MEMORANDUM TO PROGRAMS, PROJECTS AND OPERATIONS SUBCOMMITTEE:

SUBJECT: Update on Papio Creek Watershed PL 566 Structures #S-27, S-31 and S-32 Rehabilitation Assistance and Proposal for Papio Creek Watershed PL 566 Structure #W-3 and Turtle Creek Watershed PL 566 Structure #2 Breach Analysis Assistance

DATE: February 24, 2004

BY: Martin P. Cleveland, P.E., Construction Engineer

Approximately two years ago, the USDA – Natural Resources Conservation Service (NRCS) initiated a dam rehabilitation assistance program to address the needs of aging dams throughout the United States, in particular those dams built through their Public Law (PL) 566 Program. The PL 566 Program has been designing/building dams for about 65 years.

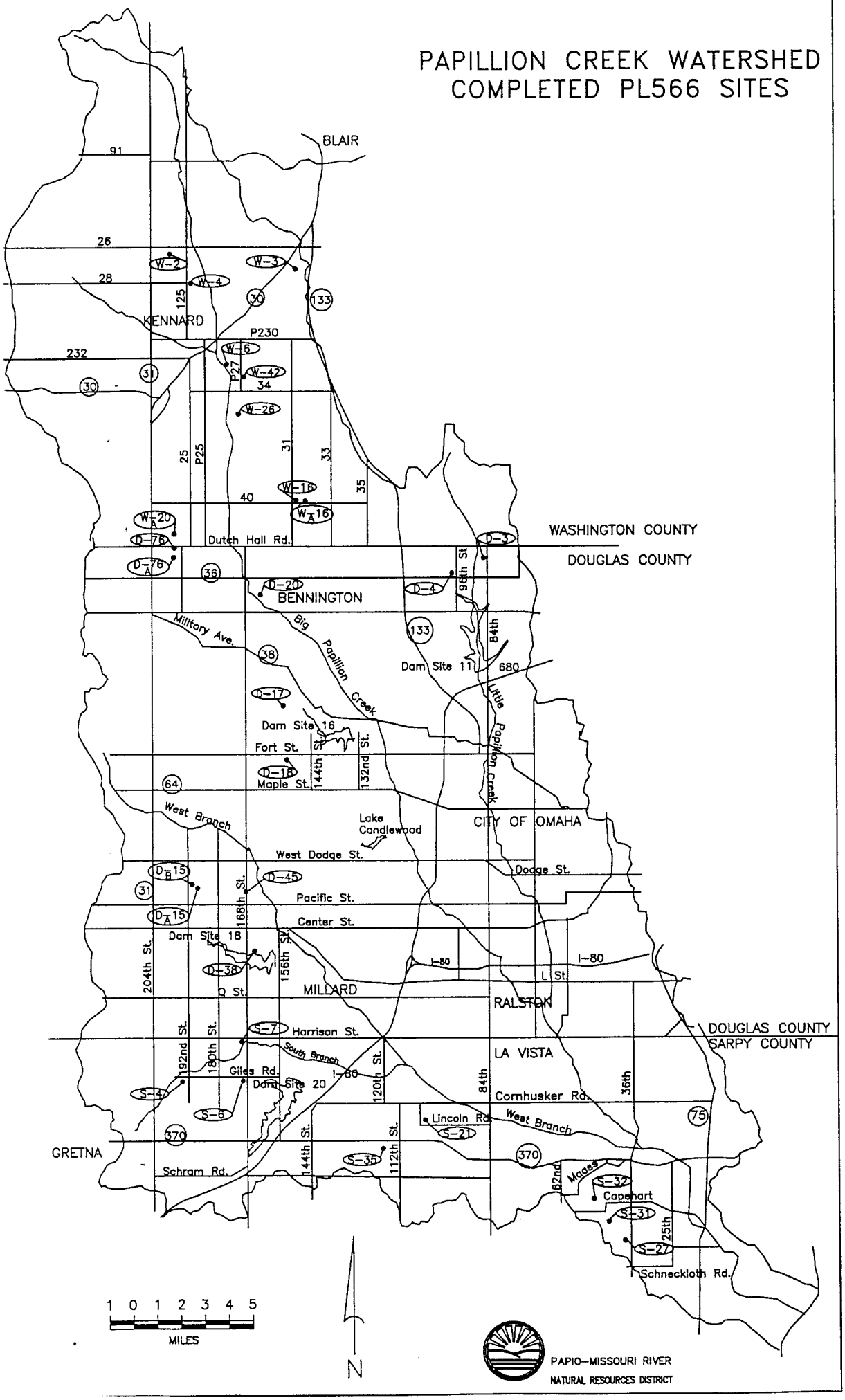
The District owns/operates 70 dams, 50 of which were built via the PL 566 Program. The District's PL 566 dams range in age from 1962 to 1997. The NRCS has identified 3 District dams (S-27, S-31 and S-32) that are eligible for the rehabilitation funding, primarily as the result of the proximity of residential units downstream of these dams and potential damage to structures and human life if the dams would fail (breach). These dams are located in Bellevue area, near 36th Street and Capehart Road.

At the May 8, 2003 Board of Directors meeting, Memorandum of Understanding Agreements (MOU) between the NRCS and the District for S-27, S-31 and S-32 were approved. The MOU outlines the cost share split for design, land rights and construction. Federal funding for the project will be up to 65 percent of the total costs of the rehabilitation project, but will not exceed 100 percent of the actual construction costs incurred in the rehabilitation. NRD would be responsible for all land rights and permits. At this stage of the project the rehabilitation costs have not been estimated, as the specific design is unknown. Rehabilitation work is subject to available funding of both NRCS and NRD. Attached is a status report by NRCS related to the before –mentioned dams.

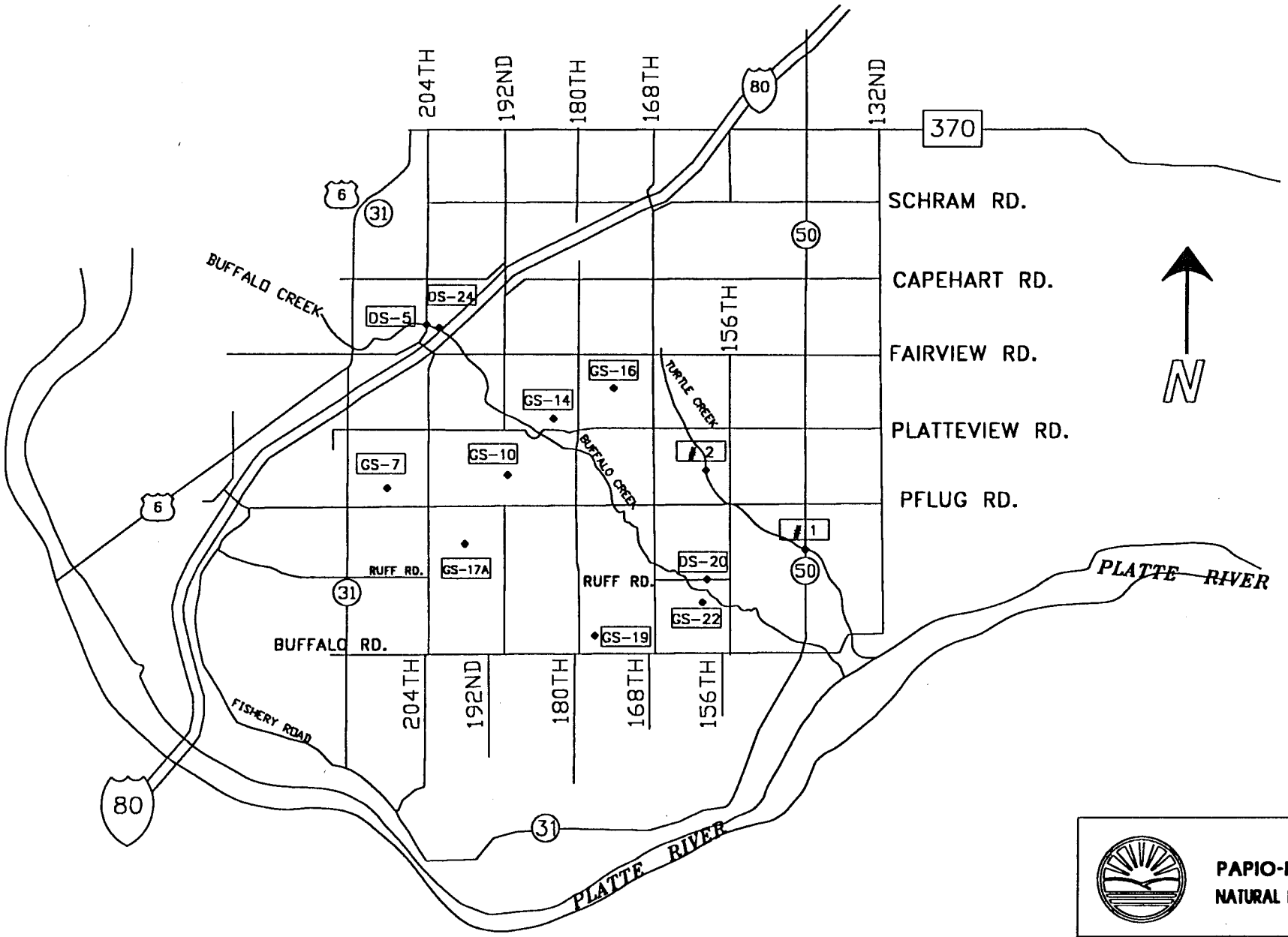
During fall 2003, the NRCS inspected potential dam rehabilitation sites (Papio Creek Sites #D-20, D-38, S-6, S-21, S-35, W-3, W-6, W-16 and W-42; Tekamah-Mud Creek Site #6-2; Turtle Creek Site #2). The NRCS review team concluded that 2 sites, Papio Creek Site #W-3 and Turtle Creek Site #2 were potentially eligible for Rehabilitation Program. Attached are study reports for these two sites. Additional investigation (breach analysis) by the NRCS is needed in order to conclude the site eligibility.

It is Management's recommendation that the Subcommittee recommend to the Board that the District request that the NRCS conduct a breach analysis for Papio Creek Site #W-3 and Turtle Creek Site #2 to determine if they are eligible for the NRCS Rehabilitation Program.

PL56677 File: 502


PAPILLION CREEK WATERSHED
COMPLETED PL566 SITES
BLAIR
KENNARD
WASHINGTON COUNTY
DOUGLAS COUNTY
BENNINGTON
Dutch Hall Rd.
Military Ave.
Big Papillion Creek
Dam Site 11
Dam Site 16
Fort St.
Maple St.
West Branch
Lake Candlewood
CITY OF OMAHA
West Dodge St.
Dodge St.
Pacific St.
Center St.
Dam Site 18
MILLARD
RALSTON
L St.
I-80
Harrison St.
DOUGLAS COUNTY
SARPY COUNTY
LA VISTA
South Branch
Giles Rd.
Dam Site 20
Cornhusker Rd.
Lincoln Rd.
West Branch
GRETNA
Schram Rd.
Mages
Capehart
Schneckloth Rd.
MILES
N
PAPIO–MISSOURI RIVER
NATURAL RESOURCES DISTRICT

BUFFALO CREEK & TURTLE CREEK
COMPLETED GRADE STABILIZATION STRUCTURES



PAPIO-MISSOURI RIVER
NATURAL RESOURCES DISTRICT

DATE: 6/2/94 | FILE NAME:K:\DWG\MNBUFF

USDA United States Department of Agriculture

Natural Resources Conservation Service

Nebraska NRCS State Office
Federal Building, Room 152
100 Centennial Mall North
Lincoln, NE 68508-3866

Subject: Watershed Rehabilitation Update
Papio Creek, S-27, S-31, & S-32

Date: 3/1/2004

To: Don Doty, DC
Omaha Field Office

File Code:390-15

This is to give you a brief progress report on the planning process for the Papio Creek Rehabilitation project structures, Sites S-27, S-31 and S-32. After meeting with the P-MR NRD Board of Directors and signing the Memorandum of Understanding for the planning process on May 6, 2003, the NRCS advertised to obtain Architect and Engineering services for the planning project. A contract was signed on September 30, 2003 with the HDR, Engineering, Inc. for these planning services.

The NRCS is close to completing our negotiations with HDR Engineering, Inc. for the Task Orders to complete the planning process. This Task Order includes and approximate time schedule of 12 months for the completion of planning after the contract is finalized.

The Omaha NRCS Field Office will be notified as soon as the contracting process has been completed and project planning can be initiated for Papio Creek S-27, S-31 and S-32.

/s/ Marvin D. Brown

MARVIN D. BROWN
Assistant State Conservationist/Water Resources (acting)

Watershed Rehabilitation Program Assessment Report
Papillion Creek Watershed
Douglas/Sarpy/Washington Counties, Nebraska
March 2004

- The watershed rehabilitation program is part of the PL-566 Small Watersheds Program administered by NRCS. It was authorized in the 2002 Farm Bill.
- Applications are accepted anytime and ranked in June, each calendar year. Technical Assistance, funding for planning, and investigation work is requested during the following Federal Government Fiscal Year, depending on needs.
- Supplemental Watershed Work Plans are the result of the application and study for rehabilitation.
- During FY2003 (October 2002- September 2003) 11 sites were evaluated for consideration for the Watershed Rehabilitation Program.

SUMMARY OF ASSESSMENT AND FINDINGS

Papio Creek Watershed:

Site	Issue	Finding	Recommendation
S-35	potential hazard class change	No Change, No maintenance problems	Continue normal operation
S-6	potential hazard class change	No Change, No maintenance problems	Continue normal operation
S-21	potential hazard class change	No Change, No maintenance problems	Continue normal operation
D-38	potential hazard class change	No Change, No maintenance problems	Continue normal operation
D-20	Sediment issues	No Change, No maintenance problems	Continue normal operation
W-42	Sediment issues	No Change, No maintenance problems	Continue normal operation
W-3	Debris issue	**Houses in downstream breach inundation zone, potential hazard classification change (See Assessment Report)**	**Request downstream survey and dam breach routing analysis for Hazard Classification change and Rehabilitation Planning.**
W-6	Sediment issues	No Change, No maintenance problems	Continue normal operation
W16	Sediment issues	No Change, No maintenance problems	Continue normal operation

Tek - Mud Watershed

Site	Issue	Finding	Recommendation
6-2	potential hazard class change	No Change, No maintenance problems	Continue normal operation

Turtle Creek Wateshed

Site	Issue	Finding	Recommendation
2	potential hazard class change	**Houses in downstream breach inundation zone, potential hazard classification change (See Assessment Report)**	**Request downstream survey and dam breach routing analysis for Hazard Classification change and Rehabilitation Planning.**

Site Assessment Report

Papio Creek Watershed
Site: W-3
Washington County, Nebraska

Prepared by: Natural Resources Conservation Service
Lincoln, Nebraska

December, 2003

Table of Contents

Abstract

The Small Watershed Rehabilitation Amendment (PL-472) has authorized funding and technical assistance to rehabilitate aging dams built under the USDA Watershed Protection and Flood Prevention Act (PL-566). Sponsors of these project dams can apply for rehabilitation assistance to extend the service life of their dams by 50 to 100 years while ensuring that the dams meet applicable safety and performance standards. Policy established by the Natural Resources Conservation Service (NRCS) allows local sponsors of these dams to request preliminary site assessments. Each assessment will be conducted by NRCS and local sponsor personnel, and will provide the sponsor with information to decide if a formal request for rehabilitation should be pursued. The Papio-Missouri River Natural Resource District (PMRNRD) has requested a preliminary assessment of Papio Creek Watershed Site W-3. A team comprised of NRCS and PMRNRD personnel completed field assessment of this site on September 12, 2003.

Papio Creek Site W-3 is one of 35 grade stabilization structures built in Douglas, Sarpy, and Washington counties as part of the Papillion Creek Watershed PL-566 Project, which was authorized in 1967. The original local sponsors were the soil and water conservation districts, county commissioners, and supervisors of Douglas, Sarpy, and Washington counties. The Papio-Missouri Natural Resources District was created in 1972 and became the local sponsoring organization.

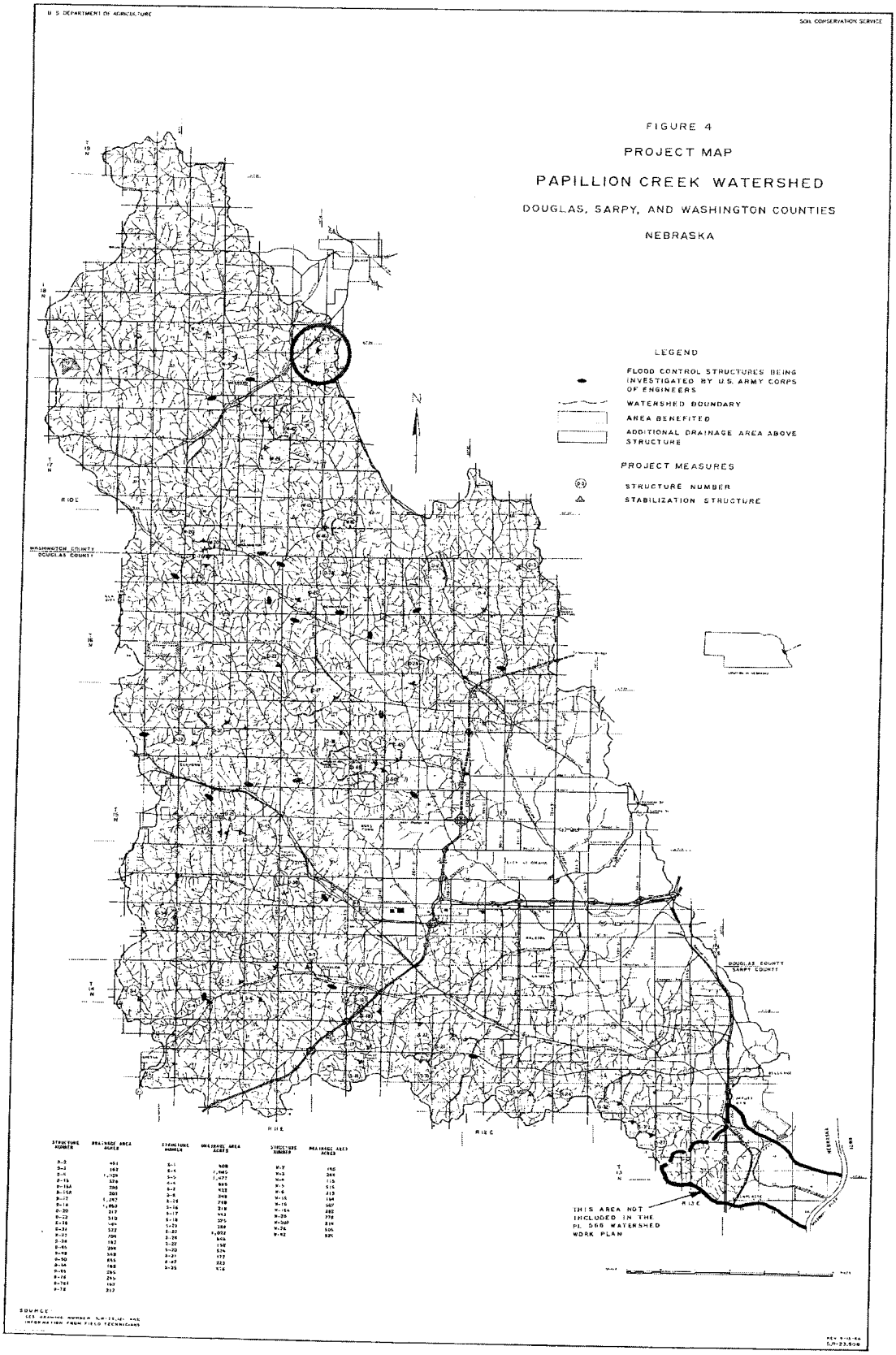
Construction of Site W-3 was completed in 1983.

THE REHABILITATION PROCESS

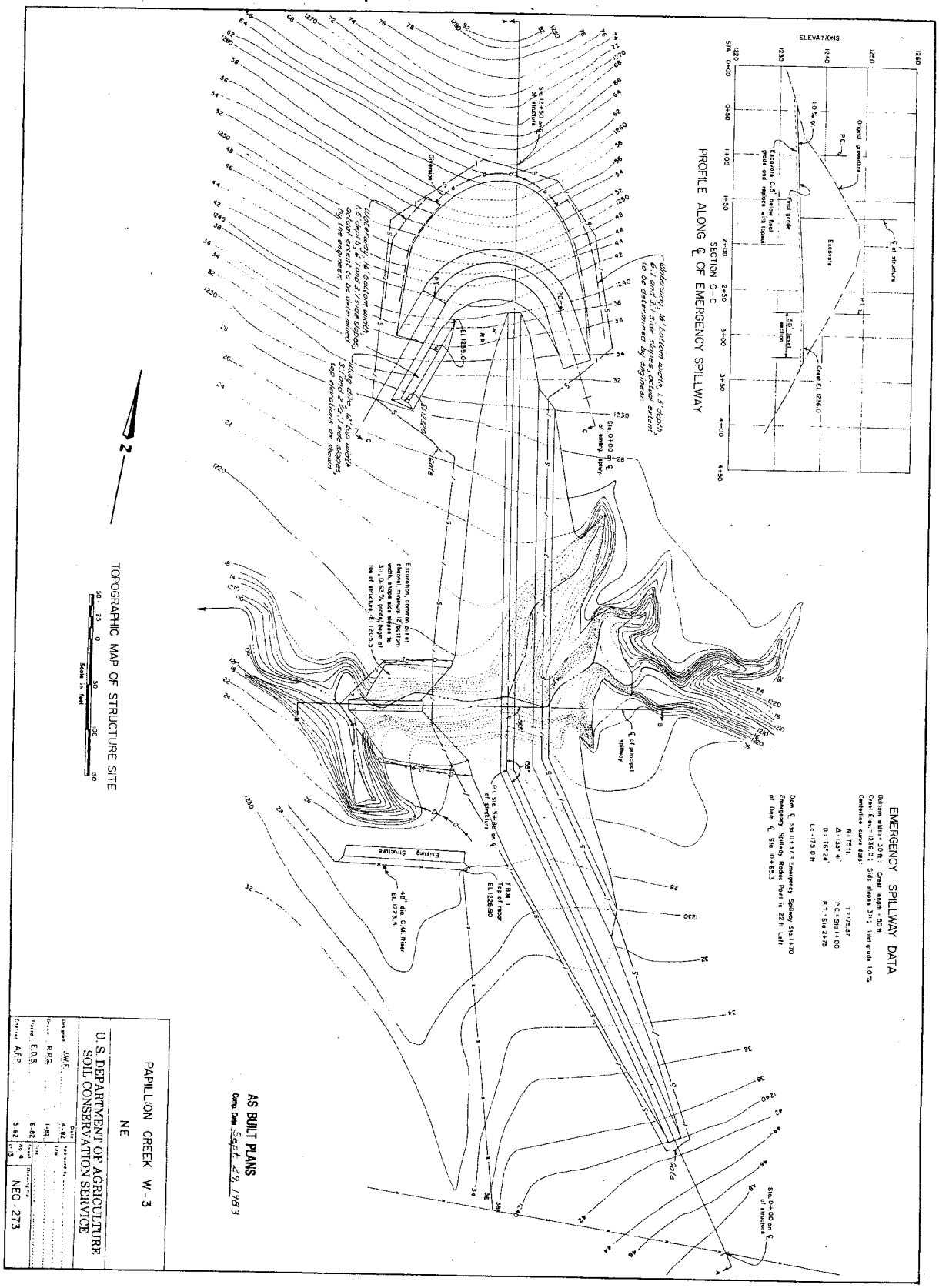
The Small Watershed Rehabilitation Amendment (PL-472) was authorized by Congress in 2000. It is an amendment to PL-566, the original legislation that allows NRCS to plan and install small watershed projects at the request of local sponsoring organizations.

Like most federal legislation, the authorizing authority does not include the funding. Funding occurs as part of the annual federal budgeting process. While funding for rehabilitation work has been high, it has been insufficient to address the needs of literally thousands of watershed structures built over nearly five decades (in Nebraska alone, there are over 900 watershed project dams). This has resulted in the need to rank applications for rehabilitation assistance.

The primary criterion for achieving a high ranking is whether the site has had a hazard classification change. Changes in hazard classification usually occur with residential and commercial construction downstream of the structure, resulting in an increased risk of loss of life.

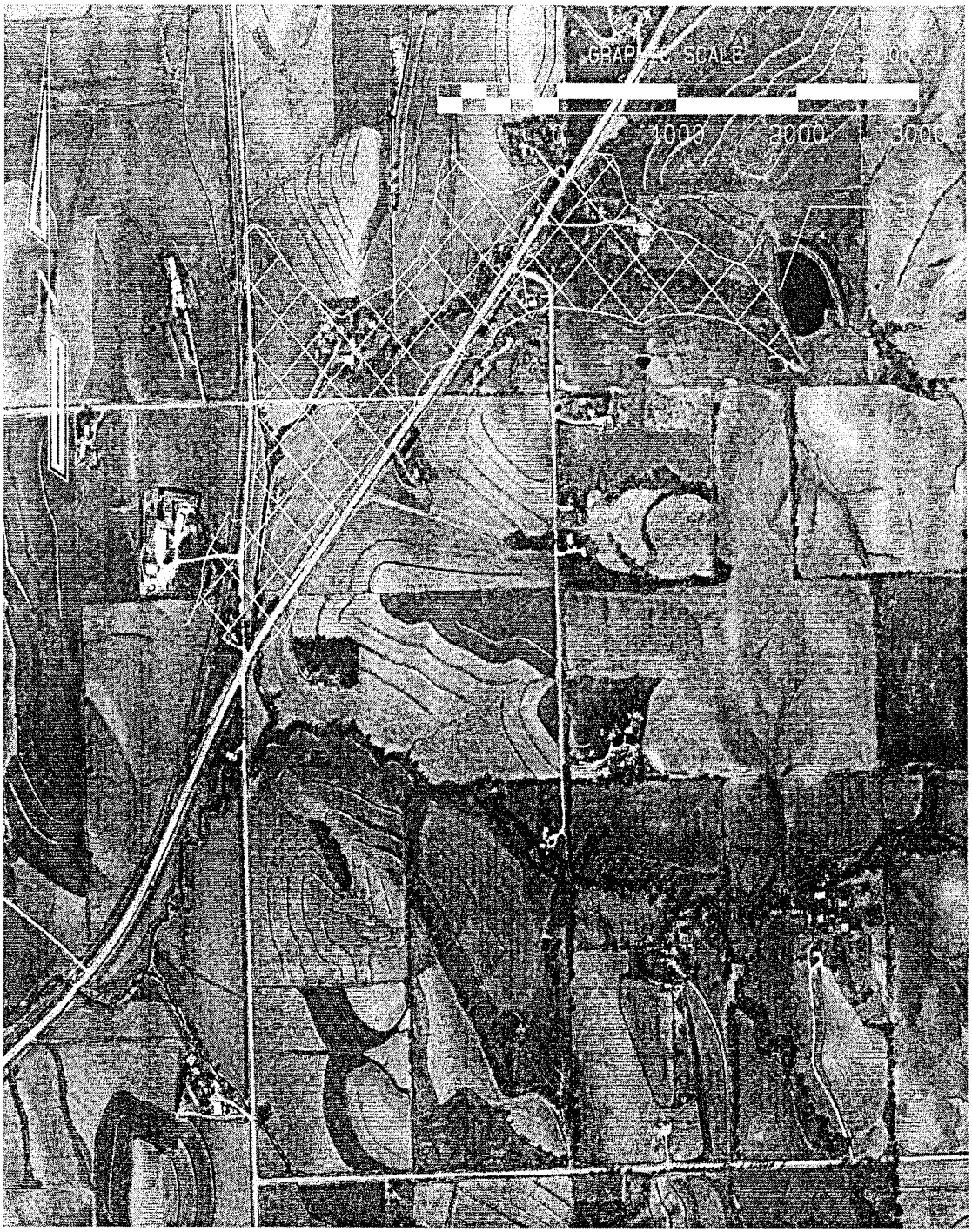

U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
FIGURE 4
PROJECT MAP
PAPILLION CREEK WATERSHED
DOUGLAS, SARPY, AND WASHINGTON COUNTIES
NEBRASKA
LEGEND
FLOOD CONTROL STRUCTURES BEING INVESTIGATED BY U.S. ARMY CORPS OF ENGINEERS
WATERSHED BOUNDARY
AREA BENEFITED
ADDITIONAL DRAINAGE AREA ABOVE STRUCTURE
PROJECT MEASURES
STRUCTURE NUMBER
STABILIZATION STRUCTURE
N
WASHINGTON COUNTY
DOUGLAS COUNTY
DOUGLAS COUNTY
SARPY COUNTY
R10E
R11E
R12E
THIS AREA NOT INCLUDED IN THE PL 566 WATERSHED WORK PLAN
SOURCE

Project Map



Plan View of Site W-3

Papio Creek Watershed Structure W-3



INUNDATION MAP

POTENTIAL FLOOD AREA IF THE DAM FAILS

(This map is an approximate representation of the inundation area based solely on best professional judgement. The actual area must be determined utilizing breach routing procedures.)

