resources District	\$ 15,000	\$4,000
Lower Platte South Natural Resources District	\$ 15,000	\$4,000
Papio-Missouri River NRD	\$ 15,000	\$4,000
Nebraska Game and Parks Commission	\$ 15,000	\$4,000
Nebraska Department of Roads (NDOR)	\$ 15,000	\$4,000
Metropolitan Utilities District (MUD)	\$ 15,000	\$0
Lincoln Water Systems (LWS)	\$ 15,000	\$0
<b>Totals:</b>	<b>\$ 105,000</b>	<b>\$20,000</b>

**It is the intent of the Funding Partners to obtain separate grant funding (i.e. the Nebraska Environmental Trust etc.) for any additional non-federal funds required for other Phase 2 expenses not addressed by Addendum B. Addendum B only obligates the above Funding Partners for the amounts listed. It is understood that any additional non-federal obligations for Data Acquisition & Information System Development for the Lower Platte River Cumulative Impact Study - Phase 2 will need separate approval by Funding Partners in the form of amendments to Addendum B.**

3. **Contracts:** The Lower Platte South Natural Resources District is also authorized to enter into agreements with the U.S. Army Corps of Engineers and the U.S. Geological Survey on behalf of the Funding Partners for utilizing available federal funding as a part of this overall effort.

4. **Funding Collection and Distribution:** The Funding Partners authorize the Lower Platte South Natural Resources District to collect and disperse non-federal funds as outlined in Addendum B.

5. **Effective dates:** Addendum B becomes effective upon execution by all Funding Partners and will extend until all available funding as outlined above is expended.

**IN WITNESS WHEREOF,**

This Addendum B to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Lower Platte North Natural Resources District on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Lower Platte North Natural Resources District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Addendum AB@ to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Lower Platte South Natural Resources District on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**Lower Platte South Natural Resources District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Addendum AB@ to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Papio-Missouri River Natural Resources District on this

\_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Papio-Missouri River Natural Resources District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Addendum AB@ to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Nebraska Game and Parks Commission on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Nebraska Game and Parks Commission**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_



**IN WITNESS WHEREOF,**

This Addendum AB@ to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Nebraska Department of Roads on this \_\_\_\_ day of \_\_\_\_\_, 2005.

**Nebraska Department of Roads**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Addendum AB@ to the Interlocal Cooperation Act Agreement for the Lower Platte River Cumulative Impact Study is executed by the Metropolitan Utilities District on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Metropolitan Utilities District**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

**IN WITNESS WHEREOF,**

This Addendum AB@ is executed by Lincoln Water Systems on this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

**Lincoln Water Systems**

**By:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Designated Contact Person:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Telephone Number:** \_\_\_\_\_

## Memorandum

**To:** Programs, Projects and Operations Subcommittee  
**From:** Paul Woodward, Water Resources Engineer  
**Date:** July 6, 2005  
**Re:** Amendment #2 to Professional Services Contract for West Papio Watershed Floodplain Remapping Project

---

In March 2005, the Board approved Amendment #1 to a professional services contract with HDR Engineering Inc. to develop new and/or updated flood hazard data for the West Branch Papillion Creek and its Tributaries, bringing the total amount not to exceed to \$410,480. A federal grant in the amount of \$349,900 had previously been secured through the Federal Emergency Management Agency (FEMA) for the project. HDR has since completed much of the hydraulic analysis needed to determine the new base flood (100-yr) elevations. The flood elevations have increased in most locations including the lower reaches of the West Papillion Creek (downstream of Giles Road) where the District's flood control channels and levees are located. Due to these increases, FEMA is requiring a more detailed analysis of this reach and has indicated a willingness to provide additional grant funding to complete the analysis. The attached special problems report outlines the alternatives that need to be studied.

In general, the additional HDR services relate to determining base flood elevations with and without the levee system in place. The scope also includes some non-FEMA fundable preliminary analysis of alternatives that could be implemented to maintain the current level of flood protection currently provided by this system. HDR's proposed scope and fee for work under this amendment is attached for your consideration. In all, HDR is requesting an increase in the maximum fee of \$75,900.

In order to offset this added cost, District staff has negotiated an additional grant from FEMA. A grant application in the amount of \$42,600 has been prepared and is attached. This would leave \$33,300 of additional costs for the District, making the NRD's total contribution to the project of \$93,780, or nearly 20%.

In conclusion, additional services under amendment #2 for this floodplain mapping project are estimated to cost an extra \$75,800, increasing the maximum fee from \$410,480 to \$486,280. FEMA grants totaling \$392,500 cover about 80% of the costs. The staff does believe that the additional work is justified and necessary to develop complete and accurate floodplain mapping for the West Papio Watershed.

**Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the enclosed grant application to FEMA and Amendment #2 to the professional services contract with HDR Engineering, Inc. for the West Papio Watershed Flood Plain Remapping Project which provides for an increase in the maximum fee to \$486,280, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Council.**

**WEST PAPILLION CREEK FLOOD HAZARD UPDATE  
FEMA PROJECT NO.:**

**The Problem:**

Located in the lower reach of the West Papillion Creek is an earthen levee system that extends from approximately 42nd Street to 96th Street on the left overbank and from approximately 44th Street to Walnut Creek on the right overbank. The levee system ties into high ground at the downstream end, just short of the confluence with Big Papillion Creek. This levee was constructed from 1990 to 1995 in several segments. The design discharge at the downstream end was 29,200 cfs. The levee protects lands within the jurisdiction of the city of Papillion and Bellevue.

In the hydrologic analysis, submitted in March 2005, a peak 100-year discharge near the mouth of West Papillion Creek was 35,300 cfs, for existing land use conditions. A peak 100-year discharge near the mouth was estimated at 37,000 cfs for future (total build out) land use conditions.

During the HEC-RAS hydraulic analysis of the West Papillion Creek, it was discovered that the levee freeboard was compromised throughout the leveed reach. There is less than 2-foot between the 100-year water surface elevation (WSEL) and the top of levee elevation. Figure 1 shows a profile of the top of levee elevation; generated from LiDAR data and the existing conditions water surface profile.

P-MRNRD surveyed the levee tops and it was found that the LiDAR data was in good agreement with the surveyed levee profile. A comparison of the LOMR (approved in 2004) HEC-2 model and the floodplain remapping model was conducted, using the LOMR design discharge of 29,200 cfs at the mouth. It was found that the floodplain remapping model water surface profiles were in good agreement with the LOMR model. Since the levees do not have the required 3- or 4-feet of freeboard with an updated peak discharge of 35,300 cfs, the levees are considered as not providing protection from the base flood and a levee analysis will need to be conducted to define the floodplain.

**The Alternatives**

Several alternatives are available to evaluate the floodplain within the leveed reach. Alternatives include: 1) map area as an AE zone, 2) accept a lesser freeboard requirement, 3) define upstream storage and, 4) map area as an AR Zone.

The first alternative consists of evaluating the floodplain three different levee conditions: 1) no left levee, 2) no right levee and 3) no right or left levees. The maximum BFE would be mapped.

The second alternative is accepting a lesser freeboard requirement. FEMA may approve a freeboard of 2 feet if a risk and uncertainty analysis can demonstrate that 2 feet of freeboard is adequate. It is difficult to demonstrate that a large amount of capacity is available within the freeboard area on stream bank levees, such as the West Papillion Creek levees. The alternative was eliminated.

## **SPECIAL PROBLEM REPORT NO. 1**

The third alternative is storage. Three (3) reservoirs have been proposed in the West Papillion Creek Watershed. In addition, other reservoirs may be constructed within the Watershed as a part of a development in the future. Since these reservoirs are not under design, the effects of these reservoirs can not be included in the analysis. If in the future, additional upstream storage is constructed, the CLOMR/LOMR process could be used to re-certify the levees. This alternative was also eliminated.

The final alternative was mapping the area as an AR Zone (Restoration). FEMA regulations 65.14 describes the AR Zone in which the protection would be restored within 5-years (non-Federal sponsor) after the flood hazard maps effective date. A detailed plan and schedule would need to be developed and executed to convert the floodplain from an AR Zone to an AE Zone with certified levees in place. The hydraulic analysis for an AR Zone would be the same as an AE Zone with no levees. Additional work would be necessary to work with the communities on the compliance of an AR Zone.

### **The Solution:**

The floodplain analysis will be evaluated for three different levee conditions modes for both the existing and future land use conditions: 1) no left levee, 2) no right levee and 3) right and left levees in place. The water surface profile for each levee condition model is to be plotted. In the Floodway Data tables of the FIS, 3 BFE's will be presented for each levee condition.

The floodway analysis is to be based on no right or left levees. The 1-foot surcharge will be based on the difference between the two no levees profiles.

### **Impact to Project Schedule and Cost:**

The following revised schedule is proposed. The end date of the revised schedule indicates a draft submittal to FEMA and does not include time for FEMA review and comment.

<b>Grant expires October 1, 2005.</b>	<b>Original Grant</b>	<b>Revised Schedule</b>
MAS No. 1 - Field Surveys and Reconnaissance	Jan. 1, '04 to Oct. 1, '04	Completed
MAS No. 4- Hydrologic Analyses	Jan. 1, '04 to Oct. 1, '04	Completed
MAS No. 6 - Hydraulic Analyses	Nov. 1, '04 to Apr. 1, '05	Nov. 1, '04 to Sep. 1, '05
MAS No. 8 - Floodplain Mapping	Apr. 1, '05 to Jul. 1, '05	Sep. 1, '05 to Dec. 1, '06
MAS No. 10 - Base Map Acquisition	Jan. 1, '04 to Jun. 1, '05	Jan. 1, '04 to Jul. 15, '05
MAS No. 14 - Post-Preliminary Processing	Dec. 1, '05 to Mar. 1, '06	Apr 1, '06 to Jul. 1, '06

The additional effort to evaluate the levees is \$61,600.