Description of Site W-3

Papio Creek Watershed Site W-3 is a grade stabilization dam. It is a 34.5-ft. tall earthen embankment with a drainage area of 0.38 square miles. The permanent pool, or normal pool during non-flood periods, is 5.9 acres. As the name suggests, the purpose of this structure is to stabilize the channel so that continued upstream migration of channel degradation, or downcutting, does not occur. Sediment storage or flood storage in the structure is incidental to this purpose. At the time of construction, the site did have the capability to store 44 ac.ft. of sediment and water at the permanent pool elevation. During major flood events, the pool could enlarge to cover an area of 9.9 acres. At flood stage, the site can store up to 83.2 ac.ft. of potential floodwater that is then slowly released after the storm event.

The principal spillway system consists of a corrugated metal intake structure in the pool (riser) with a twin corrugated metal outlet pipe through the dam. This system controls the release of floodwater. The riser is 36-in. diameter. The outlet pipe is a 24-in. corrugated metal pipe. The outlet pipes discharges into an excavated earthen basin approximately with a 0.0% grade. Potential seepage alongside each pipe system is controlled with 4 - 7-ft. x 7-ft. metal anti-seep collars surrounding the metal principal spillway pipe. The embankment foundation has an internal drainage system consisting of a 3-ft. wide by 4-ft. thick sand/gravel foundation trenched drain at the embankment/foundation interface through a crushed rock bedding in the drain outlet. Side slopes of the dam are 2 ½-ft. horizontal to 1-ft. vertical.

Brief History and Existing Condition of Papio Creek Watershed Site W-3.

Site W-3 was designed in 1982 and construction on the site was completed in September of 1983. The site was designed and constructed as a Class "a" (low) hazard site, meaning there was no potential for loss-of-life if the dam should fail. The dam was planned and built with grade stabilization being the primary purpose of the structure. It was designed to have a 50-year economic life.

The site has been well maintained, with exception of the downstream outlet area. There are cattle trails visible and the site has been overgrazed. One trail has exposed the last pipe joint connection and the cathodic protection wire weld has been disconnected. There is a seep area on the left embankment downstream that is present. If the cattle continue to graze the area the seep area will erode and eventually cause damage to the dam slope. This left embankment seep zone extends up along the join line between Site W-3 and an older grade stabilization site perpendicular to it on a small downstream tributary. There is some visible deterioration of the asbestos-impregnated, bituminous coating on the principal spillway pipe and riser.

The pool area has open water an estimated three to five feet deep. Sediment has encroached into the upper end of the pool, as it was designed to do. Any sediment or water storage remaining below the riser elevation is incidental but beneficial.

The 24-in. principal spillway pipes through the dam were not inspected with a remote camera at the time of the assessment investigation. A thorough inspection must be performed if the site is

rehabilitated. This type of inspection would help determine what procedures may be necessary to ensure the pipe can provide another 50 to 100 years of service.

Sponsors of Papio Creek Watershed:

The original sponsors of Papio Creek Watershed included:

- Sarpy Soil and Water Conservation District
- Douglas Soil and Water Conservation District
- Papio Soil and Water Conservation District
- Douglas County Commissioners
- Sarpy County Commissioners
- Washington County Commissioners
- Papio Watershed Board

The Natural Resources District system was created by the Nebraska Legislature in 1972. The legislature combined 154 special purpose resource management entities, including county soil conservation districts, drainage districts, and watershed boards into 24 NRDs. In 1989 this number was reduced to 23 NRDs through a merger of the Papio NRD and the Middle Missouri Tributaries NRD. This system of locally governed, full-spectrum resource districts with taxing authority is unique to Nebraska.

Natural Resource Districts currently are the sponsoring local organizations for PL-566 project work in the state. However, other sponsors could be added during the rehabilitation process if added purposes are desirable (such as recreation or sediment storage) and if political, social, and physical site conditions are suitable.

Existing Beneficiaries

Benefited areas for the Papio Creek Watershed Project are shown in yellow on the Project Map. Dams in the project provide grade stabilization benefits on about 6340 acres. Landowners upstream of these dams benefit from reduction in economic and physical damages related to channel instability, as well as reduced periods of denied access to their property. County and city highway departments and the general public benefit from damage reduction to road and bridge crossings upstream of the project dams.

Site W-3 is in proximity to the towns of Blair and Kennard. Its drainage area may experience eventual land use changes from agricultural to urban. Economic and physical benefits from grade control structures also apply to urban settings, where these dams provide recreational benefits such as walking/jogging trails and bird watching, as well as significantly enhancing the esthetical value of the landscape.

Adequacy of O&M for the Dam

Site W-3 has been generally well maintained by the Papio-Missouri River Natural Resources District. Landowner cooperation is essential to minimize future damage from overgrazing.

Hazard Classification

The original and current hazard classification for Site W-3 is Class "a" (low) hazard meaning that if the dam should fail for any reason, potential loss of life would not be an issue. However, due to the presence of a house about one thousand feet downstream of the structure and Highway 30 crossing the stream channel below that, a detailed breach routing is recommended to determine if the rehabilitation should be to a high hazard classification. It is possible that other construction could occur within the flood zone in the future.

The preliminary breach routing (see map on page 6) indicated that a house about one thousand feet downstream from the dam is near the edge of the inundation area, and Highway 30 crosses the stream floodplain about 400 feet below the house. The inundation area below the dam is the area that would be flooded if the dam should fail. A detailed breach routing analysis will include a detailed survey of this area to determine elevations and will be necessary resolve the hazard classification issue.

Rehabilitation Needs of Site W-3 and Eligibility of the Dam for Rehabilitation

If the detailed breach routing indicates a need for high hazard design, the following factors need to be addressed:

1. The dam and auxiliary spillway design will need to be modified to safely pass or contain the larger rainfall runoff required for a high hazard design. This may consist of raising the top of the dam and raising and/or widening the auxiliary spillway.
2. If the dam is raised, the principal spillway pipe system will need to be extended.
3. A minimum of a 30-inch diameter reinforced concrete pipe would be necessary to meet design criteria for a high hazard structure.
4. The riser would need to be replaced to meet the high hazard design criteria.

While the dam has been generally well maintained, there are some maintenance issues that remain to be addressed. These deal mainly with cattle access to the downstream outlet area and the already gated access to the auxiliary spillway and the structure itself (gate was open). It is recommended that the sponsor review the existing easement area. If possible, add the additional right of way fence to prohibit cattle from entering the principal spillway outlet area. If the easement area is not available, then the landowner needs to be informed of the damage that will continue to occur when cattle area in the area. Seeding the eroded cattle trails and monitoring the existing gate(s) will be necessary on the auxiliary spillway and along the remainder of the site due to cattle overgrazing.

Site W-3 appears to be eligible for the Rehabilitation provisions of the Watershed Program, if a high hazard condition exists. Funding for rehabilitation is based upon a priority ranking system, which considers the potential for dam failure and the consequences of dam failure. Class "c" (high) hazard sites have a higher ranking for funding than low hazard sites.

The sponsors of potential rehabilitation projects should be aware that additional landrights might be required for construction. This cost is part of the sponsor's cost for the project and can be included in their portion of the total project cost. Sponsors are also responsible for any

permitting costs or water and resource rights costs, which are not considered part of the total project cost.

The rehabilitation provisions of the PL 106-472 can provide 65% of the total rehabilitation cost, but shall not exceed 100% of the actual construction costs incurred in the rehabilitation. Total rehabilitation cost for the project shall include all costs associated with all components of the project, including acquisition of land, easements, rights-of-way, project administration, non-Federal technical assistance (TA), non-structural measures, contracting, and construction. The cost of TA provided by NRCS shall not be considered part of the total cost of the rehabilitation project. If, however, the sponsor provides or otherwise obtains TA for planning, design, and/or construction, the TA cost is included in the computation of total cost of the rehabilitation project. The sponsor is responsible for the cost of all water, mineral, and other resource rights and all federal, state, and local permits, which are not considered part of the total cost of the rehabilitation project. The sponsor's contribution can be in the form of cash, in-kind services, the value of land rights in addition to those acquired for the current project, or any combination of these items.

Planning and Implementation Process

Should the sponsors make application for rehabilitation of Site W-3, the site will go through the conventional watershed planning process with consideration and evaluation of all potential alternatives and their impacts (economically, environmentally, socially, etc.). During the planning process, there will be opportunities for public participation and comment.

The estimated time frame for the activities are:

- Planning: 1 year
- Design: 1 year
- Implementation: 1 year

Potential for Addressing Other Resource Needs

If rehabilitation is pursued, the sponsors will have the opportunity to investigate the addition of other purposes to the site.

Potential Scope of the Rehabilitation Project

Following are two rehabilitation alternatives for Site W-3, if the detailed breach routing shows the need for a high hazard classification design.

1. **Extend the Useful Life of the Structure by upgrading the site to current NRCS criteria for a Class "c" (high) hazard by raising the top of the dam.**

   This alternative would involve some or all of the following actions: raising the auxiliary spillway, providing adequate emergency spillway capacity, raising the top of the dam, flattening the side slopes, extending and/or replacing the existing pipe with a 30-inch reinforced concrete pipe, replacing the principal spillway riser.

Estimated Total Project Cost: $ 190,000

(Does not include possible sediment removal or landrights costs.)

2. **Decommission the dam.**

This alternative would consist of total removal of the dam and accumulated sediment. The dam would be replaced with a small drop structure to prevent channel degradation.

Estimated Total Project Cost: $ 250,000

Rehabilitation of Site W-3

Papio Creek Watershed Site W-3 is potentially eligible for the Rehabilitation Program if it has to be reclassified as a high hazard dam.

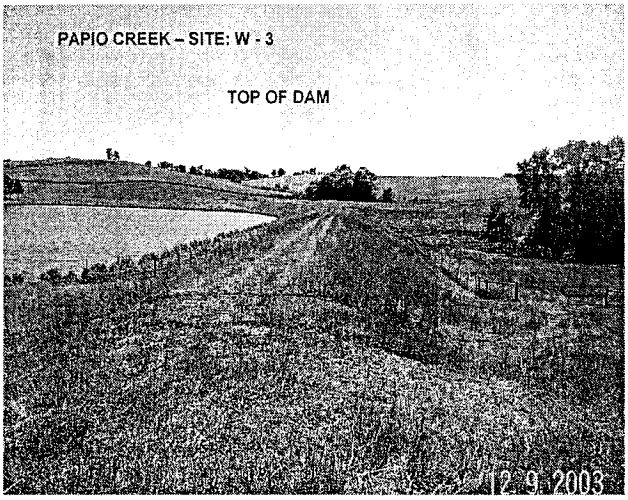
In order to pursue the rehabilitation of Site W-3, the sponsors first will need to request a detailed breach analysis to determine hazard classification. If the dam has become a high hazard site, the sponsor then would complete a Standard Form 424 "Application for Federal Assistance" with the following information attached to the application:

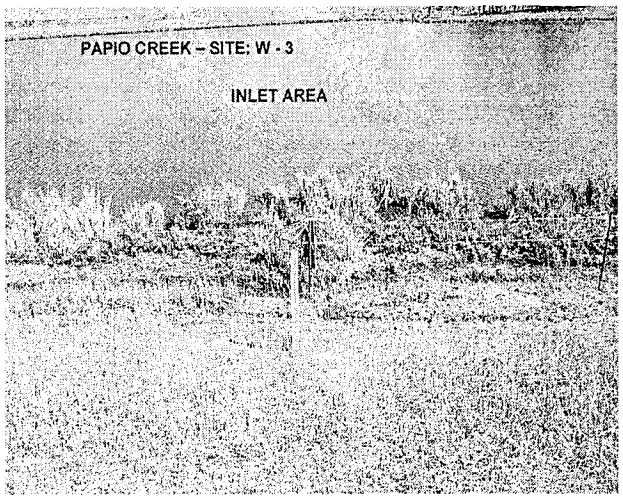
- Project name,
- Dam number,
- Original Project Authority,
- Dam location (legal description)
- List of the current Sponsoring Local Organizations (SLOs)
- The name(s), address(es), and contact information for the person(s) designated as the contact(s)
- for each of the SLO(s),
- Year the dam was constructed,
- Description of existing conditions and known rehabilitation needs of the dam,
- Description of current benefits provided by the dam.
- Dam Safety Agency information; permit needs, comments, and recommendations on rehabilitation needs for the specific dam. If the State Dam Safety Agency ordered any action on the dam, attach a copy of the order. (Note: Alabama may have a Dam Safety Act soon.)
- Statements that the SLO(s) commit to:
    - Assistance in leading a locally-led planning effort,
    - Obtaining the required landrights including the use of power of eminent domain, if necessary,
    - Providing local cost-share funds and/or in-kind services to provide the required 35 percent of the total project costs,
    - Enter into a new Operation and Maintenance (O&M) Agreement with the Natural Resources Conservation Service,
    - Providing funds for continuing O&M actions,
    - Obtaining required permits and approvals at their costs,
    - Providing leadership to assure appropriate land use controls are enacted or acquired for downstream areas prior to construction if a Class "a" (low) or

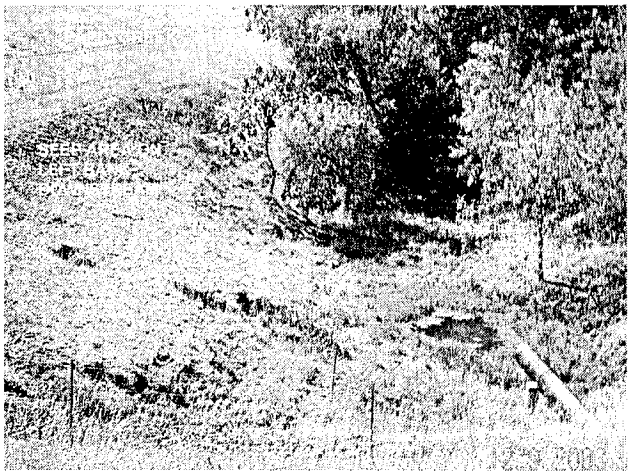
Class "b" (significant) hazard dam is involved, and

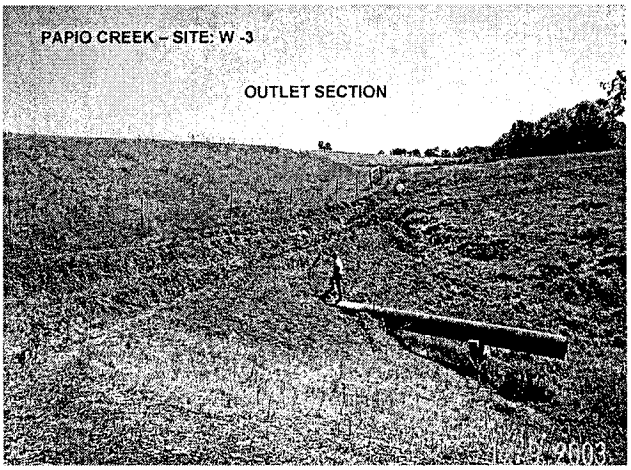
- Providing leadership to assure adequate land treatment measures have been installed on at least 75 percent of the watershed areas above the dam.
- Statement the SLO(s) plan to provide in-kind services and/or acquire landrights will sign a Memorandum of Understanding with NRCS before being credited with the value of any in-kind contribution.

Pictures of Existing Conditions at Site W-3, Papio Creek Watershed Dam









Site Assessment Report

Turtle Creek Watershed
Site: 2
Sarpy County, Nebraska

Prepared by: Natural Resources Conservation Service
Lincoln, Nebraska

December, 2003

Table of Contents

Abstract

The Small Watershed Rehabilitation Amendment (PL-472) has authorized funding and technical assistance to rehabilitate aging dams built under the USDA Watershed Protection and Flood Prevention Act (PL-566). Sponsors of these project dams can apply for rehabilitation assistance to extend the service life of their dams by 50 to 100 years while ensuring that the dams meet applicable safety and performance standards. Policy established by the Natural Resources Conservation Service (NRCS) allows local sponsors of these dams to request preliminary site assessments. Each assessment will be conducted by NRCS and local sponsor personnel, and will provide the sponsor with information to decide if a formal request for rehabilitation should be pursued. The Papio-Missouri River Natural Resource District (PMRNRD) has requested a preliminary assessment of Turtle Creek Watershed Site 2. A team comprised of NRCS and PMRNRD personnel completed field assessment of this site on September 9, 2003.

Turtle Creek Site 2 is one of two floodwater-retarding structures built in Sarpy County as part of the Turtle Creek Watershed PL-566 Project, which was authorized in 1959. The original local sponsors were the Sarpy Soil and Water Conservation District and the Turtle Creek Watershed Conservancy District. The Papio-Missouri Natural Resources District was created in 1972 and became the local sponsoring organization.

Construction of Site 2 was completed in 1962.

THE REHABILITATION PROCESS

The Small Watershed Rehabilitation Amendment (PL-472) was authorized by Congress in 2000. It is an amendment to PL-566, the original legislation that allows NRCS to plan and install small watershed projects at the request of local sponsoring organizations.

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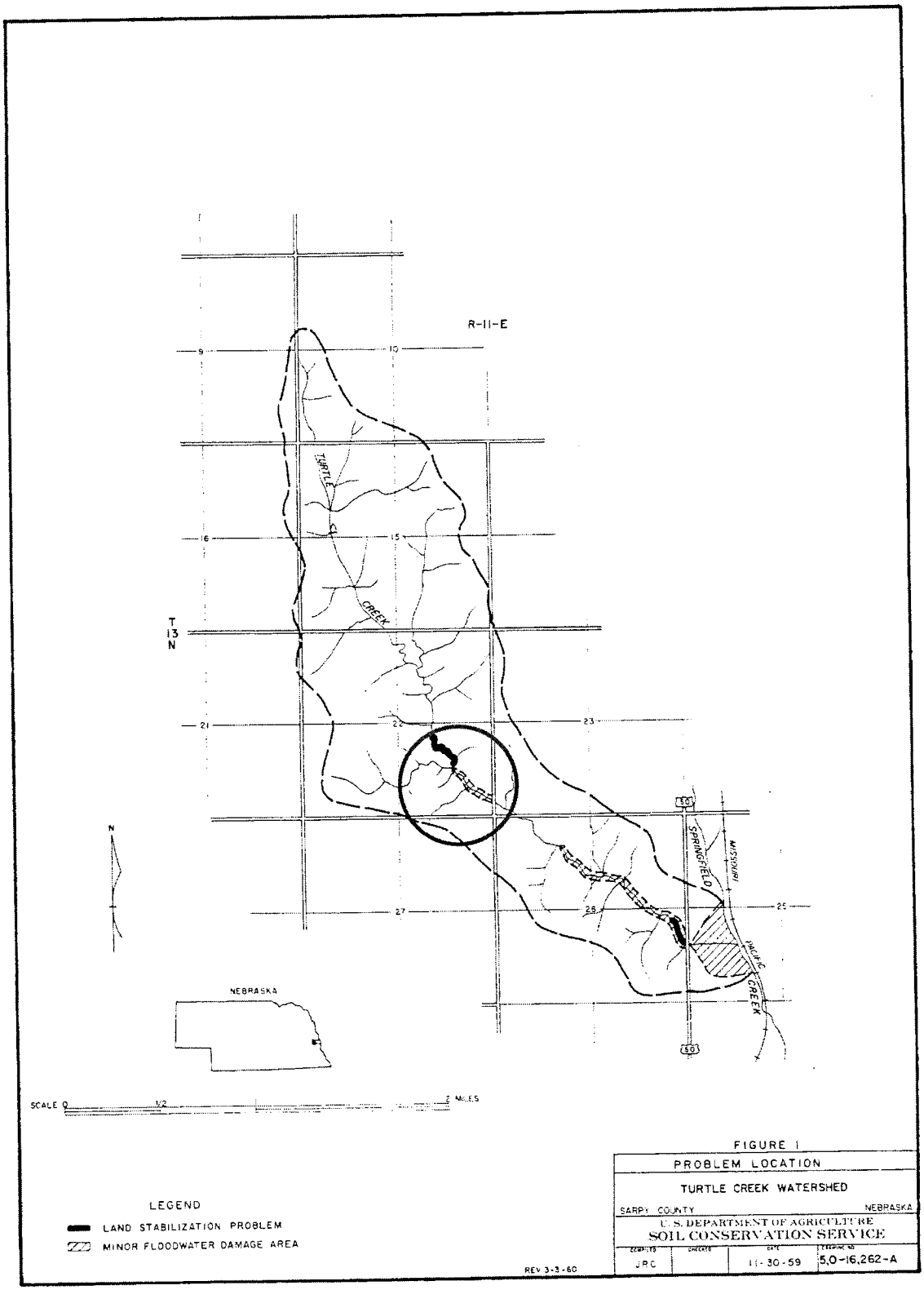
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13
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TURTLE CREEK
SPRINGFIELD
MISSOURI
PACIFIC
CREEK
NEBRASKA
N
SCALE 0 1/2 1 MILES
LEGEND
LAND STABILIZATION PROBLEM
MINOR FLOODWATER DAMAGE AREA
FIGURE 1
PROBLEM LOCATION
TURTLE CREEK WATERSHED
SARPY COUNTY
NEBRASKA
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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JRC
CHECKED
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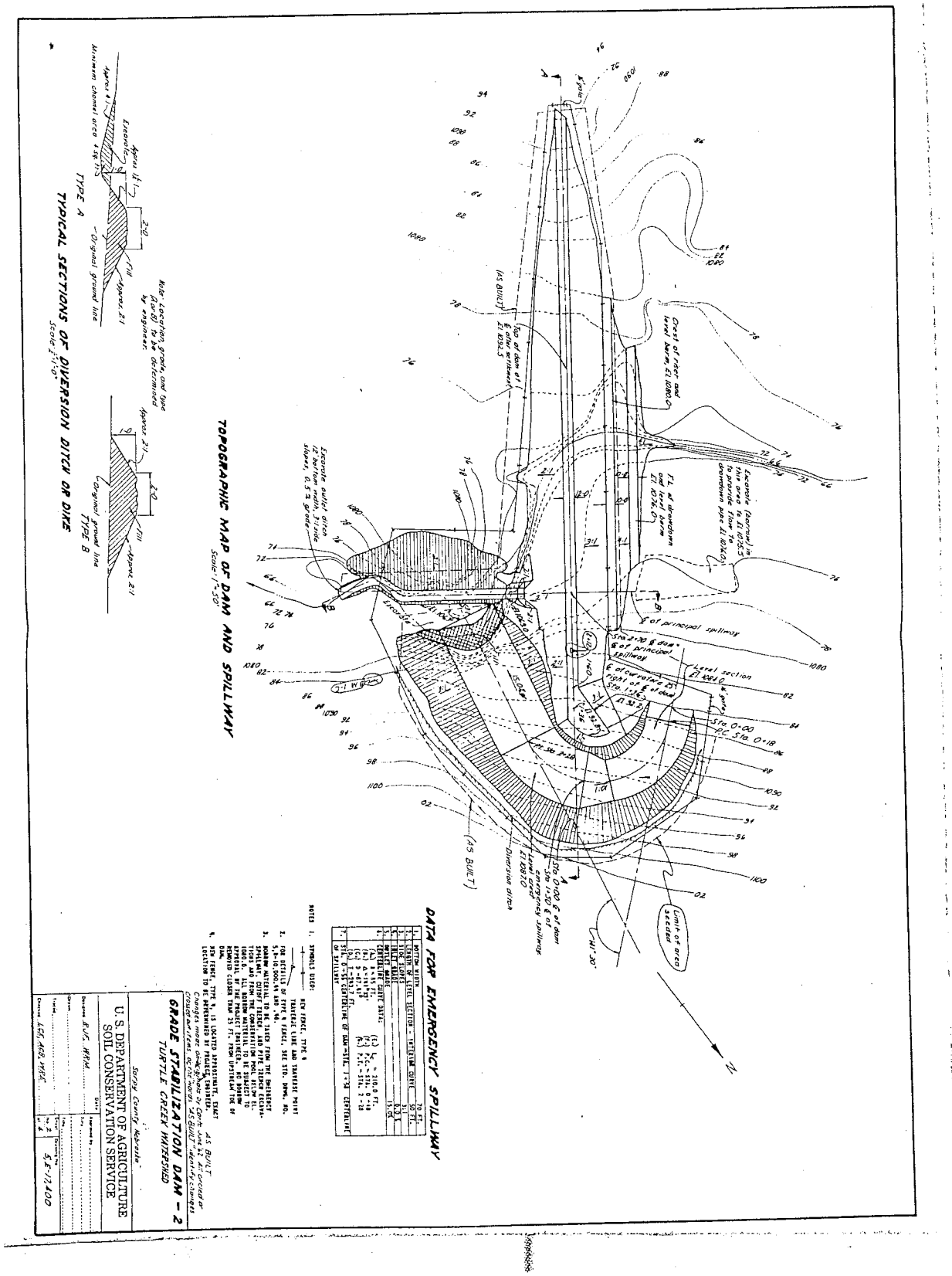
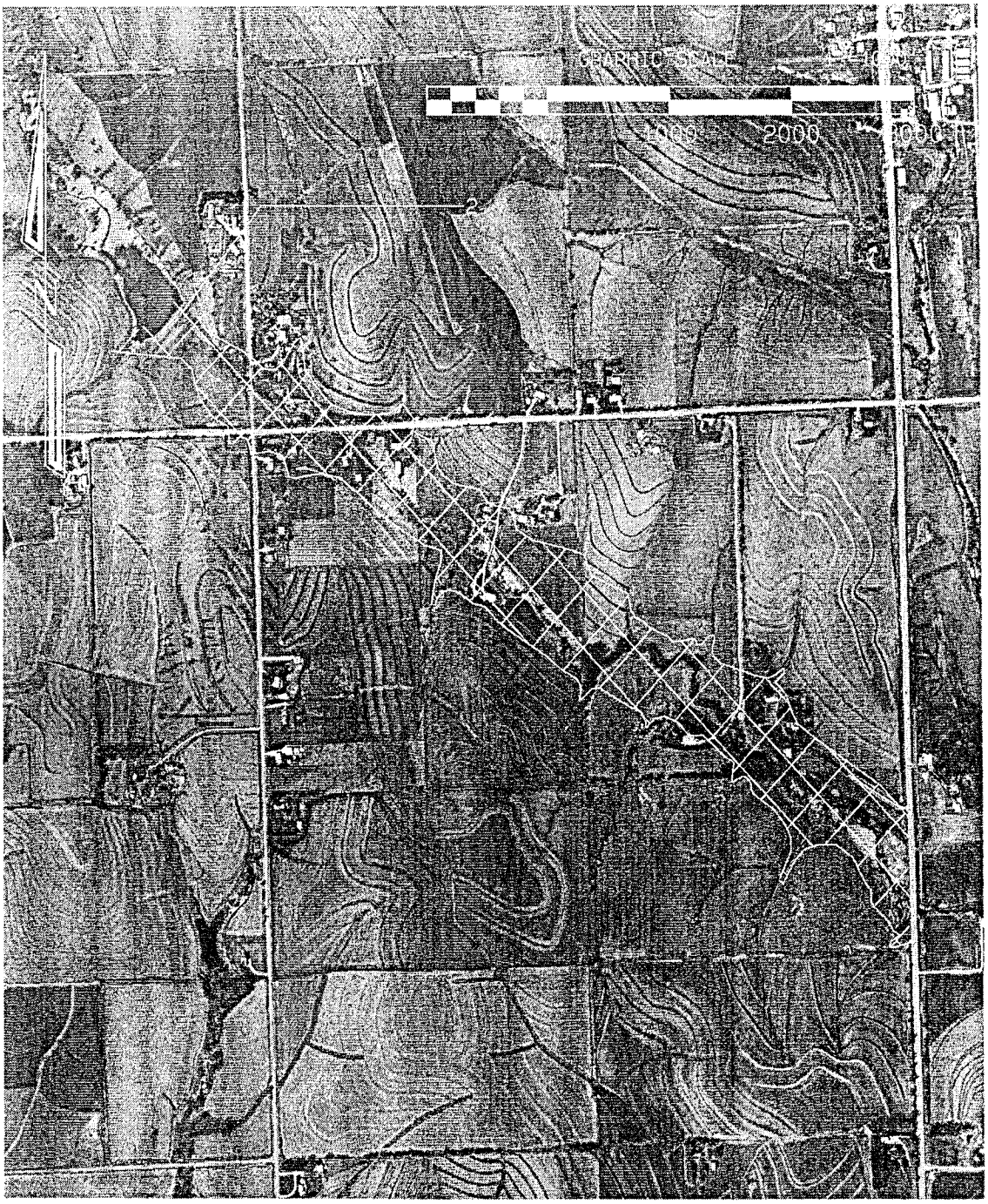
REV 3-3-60

Project Map



Plan View of Site 2

Turtle Creek Watershed Structure 2



INUNDATION MAP

POTENTIAL FLOOD AREA IF THE DAM FAILS

(This map is an approximate representation of the inundation area based solely on best professional judgement. The actual area must be determined utilizing breach routing procedures.)

Description of Site 2

Turtle Creek Watershed Site 2 is a grade stabilization dam. It is a 30.8-ft. tall earthen embankment with a drainage area of 2.07 square miles. The permanent pool, or normal pool during non-flood periods, is 11.65 acres. As the name suggests, the purpose of this structure is to stabilize the channel so that continued upstream migration of channel degradation, or downcutting, does not occur. Sediment storage or flood storage in the structure is incidental to this purpose. At the time of construction, the site did have the capability to store 39.85 ac.ft. of sediment and water at the permanent pool elevation. During major flood events, the pool could enlarge to cover an area of 29.24 acres. At flood stage, the site can store up to 182.41 ac.ft. of potential floodwater that is then slowly released after the storm event.

The principal spillway system consists of a corrugated metal intake structure in the pool (riser) with a corrugated metal pipe through the dam. This system controls the release of floodwater. The riser dimension is 5-ft. in diameter. The outlet pipe is a 42-in. corrugated metal pipe. The outlet pipe discharges into an excavated earthen basin approximately 14 ft. bottom width 0.5% grade. Potential seepage alongside the pipe system is controlled with 4 – 7.5-ft. x 7.5-ft. concrete anti-seep collars surrounding the concrete principal spillway pipe. Side slopes of the dam are 3-ft. horizontal to 1-ft. vertical.

Brief History and Existing Condition of Turtle Creek Watershed Site 2.

Site 2 was designed in 1961 and construction on the site was completed in June of 1962. The site was designed and constructed as a Class "a" (low) hazard site, meaning there was no potential for loss-of-life if the dam should fail. The dam was planned and built with grade stabilization being the primary purpose of the structure. It was designed to have a 50-year economic life.

The site has been well maintained. There is some visible deterioration of the asbestos-impregnated, bituminous coating on the principal spillway pipe and riser. The original headwall and guard on the inlet was wooden. It was replaced 2 years ago with a corrugated metal trash rack.

The pool area is dry and vegetated with grass and brush. Some storage is still available below the riser elevation. Sediment deposition has encroached into the upper end of the pool, as it was designed to do. Since the site is forty years into a fifty-year design life, any remaining sediment and water storage below the riser elevation is beneficial. Limited seepage was observed along the sides of the outlet channel, which may be a natural condition or an indication of possible seepage through the fill.

The 42-in. principal spillway pipe through the dam was not inspected with a remote camera at the time of the assessment investigation. A thorough inspection must be performed if the site is rehabilitated. This type of inspection would help determine what procedures may be necessary to ensure the pipe can provide another 50 to 100 years of service.

Sponsors of Turtle Creek Watershed:

The original sponsors of Turtle Creek Watershed included:

- Sarpy Soil and Water Conservation District
- Turtle Creek Watershed Conservancy District

The Natural Resources District system was created by the Nebraska Legislature in 1972. The legislature combined 154 special purpose resource management entities, including county soil conservation districts, drainage districts, and watershed boards into 24 NRDs. In 1989 this number was reduced to 23 NRDs through a merger of the Papio NRD and the Middle Missouri Tributaries NRD. This system of locally governed, full-spectrum resource districts with taxing authority is unique to Nebraska.

Natural Resource Districts currently are the sponsoring local organizations for PL-566 project work in the state. However, other sponsors could be added during the rehabilitation process if added purposes are desirable (such as recreation or sediment storage) and if political, social, and physical site conditions are suitable.

Existing Beneficiaries

The benefited area for the Turtle Creek Watershed Project is shown as the hatched and solid areas on the Figure 1 in the original work plan (Problem Area Map). Both dams in the project provide grade stabilization benefits on about 290 acres. Landowners upstream of these dams benefit from reduction in economic and physical damages related to channel instability, as well as reduced periods of denied access to their property. County and city highway departments and the general public benefit from damage reduction to road and bridge crossings upstream of the project dams.

Because of proximity to Springfield and surrounding communities, the Turtle Creek Watershed sites and their drainage areas will experience land use changes from agricultural to urban. Some individual development already has occurred downstream of the watershed. Economic and physical benefits from these grade control structures also apply to urban settings, where these dams provide recreational benefits such as walking/jogging trails and bird watching, as well as significantly enhancing the esthetical value of the landscape.

Adequacy of O&M for the Dam

The dam has been well maintained by the Papio-Missouri River Natural Resources District.

Hazard Classification

The original and current hazard classification for Site 2 is Class "a" (low) hazard, meaning that if the dam should fail for any reason, potential loss of life would not be an issue. However, some home construction has occurred along the downstream floodplain that may fall within the breach

inundation area below Sites 1 and 2. This is the area that would be flooded if the dam(s) should fail.

The preliminary breach routing (see map on page 6) indicated that several existing houses may lie within the inundation area. A detailed breach routing analysis will include a land survey of the floodplain area to determine actual elevations and is recommended to resolve this issue. The detailed breach routing will determine if the rehabilitation should be to a Class "c" (high) hazard classification, which means there is potential for loss of life. The downstream floodplain is an area that will be subject to future development. It is probable that other homes will be built within the flood zone in the future.

Rehabilitation Needs of Site 2 and Eligibility of the Dam for Rehabilitation

To determine if there is a need to rehabilitate Site 2 to meet current NRCS criteria associated with a high hazard site and to extend the useful life of the structure another 50 to 100 years, a detailed breach routing of Site 2 should be completed. If this detailed breach routing indicates a need for high hazard design, the following factors need to be addressed:

1. The dam and auxiliary spillway design will need to be modified to safely pass or contain the larger rainfall runoff required for a high hazard design. This may consist of raising the top of the dam and raising and/or widening the auxiliary spillway.
2. If the dam is raised, the principal spillway pipe system will need to be extended.
3. A minimum of a 30-inch diameter reinforced concrete pipe would be necessary to meet design criteria for a high hazard structure.
4. The riser would need to be replaced to meet the high hazard design criteria.

Site 2 appears to be eligible for the Rehabilitation provisions of the Watershed Program, if a high hazard condition exists. Funding for rehabilitation is based upon a priority ranking system, which considers the potential for dam failure and the consequences of dam failure. Class "c" (high) hazard sites have a higher ranking for funding than low hazard sites.

The sponsors of the potential rehabilitation project should be aware that additional landrights might be required for construction. This cost is part of the sponsor's cost for the project and can be included in their portion of the total project cost. Sponsors are also responsible for any permitting costs or water and resource rights costs, which are not considered part of the total project cost.

The provisions of the Rehabilitation Program provide up to 65 percent of total rehabilitation cost, but shall not exceed 100 percent of the actual construction costs. Total rehabilitation cost for the project shall include all costs associated with all components of the project, including acquisition of land, easements, rights-of-way, project administration, non-Federal technical assistance (TA), non-structural measures, contracting, and construction. The cost of TA provided by NRCS shall not be considered part of the total cost of the rehabilitation project. If, however, the sponsor provides or otherwise obtains TA for planning, design, and/or construction, the TA cost is included in the computation of total cost of the rehabilitation project. The sponsor is responsible for the cost of all water, mineral, and other resource rights and all federal, state, and local permits, which are not considered part of the total cost of the rehabilitation project. The

sponsor's 35% can be in the form of cash, in-kind services, the value of land rights in addition to those acquired for the current project, or any combination of these items.

Planning and Implementation Process

Should the sponsors make application for rehabilitation of Site 2, the site will go through the conventional watershed planning process with consideration and evaluation of all potential alternatives and their impacts (economically, environmentally, socially, etc.). During the planning process, there will be opportunities for public participation and comment.

The estimated time frame for the activities are:

- Planning: 1 year
- Design: 1 year
- Implementation: 1 year

Potential for Addressing Other Resource Needs

If rehabilitation is pursued, the sponsor will have opportunity to investigate the addition of other purposes to the site. However, the site appears limited in the amount the dam can be raised due to the elevation of the road adjacent to the pool.

Potential Scope of the Rehabilitation Project

Following are two rehabilitation alternatives for Site 2, if the detailed breach routing shows the need for a high hazard classification design.

1. **Extend the Useful Life of the Structure by upgrading the site to current NRCS criteria for a Class "c" (high) hazard by raising the top of the dam.**

   This alternative would involve some or all of the following actions: raising the auxiliary spillway, providing adequate auxiliary spillway capacity, raising the top of the dam, flattening the side slopes, extending and/or replacing the existing pipe with a 30-inch reinforced concrete pipe, replacing the principal spillway riser.

   Estimated Total Project Cost: $ 770,000

   (Does not include possible sediment removal or landrights costs.)

2. **Decommission the dam.**

   This alternative would consist of total removal of the dam and accumulated sediment. The dam would be replaced with a small drop structure to prevent channel degradation.

   Estimated Total Project Cost: $ 960,000

Rehabilitation of Site 2

Turtle Creek Watershed Site 2 is potentially eligible for the Rehabilitation Program if it has to be reclassified as a high hazard dam.

In order to pursue the rehabilitation of Site 2, the sponsors first will need to request a detailed breach analysis to determine hazard classification. If the dam has become a high hazard site, the sponsor then would complete a Standard Form 424 "Application for Federal Assistance" with the following information attached to the application:

- Project name,
- Dam number,
- Original Project Authority,
- Dam location (legal description)
- List of the current Sponsoring Local Organizations (SLOs)
- The name(s), address(es), and contact information for the person(s) designated as the contact(s) for each of the SLO(s),
- Year the dam was constructed,
- Description of existing conditions and known rehabilitation needs of the dam,
- Description of current benefits provided by the dam.
- Dam Safety Agency information; permit needs, comments, and recommendations on rehabilitation needs for the specific dam. If the State Dam Safety Agency ordered any action on the dam, attach a copy of the order. (Note: Alabama may have a Dam Safety Act soon.)
- Statements that the SLO(s) commit to:
  - Assistance in leading a locally-led planning effort,
  - Obtaining the required landrights including the use of power of eminent domain, if necessary,
  - Providing local cost-share funds and/or in-kind services to provide the required 9 percent of the total project costs,
  - Enter into a new Operation and Maintenance (O&M) Agreement with the Natural Resources Conservation Service,
  - Providing funds for continuing O&M actions,
  - Obtaining required permits and approvals at their costs,
  - Providing leadership to assure appropriate land use controls are enacted or acquired for downstream areas prior to construction if a Class "a" (low) or Class "b" (significant) hazard dam is involved.
  - Providing leadership to assure adequate land treatment measures have been installed on at least 50 percent of the watershed areas above the dam.
- Statement the SLO(s) plan to provide in-kind services and/or acquire landrights will sign a Memorandum of Understanding with NRCS before being credited with the value of any in-kind contribution.

Pictures of Existing Conditions at Site 2, Turtle Creek Watershed Dam

TURTLE CREEK – SITE: 2

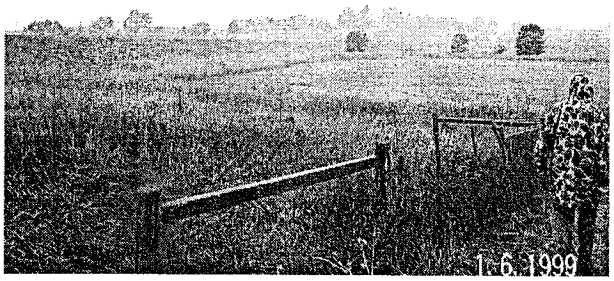
SITE OVERVIEW

TURTLE CREEK – SITE: 2

TOP OF DAM

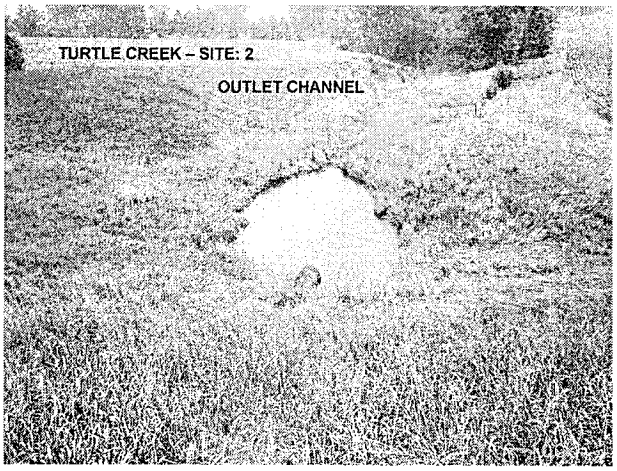
TURTLE CREEK – SITE: 2

UPSTREAM LEFTBANK AREA



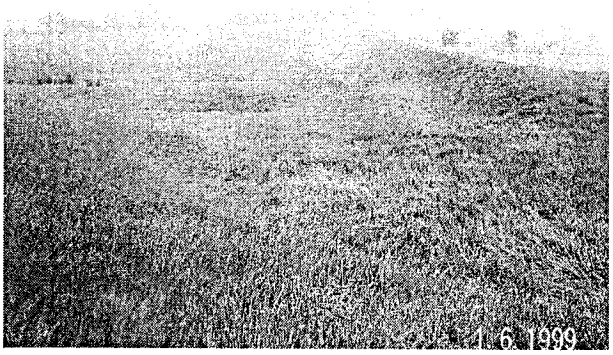
TURTLE CREEK – SITE: 2

OUTLET CHANNEL



TURTLE CREEK – SITE: 2

AUXILARY SPILLWAY OUTLET



Memo to the Programs, Projects and Operations Subcommittee

Subject: Western Douglas County Trails Plan

Date: February 27, 2004

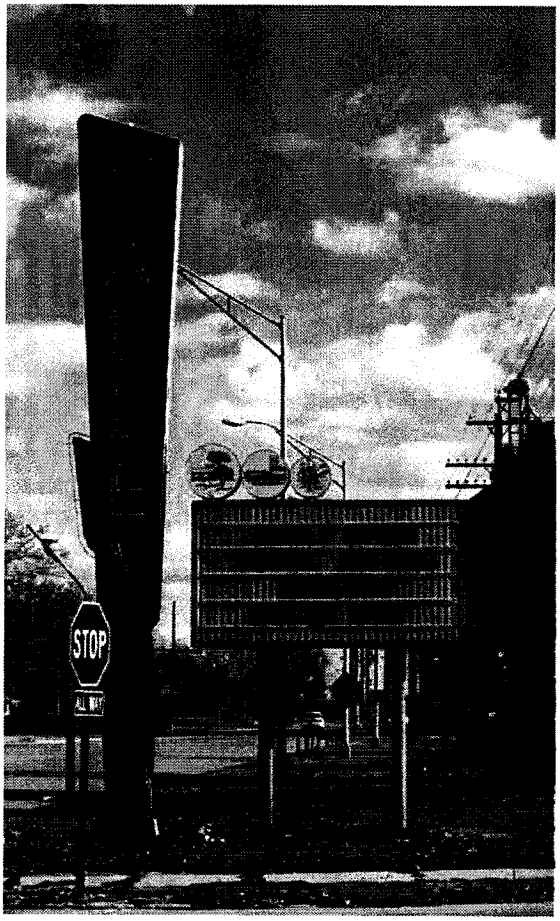
From: Gerry Bowen

The District, in cooperation with the Cities of Elkhorn, Valley, and Waterloo, Douglas County, MAPA, and the YMCA, hired a consultant to prepare a trials plan for Western Douglas County. The final draft of the plan has been prepared. An electronic version of the plan is available on the NRD' s web site.

Phase 1 of the plan would identify and construct a trail connecting Valley, Waterloo, and Elkhorn with the Omaha trails system, and provide for future connection to a trials system in Freemont.

It is recommended that the subcommittee recommend to the Board that the Western Douglas County Trails Plan be adopted.

The West Douglas County Trails Plan



Prepared for the Papio-Missouri River Natural Resources District, Douglas County, the City of Valley, the City of Elkhorn, the Village of Waterloo, the Two Rivers YMCA, and the Metropolitan Area Planning Agency

by

RDG Planning & Design

RDg
PLANNING ● DESIGN

Introduction

Planning the trails system of Douglas County and the overall Omaha/Council Bluffs metropolitan region began with concepts for a network following the Papillion Creek system, the historic Omaha boulevard system, and 144th Street, developed as part of Omaha's park planning efforts of the mid-1980s. After the opening of the area's first contemporary trail, the Keystone Trail segment from 76th and Cass to Democracy Park near 90th and Fort Streets in 1990, the system has grown to include almost 100 miles in two states and three counties, with many more miles in construction or active development. The signature of this system will be the Missouri River Pedestrian Bridge, scheduled for completion in 2005. This structure will knit together the regional systems on both sides of the river, and will ultimately be part of a four-state system, providing continuous trails from northern Kansas through Beatrice, Lincoln, Omaha, Council Bluffs, and Shenandoah into Missouri, and potentially all the way to Saint Louis via the Katy Trail. Within two decades, Nebraska in general and the Omaha metropolitan area in particular have moved from the rear of the pack to the avant-garde in trail development. Most importantly, trails have become integrated into the lives and expectations of citizens of our area. Twenty years ago, people in developing subdivisions opposed trails in their areas as encroachments on their privacy; today, they demand them in their communities and neighborhoods. Recent studies indicate that residents living near Omaha's urban trails system use the facilities frequently; credit trails with influencing their decisions to buy their homes; and expect that trails add value to their property.

With the continued growth of the metropolitan area's trail network, the system's tendrils have extended farther out into the western part of the county. The West Papillion Trail now extends as far northwest as 156th and Maple, and connects to the Zorinsky Lake Trail, which itself reaches to 180th Street between Center and F Streets. The development of the Newport Landing subdivision around Bennington Lake will eventually extend trail access to 180th Street and Highway 36. Elkhorn has developed a trail from its old town center to West Maple Road via Center Street and Ta-Ha-Zouka Park, and has programmed a community-wide system through its comprehensive parks plan, while the Village of Waterloo is in the middle stage of developing a trail loop around the town that utilizes much of its circumferential levee system. Other longer range plans, including the planned conservation of the Old Lincoln Highway corridor and the Omaha Suburban Parks Master Plan, will further extend the reach and utilization of trails into the western parts of Douglas County.

This gradual system growth, the overall popularity of trails, and the construction of such new facilities as the new YMCA near Valley led the Papio-Missouri River Natural Resources District, the Nebraska Game and Parks Commission, Douglas County, and the municipalities of Elkhorn, Waterloo, and Valley to commission this plan for a Western Douglas County trails network. The plan is designed to:

- Take advantage of major environmental, recreational, and community features in the western county by linking them to the emerging regional trails system.
- Provide safe trail access to major recreational destinations, such as the Two Rivers YMCA and Two Rivers State Recreation Area.
- Provide new recreational and transportation options to residents of western Douglas County and its communities.
- Develop realistic regional trail connections between the metropolitan trails system and Fremont, consistent with proposals in the Nebraska State Trails Plan.

- Provide a roadmap for the gradual and realistic implementation of a rural trail system in the western part of the county.

We hope that this plan contributes to the growth of a regional trails network that extends the experiences offered by urban trail networks into areas of the county that are likely to retain their rural and small town personality well into the future. As such, it will enrich the quality of life for the area's residents and visitors; and will add the potential of new "paths of discoveries" that help us live in a healthier and more satisfying way.

The Waterloo Trail.

Part One: The Uses of Trails

Purposes of the West County Trail System

Most people identify trails with recreational activities, including traditional uses like walking and bicycling and newer pursuits like in-line skating. However, trails have many roles to play in a community. The Nebraska State Trails Plan, published initially in 1994 and updated in 2004, identifies a number of benefits to trail development, including:

- ***Recreation.*** Outdoor recreation is the core benefit of a trail development program, providing opportunities for users to pursue the state's most popular recreational activities in a safe and rewarding environment. Trail-related recreation is especially important because it is within reach of people of all abilities and can be done at the convenience of participants. Trails appeal to everyone, from gifted athletes training for events to the majority of us looking for a nice place to take a walk, ride a bike, or spend time with family and friends.

- ***Health and Physical Activity.*** Despite national attention on diet and health, Americans are experiencing record epidemics of overweight and obesity. Scientists are increasingly discovering the many health consequences of these conditions, and attribute much of the problem to our sedentary behavior patterns. The financial effects of low physical activity and poor fitness cost Nebraska billions of dollars annually in health care cost and lost productivity. We know that 30 to 60 minutes of moderate physical activity each day produces major health benefits, and the availability of convenient trails increases the likelihood and frequency that individuals will engage in such activities.

- ***Transportation.*** Trails and non-motorized transportation provide alternatives to the car for certain kinds of trips, providing safe alternative access for young people and relieving the congestion and compromises to the quality of community life created by an exclusive reliance on automobile transportation. In western Douglas County, the transportation benefit includes safe movement to major recreational facilities, such as the YMCA, Elkhorn's library and planned recreation center, Two Rivers State Recreation Area, and schools in Valley and Waterloo. In addition, when we use trails as part of a transportation system, we are combining the benefits of recreation, better health, and good stewardship of the environment.

- ***Economic Development.*** Trails can produce increased visitor revenue and business opportunities when they have features that make them significant destinations or extend the experience of existing or potential tourism features. A West County trails system can integrate the town centers of Elkhorn, Valley, and Waterloo into a connected regional network, increasing local business. A recent economic impact study of Omaha metropolitan area trails indicates that many property owners believe that the presence of trails in neighborhoods increases the market value of homes.

  Trails-related economic development takes on added importance with the completion of the US 275 freeway, east of the old route though Valley. This new alignment has shifted most of the corridor's traffic, and much of its business activity, away from the old corridor and Valley's town center. Heavy trail utilization of the old corridor could help restore some specialized business back to the center of town, reinforcing Valley's current streetscape and town center revitalization program.

- ***Community Image and Quality.*** By enhancing community quality, trails improve business and resident recruitment efforts. As the recruitment of human resources achieves the same level of importance as the recruitment of industry, trails and other amenity features become critical to a city's economic development efforts.

- ***Education.*** Trails provide opportunities for learning about the natural or built environments of communities and their surroundings. Western Douglas County features unusual opportunities for historic interpretation, where themes of interest range from Mormon emigration to pioneer aviation.

These benefits generally apply to urban and rural trails throughout the state. An effective trail system for Western Douglas County will realize these benefits but must be designed to meet goals specific to the area. The major functions of a West County trail and pedestrian system should be to:

- ***Provide a primary recreation activity to short- and long-distance trail users.*** In Western Douglas County, developing facilities that extend the reach of the regional trail system for pedestrians, bicyclists, in-line skaters, and other recreational users will be a major priority. Current facilities are relatively scarce and fragmented. They are largely limited to Elkhorn's Center Street/Ta-Ha-Zouka Park Trail from the old town center of Elkhorn to West Maple Road; the initial stage of the Waterloo Trail; and Valley's pedestrian system. Because of the distances involved in much of the West County study area, much of this system will be focused on bicycle facilities. Pedestrian activity will tend to be focused on individual communities, and on close connections among the three towns of the West County.

- ***The West County system will be fully integrated into the Metro Area Trails network, and should provide a seamless extension to that growing system.*** In addition, the West County system should be part of a continuous bicycle link between Omaha and Fremont. The completion of the new US 275 Freeway opens the former US 275 right-of-way, now designated Reichmuth Road in Douglas County, for multi-modal use.

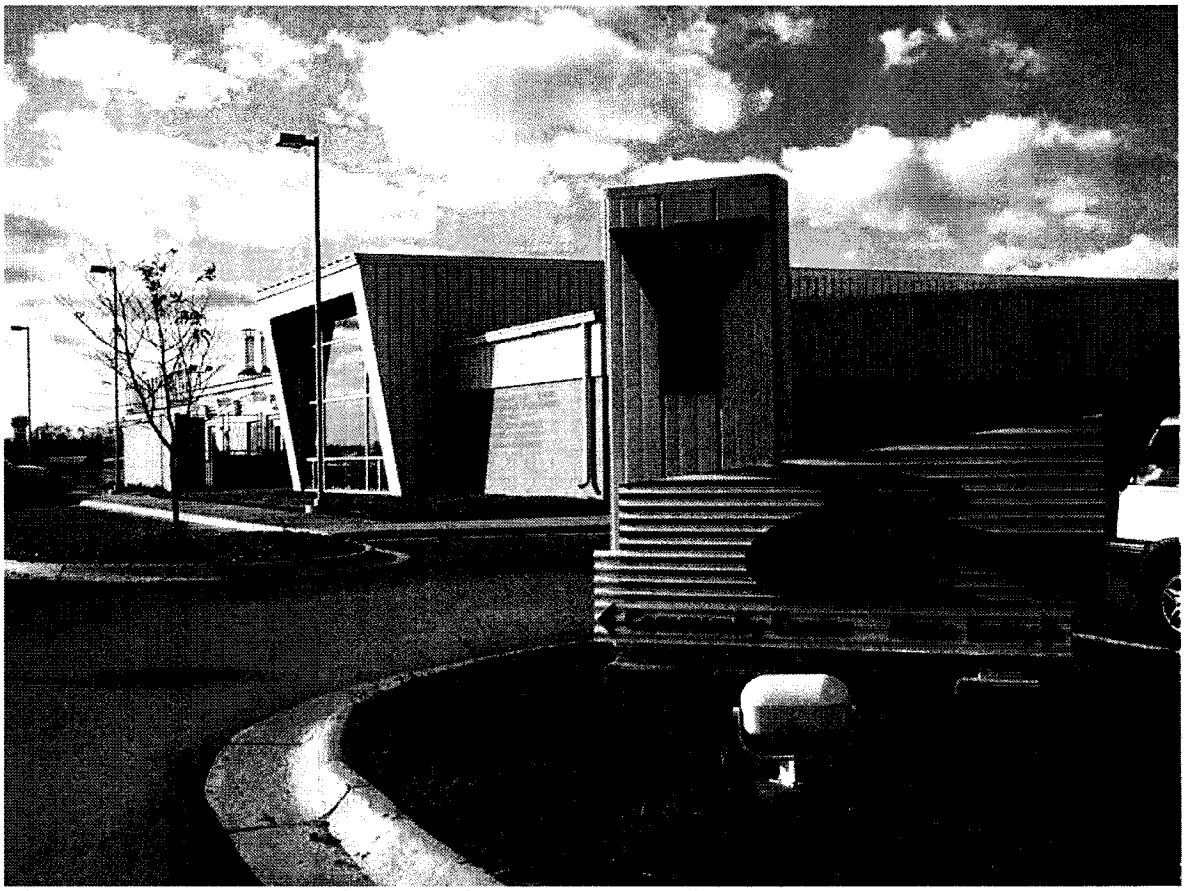
- ***Provide trail, bicycle routes, and pedestrian linkages between residential areas and activity centers.*** Western Douglas County is experiencing significant population growth. From a community perspective, much of this growth has been related to Elkhorn, although Waterloo and Valley are also experiencing moderate residential construction activity. Another growth area includes subdivisions in the rural county developed around lakes, such as Westshores, Ginger Cove, and Riverside Lakes. This increasing population generates the development of supporting services and amenities, such as the newly-opened YMCA near the Meigs Street interchange of US 275. Providing safe, non-motorized access from population clusters to activity centers and amenities will be an important function of a West County trails network. The system should also provide access to such other significant features as Two Rivers SRA, significant city parks such as Ta-Ha-Zouka Park in Elkhorn and City Park in Valley, and regional employment centers such as Valmont, the US Weather Service, and 30M.

- ***Provide safe routes to school.*** Public and private recreation and transportation agencies have banded together to promote a Safe Routes to School program, emphasizing systems that make it possible for students to get to school safely without the use of automobiles. Each of the three communities maintains separate school systems that serve both residents and surrounding rural areas. The trails system should improve student access to these schools, and can help provide better internal linkages between the Valley and Waterloo facilities should those systems combine in the future.

- ***Link the three West County communities together.*** While Elkhorn, Waterloo, and Valley are relatively close together, and maintain strong relationships, connections among them are relatively weak. The new US 275 Freeway severed the previous, more direct connection between Waterloo and Valley along old US 275. A connection of the three towns to each other may emerge as the nucleus of a West County trail network, growing in the future by extending to Omaha on the east and Fremont on the west.

- ***Coordinate with other recreation and resource management initiatives.*** This plan primarily addresses land-based recreational activities, such as bicycling. However, the Papio-Missouri River Natural Resources District is also examining other recreational options within its jurisdiction. For example, in 2003-04, a parallel study of canoeing opportunities along the Elkhorn River is taking place. The P-MRNRD owns or leases canoe access on the Elkhorn and Platte Rivers, including Elkhorn Crossing and the Platte River Landing Recreation Area south of Highway 64. The overland trail system and the Elkhorn canoe corridor should interact, and canoe access points can have multiple benefits as open space nodes along the trail system.

A system that meets these overall objectives is based on both destinations and opportunities. Destinations define key points that the system must serve, while opportunities help identify the routes that both serve destinations and provide pleasant experiences. The following sections examine these determinants of a trail network for Western Douglas County.



The Two Rivers YMCA, a major destination for a West County trails system.

Part Two:
Trail Resources and Opportunities

Determinants of the Western Douglas County Trail System

This section discusses the element that lend shape and form to a trails system for Western Douglas County, and include such generators as Population Clusters, Regional Parks, Public Facilities, and Activity Centers.