**For Papio-Missouri River Natural Resources District  
For Development of Flood Hazard Data for West Branch Papillion Creek  
and its Tributaries  
Douglas and Sarpy Counties, NE**



**AMENDMENT NO. 2**



**BACKGROUND AND BASIS OF PROPOSAL**

The purpose of Amendment No. 2 is to 1) conduct a levee analysis for the Papio Missouri River Natural Resources District (P-MRNRD) on the earthen levees located along the lower reach of West Papillion Creek and 2) preliminary evaluation for the feasibility of achieving a temporary flood hazard zone designation, Zone AR (restoration). During the hydraulic analysis, it was found that the levee freeboard was less than the minimum freeboard of 3-feet above the 1-percent-annual-chance flood elevation or base flood elevation (BFE). The peak discharge associated with the existing land use conditions exceeded the design capacity of the levees. Since the levees do not meet the requirements of Section 65.10 of the NFIP regulations, the 1-percent-annual flood elevation is to be recomputed as if the levees do not exist. This amendment addresses the work necessary to evaluate the levee system for three conditions: 1) without the left levee, 2) without the right levee, and 3) without both the left and right levees.

Hydraulic analysis of the existing certified leveed reach of West Papillion Creek revealed that the freeboard provided by the existing levee for the 1-percent annual chance flood event is less than the required 3 ft in some locations. Because this is a FEMA certified levee, P-MRNRD has the option to remap the leveed reach as either an AE or AR (restoration) Zone. The AR Zone option may be pursued if the affected communities demonstrate they are in the process of restoring the flood protection system to provide base flood protection, as outlined in Section 65.14 of the CFR, Part 44. This amendment will help the P-MRNRD determine whether additional investigation should be performed to pursue designating the leveed reach along West Papillion Creek as an AE or AR Zone.

**SCOPE OF SERVICES**

The basic objectives of this Project are:

- Provide on-going project management, including attending internal project coordination meetings.
- Evaluate the levee system under different operating conditions.
- Preliminary evaluation for the feasibility of achieving an AR Zone designation
- Determine floodplains and floodways for leveed reach segments.
- Provide technical assistance at FEMA facilitated public meetings.

Amendment No. 2 addresses the Additional Services necessary to conduct the levee evaluation. The tasks described below are added to their respective task series.

Task Series 100 – Project Management

Task Series 300 – Hydrologic Analysis (MAS Activity 4)

Task Series 400 – Hydraulic Analysis (MAS Activity 6)

Task Series 500 – Floodplain Mapping (MAS Activity 8)

Task Series 700 – Appeals and Protest Assistance (MAS Activity 14)

The HDR Team proposes to provide the following professional services over an anticipated six (6) – month project period.

### **TASK SERIES 100 – PROJECT MANAGEMENT**

With the time extension, additional project management activities including general administration and meetings will be conducted.

**Task 140 Additional Project Coordination/Management.** Additional project management tasks, including invoicing, monthly progress reports, and other administrative project activities, will be performed.

**Task 150 Additional Coordination Progress Meetings.** Additional coordination meeting will be conducted with the P-MRNRD and FEMA/RMC.

**Subtask 150.1 Additional Project Coordination Progress Meetings.** One additional coordination meeting will be conducted with the P-MRNRD personnel to review and discuss project progress, and one additional coordination meeting will be conducted with the NFIP personnel to review and discuss project progress

**Subtask 150.2 Additional Coordination with FEMA RMC.** Two additional coordination meetings with the FEMA RMC will be conducted.

#### **Task Deliverables:**

- Monthly invoices and progress reports
- Meetings agenda and minutes

#### **Key Understandings:**

- The duration of the additional project tasks is 6 months.
- Meetings will be held at the offices of the P-MRNRD and attended by 3 HDR professionals.
- FEMA/RMC coordination meetings will be telephone conference calls.

### **TASK SERIES 300 – HYDROLOGIC ANALYSIS – MAS ACTIVITY 3**

The 1-percent-annual-chance flood peak discharges previously submitted to FEMA was reduced to account for levee storage or ponding on the land side of the levee and will be revised for levee analysis. Rather than a few distinct outlet points, much of the drainage area in the leveed reach is distributed along the channel with numerous small interior drainage structures providing outlets to West Papillion Creek. Because much of the drainage area is distributed along West Papillion Creek, including interior drainage flows within the West Papillion Creek system will have minimal impact on the WSELs except at distinct outlet points from larger tributaries. Therefore, Midland Creek is the only major tributary in the leveed reach previously reduced that will be evaluated for contributing to the peak discharge on West Papillion Creek. Because Midland Creek is a right bank tributary to West Papillion Creek, Midland Creek will be evaluated for contributing to West Papillion Creek for the without right levee and without both left and right levee conditions only.