Population Clusters

The West County's three municipalities, Elkhorn, Waterloo, and Valley, themselves are major determinants of the trail system. The system must connect these towns and integrate their own trail development efforts into the overall system. Much of the balance of the county is located in the floodplains of the Elkhorn and Platte Rivers, which is likely to limit eventual urban development. However, lake-related residential development has proven popular in the West County. These population clusters should also be served by the trail network and include:

- Westshores, between 240th Street (US 275), 252nd Street, Pacific Street, and Dodge Road.
- Lake development along 264th Street between Dodge and Blondo Streets.
- Riverside Lakes, east of 228th Street between Dodge and Pacific Streets.
- Ginger Cove and Ginger Woods, south of Highway 64 and east of the Platte River.

Unincorporated clusters that should also be served by the network include:

- King Lake, in the Elkhorn River floodway east of 252nd Street.
- Elk City, along 225th Street between Bennington Road and Highway 36.

Regional Parks and Potential Open Spaces

Two Rivers State Recreation Area west of 264th and F, administered by the Nebraska Game and Parks Commission, is the primary regional recreation facility in the West County. The P-MRNRD also administers Elkhorn Crossing, a camping and canoe access on the west side of the Elkhorn River south of Highway 36 and the Platte River Landing Recreation Area on the Platte River south of Highway 64. Other potential regional open spaces include:

- An area south of Q Street along 245th Street. Here, 245th Street follows the Elkhorn River closely, and provides an excellent river access possibility.

- A large community park, proposed by the Elkhorn and Omaha Suburban Parks Master Plan in an area generally south of Center between 192nd and 222nd Streets.
- An active use sports facility, proposed in the Elkhorn Parks Master Plan between Waterloo and Elkhorn south of West Maple Road.

Recreation Centers, Schools, and Public Facilities

These important destinations should be connected to the trail network to strengthen its functioning for safe transportation to educational and recreational facilities. Because Elkhorn has previously completed a parks and trails master plan, local Elkhorn facilities are not included here. However, some major community facilities existing or planned in Elkhorn will draw users from the broader region. Major features to be served by the trails network include the following:

Recreation Centers and Community Facilities

- Two Rivers YMCA: Valley on the northwest quadrant of the US 275/Meigs Street interchange.
- City of Elkhorn Community Recreation Center/YMCA (under development): Veterans Drive and Roberts.
- Elkhorn Public Library: northeast of 204th and Blondo Streets.

Schools

- Metro Community College (Elkhorn Campus): 204th and West Dodge Road.
- Elkhorn High School: East of Veterans Drive.
- Waterloo Public Schools: 7th and Front Street.
- Valley High School/Elementary School campus: Between Center, Pine, Meigs, and Vess Streets.

City Parks

- Ta-Ha-Zouka Park: Elkhorn, west of Center Street.
- Valley City Park: Park and Alexander Streets.

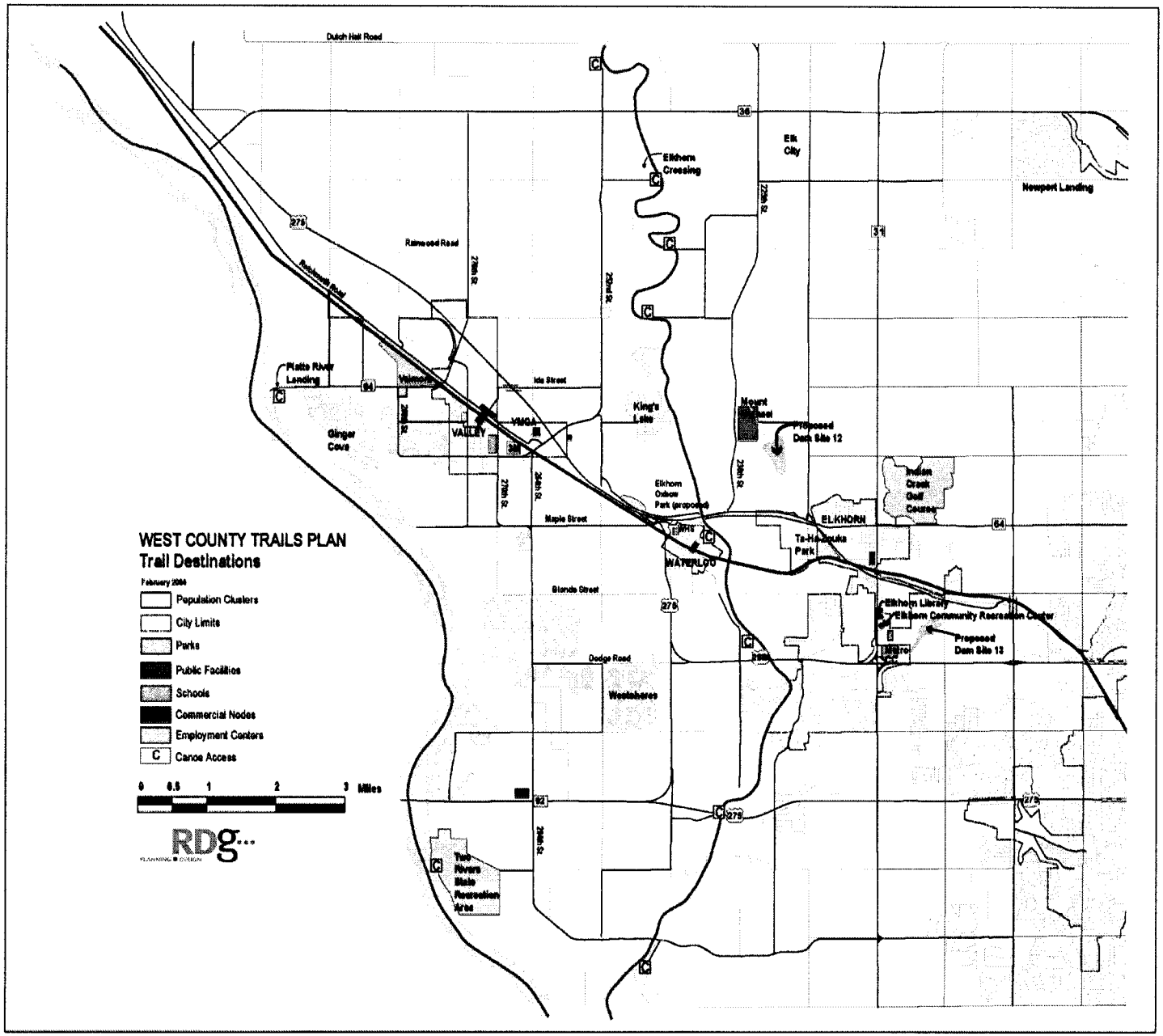
Commercial and Mixed Use Activity Centers and Nodes

Commercial centers enhance the trail experience by offering services to trail users and providing destinations and unique environments that are often best approached and experienced outside of cars. Commercial features ideally served by the trails system include:

- Elkhorn's historic village center, along Main Street between the West Branch of the Papillion Creek and Glenn Street.
- Valley town center, along Spruce Street between Reichmuth Road and 2nd Street.
- Waterloo village center, along 3rd Street between Lincoln Avenue and Front Street.
- Reichmuth Road corridor in valley, between Pine Street and Walnut Street.
- 264th and West Center (Highway 92) intersection. (includes convenience/general store)
- Meigs Street and US 275 interchange (includes food service)

Trail Corridor Opportunities

The state's largest regional trail systems, those of the Omaha and Lincoln metropolitan areas, use stream and abandoned railroad corridors as their main formative elements. While the Union Pacific Railroad is a major physical feature in the West County, the railroad does not permit joint trail use on its right-of-way. The UP through this part of the county is entirely main line railroad, and, as one of the nation's busiest freight corridors, is not suitable for joint rail-with-trail use. The county lacks other existing or abandoned branch line trackage.


WEST COUNTY TRAILS PLAN
Trail Destinations
February 2004
Population Clusters
City Limits
Parks
Public Facilities
Schools
Commercial Nodes
Employment Centers
C Canoe Access
0 0.5 1 2 3 Miles
RDg...
Dutch Hall Road
Elkhorn Crossing
Elk City
Newport Landing
Ramwood Road
Platte River Landing
Ida Street
VMGA
VALLEY
King's Lake
Proposed Dam Site 12
Indian Creek Golf Course
Elkhorn Oxbow Park (proposed)
Maple Street
ELKHORN
Ta-Ha-Zouka Park
WATERLOO
Blonde Street
Elkhorn Library
Elkhorn Community Recreation Center
Proposed Dam Site 13
Dodge Road
Westshores
Two Rivers State Recreation Area

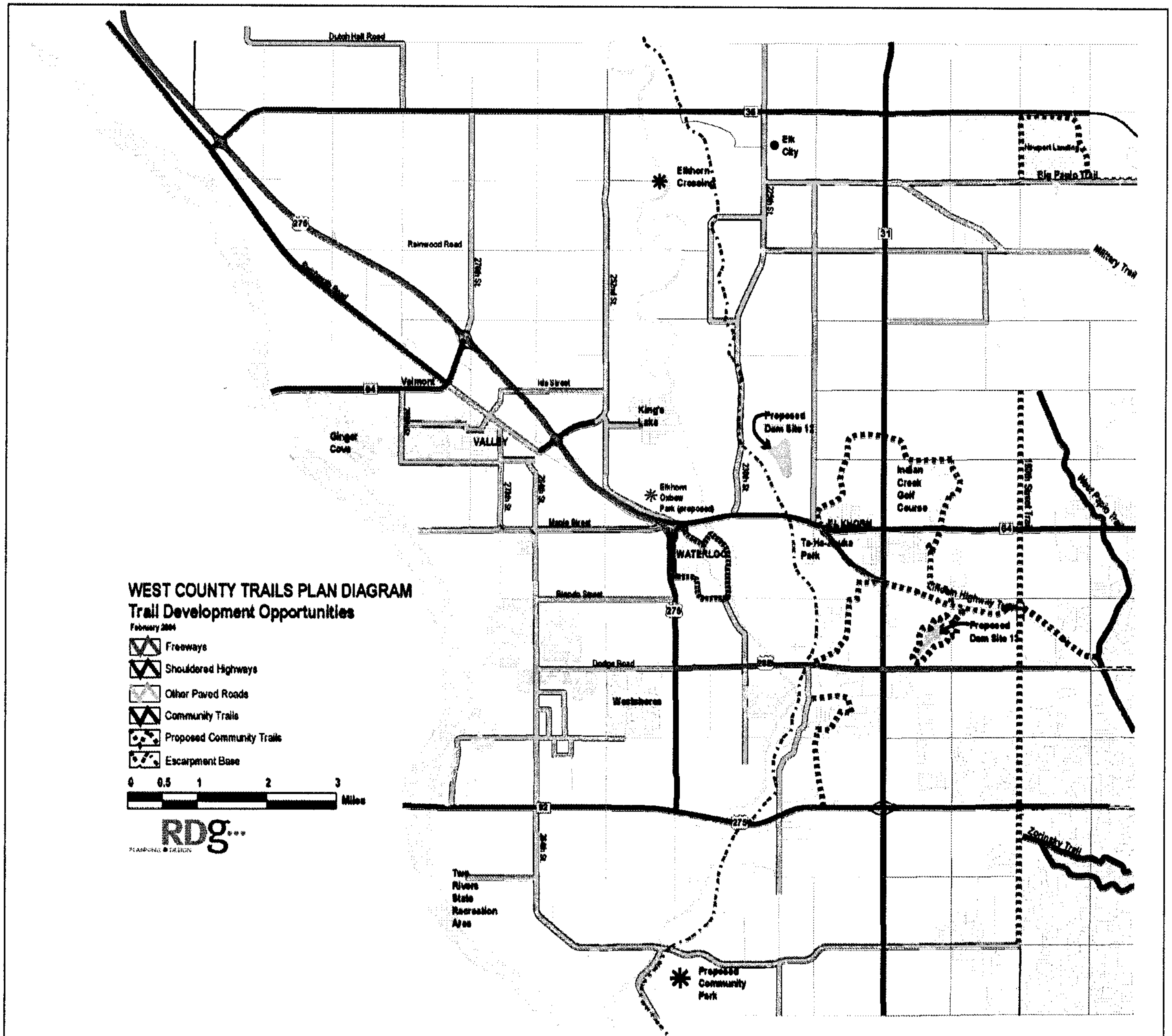
Similarly, while the West County planning area includes two major streams, the Platte and Elkhorn, neither provides good trail development opportunities. Most of the Elkhorn riverbank is in private ownership, and not readily available for trail development. Some of the river edge is marked by scenic steep bluffs. It is also not presently possible to use the Platte River corridor. Although the NRD's Union Dike lines much of the Platte River, commitments to property owners and private use patterns currently make this corridor unavailable for trail use. Along both rivers, access is available at specific points, but linear trail use is extremely unlikely.

As a result, the extensive grid of county roads and highways becomes the West County's primary trail resource, leading to a relatively more "European" bicycle system concept based on adapting existing rights-of-way to multiple modes, including bicycle and some pedestrian utilization. Several factors enter into the adaptability of various county road corridors for trail use, including:

Roadway paving and road section. State highways through the study area typically include paved shoulders, which provide satisfactory accommodations for bicyclists. Shoulders are generally more appropriate for experienced road cyclists, who are more comfortable with adjacent highway traffic. On the other hand, a paved shoulder on a high-speed road does not provide a good pedestrian environment. Highways with paved shoulders in the West County area include:

- Highway 36.
- Highway 275 from Waterloo to West Center Road.
- West Center Road (Highway 92) from 204th Street to the Platte River.
- 204th Street (Highways 6/31) from county line to county line.
- Highway 64 from US 275 to the Platte River.
- Reichmuth Road (former US 275) between Meigs Street and the Dodge County Line.

Paved shoulders on Reichmuth Road (former US Highway 275)



WEST COUNTY TRAILS PLAN DIAGRAM
Trail Development Opportunities
Freeways
Shouldered Highways
Other Paved Roads
Community Trails
Proposed Community Trails
Escarpment Base
0 0.5 1 2 3 Miles
RDG
Dutch Hall Road
Elk City
Elkhorn-Crossing
Big Papio Trail
Military Trail
Rainwood Road
Valmont
Ida Street
King's Lake
Ginger Cove
VALLEY
Proposed Dam Site 12
Elkhorn Oxbow Park (proposed)
Indian Creek Golf Course
ELKHORN
Maple Street
WATERLOO
Dodge Road
Westaberns
Proposed Dam Site 13
Zorinsky Trail
Two Rivers State Recreation Area
Proposed Community Park
West Papio Trail

The US 275 freeway from Waterloo to Fremont is not included in the group of roads with paved shoulders. Bicycle use of this limited access freeway is not permitted. However, possible joint use of the right-of-way is possible, and the state trails plan recommends consideration of such trail use of freeway corridors when feasible.

Other paved county road sections range from 20 to 24 feet without shoulders. These roads are frequently used by bicyclists because of their paved surfaces and low traffic volumes. Most of these roads follow section lines, although some divert from the surveyor's grid because of topography or adjacent development. The paved roads that provide best potential for joint trail use include:

North-South Roads

- 216th Street from West Maple to Highway 36.
- 225th/230th Street from West Maple to the Washington County Line through Elk City.
- 234th Street, forming a loop from about 230th and State to 225th Street on the half-section line between Rainwood and Bennington Roads.
- 252nd Street from the US 275 frontage road to Highway 36.
- 276th Street from the Highway 275/64 interchange to Highway 36.
- 300th Street, Reichmuth Road to Highway 64.
- Skyline Drive/222nd Street from West Dodge Road to F Street.
- River Road/228th Street from Waterloo to termination north of West Center Road.
- 264th Street, Meigs Street to West Q Road.
- Campanile Road from Highway 92 to Pacific Street.

East-West Roads

- Dutch Hall/Old Highway 8 from 288th Street to US 275.
- Ida Street, from 252nd to 270th Street.
- Meigs Street from 252nd to 288th Street.
- Maple Road from Waterloo to the Platte River.
- Dodge Road from US 275 to 264th Street.
- Pacific Street from 252nd Street to Campanile Road.
- Q Road from 204th to 264th Street.

Drainage ditch and sideslope conditions. On non-shouldered roads, the condition of the right-of-way off the paved surface influences trail treatment. Variables include the location of the drainage ditch, and the gradient of the off-road right-of-way. Most county roads utilize a rural section, with the road surface draining to a ditch. The roadside ditch may be as close as six feet from the edge of pavement. In other cases, the ditch may be as many as 12 feet from the pavement edge; or the road may not have a ditch. Slopes from the edge of pavement to the right-of-way line also vary, depending on the location of the ditch and overall grading of the road. Generally, roads with broad side shoulders and ditches that are relatively far from the edge of the pavement lend themselves to roadside trails. On the other hand, roads with close ditches typically require adjacent paved shoulders to accommodate trail use, and lack the space necessary for a roadside trail.

Topography. The topography of the West County also influences potential trail corridors. Most of the study area is in the Elkhorn and Platte River floodplains and is nearly flat. The

topography changes on the eastern side of the area, as the bluffs and escarpments that form the edge of the Elkhorn Valley beginning the rolling landscape that is more characteristic of Omaha and Douglas County. Potential corridors that illustrate more varied or difficult topography include the following roads:

- *225th/230th Street.* This scenic north-south road begins in the south at Highway 64 in the Elkhorn floodplain. Northbound, it gently climbs out of the valley, and follows contours near the base of the escarpment. North of State Street, the road turns northeast and begins a steep but short climb up the escarpment. This 100-foot climb leads to the top of the escarpment, where the road reverts to a flat, north alignment through Elk City.

- *216th Street.* This north-south road follows a rolling topography between Highway 64 and Highway 36. The steepest grades are short and occur as the road climbs out of drainageways cut by Papio Creek tributaries.

- *Q Road.* Q Road experiences significant grades as it climbs out of the Elkhorn valley from 245th Street east to 204th Street. This segment gains about 200 feet in elevation, and includes several relatively challenging segments, punctuated by relatively level areas. The steepest grades are found immediately on leaving the Elkhorn River.

- *Skyline Drive/222nd Street.* Skyline Drive, within the city limits of Elkhorn for much of its distance, runs along the top of the Elkhorn escarpment south of West Dodge Road. Skyline Drive connects with 222nd Street, and proceeds through a moderately rolling topography south to Q Road.

River Access Points and Natural Features

While linear trail access along the Platte and Elkhorn Rivers appears impossible at present, potential river access (and corridors that lead to them), as well as other natural features also provide possible trail development opportunities. These features include:

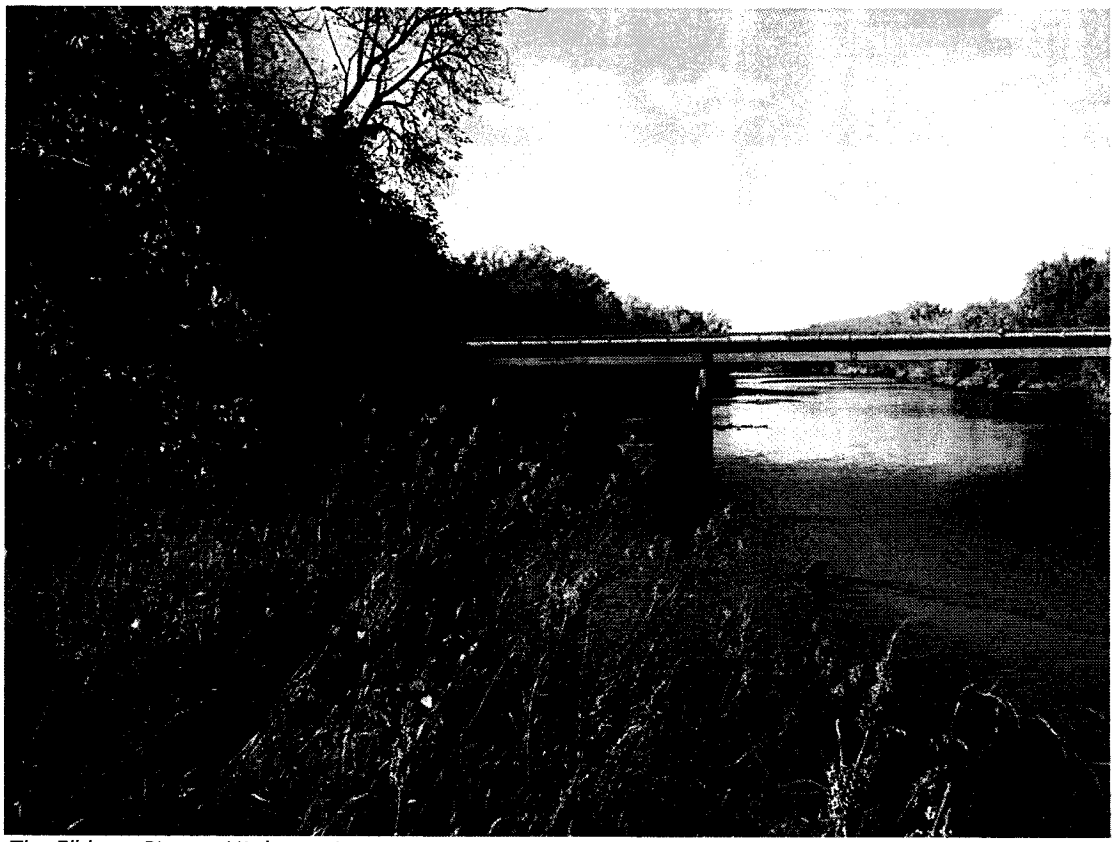
Elkhorn River Access

- 252nd Street north of Highway 36. Here, the alignment of the road intersects with a meander on the Elkhorn.

- Elkhorn Crossing. This existing river access is managed by the NRD and is located about one mile east of 252nd Street at the terminus of Bennington Road. However, this access point is relatively remote and difficult to maintain.

- Rainwood Road Access. This access point, on a scenic meander of the Elkhorn River, is reached by a one-half mile long spur of Rainwood Road, west of 234th Street.

- State Street Access. A road that connected 234th Street to the river has been removed, but the right-of-way remains intact, leading to another potential river access.



The Elkhorn River at Highway 64.

- Highway 64 access. This site is located east of the Highway 64 (West Maple Road) bridge over the Elkhorn River. This site may be connected to the Waterloo Trail system by reusing the supports of the Old Highway 64 bridge.

- West Dodge Road. Reconstruction of West Dodge Road to freeway standards will carry the new road over the current at-grade intersection with River Road and 228th Street. This opens the possibility of recreational river access at this point.

- 245th Street south of Q Road. Here, the paved 245th Street parallels the Elkhorn River for a distance of about 0.5 miles. A vestige of the Rock Island Railroad also adds historical interest to this segment.

Platte River Landing

- Platte River Landing. This existing river access site is located south of the highway 64 Platte River bridge.

- Two Rivers State Recreation Area.

Other Features

- Old Elkhorn River Channel northwest of Waterloo. This channel and wetlands area is adjacent to a blighted, former industrial area along the old Highway 275 (now a frontage

road) northwest of Waterloo. The site includes the old Roberts Dairy plant and several abandoned or seriously underused commercial and industrial properties.

- King Lake. This narrow oxbow was an old channel of the Elkhorn River, and is one of several other oxbows along this stretch of the Elkhorn. Many of these old channels have produced clusters of cottages and small settlements

- Rawhide Creek. This is one of the principal drainage channels in the northwestern part of the county, and flows into the Elkhorn north of State Street. However, neighboring property ownerships make its use as an open space corridor unlikely at present.

- South Elkhorn Oxbow. This oxbow is located northwest of the West Q Road crossing of the Elkhorn River.

Community Trail Programs

Elkhorn and Waterloo both have active trails development programs that have resulted in significant construction.

Elkhorn has developed a trail segment from Center Street and West Maple Road, extending along Center Street southeast to Ta-Ha-Zouka Park, and continuing along Center Street to the historic village center. Additional trail plans include:

- A connection from the Center Street (Elkhorn) trail to the planned recreation center/YMCA.

- The Skyline Trail, following Skyline Drive, Rawhide Road, 212th Street, and other alignments, ultimately extending past Skyline Woods Golf Course and terminating near a planned sediment control structure near 204th and West Center Road.

- The Indian Creek Trail, extending north along Indian Creek, 192nd Street, and Fort Street.

A future trail is also planned along the Old Lincoln Highway, using an alignment identified in the Elkhorn/Lincoln Highway Preservation Plan. This plan proposes an alignment that generally parallels the Old Lincoln Highway corridor, but is buffered in such a way as to avoid a visual impact on the historic roadway. This trail will ultimately link into the Omaha metropolitan area trail system along the West Branch of the Papio Creek and will connect to the proposed Dam Site 13, a key element of a major park planned northwest of 192nd and Dodge.

Waterloo has developed a master plan for a multi-staged circumferential trail. The first phase of trail construction is completed, and extends from the school campus south and east along the Donahue Creek levee to about 236th Street. A second stage continues around the schools campus and along Lincoln Avenue to 3rd Street, at the entrance to the village center. The trail will continue northeast along 3rd Street to the Elkhorn River, potentially crossing the river on the alignment of the old Highway 64 bridge. The main circumferential trail will continue south along the Elkhorn River levee to Blondo Street, and proceed west and north to complete the loop.

Both of these community trail systems should be connected to the West County system and form key opportunities for inter-community linkage.

Probable Trail Corridors

Based on the above analysis of determinants and opportunities, we believe that the following corridors are particularly important components of a future West County Trail Network.

- Reichmuth Road (Old Highway 275). This corridor provides a broad right-of-way with wide shoulders northwest of West Street in Valley. Through Valley, it is four lanes wide and continues as cul-de-sac frontage roads, severed by the new US 275 freeway. Most regional traffic now uses the freeway, dramatically reducing traffic volumes on the road and creating an excellent opportunity for retro-fit for multi-modal use. In addition, the corridor provides extremely easy topography and a direct link to Fremont; directly serves major employers like Valmont and the Weather Service; and passes by Valley's traditional town center and the YMCA. The most difficult problems with the Reichmuth Road corridor include the severed connection between Valley and Waterloo; and physical blight along old industrial areas along the road between those two communities.

- 264th Street. This principal north-south county road extends from Valley, 3M, and the YMCA area through lake communities, and provides access to Two Rivers SRA and the Elkhorn River. It connects into West Q Road, which in turn provides an opportunity for a link into the Omaha trail system at Zorinsky Lake. This corridor, frequently used by road bicyclists, suffers, however, from relatively heavy, high-speed traffic. Extensive gravel-mining operations and the road's status as the principal north-south through route between Highway 6 and the Platte River make it particularly important as a truck route.

- 225th/230th Street (Elk City Road). This scenic road starts in the Elkhorn Valley and climbs the Elkhorn River escarpment to Elk City. The road continues north of Highway 36, ultimately leading to paved roads in Washington County that extend to Herman. The road is another regional favorite, and provides such features as panoramic valley views, interpretation of the area's aviation history, and passage through the once organized village of Elk City. It provides a challenging climb for northbound bicyclcists.

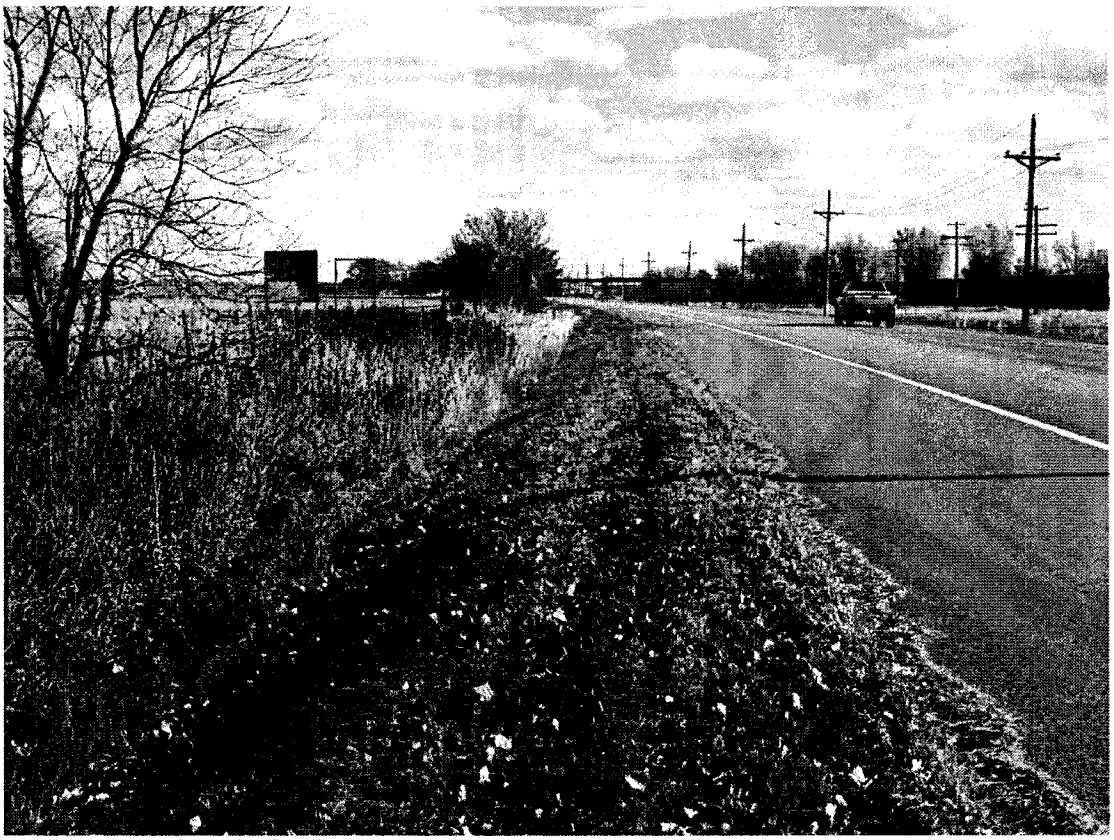
- 252nd Street. This corridor parallels the Elk City system on the west side of the river and is a flat road that provides access to King Lake and the NRD's Elkhorn Crossing canoe access and camping facility. To the north, it terminates at the Elkhorn River. Parts of the corridor include broad off-road right-of-way, suitable for separated roadside trail development.

- Highway 64/288th Street/Valley Street. This route provides the best connection between Platte River Landing, the entrance to the Ginger Cove residential area, the City of Valley, and ultimately the YMCA area. Highway 64 west of 288th Street provides paved shoulders and extensive areas on its north side suitable for separated roadside trails. Both 288th and Valley Street, a new west entrance into the city, also feature good roadside conditions, making roadside trail development feasible.

- Meigs Street. With the completion of the US 275 freeway, Meigs Street has increasingly become the principal entrance to Valley. Within the structure of a trail network, Meigs connects the 252nd Street corridor, commercial development (including food service) at the interchange, the YMCA, 3M, and the Valley public schools campus. The street is one of two grade separated crossings over the Union Pacific and provides paved shoulders. On the other hand, it is relatively busy with a number of turning movements. Unfortunately, the UP and US 275 overpasses were not built with separated pedestrian accommodations.

- West Maple Road (Highway 64). Highway 64 directly connects the Waterloo and Elkhorn trail systems, and has adequate room on its south side to accommodate a separated trail. However, this very busy, divided arterial provides a formidable barrier to trail connections on its north side.

- River Road/228th Street. River Road parallels the Elkhorn River south of Waterloo and has adequate space for a separated roadside trail. Prior to construction on West Dodge Road, River Road aligned with 228th Street, leading to Riverside Lakes. River Road and 228th Street will pass under Dodge, providing a good opportunity for trail continuity. 228th Street currently terminates in private property just north of West Center Road. A future off-road trail/greenway will be needed to make this a viable future trail corridor.



Reichmuth Road north of Valley.

Part Three:
Trail Facility Types and Design

Design Components of the Western Douglas County System

Traditionally, we think of trail systems as a framework of off-road facilities routed on their own rights-of-ways and completely separated from roadways. Thus, the Omaha metropolitan system uses a combination of stream corridors (Keystone, Big Papio, West Papio Trails), railroad rights-of-way (Field Club Trails), and roadside reservations (144th Street Trail, Boulevard Trails) to form its primary framework. The new Riverfront Trail will be a hybrid system, much of which is included in the design of new parks and development along the Missouri Riverfront. Lincoln's metropolitan trail network similarly uses railroad abandonments (Rock Island, MoPac, and Murdock Trails), stream corridors (John Wolff Trail), and separated roadside facilities.

Exclusive trail corridors, sometimes referred to as "Class I" trails, are clearly the most desirable trail design alternative. However, the proposed functions of the system, the relative absence of clearly defined corridors, and land use and property ownership patterns in the largely rural West County will require a trail system that will use a number of design configurations. This system will be much more focused on the use of existing rights-of-way, and adapting the county road system to multiple purposes. Some of these will be more adaptable to some users than others. However, together, these different configurations can produce an overall system that will satisfy the county's needs for a comprehensive recreational and supplemental transportation system.

This discussion does not present comprehensive design standards for trails. The Nebraska Department of Roads maintains specific design standards for projects financed under the Transportation Enhancements program. Many of these standards are based on the Guide to the Development of Bicycle Facilities, published by the American Association of State Highway Transportation Officials. *A Network of Discovery: A Comprehensive Trails Program for the State of Nebraska* also contains design standards for both different user groups and types of trails. However, because of its focus on adapting state highways and county roads to non-motorized trail use, this plan proposes some unusual trail configurations. This section will establish special standards and policies that apply to specific trail contexts in the West County. These standards and concepts may in turn apply to other similar rural county applications in other parts of the state.

The Western Douglas County Trails system will be composed of the following trail design types:

- *Exclusive Off-Road Trails* (or Class I Trails), facilities open to non-motorized vehicles only that do not share right-of-way with streets or roads.

- *Separated Roadside Trails,* facilities open to non-motorized vehicles only which are separated from roads but developed in the same or adjacent right-of-way. Roadside trails may be developed along urban streets as improvements of existing sidewalks to trail standards.

- *Shoulders,* providing paved shoulders along a roadway to accommodate non-motorized users. Shoulders are generally proposed as a part of rural section roadways, without curb and gutter.

- *Detachable Shoulders,* a hybrid between paved shoulders and a separated roadside trail. Detachable shoulders diverge off the paved roadway surface where space and road section permit adequate space for a separated path.

- *"Reichmuth Bikeway,"* adapting the former US 275 corridor to bicycle as well as continued vehicular use.

- *"Share the Road" Routes,* designated streets that are signed with "share the road" messages to alert motorists to expect substantial bicycle use of a street or roadway.

- *Walking trails,* including natural areas and steep slopes which because of grades are poorly suited to multiple users and, in many cases, can not meet the grade standards of the Americans with Disabilities Act.

DESIGN STANDARDS AND CRITERIA

Exclusive Off-Road Trails

These trails are physically separated from motor vehicle traffic and rights-of-way and are typically built along utility, railroad, or drainage corridors, or within a greenway acquired by purchase of easement across private land. Exclusive off-road trails can accommodate a wide variety of users, including cyclists of all ability levels, pedestrians, joggers and runners, in-line skaters, people in wheelchairs, and a variety of other wheeled vehicles. They are the most versatile recreational resources, and provide users with the opportunity to escape the surrounding environment.

Width and Pavement

The current width standard for an off-road trail financed by the Transportation Enhancements (TE) program is ten feet with a minimum graded shoulder of two feet. In certain settings with either limited use or space constraints, an eight-foot trail might be acceptable. The eight-foot section is used along the Waterloo Trail, for example. Nebraska Department of Roads standards currently require concrete pavement for TE-funded paved trails. Paved trails in Nebraska generally utilize concrete or asphaltic concrete surfaces. While concrete is more costly than asphalt surfacing, it is also generally more durable, provides better edge definition, and is more resistant to freeze-thaw cycles. Granulated stone trails are also eligible under state standards for TE funding, and are typically used in rural settings.

In Western Douglas County, off-road trail settings include:

- Continuation of the Waterloo and Elkhorn trail systems, and connections to the Omaha metropolitan trail system.

- Alignments generally parallel to roads with enough adjacent property to completely disengage the trail from the roadway. Some of these settings include Highway 64 west of 288th Street, excess freeway right-of-way along US 275, segments of old Highway 275, and environmental or open space resource areas bounded by roads. When freeway right-of-way is used, a clear vertical barrier, such as fencing or impermeable landscaping, should be used to prevent trail users from encroaching on the limited access roadway.

- Stream corridors and levee tops.

- Abandoned road grades, such as State Street between 234th Street and the Elkhorn River.

In some situations, typically long distance trails in rural or semi-rural settings, granular stone is used as a trail surface. Examples of such trails in the larger region include the MoPac East Trail from Lincoln to Elmwood, the proposed MoPac Trail from Springfield to Louisville, the Oak Creek Trail from Valparaiso to Brainard, and the finished surface of the Cowboy Trail. Densely compacted stone can create a hard surface that is compatible with bicycle and some wheelchair users, although it only marginally accommodates narrow-tired road bicycles. Most off-road trails within the Western Douglas County area should be paved, largely because of the popularity of road bicycle use.

Support Facilities

Because of their separation from other traveled right-of-way, detailed plans for off-road trails may include additional amenities. These include:

• Trailheads, providing parking, maps, information, and when possible and necessary, water and restroom facilities.

• Trail furniture, such as benches and receptacles. Furniture should be set back three feet from the edge of the trail and should be spaced at regular intervals. Trails can raise funds for development and maintenance by selling sponsorships for individual benches, bridges, and shelters.

• Directional and information signage, identifying the trail, providing mileage information, maps, directions to associated features, and other information necessary to orient the user and increase enjoyment of the trail experience. Directional signage should also include trail identification information.

Because the Western Douglas County trail system adapts county road routes for bicycle use, a route designation system is particularly important. This system should include a logo for the system, and numerical designators of routes, together with destination information.

• Regulatory and warning signage, describing the laws and regulations that apply to the trail and its users, and alerting users to curves, crossings, bridges, and other potentially hazardous conditions. Regulatory and warning signage should be consistent in design, size, location, and copy.

Intersection Design

Grade crossings of streets and railroads provide significant challenges to all trail systems. Fortunately, the flat topography of the Platte and Elkhorn valleys provides generally good intersection visibility. At-grade intersection design should:

- Establish crossings at logical locations where motorists are likely to look for crossing traffic.
- Provide warning signage for motorists well in advance of the trail crossing, along with clear crossing markings.
- Assure good visibility between trail users and motorists by preventing obstructions of vegetation or competing signage.
- Provide clear warning information and markings to trail users of the upcoming intersection.
- At railroad crossings, use devices that prevent trail users from casually crossing in front of oncoming trains. Such a device has been effectively installed as part of the first phase of the Waterloo Trail.

Separated Roadside Trails

This class of trail resembles off-road trails, except that they are developed on or adjacent to road rights-of-way. A two-way roadside trail should never be located directly along a roadway without a curb or other vertical separation. This creates a "counterflow" situation in which bicyclists and pedestrians face oncoming vehicular traffic. Ideally, roadside trails should be distinct from the roadway and should be separated from the main road channel by at least six feet. When separated roadside trails are used directly adjacent to streets in urban settings, the trail should be visually separated from the curb by a contrasting paving pattern (such as stamped concrete).

Most of the design patterns and features of off-road trails also apply to separated roadside trails. Intersection design is a particular challenge that requires careful attention. Intersections should be free of obstructions and designed to afford maximum visibility between motorists and trail users. Good trail crossing markings are especially important to alert turning cars of the presence of the trail, and to prevent cars from stopping across the trail at intersections. At intersections, the trail should curve toward the intersection radius, providing good visibility for trail users and reducing the likelihood that cars will stop across the trail to see oncoming traffic.

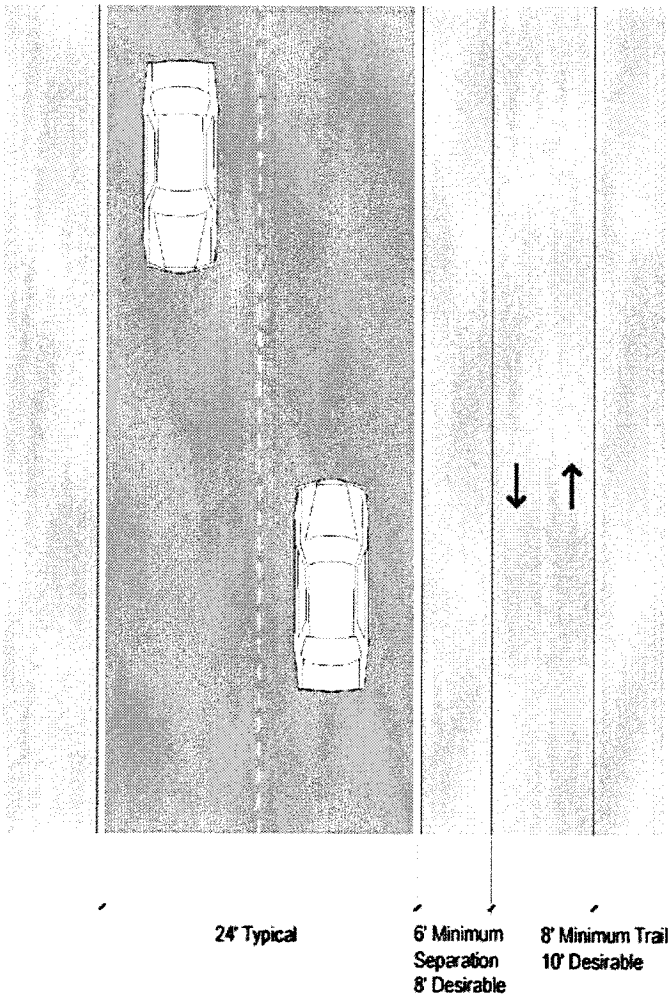
Separated roadside trails should be used in the following Western Douglas County settings:

- Road rights-of-way where drainage ditches are either absent or set back far enough to permit separated roadside trail development. This will typically require a 18-foot minimum setback from the edge of the pavement to the beginning of the embankment to the ditch, (permitting a 6-foot trail setback, a10-foot trail, and a 2-foot safety zone to the edge of the ditch). In some situations, this distance may be reduced to 14 feet (4-foot trail setback from road edge, 8-foot trail, and 2-foot safety zone).

- Urban settings where a trail is developed adjacent to a curb. An example may be the northeast side of Reichmuth Road through the center of Valley, or urban corridors such as Q Street between 204th Street and Zorinsky Lake.

Western Douglas County Trails Plan

OFF-ROAD TRAIL

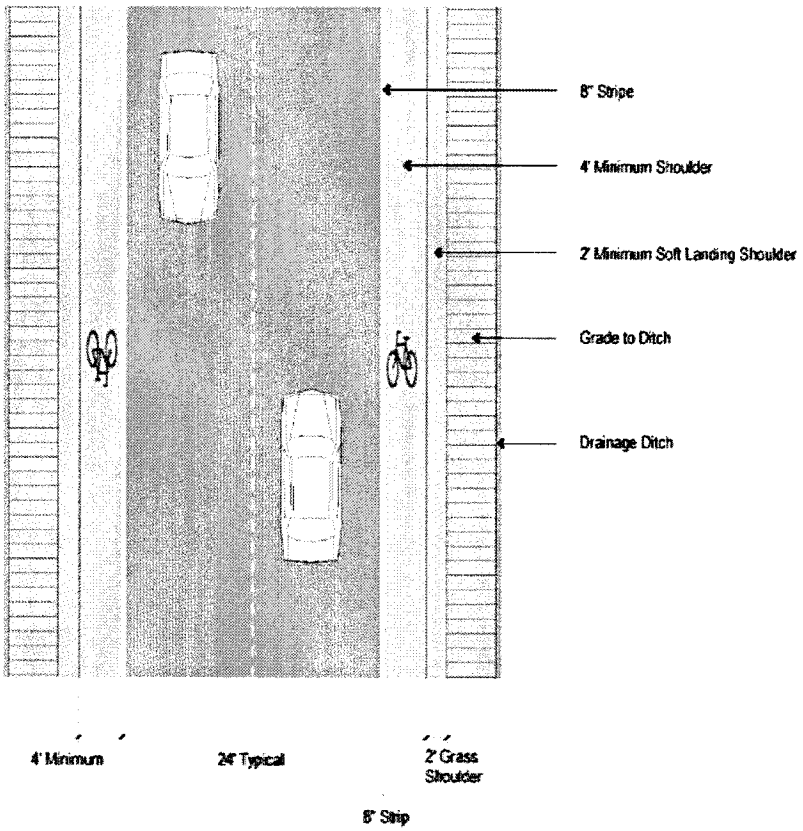


Paved Shoulders

Paved roadway shoulders benefit bicyclists and some runners as well as motorists. From a roadway point of view, they extend the life of roads by moving pavement edge deterioration away from moving lanes, as well as providing a breakdown area and a greater margin for safety on otherwise narrow roads. Paved shoulders are an important part of the overall bicycle system for Nebraska.

Western Douglas County Trails Plan

BIKEWAY SHOULDER on RURAL SECTION ROADS



Shoulders for trail use are a fundamental part of the concept for Western Douglas County. Two settings exist in the study area:

- Primary highways. Paved shoulders along primary highways are typically six to eight feet. They may be separated from the main roadway by a narrow auditory barrier (like a recessed rumble strip). If these devices are used, the clear riding width of a shoulder should never be less than four feet. Some of the primary highways in Western Douglas County will either be converted to freeway sections or will lead directly to freeways. These sections are generally unsuitable for trail use. Sections that are appropriate for bicycle use include Highway 36 from Newport Landing to Reichmuth Road; and Highway 92 (West Center Road) from Zorinsky Lake to Campanile Road.

- County roads. New shoulders on rural section roads would be designed to adapt these corridors to bicycles and some pedestrian users. The shoulder is used on road corridors where the drainage ditch is set back a minimum of six feet from the edge of pavement. The "bikeway shoulder" concept would provide a four-foot minimum width shoulder on both sides of the road. The shoulder would be separated from the driving surface by a 6-8 inch painted white line. Standard bicycle markings, consistent with the Manual of Uniform Traffic Control Devices (MUTCD) would be painted periodically in the shoulder.

Directional and Identifying Graphics

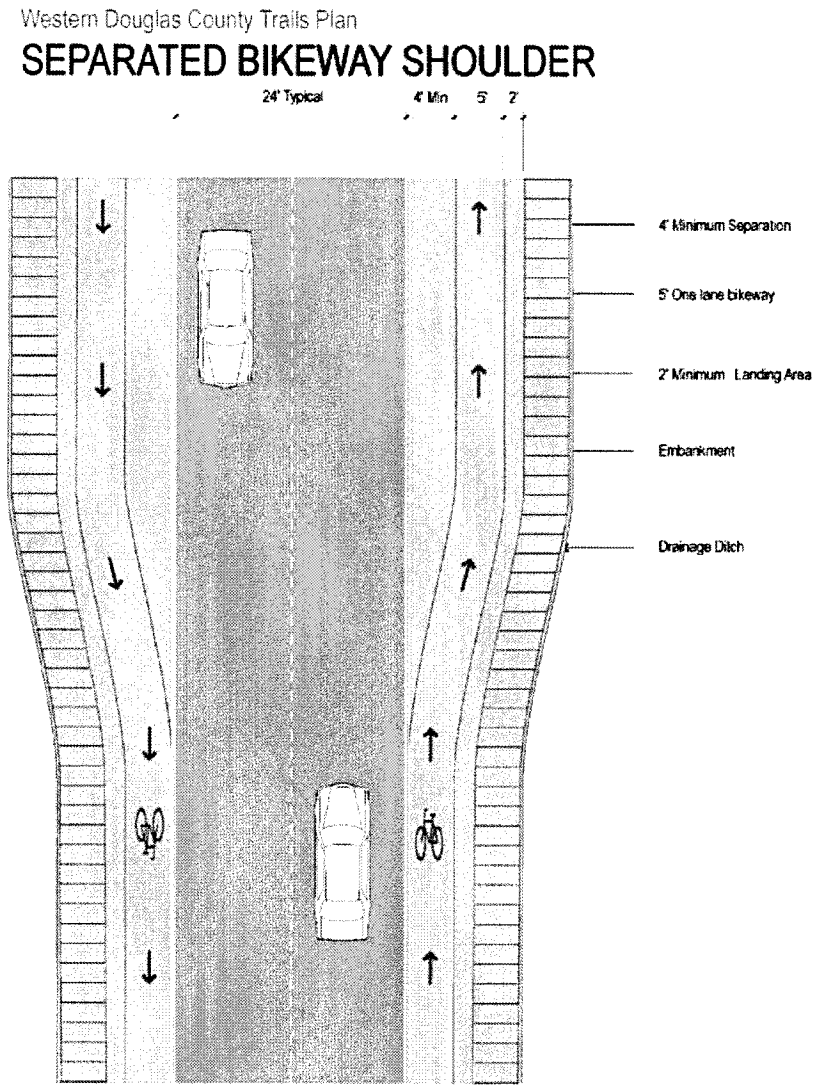
Directional and regulatory signage is particularly important to the shoulder concept. The route designation system including a logo for the system, numerical designators of routes, and destination information is especially important. Share-the-road (STR) signage should be posted on all segments included in the proposed system, in advance of actual physical construction. STR signs notify motorists of the presence of bicyclists in an area, a good safety practice with or without a comprehensive system.

Transitional Widening

Some of the road corridors proposed for shoulder installation now have paved surfaces as narrow as 20 feet. Installation of 4-foot shoulders on either side widen the entire paved surface to 28-feet, in line with state standards for intermediate volume state highways between 850 and 3,000 vehicles per day. We would not anticipate constructing bicycle shoulders for full highway depth, but the wider paving surface will nevertheless increase traffic safety. With increasing traffic volumes, some of these roads may require widening, encompassing the entire 28-foot width. When this occurs, the bicycle shoulders should either be reconstructed (creating a 36-foot minimum paved surface, with a 24-foot street channel and 6-foot shoulders), or relocated to a separated roadside trail configuration. The widening will also require regarding and reconstruction of roadside drainage structures.

Detachable Shoulders

This technique applies to bicycle shoulder segments where the drainage ditch either disappears or is set back far enough from the driving surface to permit a separated roadside trail. It is generally unsafe to make frequent transitions from a shouldered roadway to a two-way separated roadside path, requiring trail users to cross the roadway. Instead, the detachable shoulder concept separates the one-way shoulder from the roadway where space permits. The detached shoulder should have a minimum five-foot width and provides one-way travel in the direction of vehicular traffic. It should have a four-foot minimum separation from the edge of the road pavement and a two-foot safety zone, requiring an 11-foot separation from the edge of pavement to the ditch embankment.



Detachable shoulder segments should be marked as proposed for shouldered segments, with the addition of one-way travel markings on the trail surface.

Reichmuth Bikeway

The concept of a "Reichmuth Bikeway" adapts Reichmuth Road (Old US 275) to joint trail use, and applies to the corridor from the Highway 64 overpass to the Dodge County line and ultimately into Fremont. This lightly traveled highway with a good paving surface and broad shoulders will be the primary trail link between Omaha and Fremont, and minor steps can make it serve this function well. The typical section of the road here currently provides a 28-foot roadway and 8-foot shoulders. The bikeway adaptation includes the following features:

- Strengthening the visual and auditory separation between the edge of the highway pavement and the trail shoulder. This can be accomplished by installing recessed rumble strips in a two-foot area adjacent to the edge of the moving vehicular lane. A primary

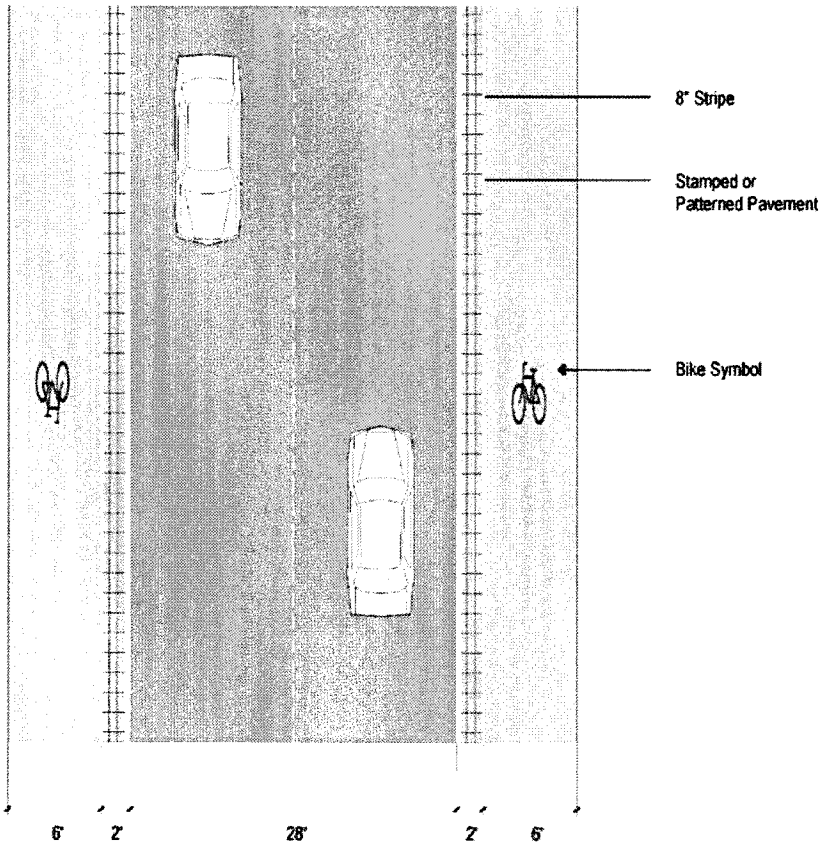
white edge line should be retained at lane edge, and a secondary white line (if permitted by MUTCD standards) can be used on the inside of the rumble zone to add visual separation. A two-foot strip of a contrasting paving surface, such as colored stamped concrete, may also be employed to create a stronger visual separation.

- Painted bicycle markings and a directional area within the shoulder, which is now designated for primary bicycle use.

- Identification and regulatory signage, including logo and route identifiers for the Reichmuth Bikeway; and Share-the-Road signage for all users.

Western Douglas County Trails Plan

RIECHMUTH BIKEWAY



Share the Road (STR) Routes

These routes are suggested (but not mandatory) pathways for bicyclists from one place to another. These streets generally do not require major capital improvements other than assuring their accessibility and ease of safe use to cyclists. In the Western Douglas County system, Share-the-Road routes include:

- Secondary bicycling routes that because of relatively light traffic do not require shoulders or other construction.

- City routes, particularly through Valley, that route trail users on city streets. Sidewalks should be provided along these routes with barrier-free ramps at street intersections.

Specific features should include:

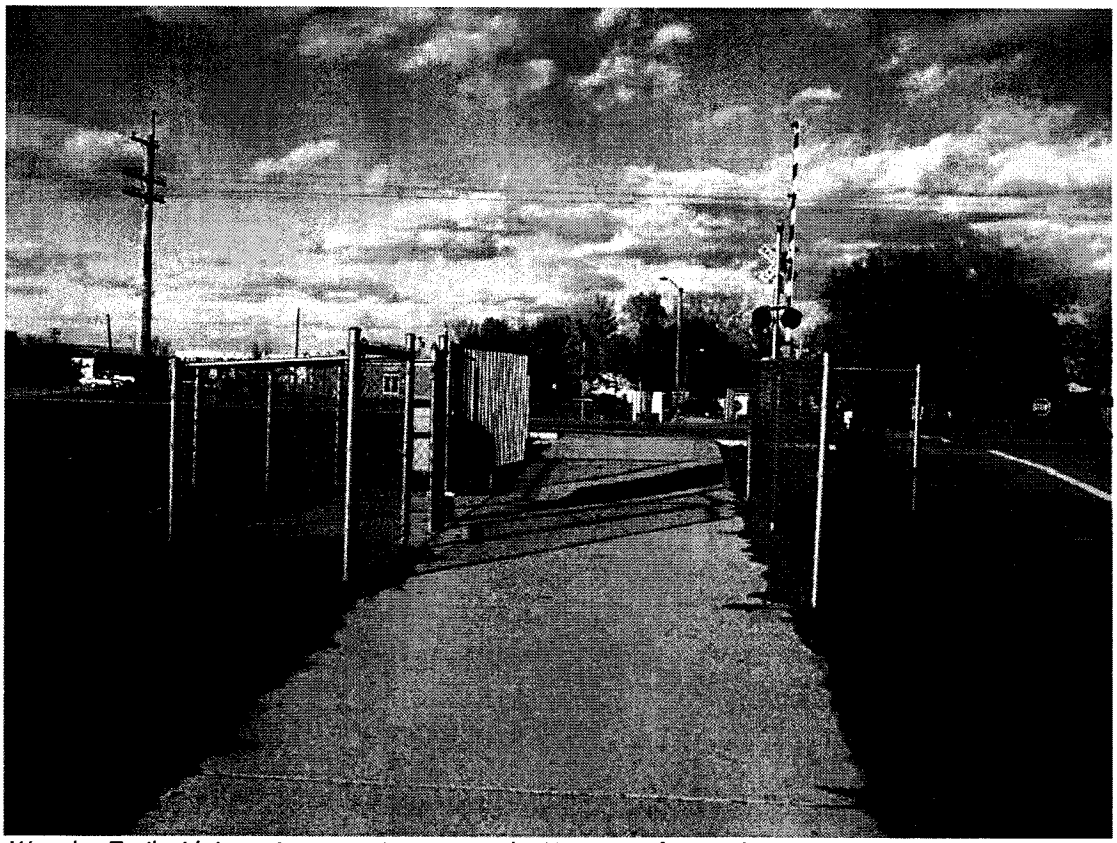
- Installation of bicycle safe sewer grates in city segments.

- Identification and regulatory signage, including logo and route identifiers for the West County system; and Share-the-Road signage for all users.

- Repair of all sidewalks and installation of barrier-free ramps at all intersections to provide full use of these streets by pedestrians.