It is also noted that detention structures are proposed on both Midland and South Midland Creeks, significantly reducing the peak discharges downstream. The hydrologic effects of these proposed flood control structures will be used to modify peak discharges on Midland and West Papillion Creeks.

**Task 350 Hydrologic Modifications for Levee Analysis.** Revise the hydrologic analysis of Midland Creek to evaluate the change in hydrologic conditions for the without right levee and without both left and right levee conditions only.



It is also noted that detention structures are proposed on both Midland and South Midland Creeks, significantly reducing the peak discharges downstream. The hydrologic effects of these proposed flood control structures will be used to modify all peak discharges (10-, 50-, 100-, and 500-yr storm events for existing and future land use conditions) on Midland Creek downstream of the detention structures. It is anticipated that these structures will be operational prior to adoption of the revised floodplain maps produced for this study.

The 10-, 100-, and 500-yr peak discharges for existing and future land use conditions on West Papillion Creek will also be adjusted for the detention structures. The 50-yr peak discharges on West Papillion Creek will not require adjustment because the levee flap gates prevent Midland Creek discharges from reaching West Papillion Creek.

The Hydrologic Analysis Report submitted in March 2005 will be amended to document modifications in hydrology discussed above.

**Key Understandings:**

- Midland Creek is the only tributary that will be included for revision of hydrologic analysis.
- P-MRNRD to provide guidance with respect to the status of Midland Creek flood control improvement projects.
- The stage-storage-discharge relationships for the detention structures on Midland and South Midland Creeks will be obtained from design documents, prepared by others.

**TASK SERIES 400 – HYDRAULIC ANALYSIS – MAS ACTIVITY 6**

A levee analysis will be conducted for three conditions: 1) without both left and right levees, 2) without the left levee, and 3) without the right levee. In addition, the preliminary feasibility of restoring the levee system to provide 1-percent-annual-chance flood protection along the earthen levee of West Papillion Creek will be evaluated.

**Task 480 Hydraulic Modifications for Levee Analysis.** Determine if the levee freeboard requirement of 3 ft in open reaches and 4 ft at structures is exceeded. Conduct a levee analysis to determine the BFEs and regulatory floodway.

**Subtask 480.1 Levee Freeboard Determination.** The BFE on the unprotected side (river side) of the levees will be computed with the levees in place for existing and future land use conditions. The freeboard for existing and future land use conditions with the levee in place will be determined.

**Subtask 480.2 Comparison of Levee Elevations.** As-built levee elevations were surveyed shortly after each segment was constructed. A comparison of top of levee elevations from these as-built drawings with top of levee elevations obtained using LiDAR data will be conducted. The P-MRNRD will also survey the top of levee profile and a comparison of the surveyed top of levee elevations with the LiDAR levee elevations will be conducted. Adjustments to the LiDAR levee elevations will be made, if appropriate.

**Subtask 480.3 Levee Analyses.** Levee analysis includes three conditions: 1) without both left and right levees, 2) without left levee, and 3) without right levee. The highest flood level determined for each segment of the channel (left land side, river side, and right land side) from levee analysis will be used to establish the regulatory BFEs, resulting in the possibility of three sets of BFEs

for both existing and future land use conditions (left land side, river side, and right land side). It is noted that the 1-percent annual chance flood WSELs computed without both left and right side levees will be used as the base flood, or without floodway condition, for floodway analysis (elevations used to determine surcharge); however, the without left and right levee WSELs will not be used as regulatory BFEs. The BFEs for the river side of the levees will be determined with both left and right levees in place.

**Subtask 480.4 Water Surface Profiles for Leveed Reach.** A total of 9 water surface profiles will be generated for the reach of West Papillion Creek having both left and right bank levees:

- Flood profiles for the 10-, 2-, and 1-percent annual chance flood WSELs representing existing conditions hydrology and the 1-percent annual chance flood WSELs representing future conditions hydrology will be plotted with both left and right levees in place. (4 profiles)
- The 1-percent annual chance flood WSELs will be plotted 1) without the levee and 2) without the right levee for both existing and future conditions hydrology. Both the existing and future conditions hydrology will have two profiles: 1) WSELs computed without left levee and 2) WSELs computed without right levee. (4 profiles)
- The 0.2-percent annual chance flood WSELs will be plotted without left and right levee elevations for existing conditions hydrology. (1 profile)

**Subtask 480.5. Floodway Determination in Leveed Reach.** Define the floodway for existing land use conditions using levee analysis without both left and right levees. One set of floodway surcharges and floodway widths will be determined and included in the Floodway data table. A maximum 1-foot surcharge will be used to define the floodway or a minimum of 3H:1V of the channel depth measured from the channel invert to the top of bank, plus 20 feet from the center of the channel. It is noted that the 1-percent annual chance flood WSELs computed without both left and right levees will be used as the base flood, or without floodway condition, for floodway analysis (elevations used to determine surcharge).