Walking Trails

Walking trails vary from paved surfaces to more natural surfaces such as wood chips. They are most applicable to hilly and natural areas, where the casual user will not expect full accessibility to people with disabilities or wheeled vehicles. Walking or nature trails are appropriate within parks, or as environmental loops off multi-use trails where lower-impact activities are appropriate.



Waterloo Trail with its unique crossing gate at the Union Pacific mainline.

Part Four: West County Trails

A Description of the Western Douglas County Trails Network

This section describes the Western Douglas County Trails Network and its various components. The plan concept includes the following major features:

- **A Tri-Community Core** that connects Valley, Waterloo, and Elkhorn with each other and with the metropolitan trail system. This core is designed for multiple users and makes extensive use of the Old Highway 275 corridor. It begins at the Highway 64 overpass on the north edge of Valley and connects to Elkhorn's Center Street trail at Center Street and Highway 64. In the process, it serves Valley's town center, the YMCA, Waterloo schools and village center, the Waterloo Trail Loop, Ta-Ha-Zouka Park, and uktimately the traditional town center of Elkhorn.

- **A Platte River Branch** that connects Platte River Landing and Ginger Cove to Valley and the Tri-Community Core. This branch uses road segments and is integrated into a city trail for Valley.

- **A North Elkhorn Loop** that utilizes road rights-of-way that ring the Elkhorn River, and connects to the Elkhorn River at specific public access points. This loop is integrated into the Elkhorn River Canoe Trail at these access nodes. The legs of the North Elkhorn Loop are connected into the Tri-Community Core and tie together through Waterloo.

- **A South Rivers Loop,** mirroring the North Elkhorn Loop by using roads that parallel the Elkhorn and Platte Rivers. The South Rivers Loop forms a ring around the Elkhorn River in concert with Elkhorn's proposed Skyline Trail. The loop also provides a direct connection to Two Rivers SRA and serves major population centers like Westshores and Riverside Lakes.

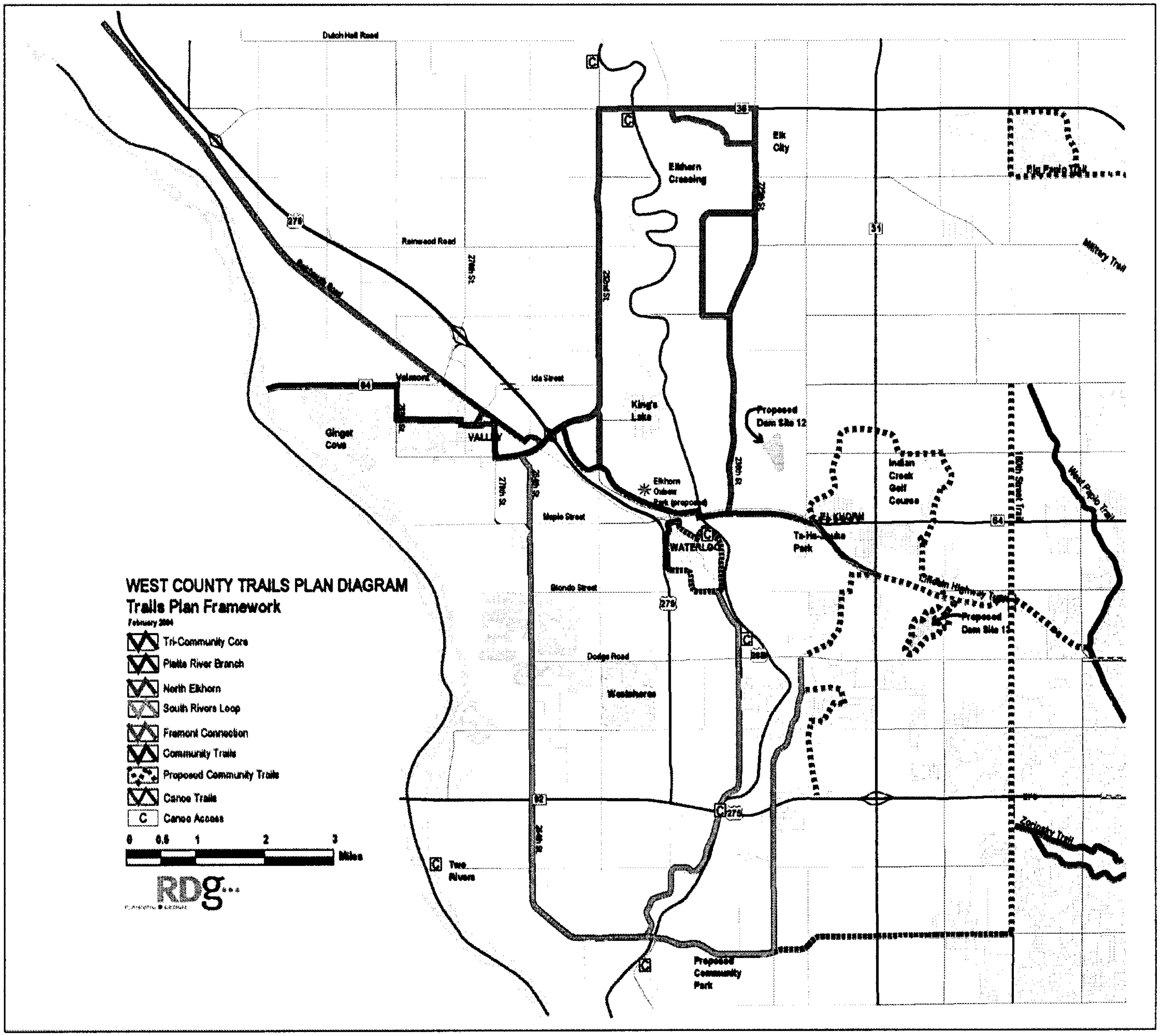
- **The Fremont Connection,** using the Reichmuth Bikeway to connect Douglas County into Fremont and its evolving trail system.

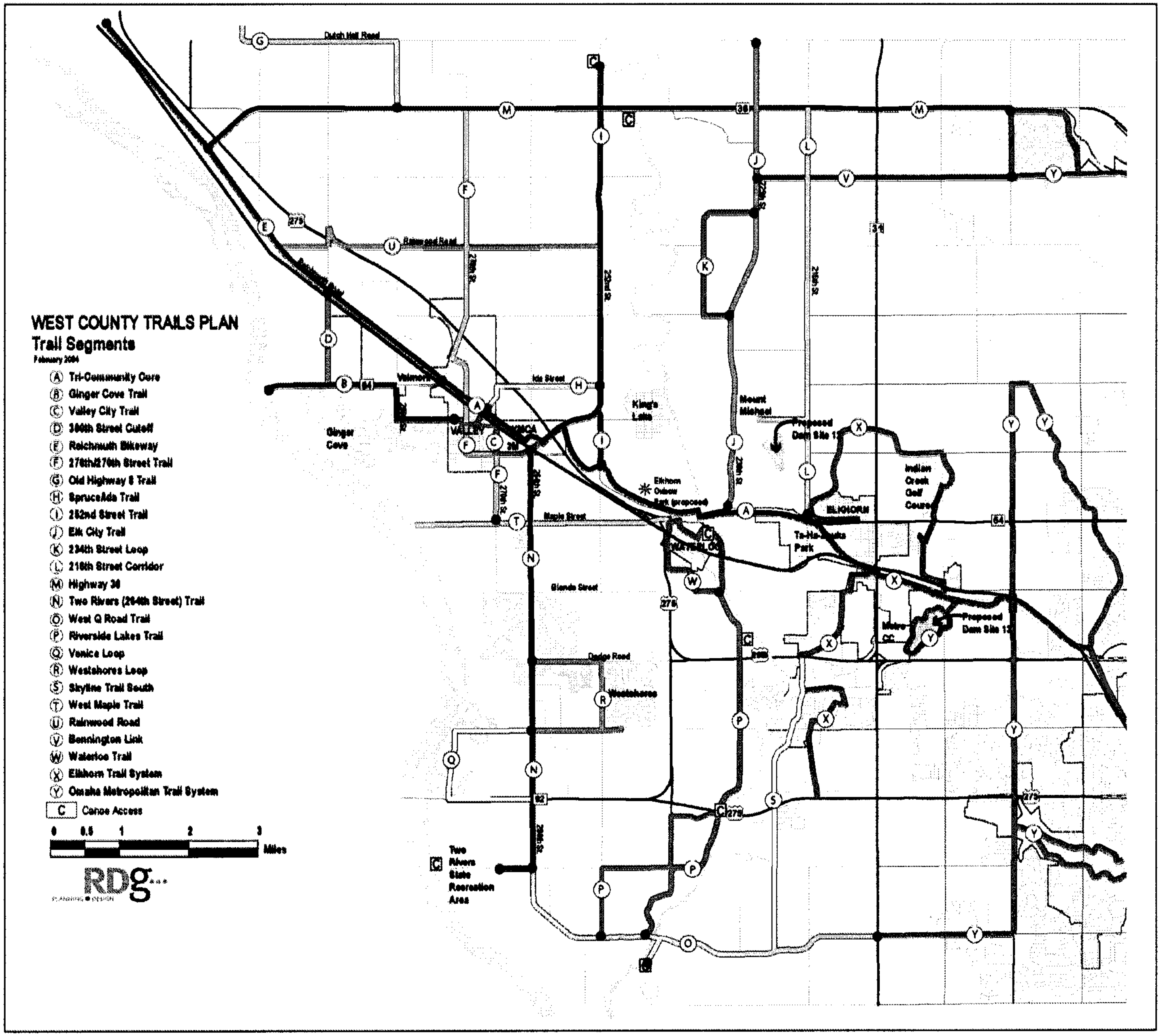
- **Connections of both major river loops into the Omaha metropolitan trail system** at their north and south edges, and linkage of the Tri-Community Core into the central part of the Omaha system.

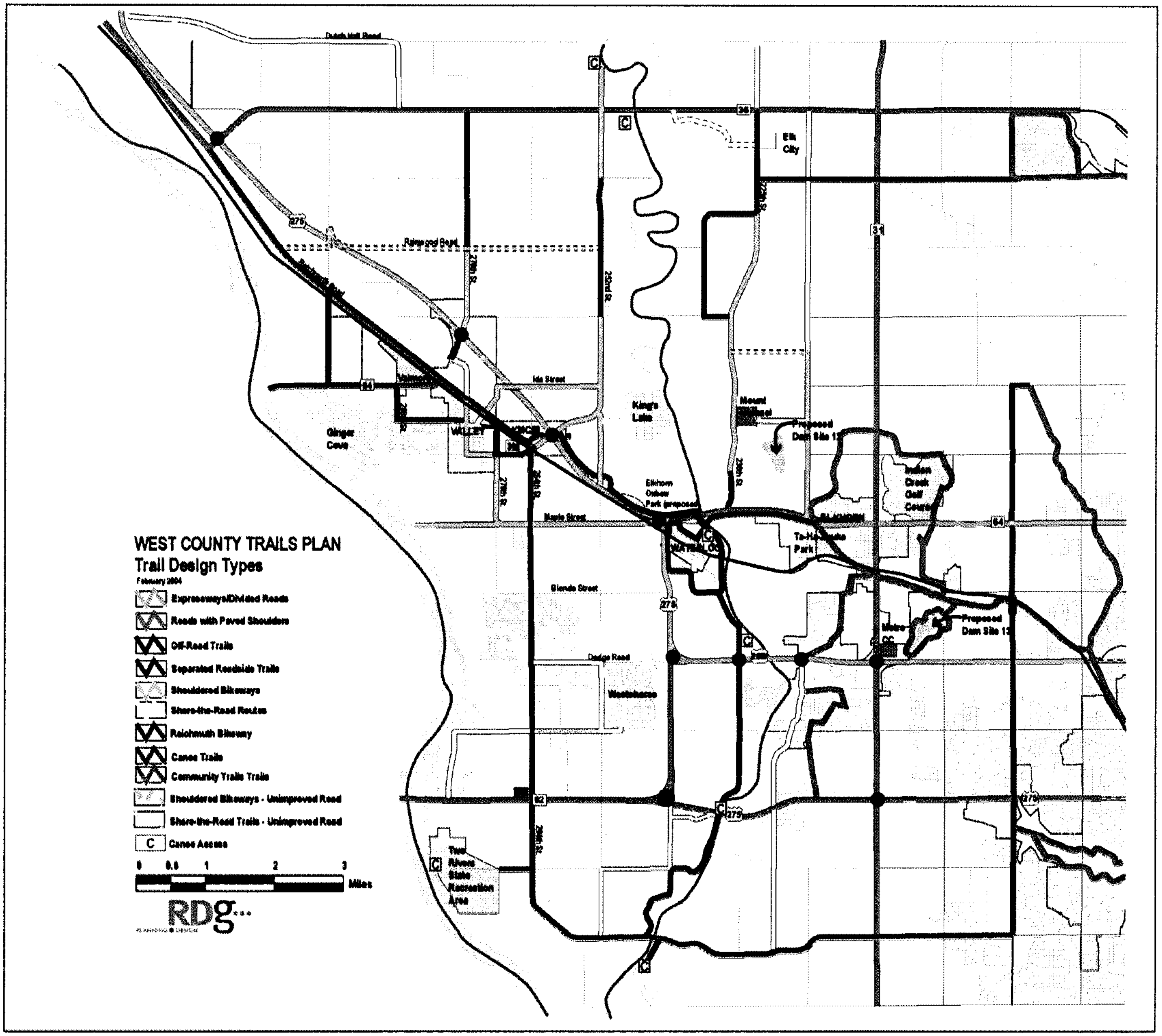
The Trails Plan Framework identifies these general elements of the system. The individual trail segments are described below and keyed to the West County Trails Master Plan Map.

A. Tri-Community Core Trail

This central portion of the system begins at the Highway 64 overpass over Reichmuth Road and Union Pacific mainline. It continues south as a separated roadside trail on the northeast side of the highway into Valley. At the Spruce Street intersection, the main entrance into Valley's traditional town center, the road widens from a three-lane urban section to a four-lane section. We recommend an intersection modification and beautification project here that


WEST COUNTY TRAILS PLAN DIAGRAM
Trails Plan Framework
February 2004
Tri-Community Core
Platte River Branch
North Elkhorn
South Rivers Loop
Fremont Connection
Community Trails
Proposed Community Trails
Canoe Trails
Canoe Access
0 0.5 1 2 3 Miles
Dutch Hall Road
Rainwood Road
Ida Street
Maple Street
Blondo Street
Dodge Road
Elkhorn Crossing
Elk City
King's Lake
Ginger Cove
Valmont
Proposed Dam Site 12
Indian Creek Golf Course
Proposed Dam Site 11
Military Trail
West Papio Trail
Big Papio Trail
Zorinsky Trail
180th Street Trail
Two Rivers
Proposed Community Park
Westshore
Elkhorn Oxbow Park (proposed)


WEST COUNTY TRAILS PLAN
Trail Segments
February 2004
(A) Tri-Community Core
(B) Ginger Cove Trail
(C) Valley City Trail
(D) 300th Street Cutoff
(E) Reichmuth Bikeway
(F) 276th/270th Street Trail
(G) Old Highway 8 Trail
(H) SpruceAda Trail
(I) 252nd Street Trail
(J) Elk City Trail
(K) 234th Street Loop
(L) 216th Street Corridor
(M) Highway 36
(N) Two Rivers (264th Street) Trail
(O) West Q Road Trail
(P) Riverside Lakes Trail
(Q) Venice Loop
(R) Westshores Loop
(S) Skyline Trail South
(T) West Maple Trail
(U) Rainwood Road
(V) Bennington Link
(W) Waterloo Trail
(X) Elkhorn Trail System
(Y) Omaha Metropolitan Trail System
C Canoe Access
0 0.5 1 2 3 Miles
RDG
Dutch Hall Road
Rainwood Road
Ida Street
Maple Street
Glenda Street
Dodge Road
Westshores
Ginger Cove
King's Lake
Mount Michael
Proposed Dam Site 13
Elkhorn Oxbow Park (proposed)
ELKHORN
Ta-Ha-Zouka Park
Indian Creek Golf Course
Proposed Dam Site 12
Metro CC
Two Rivers State Recreation Area
252nd St.
234th St.
216th St.
264th St.
270th St.
276th St.
288th St.
36
64
31
275
92


WEST COUNTY TRAILS PLAN
Trail Design Types
February 2004
Expressways/Divided Roads
Roads with Paved Shoulders
Off-Road Trails
Separated Roadside Trails
Shouldered Bikeways
Share-the-Road Routes
Reichmuth Bikeway
Canoe Trails
Community Trails Trails
Shouldered Bikeways - Unimproved Road
Share-the-Road Trails - Unimproved Road
C Canoe Access
0 0.5 1 2 3
Miles
RDG
Dutch Hall Road
Elk City
Ida Street
King's Lake
Mount Michael
Proposed Dam Site 13
Indian Creek Golf Course
Ginger Cove
VALLEY
Elkhorn Oxbow Park (proposed)
Maple Street
Ta-Ha-Zouka Park
Blondo Street
Proposed Dam Site 12
Dodge Road
Westshore
Two Rivers State Recreation Area

would improve the entrance into Valley, be appropriate to traffic volumes at the intersection, and improve trail accommodations. This project would:

- Reduce the road section to three-lanes, with through lanes in each direction and a separate left turn lane. A landscaped median with improved thematic lighting could be provided in this area.

- Straighten the current flaring of the curb line, providing more space between curb and right-of-way line for the trail and landscaping.

- Maintain a separated roadside trail along the northeast side of the street through the intersection.

The trail would continue as a separated roadside trail on the northeast side of Reichmuth Road. As the trail passes Center Street, adjacent property and right-of-way provides adequate space to disengage the trail from the roadway, allowing an off-road trail opportunity. The trail continues to the boundary of the right-of-way and the Twin Rivers YMCA property. It would then be routed through the YMCA site to provide direct service to the center. It then follows the road from the YMCA to Meigs Street and uses the Meigs Street shoulders to cross over US 275. A clear marking or pedestrian signal should be provided at the YMCA entrance to accommodate trail users.

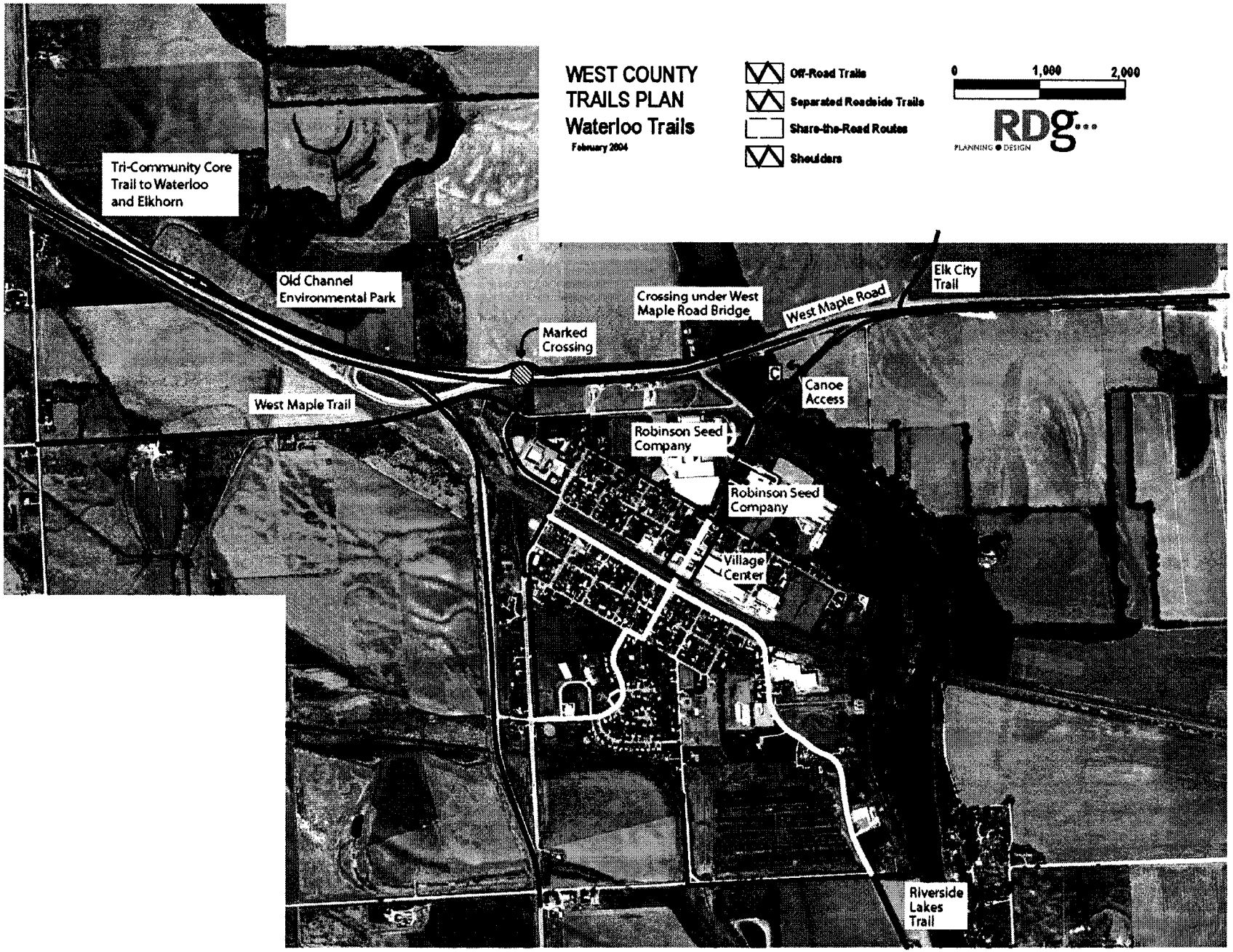
After crossing over the freeway, the trail uses US 275 right-of-way, following the northbound exit ramp and continuing along the north side of US 275. At Layne Equipment, the trail runs on freeway right-of-way, along the edge of the Layne property. It then either continues along the freeway corridor, or crosses the Layne access road, the former Highway 275 channel, and continues on the north side of the road to the intersection with 252nd Street.

The trail crosses the primary frontageroad/252nd Street movement with a well-marked crosswalk and continues as an off-road trail on the north side of the US 275 frontage road, formerly the old highway. This area is adjacent to an old channel of the Elkhorn River, and is marked by serious industrial blight. We recommend acquisition of this area as an environmental and wayside park by the NRD and Douglas County, with possible participation by Waterloo and Valley. Transportation Enhancement and Land and Water Conservation funds could also be funding sources for this project. Elimination of these blighted conditions would dramatically improve the appearance of the Waterloo-Valley highway corridor, provide a valuable open space and wetlands conservation area, and create an excellent off-road trail environment. The Tri-Community Core would continue as an off-road trail, generally along the north side of Highway 64.

The crossing of the trail into Waterloo and its connection into the planned Waterloo Trail creates significant challenges because of West Maple's expressway character. Options include:

- A surface crossing into Waterloo at the Front Street median break, connecting to the Waterloo Schools campus and the Waterloo Trail. This involves crossing the highway near a curve.

- A crossing along the Elkhorn River under the West Maple Road bridge. This connects into the Elkhorn River levee and becomes part of the Waterloo Trail. The bridge has limited headroom, requiring some earthwork. In addition, a passage under a major bridge may


WEST COUNTY
TRAILS PLAN
Waterloo Trails
February 2004
Off-Road Trails
Separated Roadside Trails
Share-the-Road Routes
Shoulders
0
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RDg...
PLANNING ● DESIGN
Tri-Community Core Trail to Waterloo and Elkhorn
Old Channel Environmental Park
West Maple Trail
Crossing under West Maple Road Bridge
Marked Crossing
West Maple Road
Elk City Trail
Canoe Access
Robinson Seed Company
Robinson Seed Company
Village Center
Riverside Lakes Trail

raise security concerns. In addition, this crossing is impossible during periods of high water.

- A pedestrian-actuated crossing near either Front Street or the Elkhorn River bridge. Under the requirements of the Manual of Uniform Traffic Control Devices (MUTCD), pedestrian only signals must be located at least 100 feet from a street intersection.

- A pedestrian overpass at the Front Street or mElkhorn bridge locations.

From the Waterloo Trail, the Tri-Community Core would continue across the river on a new trail bridge built on the alignment of the old Maple Street bridge. This connects to a potential river access and recreation site planned for the east bank of the river south of Highway 64. The trail route then continues east along the south side of West Maple Road, linking with the Elkhorn Trail system at Center Street.

B. Ginger Cove Trail

This trail corridor connects the Natural Resources District's Platte River Landing at the Highway 64 Bridge with Valley City Park and Valley's City Trail. Platte River Landing serves as a trailhead for both the Platte River Canoe Trail and the Ginger Cove link. The trail crosses Highway 64 from Platte River Landing and continues east as an off-road trail in a broad right-of-way setback along the north side of Highway 64. Highway 64 also has paved shoulders though this area. At 288th Street, the trail corridor continues south, using the county road right-of-way for a separated roadside trail. The trail continues for about 0.5 miles to Valley Street, and continues east as a separated roadside facility along the south side of the street to Valley City Park. A park trail would provide an entrance to Valley's City Trail.

C. Valley City Trail

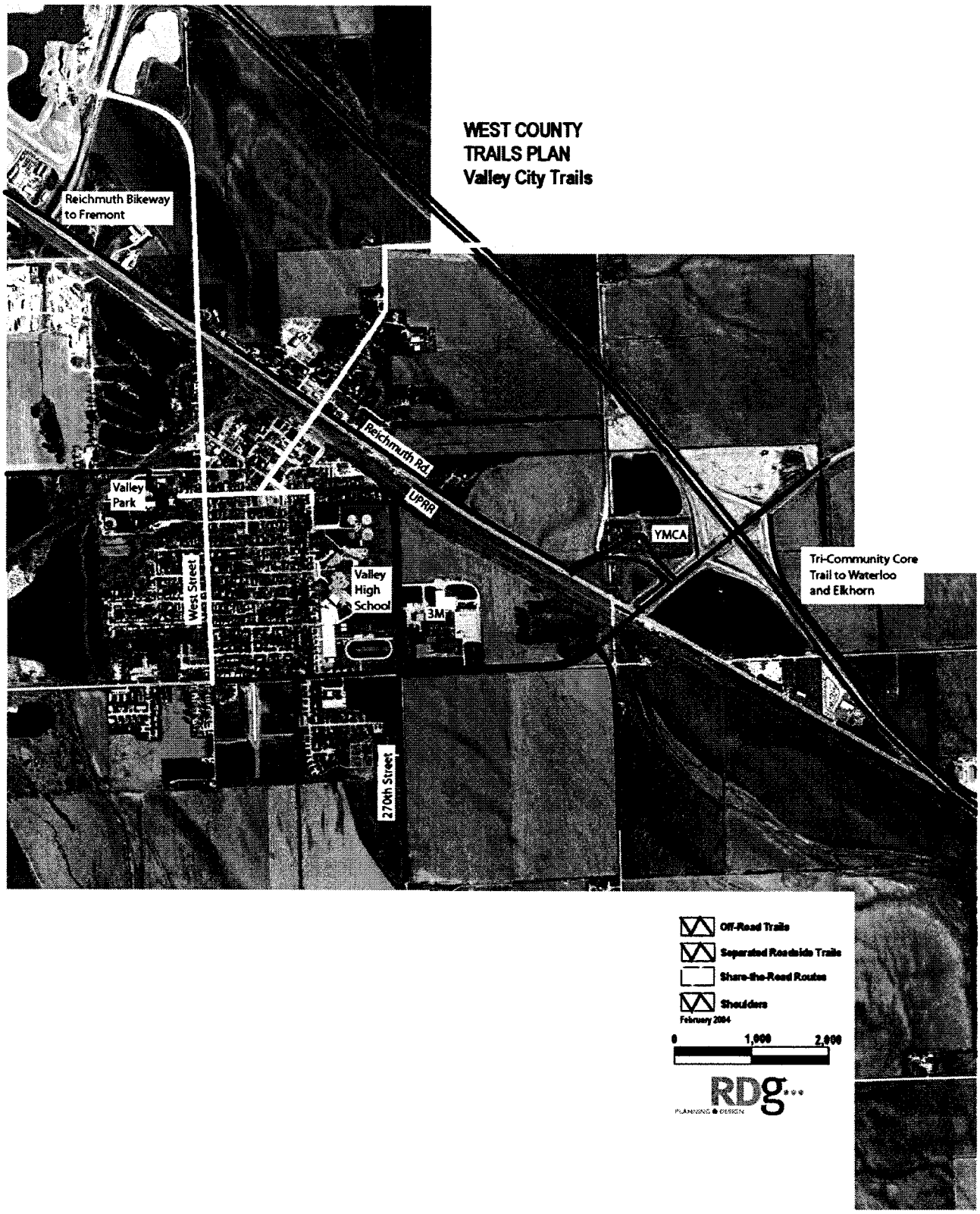
This pathway connection connects the Ginger Cove Trail and the City of Valley to the Tri-Community Core. A park trail in City Park would connect to Gardiner Street and continue east as a Share-the-Road (STR) route. Spruce Street is also marked as an STR route through Valley Town Center and to the Tri-Community Core at Reichmuth Road. The Gardiner Street route continues to Pine Street and then continues as a off-road trail on the north and east edges of the Valley High School and athletic complex campus. The off-road trail continues to Center Street (270th Street) and Meigs Street, and continues east on the edge of the 3M campus along Meigs Street. At 264th Street, it leads to the shoulders of the Meigs Street railroad overpass and links with the Tri-Community Core Trail at the YMCA.

D. 300th Street Cutoff.

This short separated roadside trail follows 300th Street between the Ginger Cove Trail at Highway 64 and the Reichmuth Bikeway. It provides a direct route north around Valley and the Valmont complex.

E. Reichmuth Bikeway

The adaptation of the old Highway 275 route begins at the Highway 64 overpass and continues northwest to the Highway 36 intersection. Existing shoulders or a roadside trail in Dodge County would complete the Fremont connection. The Bikeway transitions to the Tri-


WEST COUNTY
TRAILS PLAN
Valley City Trails
Reichmuth Bikeway
to Fremont
Reichmuth Rd.
UPRR
Valley
Park
West Street
Valley
High
School
3M
YMCA
Tri-Community Core
Trail to Waterloo
and Elkhorn
270th Street
Off-Road Trails
Separated Roadside Trails
Share-the-Road Routes
Shoulders
February 2004
0
1,000
2,000
RDg
PLANNING • DESIGN

Community Core at the overpass, and will require a clear pedestrian crossing and, potentially, a pedestrian actuated signal across to the north side of the highway.

F. 276th Street Trail North and South

This corridor provides a north county connection from Valley City Park, and extends north to Highway 36. From City Park, the trail uses West Street as an STR route, crossing the Tri-Community Core Trail. It continues north and turns west to Highway 64, crossing the US 275 freeway via the highway overpass with its paved shoulders. North of the overpass, bicycle shoulders are used along 276th Street to Rainwood Road. North of Rainwood Road, adequate space exists for a separated roadside trail to Highway 36.

The 276th Street South trail continues south of Valley along West Street and 276th Street, with bicycle shoulders south of Valley to Old Maple Street. It is an STR city route along West Street between Valley Park and Meigs Street.

G. Old Highway 8 Trail

This is an STR route, beginning at 288th and Highway 36 and extending north and then west along Dutch Hall Road (Old Highway 8). Future freeway construction on US 275 will eliminate the existing intersection at US 275, requiring an alternate access to Fremont.

H. Spruce/Ida Trail

This segment connects the center of Valley with the North Elkhorn Loop at 252nd Street. It begins along Spruce Street at Valley's town center, crosses the Tri-Community Core Trail and continues north along Spruce Street to Ida Street. The route then continues east along Ida Street to 252nd Street. The entire trail link uses paved shoulders.

I. 252nd Street Trail

This trail corridor forms the western leg of the North Elkhorn Loop, and provides access to points on the Elkhorn River's west bank. The trail begins at the Tri-Community Core Trail, at the intersection of 252nd Street and the north US 275 frontage road. It continues north to the Meigs Street intersection, where it uses the Meigs Street link to connect to the YMCA and Valley City Trail. The corridor continues north along 252nd Street, crossing Highway 36 and terminating at a potential river access near the Douglas/Washington County line. The trail uses bicycle shoulders for most of its length. However, a two-mile segment from State Street to Bennington Road provides adequate clearance for a separated roadside trail. A spur along Bennington Road to the river provides access to Elkhorn Crossing.

J. Elk City Trail

This corridor forms the east leg of the North Elkhorn Loop, and extends along 225th/230th Street through Elk City and into a paved county road system in Washington County. This is currently a very popular bicycling corridor. The trail begins at West Maple Road (Highway 64) as an off-road facility, adjacent to a wetlands. It reverts to a shouldered section, gently rising along contours out of the valley. North of State, the road veers to the east and climbs steeply out to the Elk City plateau. At State Street, an alternative 234th Street loop stays in the valley along the Elkhorn before climbing back to rejoin the main trail along Deer Ridge Road, between Rainwood and Bennington Roads. From the Deer Ridge intersection, the Elk City Trail

becomes a separated roadside facility through Elk City to Highway 36. It continues as an STR route north of Highway 36 into Washington County, eventually leading to Herman.

Elk City Drive, from 225th Street to Highway 36 provides a scenic byway past restored historic buildings and through an attractive farmstead. This is currently a gravel road; hard-surfacing would be necessary to open the drive fully for bicycle use.

K. 234th Street Loop

This loop off the Elk City Trail (225th/230th Street), diverges from the Elk City Trail at State Street, and goes downgrade into the valley as the principal trail corridor climbs steeply to the north. The loop continues north along 234th Street, paralleling the Elkhorn River. An off-road trail along an unused road grade provides access to the river. The main loop continues past Rainwood Road, where a short STR link also provides river access. The loop continues north to Deer Ridge Road, and climbs out of the valley, rejoining the principal Elk City Trail at 225th Street. The loop is proposed as a separated roadside trail.

L. 216th Street Corridor

This corridor follows rolling 216th Street between Elkhorn and Highway 36, and passes the access to Mount Michael. The corridor uses shoulders to Edgewater Road, continuing north as an STR route to Highway 36. This corridor is a secondary north-south access, paralleled by shouldered Highway 31 on the east and the Elk City Trail on the west. However, it is an attractive route that links to the Mount Michael area.

M. Highway 36

Highway 36 is a principal shouldered highway, providing a major trafficway across the north tier of the county. In the trail system, it connects the Newport Landing area with the Reichmuth Bikeway. The road climbs gradually from the Big Papio Valley to the Elk City plateau, and then descends into the Elkhorn and Platte floodplains. Share-the-Road signage should be provided along this corridor.

N. Two Rivers (264th Street) Trail

This trail corridor uses 264th Street to connect Valley and the Tri-Community Core Trail with Two Rivers State Recreation Area. This route follows a very busy county road, frequented by gravel trucks originating at gravel pits along the corridor. For this reason, a separated roadside trail should be developed along the road between Valley and Two Rivers. In some areas, adequate side-road space exists for a separated roadside trail, especially between Dodge and Blondo, and south of Highway 92 to Two Rivers SRA. Some right-of-way acquisition may be required in other areas. F Street connects 264th Street with Two Rivers. This trail connects at its north end to the Valley City and Tri-Communities Core at Meigs Street.

O. West Q Road Trail

This corridor connects Two Rivers SRA and the Elkhorn Valley with Zorinsky Lake and the Omaha trail system by way of the West Q Road hill. This path begins at 264th and F, the entrance to Two Rivers. It continues south and east on flat terrain to the Elkhorn River at 245th Street. Here, an off-road trail parallels 245th Street and the river, part of an open space developed as a part of the NRD's canoe access plan. The trail continues along West Q Road, climbing gradually out of the valley to US Highway 6 (204th Street). East of Highway 6, future

widening of Q Street should include a sidewalk trail that connects to the city's planned 180th Street trail and arterial corridor. The 180th Trail would then extend north to the Zorinsky Lake Trail, with its connection to the existing metropolitan trail network. For most of its length, the West Q Trail has adequate room on its north side for a separated roadside trail. Space constraints west of 252nd Street require use of shoulders for a short distance.

P. Riverside Lakes Trail

This trail corridor generally follows the west bank of the Elkhorn River and makes up the Elkhorn leg of the South Rivers Loop. It is the only trail corridor proposed by this plan that requires significant corridor acquisition. The trail follows River Road south of Waterloo and continues under the West Dodge Road overpass, now under construction as part of a major upgrade of the Dodge corridor. The path continues south as a separated roadside trail along 228th Street past the Riverside Lakes development. Continuation of the trail south of the current terminus of 228th Street will require corridor acquisition along the river to West Center Road. The ideal corridor continues under the West Center Road bridge and follows an access road that serves riverside cottages south of Center. The off-road trail corridor continues along an oxbow lake to West Q Road at the proposed 245th and Q river access.

If all or part of these corridors are unavailable, an on-road alternative uses Wright Street (former Center Road) to 240th Street, 240th Street to F Street (or the off-road trail corridor), F Street to 252nd Street, and 252nd Street to the West Q Trail.

Q. Venice Loop

This Share-the-Road loop provides a route through Venice using Campanile Road and Pacific Street between Highway 92 and 264th Street.

R. Westshores Loop

This loop serves the Westshores development, with shoulders along Pacific Street between 264th and 252nd Streets. This connects that major residential area into the Two Rivers Trail along 264th Street. Share-the-Road segments of the loop include 252nd Street from Pacific to Dodge; and Dodge back to 264th Street.

S. Skyline Trail South

This link continues Elkhorn's planned Skyline Trail south to connect to the West Q Trail. The Skyline Trail follows Skyline Drive south to Rawhide Drive and turns eastward. This south extension would continue as an STR route south on Skyline to Highway 92, continuing south as 222nd Street to the West Q Trail.

T. West Maple Trail

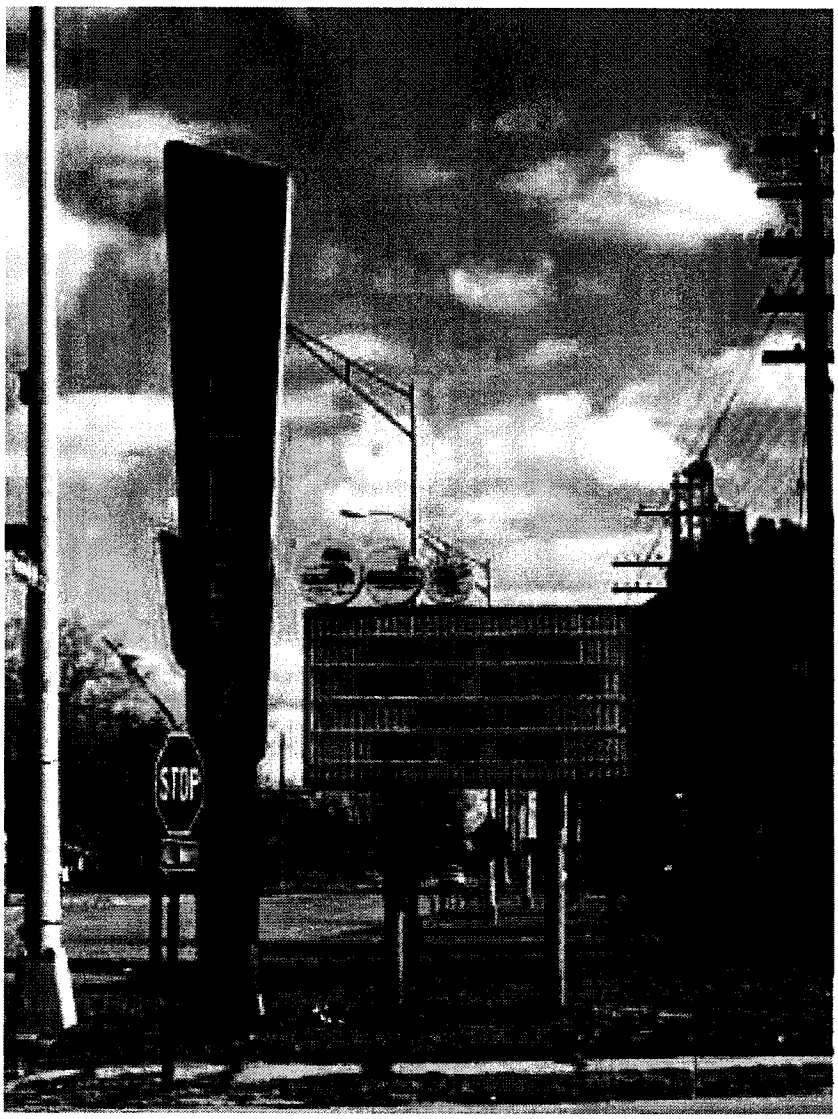
This additional east-west route links Waterloo to the Platte River and the Two Rivers Trail via West Maple Street, another popular east-west access. It provides an alternative route between Waterloo and Valley. The corridor uses paved shoulders along West Maple from Front Street in Waterloo to the terminus of the street at the Platte River.

U. Rainwood Road

A future trail link would use Rainwood Road as an east-west route between 252nd Street and the Reichmuth Bikeway. This connection requires paving of Rainwood Road. Bicycle shoulders should be incorporated into any future paving project of this segment.

V. Bennington Link

This roadside trail would use Bennington Road to connect the Elk City Trail to the extended Omaha trail system at Newport Landing. It would also connect to the proposed Military Road Trail, extending to Standing Bear Lake and the rest of the Omaha metropolitan network.



Part Five: Building the Western Douglas County Trails System

A Program for Implementation

The Western Douglas County Trails Plan envisions a long-term program for trail development, largely based on adapting the existing road system to multiple uses. This section addresses the implementation of the network and considers the following issues:

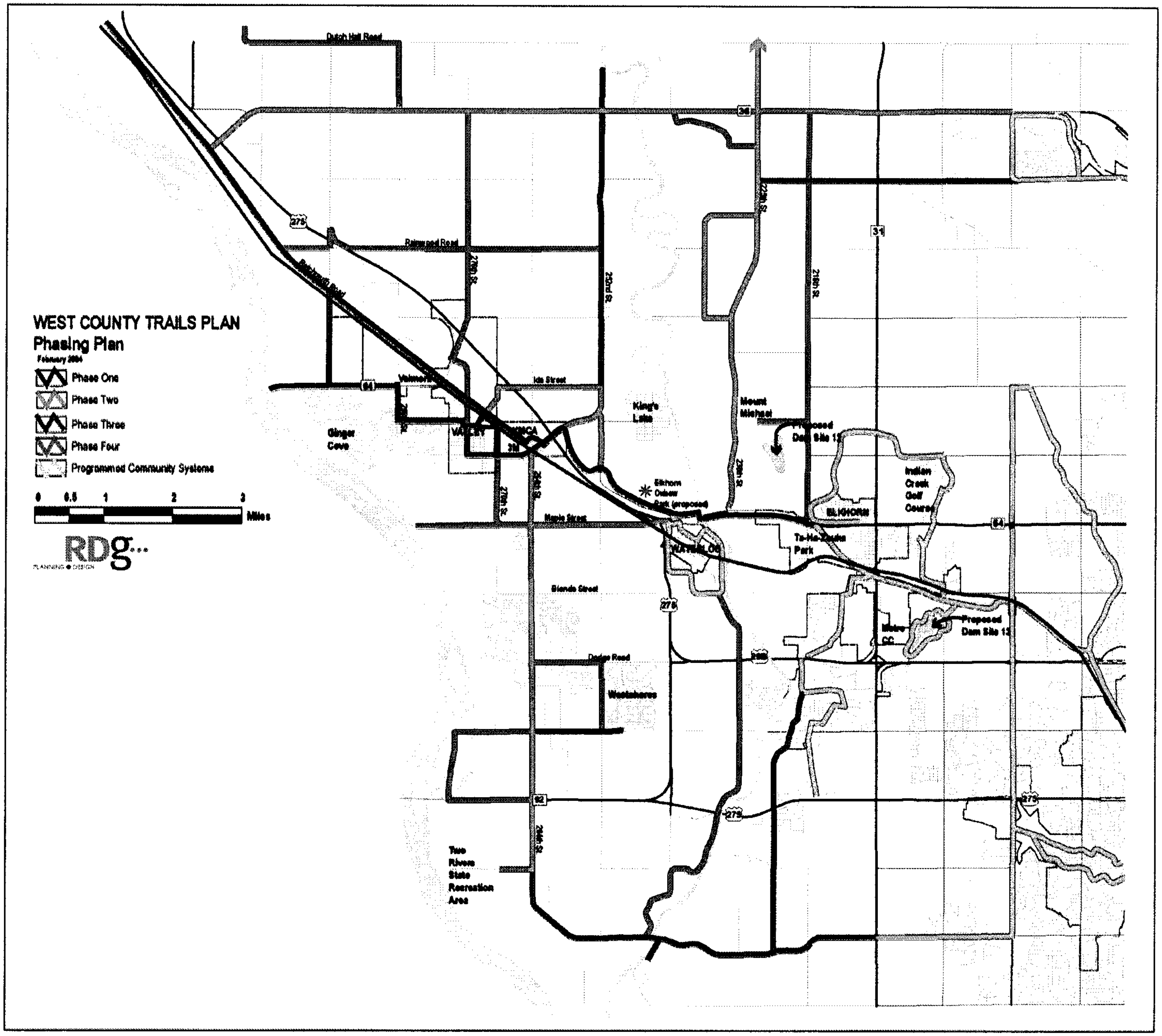
- Cost of various components of the system.
- Phasing of the development program. It is clearly impossible (and probably undesirable) to build this large system at once. Rather, its implementation is a long-term program, potentially built out over a 15 to 20-year period.
- Financing alternatives.
- Other operational and management issues.

Cost of Trail Types and Components

The following table describes cost of construction for various trail configurations and their associated features. These are used for the purpose of developing approximations of the cost of various trail segments. These projections will be refined during the specific design process for individual trails and trail segments.

Table 1
Projected Cost of Trail Configurations

Feature	Unit	Cost
Pathway Types		
Off-Road or Separated Roadside Trails		
8-foot concrete trail	Mile	$140,000
10-foot concrete trail	Mile	$175,000
8-foot asphalt trail	Mile	$ 90,000
10-foot asphalt trail	Mile	$110,000
10-foot granulated rock trail	Mile	$ 50,000
Shoulders		
4-foot asphalt shoulder, both sides	Mile	$125,000
6-foot asphalt shoulder, both sides	Mile	$175,000
"Detached shoulder," 5-foot asphalt pathway, one side	Mile	$ 83,500
Share-the-Road Adaptation	Mile	$ 15,000
Reichmuth Bikeway Adaptation		
Rumble-strip alternative	Mile	$ 40,000
Contrasting Pavement Alternative	Mile	$155,000


WEST COUNTY TRAILS PLAN
Phasing Plan
February 2004
Phase One
Phase Two
Phase Three
Phase Four
Programmed Community Systems
0 0.5 1 2 3
Miles
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Dutch Hall Road
Raymond Road
Ida Street
Maple Street
Blondo Street
Dodge Road
216th St.
252nd St.
264th St.
276th St.
King's Lake
Mount Michael
Ginger Cove
Elkhorn
Indian Creek Golf Course
Ta-Ha-Zouka Park
Westshores
Two Rivers State Recreation Area
Proposed Dam Site 12
Proposed Dam Site 13
Elkhorn Oxbow Park (proposed)
VALLEY
ELKHORN
WATERLOO
31
36
64
92
275

Signage		
Information signs	Each	$300
Directional/warning signs	Each	$200
Share the Road signs	Each	$200
Furniture/Features		
Benches	Each	$500
Trash receptacles	Each	$400
Bollards	Each	$250
Paved parking lots	Stall	$1,200
Pedestrian Features/Traffic Controls		
5-foot Sidewalk	Mile	$80,000
Pedestrian signal installation	Each	$100,000
Pedestrian signal heads	Each	$3,500
Overpass/Underpass	SF	$300
Intersection Striping	Each	$250
Lane Striping	Mile	$3,500

Sources:
RDG Planning & Design, 2003; Nebraska Department of Roads, 2003.

Phasing

The Western Douglas County Trails program anticipates completing the system over a fifteen to twenty year period in four phases. The first phase is designed to complete the core, with each subsequent phase building on the earlier system. This section presents a description of the phases, followed by a general projection of the cost of each phase. Costs are in current dollars and include a 10% contingency.

Phase One: The Core System

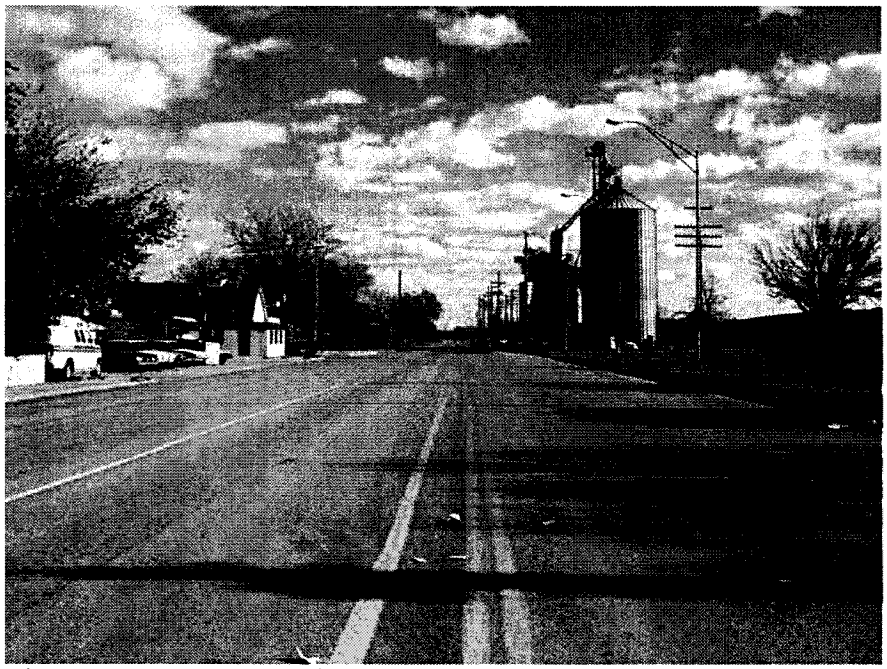
This initial phase, anticipating completion during a five-year period, completes the core of the county system, and includes the Tri-Community Core, Ginger Cove, and Valley City Trails, and the adaptation of old Highway 275 as the Reichmuth Bikeway. Completion of this phase links all three West County communities to each other and to Omaha and Fremont, and connects the core system to Ginger Cove and Platte Landing. Its major highlights include:

- Establishing the core of the system, connecting Valley, Waterloo, and Elkhorn.
- Connecting all three communities to the Twin Rivers YMCA and serving major commercial clusters.
- Adapting old Highway 275 to multi-modal use.
- Developing a new bridge across the Elkhorn River as part of the Waterloo-Elkhorn connection.

- Redeveloping blighted industrial property along the north frontage road of US 275 as an environmental and passive use open space, incorporating part of the old Elkhorn River channel to interpret river history.

Table 2
Projected Cost of the Phase One System

Trail Component	Segment	Miles	Trail Type	Cost
Tri-Community Core	Highway 64 Overpass to Center Street	1.00	Separated Roadside	$175,000
Tri-Community Core	Center Street to YMCA	0.90	Off-Road	157,500
Meigs Street Shoulders	YMCA to North Frontage Road	0.30	STR/Shoulders	10,000
Tri-Community Core	Meigs Street to 252nd Street	0.95	Off-Road	171,000
Tri-Community Core	252nd Street to Highway 64 River Bridge	1.70	Off-Road	297,500
Tri-Community Core	Crossing below Highway 64 Bridge	0.20	Off-Road	250,000
Tri-Community Core	New Elkhorn River Bridge	0.20	Off-Road	750,000
Tri-Community Core	Elkhorn River to Center Street/Ta-Ha-Zouka Trail	1.75	Separated Roadside	306,250
Valley City	Meigs Street Overpass	0.30	STR/Shoulders	10,000
Valley City	Meigs Street to Pine and Gardiner Street	1.35	Off-Road	236,250



The Tri-Community Core Trail route leaving Valley

Table 2(Continued)
Projected Cost of the Phase One System

Trail Component	Segment	Miles	Trail Type	Cost
Valley City	Gardiner/Spruce Street	0.50	STR	7,500
Valley City	City Park Trails	0.50	Off-Road Park	70,000
Ginger Cove	Valley Street, City Park to 288th Street	1.00	Separated Roadside	175,000
Ginger Cove	Valley Street to Highway 64	0.5	Separated Roadside	90,000
Ginger Cove	288th Street to Platte River Landing	2.0	Separated Roadside/Off-Road	350,000
Reichmuth Bikeway	Highway 64 Overpass to Dodge County Line	6.0	Rumble-Strip Option	240,000
Total Phase 1 Trail Program		**19.15**		**3,296,000**
Enhancement Features				
Elkhorn Oxbow Park			Acquisition, demolition and park development	1,000,000
Spruce/Reichmuth Intersection Enhancements				300,000

Phase Two: Initial River Loops

The Phase Two increment builds on the core system by extending it north and south along the Elkhorn and Platte River corridors. Phase Two enhances the two north-south routes that are current most popular with area road bicyclists – the 225th/230th Street corridor to Elk City and the 264th Street corridor to Two Rivers SRA.
Highlights include:

- Completing the Elk City Trail from the Tri-Community Core through Elk City, along with providing direct river access on the 234th Street loop.
- Connecting the core system to Two Rivers State Recreation Area via 264th Street.
- Providing a north loop from Valley via Ida Street.
- Completing an alternative Waterloo to Valley connection by way of West Maple Street and 264th Street.

Table 3
Projected Cost of the Phase Two System

Trail Component	Segment	Miles	Trail Type	Cost
Elk City Trail (230th Street)	West Maple Road wetlands	0.50	Off-road	$90,000
Elk City Trail (230th Street)	Wetlands to State Street	2.25	Shoulder	281,250
Elk City Trail (230th-225th Street)	State Street to Deer Ridge Road	1.50	Shoulder	187,500
Elk City Trail	Deer Ridge to Highway 36	1.50	Separated Roadside	262,500
234th Street Loop	State/234th/Deer Ridge Road	2.65	Separated Roadside	463,750
Two Rivers (264th Street)	Meigs to Blondo	2.00	Separated Roadside	350,000
Two Rivers (264th Street)	Blondo to Dodge	1.00	Separated Roadside	175,000
Two Rivers (264th Street)	Dodge to Highway 92	2.00	Separated Roadside	297,500
Two Rivers (264th Street)	Highway 92 to Two Rivers SRA	2.00	Separated Roadside	350,000
Spruce/Ida	Reichmuth Road to 252nd Street	2.00	Shoulder	175,000
252nd Street	Ida to Tri-Community Core	1.75	Shoulder	220,000
King Lake Spur	252nd Street to King Lake	0.50	STR	7,500
Total Phase Two Program		**20.85**		**$2,860,000**

Phase Three: Continuing the River Loops

Phase Three continues the river loops by completing the 252nd Street Trail to the north and the Skyline Trail connection to the south. It also anticipates completion of street widenings and trail development in the west Omaha system, permitting connections at the north and south extremities of the West County network. Highlights include:

- Completing the North Elkhorn Loop with trail development along 252nd Street.
- Linking Two Rivers SRA into the Omaha trails system by completing the West Q Road Trail.
- Connecting Elkhorn's Skyline Trail to Two Rivers and the south edge of the county network.
- Connecting the Elk City Trail into the Omaha system via Bennington Road.

Table 4
Projected Cost of the Phase Three System

Trail Component	Segment	Miles	Trail Type	Cost
252nd Street	Ida to State	1.00	Shoulder	$125,000
252nd Street	State to Bennington Road	2.00	Separated Roadside	175,000
Elkhorn Crossing Link	252nd Street to Elkhorn Crossing access	0.80	Separated Roadside	140,000
252nd Street	Bennington Road to North River Access	1.60	Shoulder	200,000
West Q	F Street to turn via 264th Street	0.80	Separated Roadside	140,000
West Q	264th to West Q curve	0.65	Shoulder	85,000
West Q	Curve to 245th Street	1.10	Separated Roadside	192,500
245th Street River Access	Elkhorn River south of Q	0.60	Off-Road	108,000
West Q	245th to 204th	5.30	Separated Roadside	927,500
Westshores Spur	252nd to 264th	1.25	Shoulder	156,250
300th Street Connector	Reichmuth Road to Highway 64	1.50	Separated Roadside	262,500
Skyline Trail South	Rawhide Road to West Q	3.75	STR	56,250
Bennington Link	225th to 180th	3.75	Separated Roadside	656,250
Total Phase Three Program		**24.10**		**$3,224,250**

Phase Four: Completing the Regional System

Phase Four completes the overall system by developing the Riverside Lakes Trail and completing a variety of alternative routes. Highlights include:

- Completing the Riverside Lakes Trail, connecting Waterloo to the south along the west shore of the Elkhorn River.
- Developing east-west alternative routes to Highway 36 in the northern part of the county, using Rainwood Rood and Old Highway 8.
- Creating new north-south routes, including 216th Street and 276th Street. The latter provides a direct route in and through Valley.

Table 5

Projected Cost of the Phase Four System

Trail Component	Segment	Miles	Trail Type	Cost
Riverside Lakes	Waterloo Trail to road terminus north of West Center	3.00	Separated Roadside	525,000
Riverside Lakes	Extension to West Center	0.50	Off-Road	90,000
Riverside Lakes	Elkhorn River Bridge under West Center Road	0.20	Off-Road	250,000
Riverside Lakes	West Center to West Q	2.70	Off-Road	486,000
Riverside Lakes	Property acquisition	Approximately 20 acres		800,000
216th Street	West Maple to Edgewater	2.50	Shoulder	312,500
216th Street	Edgewater to Highway 36	3.50	STR	52,500
276th Street South	West Maple to Meigs Street	1.00	Shoulder	125,000
276th (West Street)	Meigs Street to Highway 64	1.60	STR	24,000
276th (West Street)	West Street to Highway 64/US 275 interchange	0.50	STR with existing shoulders	7,500
276th Street North	US 275 to Highway 36	3.00	Separated Roadside	525,000

Table 5 (Continued)
Projected Cost of the Phase Four System

Trail Component	Segment	Miles	Trail Type	Cost
Meigs Street	270th to 276th	0.50	Separated Off-Road	90,000
West Maple	264th to Platte River	1.60	Shoulder	200,000
Westshores Loop	252nd and Pacific to 264th and Dodge	2.00	STR	30,000
Venice Loop	Campanile Road and West Center to 264th and Pacific	2.10	STR	31,500
Rainwood Road	252nd to Reichmuth, developed with street paving	4.50	Shoulder	565,000
Old Highway 8	288th and Highway 36 to US 275	5.00	STR	75,000
Total Phase Four Program		**34.20**		**$4,189,000**

Total System Cost

Table 6 below recaps the overall long-term trail development program by phase.