**Subtask 480.6. Report Documentation.** Prepare report documentation that describes the methodology and the results of the levee analysis.

**Task 485 Preliminary Evaluation for Feasibility of Achieving Zone AR.** Incorporate the hydrologic analysis for tributary detention structures on South Papillion Tributary and West Papillion Tributary with and without Dam Sites 12, 15A, and 19 (2 sets of peak discharges) using the HEC-HMS model developed for the West Papillion Creek Floodplain Remapping project. Define the 1-percent-annual-chance flood peak discharge for both existing and future land use conditions (2 sets of peak discharges).

Incorporate one set of revised 1-percent-annual-chance flood peak discharges in the HEC-RAS hydraulic model used for the West Papillion Creek Floodplain Remapping project. Determine 1-percent-annual-chance flood WSELs using these discharges for the leveed reach of West Papillion Creek, and determine available freeboard. Perform additional preliminary hydraulic modeling evaluating the effects of raising the 66th and 84th St. bridges. Results will be documented in a technical memorandum.

**Key Understandings:**

- Levee analysis will be performed for the 1-percent annual chance flood event for existing and future hydrology conditions only. The existing

condition 10- and 2-percent annual chance flood events will be modeled with both left and right bank levees in place, and the existing condition 0.2-percent annual chance flood event will be modeled without both left and right bank levees in place.

- A maximum of 9 flood profiles will be plotted including the 10-, 2-, and 0.2-percent annual chance flood events for existing condition hydrology and the 1-percent annual chance flood events with levees, without left bank levees, and without right bank levees for existing and future condition hydrology.
- Hydraulic modeling will be limited to one-dimensional analysis using HEC-RAS version 3.0 or 3.1. Split flow analysis is not anticipated and is not included in this scope.
- No interior drainage system analysis will be performed.

#### **TASK SERIES 500 – FLOODPLAIN MAPPING – MAS ACTIVITY 8**

The 1-percent-annual-chance floodplain and floodway boundaries along the leveed reach of West Papillion Creek will be delineated on the topographic data.

**Task 580 Floodplain Boundaries for Leveed Reach.** The highest flood level determined for each segment of the channel (left land side, river side, and right land side) from levee analysis were used to establish the regulatory BFEs, resulting in the possibility of three sets of BFEs for both existing and future land use conditions (left land side, river side, and right land side). These three sets of BFEs will be used to delineate the floodplain boundaries for each segment of the channel (left land side, river side, and right land side) for existing and future conditions hydrology, with a line along the levee centerline separating the areas of different BFEs. It is noted that the 100-yr flood boundaries on the unprotected side (river side) of the levees will be delineated with the levees in place for existing and future land use conditions.

**Task 590 Floodway Boundaries for Leveed Reach.** Delineate the floodway for existing land use conditions without both left and right levees. One set of floodway widths will be delineated.

##### **Key Understandings:**

- No mapping of interior drainage systems will be performed.

#### **TASK SERIES 730 – APPEALS AND PROTEST ASSISTANCE – MAS ACTIVITY 14**

During the appeals process, the HDR Team will provide technical support to P-MRNRD. Since the revised floodplain and floodway boundaries will have a greater impact on local residents and communities, the amount of coordination with the public will be necessary.

**Task 730 Additional Appeals and Protest Support.** One additional public meeting will be attended for assistance in presentation, and one additional meeting with the P-MRNRD will be held for response to FEMA and public comments.

##### **Key Understandings:**

- FEMA will be responsible for the preparation, presentation and documentation of the Appeals and Protest Public Meetings.
- Additional technical support is limited to the hours indicated on the fee estimate.

ATTACHMENT "A"															
PAPILLION MISSOURI RIVER NATURAL RESOURCES DISTRICT															
WEST BRANCH PAPILLION CREEK FLOODPLAIN REMAPPING															
FEE ESTIMATE - P-MNRD FUNDED AMENDMENT NO. 2															
HDR Engineering, Inc. Estimated Hours/Costs															
TASKS	Project Principal	Project Manager	QC Specialists	Sr Engr/ Technical	Water Resources Eng.	Tech Support	Clerical	Total Hours	Total Labor Cost	Tech. Fee	Printing	Travel	Misc.	Total Expenses [1]	Est. Total Cost
TASK SERIES 100 - PROJECT MANAGEMENT															
Task 140 Additional Project Management			20		4		4	28	\$3,732	\$126				\$126	\$3,858
Task 150 Additional Coordination Progress Meetings			20	20			4	64	\$8,196	\$289		\$110		\$799	\$8,595
Subtask 150.1 Additional P-MNRD/FEMA Project Coordination with FEMA/RMC			4	4			4	16	\$1,692	\$72				\$72	\$1,764
Subtask 150.2 Additional Coordination with FEMA/RMC			44	28			12	108							
Estimated Task Hours Subtotal	0		44	28			12	108							
Estimated Task Cost Subtotal	\$0	\$6,072	\$0	\$4,592	\$2,108	\$0	\$948	108	\$13,820	\$487	\$0	\$110	\$0	\$597	\$14,417
TASK SERIES 300 - HYDROLOGIC ANALYSIS - MAS ACTIVITY 4															
Task 350 Hydrologic Modifications for Levee Analysis			0	0			0	0	\$0	\$0				\$0	\$0
Estimated Task Hours Subtotal	0		0	0			0	0							
Estimated Task Cost Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TASK SERIES 400 - HYDRAULIC ANALYSIS - MAS ACTIVITY 6															
Task 480 Hydraulic Modifications for Levee Analysis															
Subtask 480.1 Levee Freeboard Determination								0	\$0	\$0				\$0	\$0
Subtask 480.2 Comparison of Levee Elevations								0	\$0	\$0				\$0	\$0
Subtask 480.3 Levee Analyses								0	\$0	\$0				\$0	\$0
Subtask 480.4 Water Surface Profiles for Leveed Reach								0	\$0	\$0				\$0	\$0
Subtask 480.5 Floodway Determination in Leveed Reach								0	\$0	\$0				\$0	\$0
Subtask 480.6 Report Documentation								0	\$0	\$0				\$0	\$0
Task 485 Preliminary Evaluation for Feasibility of Achieving Zone AR			8	8		24		120	\$11,696	\$541		\$220	\$110	\$871	\$12,567
Estimated Task Hours Subtotal	0		8	8		24	0	120							
Estimated Task Cost Subtotal	\$0	\$1,104	\$0	\$1,312	\$7,360	\$1,920	\$0	120	\$11,696	\$541	\$0	\$220	\$110	\$871	\$12,567
TASK SERIES 500 - FLOODPLAIN MAPPING - MAS ACTIVITY 8															
Task 580 Floodplain Boundaries for Leveed Reach								0	\$0	\$0				\$0	\$0
Task 590 Floodway Boundaries for Leveed Reach								0	\$0	\$0				\$0	\$0
Estimated Task Hours Subtotal	0		0	0		0	0	0							
Estimated Task Cost Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TASK SERIES 700 - APPEALS AND PROTEST ASSISTANCE - MAS ACTIVITY 14															
Task 730 Additional Appeals and Protest Support			12	12		6		50	\$5,944	\$226		\$110		\$336	\$6,280
Estimated Task Hours Subtotal	0		12	12		6	0	50							
Estimated Task Cost Subtotal	\$0	\$1,656	\$0	\$1,968	\$1,840	\$480	\$0	50	\$5,944	\$226	\$0	\$110	\$0	\$336	\$6,280
TOTAL HOURS	0		64	48		30	12	278							
TOTAL COST (ROUNDED)	\$0	\$9,900	\$0	\$7,900	\$11,400	\$2,400	\$300		\$21,500	\$3,302	\$0	\$390	\$1,900		\$23,200

110%

1) Includes administrative fee for expenses @

(1) Includes administrative fee for expenses @ 10%

ATTACHMENT "B"																											
PAPILLION MISSOURI RIVER NATURAL RESOURCES DISTRICT																											
WEST BRANCH PAPILLION CREEK FLOODPLAIN REMAPPING																											
FEE ESTIMATE - FEMA FUNDED AMENDMENT NO. 2																											
HDR Engineering, Inc. Estimated Hours/Costs																											
TASKS		Project Principal	Project Manager	QC Specialist	Sr Engr/ Technical	Water Resources Eng.	Tech Support	Clerical	Total Hours	Total Labor Cost	Tech. Fee	Printing	Travel	Misc.	Total Expenses [1]	Est. Total Cost											
TASK SERIES 100 - PROJECT MANAGEMENT																											
Task 140	Additional Project Management																										
Task 150	Additional Coordination Progress Meetings																										
Subtask 150.1	Additional P.M. REQUIRED FOR Project Coordination Progress Mgs																										
Subtask 150.2	Additional Coordination with FEMA/RMC																										
	Estimated Task Hours Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
	Estimated Task Cost Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0										
TASK SERIES 300 - HYDROLOGIC ANALYSIS - WAS ACTIVITY 4																											
Task 350	Hydrologic Modifications for Levee Analysis															2	4	32	8	46	\$4,516	\$207		\$207	\$4,723		
	Estimated Task Hours Subtotal	0	2	0	4	32	8	0	46																		
	Estimated Task Cost Subtotal	\$0	\$276	\$0	\$656	\$2,844	\$640	\$0	46	\$4,516	\$207	\$0	\$0	\$0	\$0	\$207	\$4,723										
TASK SERIES 400 - FLOODPLAIN ANALYSIS - WAS ACTIVITY 6																											
Task 480	Hydraulic Modifications for Levee Analysis																										
Subtask 480.1	Levee Freeboard Determination															2		24		26	\$2,484	\$117		\$117	\$2,601		
Subtask 480.2	Comparison of Levee Elevations															2		32	8	42	\$3,860	\$189		\$189	\$4,049		
Subtask 480.3	Levee Analyses															2	8	4	48	62	\$6,740	\$280		\$280	\$7,020		
Subtask 480.4	Water Surface Profiles for Leveed Reach															2		4	32	16	\$4,156	\$244	\$56		\$299	\$5,455	
Subtask 480.5	Floodway Determination in Leveed Reach															2		8	48	58	\$6,004	\$262		\$262	\$6,266		
Subtask 480.6	Report Documentation															2	2	2	16	4	32	\$3,244	\$144	\$55		\$3,443	\$3,663
Task 485	Preliminary Evaluation for Feasibility of Achieving Zone AR																			0	\$0	\$0		\$0	\$0		
	Estimated Task Hours Subtotal	0	12	10	18	202	28	4	274																		
	Estimated Task Cost Subtotal	\$0	\$1,656	\$1,740	\$2,952	\$18,584	\$2,740	\$316	274	\$27,488	\$1,236	\$110	\$0	\$220	\$1,566	\$29,054											
TASK SERIES 500 - FLOODPLAIN MAPPING - WAS ACTIVITY 8																											
Task 580	Floodplain Boundaries for Leveed Reach																	4	24	16	44	\$4,144	\$180		\$180	\$4,324	
Task 590	Floodway Boundaries for Leveed Reach																	4	24	16	44	\$4,144	\$198		\$198	\$4,452	
	Estimated Task Hours Subtotal	0	0	0	8	48	32	0	88																		
	Estimated Task Cost Subtotal	\$0	\$0	\$0	\$1,312	\$4,416	\$2,560	\$0	88	\$8,288	\$397	\$0	\$0	\$110	\$507	\$8,795											
TASK SERIES 700 - APPEALS AND PROTEST ASSISTANCE - WAS ACTIVITY 14																											
Task 730	Additional Appeals and Protest Support																			0	\$0			\$0	\$0		
	Estimated Task Hours Subtotal	0	0	0	0	0	0	0	0																		
	Estimated Task Cost Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0										
TOTAL HOURS		0	14	10	30	282	68	4	408																		
TOTAL COST (ROUNDED)		\$0	\$1,660	\$1,740	\$2,952	\$18,584	\$2,740	\$316	274	\$40,300	\$1,400	\$100	\$0	\$300	\$2,300	\$42,600											

[1] includes administrative fee for expenses @ 10%

# APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 0348-0043

<b>1. TYPE OF SUBMISSION:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Application  <input type="checkbox"/> Construction  <input checked="" type="checkbox"/> Non-Construction </div> <div style="width: 45%;"> Preapplication  <input type="checkbox"/> Construction  <input type="checkbox"/> Non-Construction </div> </div>		<b>2. DATE SUBMITTED</b> July 15, 2005	Applicant Identifier  
		<b>3. DATE RECEIVED BY STATE</b>  	State Application Identifier  
		<b>4. DATE RECEIVED BY FEDERAL AGENCY</b>  	Federal Identifier  

<b>5. APPLICANT INFORMATION</b>																						
Legal Name: <b>Papio-Missouri River Natural Resources Distric</b> Address (give city, county, state, and zip code): <b>8901 S. 154th Street</b> <b>Omaha, NE 68138-3621</b>	Organizational Unit: <b>Subdivision of the State of Nebraska</b> Name and telephone number of person to be contacted on matters involving this application (give area code): <b>Paul Woodward - (402) 444-6222</b>																					
<b>6. EMPLOYER IDENTIFICATION NUMBER (EIN):</b> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> 4 7 - 0 5 4 2 4 6 9 </div>	<b>7. TYPE OF APPLICANT: (enter appropriate letter in box)</b> <span style="border: 1px solid black; padding: 0 5px;">G</span>  <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> A. State  B. County  C. Municipal  D. Township  E. Interstate  F. Intermunicipal  G. Special District </div> <div style="width: 50%;"> H. Independent School Dist.  I. State Controlled Institution of Higher Learning  J. Private University  K. Indian Tribe  L. Individual  M. Profit Organization  N. Other (Specify) _____ </div> </div>																					
<b>8. TYPE OF APPLICATION:</b> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input type="checkbox"/> New <input type="checkbox"/> Continuation <input checked="" type="checkbox"/> Revision </div> <div style="margin-top: 5px;"> If Revision, enter appropriate letter(s) in box(es):  <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">A</div> <div style="border: 1px solid black; padding: 2px;"></div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%;"> A. Increase Award  D. Decrease Duration </div> <div style="width: 30%;"> B. Decrease Award  Other (specify): _____ </div> <div style="width: 30%;"> C. Increase Duration </div> </div> </div>																						
<b>9. NAME OF FEDERAL AGENCY:</b> <b>Federal Emergency Management Agency</b>																						
<b>10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:</b>  <div style="display: flex; justify-content: flex-end; margin-right: 50px;"> <div style="border: 1px solid black; padding: 2px;">8 3 - 5 5 5</div> </div> <b>TITLE: Cooperating Technical Partner:</b>																						
<b>11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:</b> <b>Update flood risk information for the West Branch Papilion Creek and tributaries</b>																						
<b>12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):</b> <b>Douglas and Sarpy County, Nebraska</b>																						
<b>13. PROPOSED PROJECT:</b> Start Date: 09/30/03    Ending Date: 03/01/06																						
<b>14. CONGRESSIONAL DISTRICTS OF:</b> a. Applicant: 1 and 2    b. Project: 1 and 2																						
<b>15. ESTIMATED FUNDING:</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width:20%;">a. Federal</td> <td style="width:10%;">\$</td> <td style="width:70%; text-align: right;">392,500.00</td> </tr> <tr> <td>b. Applicant</td> <td>\$</td> <td style="text-align: right;">93,780.00</td> </tr> <tr> <td>c. State</td> <td>\$</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>d. Local</td> <td>\$</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>e. Other</td> <td>\$</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>f. Program Income</td> <td>\$</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>g. TOTAL</td> <td>\$</td> <td style="text-align: right;">486,280.00</td> </tr> </table>		a. Federal	\$	392,500.00	b. Applicant	\$	93,780.00	c. State	\$	0.00	d. Local	\$	0.00	e. Other	\$	0.00	f. Program Income	\$	0.00	g. TOTAL	\$	486,280.00
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e. Other	\$	0.00																				
f. Program Income	\$	0.00																				
g. TOTAL	\$	486,280.00																				
<b>16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?</b>  a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:  DATE: _____  b. NO. <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW																						
<b>17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?</b> <input type="checkbox"/> Yes    If "Yes," attach an explanation <input checked="" type="checkbox"/> No																						
<b>18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.</b>																						
a. Type Name of Authorized Representative Steven G. Ollmans	b. Title General Manager																					
c. Telephone Number (402) 444-6222																						
d. Signature of Authorized Representative																						
e. Date Signed July 15, 2005																						

FEDERAL EMERGENCY MANAGEMENT AGENCY BUDGET INFORMATION--NONCONSTRUCTION PROGRAMS				See reverse for Paperwork Burden Disclosure Notice	Page 1 of 1 pages	OMB No. 3067-0206 Expires June 30, 1998
1. PROGRAM AGENCY AND ORGANIZATION ELEMENT TO WHICH REPORT IS SUBMITTED		2. FEDERAL GRANT OR OTHER IDENTIFYING NUMBER ASSIGNED		3. RECIPIENT ORGANIZATION (Name and complete address, including zip code)		
Federal Emergency Management Agency		EMK-2003-CA-3045		Papio-Missouri River Natural Resources District 8901 S. 154th Street Omaha, NE 68138-3621		
4. EMPLOYER IDENTIFICATION		5. RECIPIENT ACCOUNT NUMBER OR I.D. NO.		6. BUDGET PERIOD (Month, Day, Year) Beginning Date: 09/30/03 Ending Date: 03/01/06		
47-0542469				7. Mark "X" in Appropriate Box <input type="checkbox"/> New Budget <input checked="" type="checkbox"/> Revised Budget. Enter Grant Number in Box 2 above Date of Budget Revision:		
8. FEDERAL RATE SHARING (%)		100.0 %		100.0 %		Total
9. PROGRAM ACRONYM CFDA NUMBER		CTP 83-555		CTP 83-555		
Object Class	a. Personnel	0.00				0.00
	b. Fringe Benefits	0.00				0.00
	c. Travel	0.00				0.00
	d. Equipment	0.00				0.00
	e. Supplies	0.00				0.00
	f. Contractual	382,000.00		104,280.00		486,280.00
	g. Construction	0.00				0.00
	h. Other	0.00				0.00
	i. Total Direct Charges (10a to 10h)	382,000.00		104,280.00		486,280.00
	j. Indirect Charges	0.00				0.00
Source	k. Total (Sum of 10i & 10j)	382,000.00		104,280.00		486,280.00
	l. Federal Share	349,900.00		42,600.00		392,500.00
	Non-Federal Resources:					
	m. Applicant	32,100.00		61,680.00		93,780.00
Income	n. State					
	o. Local					
	p. Other Sources					
	q. Total (Sum of 10l to 10p)	382,000.00		104,280.00		486,280.00
r. Program Income						
s. Detail on Indirect Cost						
Indirect Cost	Type of Rate (mark "X" in one box)					
	Rate: %					
11. Signature of Authorizing Official		12. Name and Title (Type or print)		13. Telephone Number (Area code, Number and Extension)		Date Report Submitted
		Steven G. Oltmans General Manager		(402) 444-6222		July 15, 2005