Phase	Years	Mileage	Estimated Cost
Phase 1	2004-2009	19.15	3,296,000
Phase 2	2010-2014	20.85	2,860,000
Phase 3	2015-2019	24.10	3,224,250
Phase 4	2020-2024	34.20	4,189,000
Total System		98.30	13,569,250

Funding the West County Trails

Phased over a 20-year period, the West Trails program represents an average annual investment of about $675,000 from all sources. Clearly, not every project proposed in this plan will be implemented, but the program does present a comprehensive catalogue of possibilities. Potential funding sources include:

• *Transportation Enhancements.* This program, using Federal transportation funds and administered by the Nebraska Department of Roads, has been the staple for trail program funding in the state. TE provides an 80% federal formula share for trail projects. However, competition for these funds is strong and projects that have substantial transportation as well as recreational benefits generally receive higher ratings. Earmarked TE funds have also been available through Congressional action for specific projects. The Missouri River Pedestrian Bridge is an example of a project that is utilizing earmarked TE funds.

• *City and County Capital Improvement Program and Bond Funding.* Douglas County and participating municipalities should consider regular annual line-item appropriations in their Capital Improvement Program for trail development. Capital expenditures may be financed through the issuance of general obligation bonds for transportation and recreation improvements. This program does not include specific allocations for the Elkhorn and Waterloo trail programs, both of which have been previously planned.

• *Papio-Missouri River Natural Resources District.* The PMRNRD has been a leader in regional trail development and may have an active role to play in trail development along drainageways. As a primary sponsor of this project, the NRD is also a potential funding source. The District will also be involved in canoe trail and river access development, and may be a participant in acquisition of lands for environmental study, wetlands preservation, and passive recreation.

• *Surface Transportation Projects.* In many cases, trails follow roadways that will require improvement during the next twenty years. Trail or shoulder development should be included as an integral part of these projects.

• *State Financing.* The Nebraska Game and Parks Commission administers several programs that assist with local and regional trails development. These programs have been used in the past for projects such as the Waterloo Trail, and include the state-funded Trails Development Assistance Program (TDA); and the federal Recreational Trails Program (RTP) and Land and Water Conservation program.

• *Development Financing.* Some trail segments may be dedicated and improved along with adjacent development. Private development may participate proportionately in the development of the adjacent trail. An equitable method of financing involves private funding or special assessments on the portion of the trail equivalent to a required sidewalk, with public financing for the additional width and trail features.

• *Corporate or Foundation Contributions.* Development of the West County Trails system can have important economic development and quality of life implications. Therefore, major private contributions can be an important way of raising capital funds. Contributions may take the form of sponsorships, by which donors purchase a segment of trail with appropriate recognition. Smaller donors may purchase benches, shelters, or other amenities. The Wabash Trace Nature Trail in southwestern Iowa has successfully raised money in this way. Major Nebraska foundations, such as the Peter Kiewit and Lied Foundations, have demonstrated a major commitment to projects which improve the quality of life and competitiveness of Nebraska communities.

Memo to the Programs, Projects, and Operations Subcommittee

Subject: Savanna Shores/Walnut Creek Project

Date: February 27, 2004

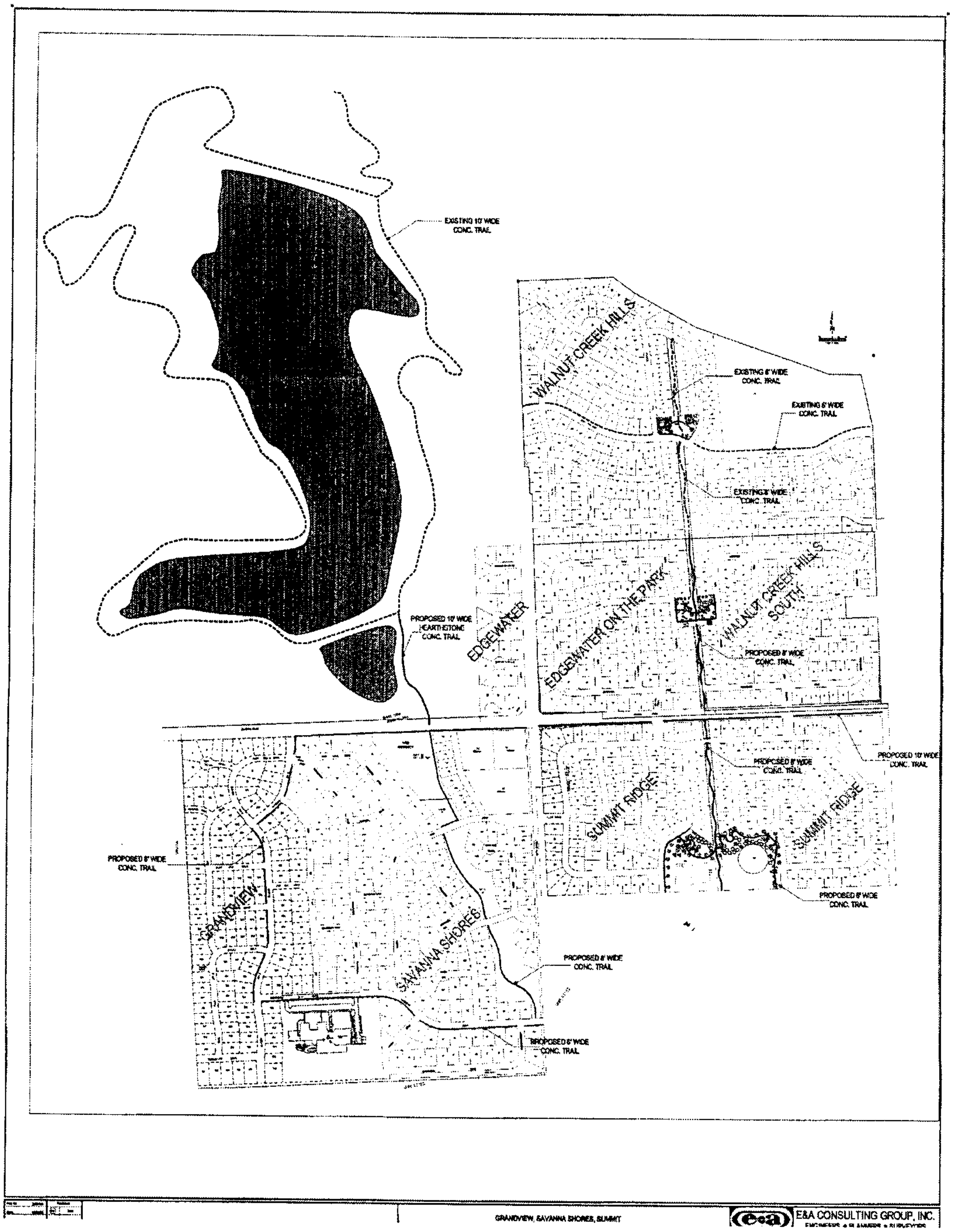
From: Gerry Bowen

On December 11, 2003, the Board approved an interlocal agreement with the Boyer Young Development Company and Sarpy County SID #249 (Savanna Shores Subdivision) located south of Walnut Creek Recreation Area. The agreement called for the SID/Developer to rehabilitate a sediment basin and to construct a trail connecting the subdivision to Walnut Creek. The NRD would cost share $100,000 for the basin rehabilitation and trail construction, plus allow the SID/Developer to improve 1.5 acres of wetland on NRD property to satisfy mitigation requirements.

The Corps of Engineers is now requiring the SID/Developer to mitigate an additional 1.5 acres. They have requested that the NRD provide the additional mitigation acres at Walnut Creek upon payment of $50,000. The attached addendum reflects this arrangement.

In addition, the insurance requirements for profession engineers and contractors are being changed to reflect changes in the insurance industry.

It is recommended that the subcommittee recommend to the Board that the General Manager be authorized to execute an amendment to the Savanna Shores/Walnut Creek Interlocal Agreement to provide an additional 1.5 acres of NRD property for wetland mitigation upon payment of $50,000 by the SID/Developer, subject to minor changes deemed necessary by the General Manager and acceptance as to form by District Legal Counsel.


EXISTING 10' WIDE CONC. TRAIL
WALNUT CREEK HILLS
EXISTING 8' WIDE CONC. TRAIL
EXISTING 8' WIDE CONC. TRAIL
EXISTING 8' WIDE CONC. TRAIL
EDGEWATER
EDGEWATER ON THE PARK
WALNUT CREEK HILLS SOUTH
PROPOSED 10' WIDE HEARTHSTONE CONC. TRAIL
PROPOSED 8' WIDE CONC. TRAIL
PROPOSED 8' WIDE CONC. TRAIL
PROPOSED 10' WIDE CONC. TRAIL
SUMMIT RIDGE
SUMMIT RIDGE
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GRANDVIEW
SAVANNA SHORES
PROPOSED 8' WIDE CONC. TRAIL
PROPOSED 8' WIDE CONC. TRAIL
GRANDVIEW, SAVANNA SHORES, SUMMIT
E&A CONSULTING GROUP, INC.
ENGINEERS • PLANNERS • SURVEYORS

DRAFT
3-1-04

FIRST ADDENDUM TO
INTERLOCAL COOPERATION ACT AGREEMENT
AMONG
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT,
SANITARY AND IMPROVEMENT DISTRICT NO. 249 OF SARPY COUNTY, NEBRASKA,
AND
BOYER YOUNG DEVELOPMENT COMPANY
FOR

SAVANNA SHORES/WALNUT CREEK PROJECT

THIS FIRST ADDENDUM (hereinafter referred to as "**THIS ADDENDUM**") is made pursuant to the Nebraska Interlocal Cooperation Act, Sections 13-801 to 13-827 R.R.S. 1997, et. seq., by and among the **PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT** (hereinafter referred to as "**the NRD**"); **SANITARY AND IMPROVEMENT DISTRICT NO. 249 of SARPY COUNTY, NEBRASKA** (hereinafter referred to as "**the SID**"); and, **BOYER YOUNG DEVELOPMENT COMPANY**, a Nebraska corporation (hereinafter referred to as "**the DEVELOPER,**" and the NRD, the SID and the DEVELOPER are hereinafter referred to individually as "**the PARTIES**"). THIS ADDENDUM amends the INTERLOCAL COOPERATION ACT AGREEMENT among the PARTIES that became effective on or about _____, 2004 (hereinafter referred to as "**THE AGREEMENT**") and adopts the definitions of the terms defined in THE AGREEMENT.

WHEREAS, the WETLANDS IMPROVEMENTS have been increased to approximately 3.0 acres of the NRD'S WALNUT CREEK land to mitigate the loss of approximately 1.0 acre of wetlands that will be destroyed by the DEVELOPER and the SID during the development of the SUBDIVISION, 1.5 acres of such new wetlands now

being required to satisfy an assessment by the Corps of Engineers' against the DEVELOPER for wetlands destruction; and,

WHEREAS, the PARTIES also desire to amend the insurance required to be carried by the ENGINEERS and by the CONTRACTOR,

NOW, THEREFORE, IN CONSIDERATION of the foregoing recitals and their mutual covenants, the PARTIES hereby agree as follows, to-wit:

A. That paragraphs 5, 15 and 22 and 23 of the AGREEMENT should be, and are hereby, amended to read as follows:

5. ENGINEERS INSURANCE. The contract between the DEVELOPER and the SID on the one hand, and the ENGINEERS on the other hand (hereinafter referred to as **the ENGINEERING CONTRACT**"), shall require the ENGINEERS to purchase, and maintain until the expiration of two years after completion of the PROJECT, the following policies of insurance with minimum requirements as shown:

a) Workmens Compensation and Employers Liability
   - i) Workers' Compensation: statutory minimum
   - ii) Longshore and Harbor Workers' Compensation Act endorsement and Admiralty Law endorsements (required if the work involves maritime operations).
   - iii) Employer's Liability: $100,000.00 per accident.

b) Professional malpractice
   - i) $1,000,000.00 each claim
   - ii) $2,000,000.00 aggregate

c) Commercial General Liability – ISO Occurrence Form
   - i) $1,000,000.00 each occurrence
   - ii) $2,000,000.00 general aggregate
   - iii) $2,000,000.00 products – completed operations aggregate
   - iv) $1,000,000.00 personal & advertising injury

v) $300,000.00 fire damage

vi) $5,000.00 medical expense

d) Business Auto Liability - Owned, Non-Owned & Hired vehicles $1,000,000.00 combined single limit

e) General Provisions:

i) All policies shall be endorsed to have any annual aggregate apply on a per-project basis and to provide 30 days written notice to the NRD prior to termination or change in the coverage provided.

ii) The NRD reserves the right to approve the ENGINEER'S insurers.

iii) Workers Compensation and Commercial General Liability policies shall be endorsed to provide Waiver of Subrogation in favor of the NRD.

iv) The Commercial General Liability policy shall be endorsed to include the NRD as Additional Insured (form CG 20 10).

The ENGINEERING CONTRACT shall further require that, prior to commencement of the work, and from time to time thereafter at the NRD'S reasonable request, the ENGINEERS shall submit certificates in form acceptable to the DEVELOPER, the SID and the NRD evidencing such insurance.

15. CONTRACTOR'S INSURANCE. The CONSTRUCTION CONTRACT DOCUMENTS shall require the PROJECT CONTRACTOR to purchase, and maintain until the expiration of two years after completion of the PROJECT, the following policies of insurance with minimum requirements as shown:

a) Workmens Compensation and Employers Liability

i) Workers' Compensation: statutory minimum

ii) Longshore and Harbor Workers' Compensation Act endorsement and Admiralty Law endorsements (required if the work involves maritime operations).

iii) Employer's Liability: $100,000.00 per accident.

b) Commercial General Liability – ISO Occurrence Form

i) $1,000,000.00 each occurrence

ii) $2,000,000.00 general aggregate

iii) $2,000,000.00 products – completed operations aggregate

iv) $1,000,000.00 personal & advertising injury

v) $300,000.00 fire damage

vi) $5,000.00 medical expense

c) Business Auto Liability - Owned, Non-Owned & Hired vehicles $1,000,000.00 combined single limit

d) General Provisions:

i) All policies shall be endorsed to have any annual aggregate apply on a per-project basis and to provide 30 days written notice to the NRD prior to termination or change in the coverage provided.

ii) The NRD reserves the right to approve the ENGINEER'S insurers.

iii) Workers Compensation and Commercial General Liability policies shall be endorsed to provide Waiver of Subrogation in favor of the NRD.

iv) The Commercial General Liability policy shall be endorsed to include the NRD as Additional Insured (form CG 20 10).

The CONSTRUCTION CONTRACT DOCUMENTS shall require that, prior to commencement of the work, the PROJECT CONTRACTOR shall submit certificates in form acceptable to the DEVELOPER, the SID and the NRD evidencing such insurance.

22. PROJECT CONTRIBUTIONS.

a) As the NRD'S sole contributions towards and sole liability for the costs of design and construction of, and permits and rights-of-way for, the PROJECT (hereinafter referred to collectively as "the NRD CONTRIBUTION"), the NRD shall pay to the SID:

i) One-half (50%) of the first ONE HUNDRED FIFTY THOUSAND DOLLARS ($150,000) necessarily expended by the SID for

the costs of design and construction of the SEDIMENT DETENTION POND IMPROVEMENTS; and,

ii) One-half (50%) of the first FIFTY THOUSAND DOLLARS ($50,000) necessarily expended by the SID for the costs of design and construction of the BOX CULVERT that remain unpaid after the application of any grant funds obtained for construction of the BOX CULVERT, the grantor's apportionment of grant funds attributable to the BOX CULVERT to be conclusive as among the PARTIES.

b) The DEVELOPER shall pay to the NRD the amount of FIFTY THOUSAND DOLLARS ($50,000) (hereinafter referred to as "the **DEVELOPER'S ASSESSMENT**") representing the agreed reasonable value of approximately 1.5 acres (of the 3.0 total acres) of the NRD'S WALNUT CREEK land that will be converted to wetlands during the development of the SUBDIVISION solely to satisfy an assessment by the Corps of Engineers against the DEVELOPER for wetlands destruction.

23. PAYMENT OF CONTRIBUTIONS. The NRD shall pay the NRD CONTRIBUTION to the SID forty-five (45) days after receipt of written notice from the ENGINEERS that the PROJECT has been substantially completed in accordance with the CONSTRUCTION CONTRACT DOCUMENTS, or forty-five (45) days after the DEVELOPER'S payment to the NRD of the DEVELOPER'S PENALTY, whichever date is the last to occur. The NRD CONTRIBUTION shall be paid to the SID without interest until due and thereafter shall be paid with interest computed from the due date at the rate determined by adding two percentage points (2.0%) to the national rate charged from time-to-time by the First National Bank of Omaha, Nebraska, or at the rate paid by the DEVELOPER and the SID for financing such costs during such delinquency period, whichever amount is greater.

B. Except as modified herein, the AGREEMENT is ratified and confirmed in all respects.

IN WITNESS WHEREOF,

THIS ADDENDUM is executed by the PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT on this ____ day of _____, 2004

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

By _____
General Manager

THIS ADDENDUM is executed by SANITARY AND IMPROVEMENT DISTRICT NO. 249 OF SARPY COUNTY, NEBRASKA on this ____ day of _____, 2004

SANITARY AND IMPROVEMENT DISTRICT NO. 249 OF SARPY COUNTY, NEBRASKA

By _____
Chairperson, Board of Trustees

Attest:

_____
Clerk

THIS ADDENDUM is executed by BOYER YOUNG DEVELOPMENT COMPANY, on this ____ day of _____, 2004.

BOYER YOUNG DEVELOPMENT COMPANY

By _____
TIMOTHY J. YOUNG, President

STATE OF NEBRASKA)
) SS.
COUNTY OF _____)

On this _____ day of _____, 2004, before me, a Notary Public, personally came STEVEN G. OLTMANS, General Manager of the **PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT**, to me personally known to be the identical person whose name is affixed to the above and foregoing instrument, and he/she acknowledged the same to be his/her voluntary act and deed and the voluntary act and deed of said District.

WITNESS my hand and Notarial Seal the date last aforesaid.

_____
Notary Public

STATE OF NEBRASKA)
) SS.
COUNTY OF _____)

On this _____ day of _____, 2004, before me, a Notary Public, personally came _____, Chairperson, Board of Trustees of **SANITARY AND IMPROVEMENT DISTRICT NO. 249 OF SARPY COUNTY, NEBRASKA**, to me personally known to be the identical person whose name is affixed to the above and foregoing instrument, and he/she acknowledged the same to be his/her voluntary act and deed and the voluntary act and deed of said District.

WITNESS my hand and Notarial Seal the date last aforesaid.

_____
Notary Public

STATE OF NEBRASKA)
) SS.
COUNTY OF _____)

On this _____ day of _____, 2004, before me, a Notary Public, personally came TIMOTHY J. YOUNG, President of **BOYER YOUNG DEVELOPMENT COMPANY** to me personally known to be the identical person whose

name is affixed to the above and foregoing instrument, and he/she acknowledged the same to be his/her voluntary act and deed and the voluntary act and deed of said corporation.

WITNESS my hand and Notarial Seal the date last aforesaid.

_____

Notary Public

Memo to: Programs, Projects, and Operations Subcommittees

Subject: Mopac Trail Engineering Fees - Contract with E&A Consulting Group

Date: January 29, 2004

From: Gerry Bowen

On May 13, 1999, the District hired E&A Consulting Group (EACG) to provide engineering services for the Mopac Trail Project (Springfield to the Platte River segment). The contract amount was for $171,927.

On August 9, 2001, the Board voted to increase the " not-to-exceed" amount of the contract with EACG for engineering services on the Mopac Trail Project (see attached memo) from $171,927 to $217,507.

On February 6, 2003 (see attached), EACG submitted another request for an increase in the " not-to-exceed" amount of the contract in the amount of $5,592. The increase fees resulted from changes in the project needed to accommodate adjacent landowners. This request was not presented to the Board at that time since the project was not yet completed, and the possibility existed that additional requests may be received.

On February 14, 2004, EACG submitted a third request (see attached) for another fee increase to complete the project (see attached). This request covers additional tasks not included in the revised scope of services that the EACG was asked to perform to satisfy landowner requests made necessary to acquire right-of-way for the project. In addition, EACG is requesting an adjustment for increased hourly rates for construction observation that have occurred since the original contract was written in 1999.

The total increase in fees totals $27,306.86 ($10,995.58 for additional services, $10,379.29 for increased hourly rates, and $5,931.99 for inflation). Therefore, EACG is requesting an increase in the contract amount from $217, 507.00 to 244,813.86.

It is recommended that the Subcommittee recommend to the Board that the maximum amount of the contract with E and A Consulting Group for engineering services on the Mopac Trail Project be increased form $217, 507.00 to $244,813.86.

E&A CONSULTING GROUP, INC.
ENGINEERS • PLANNERS • SURVEYORS

12001 "Q" STREET
OMAHA, NEBRASKA 68137-3542
PHONE: (402) 895-4700
FAX: (402) 895-3599

"Building Our Reputation on Quality and Service"

7130 SOUTH 29TH STREET, SUITE D
LINCOLN, NEBRASKA 68516-5841
PHONE: (402) 420-7217
FAX: (402) 420-7218

February 14, 2004

Gerry Bowen
Papio-Missouri River
Natural Resource District
8901 S 154TH Street
Omaha, NE 68138-3621

Re: Additional Work, Springfield to Louisville
Project No. STPB-77(43), C.N. 21994
E&A 99032

Dear Mr. Bowen:

We are requesting a supplement to the agreement to cover the following additional work needed to complete the design on the above-referenced project. The following is a breakdown of the hours required to complete additional items of work the from the January 23, 2004 request to supplement the agreement

Item No. 1
Submit NPDES permit application. This item included effort to research information to fill out the application. A set of plans were also required with the submittal

Grade Level	**Hours**	**Rate**		**Amount**
Project Management	0.5	$ 110.00	$	55.00
Senior Engineer	4	$ 96.00	$	384.00
Design Engineer		$ 76.00	$	-
Survey Crew		$ 115.00	$	-
RLS		$ 93.00	$	-
Technician	3	$ 56.00	$	168.00
	7.5	Sub Total =	**$**	**607.00**

Item No. 2

Revise fencing, grading and drainage design within the Hurlbut property (Sta. 1160+50 to 1188+70). This item, per the landowner's request, included the relocation of culvert pipes, drainage ditches, and fencing, as well as, the addition of a 30" pipe at Sta. 1164+15. The relocated pipes, ditches and fencing affected the build notes, culvert sections, and quantity sheets. The 30" pipe required a drainage study in order to properly size the pipe, a culvert section was drawn, and quantities were generated.

Grade Level	Hours	Rate	Amount
Project Management	3	$ 110.00	$ 330.00
Senior Engineer	16	$ 96.00	$ 1,536.00
Design Engineer	12	$ 76.00	$ 912.00
Survey Crew		$ 115.00	$ -
RLS		$ 93.00	$ -
Technician	18	$ 56.00	$ 1,008.00
	76	Sub Total =	**$ 3,786.00**

Item No. 3

Advertise for bid letting. This item was not included in the original scope of work. We are requesting payment for the preparation notice and cost of publication. The notice was published in the Omaha World-Herald for three consecutive Sundays beginning September 21, 2003.

Grade Level	Hours	Rate	Amount
Project Management	0.5	$ 110.00	$ 55.00
Senior Engineer	1.5	$ 96.00	$ 144.00
Design Engineer		$ 76.00	$ -
Survey Crew		$ 115.00	$ -
RLS		$ 93.00	$ -
Technician	2.5	$ 56.00	$ 140.00
Publishing Cost			$ 671.58
	4.5	Sub Total =	**$ 1,010.58**

Sub Total for January 23, 2004 request= $ 5,403.58

The following is a breakdown of the hours required to complete additional items of work the from the February 6, 2003 request to supplement the agreement

Item No. 1 Fencing along Steve Hurlbut property
Steve Hurlbut requested the placement of 5-strand barbed wire fencing along his property. The fence ran from approximately Sta. 1160+50 to 1187+70. Gates were placed near the north end of the fencing. Build notes, comps and a special plan sheet were required.

Grade Level	Hours	Rate		Amount
Senior Engineer	6	$ 93.00	$	558.00
Survey Crew		$ 105.00	$	-
RLS		$ 93.00	$	-
Technician	6	$ 54.00	$	324.00
	12	Sub Total =	$	**882.00**

Item No. 2
A permit from the NDOR was required to occupy State ROW at the south end of the project. This permit had been applied for and received previously, but following the extension of the project to a new trail head south of highway 31; we had to resubmit the permit application. The State was not as willing to approve this application which meant additional survey and design time for us to complete this task. I met twice with Eldon Poppe, Design Engineer with the NDOR, to review and explain design concerns he had. After meeting with him and including additional information, the permit was approved.

Item No. 2a Permit application to occupy State ROW
Additional survey time was required to tie down existing features:

Grade Level	Hours	Rate		Amount
Senior Engineer		$ 93.00	$	-
Survey Crew	8	$ 105.00	$	840.00
RLS	2	$ 93.00	$	186.40
Technician	7	$ 54.00	$	378.00
	17	Sub Total =	$	**1,404.00**

Item No. 2b Permit application to occupy State ROW
Design time required to resubmit the application, meet with Poppe, add details to the plans per Poppe's request (including design and special plans) and submit plan sheets again:

Grade Level	Hours	Rate		Amount
Senior Engineer	12	$ 93.00	$	1,116.00
Survey Crew		$ 105.00	$	-
RLS		$ 93.00	$	-
Technician	6	$ 54.00	$	432.00
	20	Sub Total =	$	**1,548.00**

Item No. 3
In order to provide for trail maintenance, a permit was required from the NDOR to construct a drive off of highway 50 just north of the Buffalo Creek Bridge. Our work effort included a site visit, research of as-builts at the NDOR, design and submittal of the permit application. The permit was initially denied by the State due to a lack of proper sight distance. I made a follow up call to John Jacobsen to further explain the application, and I feel Jake will recommend approval of the permit.

Grade Level	Hours	Rate	Amount
Senior Engineer	16	$ 93.00	$ 1,488.00
Survey Crew		$ 105.00	$ -
RLS		$ 93.00	$ -
Technician	5	$ 54.00	$ 270.00
	21	Sub Total =	**$ 1,758.00**

Sub Total for February 6, 2003 request= $ 5,592.00
Sub Total for January 23, 2004 request= $ 5,403.58
Total = $ 10,995.58

We are also requesting an increase of $10,379.29 to cover the inflationary cost associated with the Construction Inspection ($34,244.71 to $44.627.00), as well as the increased inflationary cost of 3 percent per year over the past four years of $5,931.99. The actual of increase in hourly rates from 1999 to 2004 averages 608 percent per year for a total increase of $27,306.86.

If you have any questions, I can be reached at (402) 420-7217.

Sincerely,

E&A CONSULTING GROUP, INC.

Greg Wood, PE
Vice President

E&A CONSULTING GROUP, INC.
ENGINEERS • PLANNERS • SURVEYORS

12001 "Q" STREET • OMAHA, NEBRASKA 68137-3542
PHONE: (402) 895-4700 • FAX: (402) 895-3599

7130 SOUTH 29TH STREET, SUITE D • LINCOLN, NEBRASKA 68516-5841
PHONE: (402) 420-7217 • FAX: (402) 420-7218

MEMORANDUM

TO: Projects, Planning and Operations Sub-Committee

FROM: Dick Sklenar

SUBJECT: Elkhorn River Access Feasibility Study

DATE: March 1, 2004

Attached is the Elkhorn River Access Feasibility Study that has recently been completed by Beringer, Ciaccio, Dennell, and Mabrey (BCDM) (formally Ciaccio Dennell Group). The study entails an in-depth analysis of developing public access points to the river within our District. Due to ease of maintenance and visibility, all sites (except for one) were adjacent to bridge crossings over the Elkhorn River.

To conclude the study report, property owners at the most desirable access location were contacted. Based on responses from property owners, three of the sites (West Dodge Road, Maple Street, Q Street) are favorable for development. Of the three sites mentioned, it appears that two of these sites will have sponsors to operate and maintain their respective location. The YMCA has agreed verbally to do this for the site at " Q" Street, and the Village of Waterloo has also agreed on the condition that the J.C. Robinson Seed Company donates the property to the Village.

The West Dodge Road access point is also a viable location for development. In this instance, the property owners have provided verbal consent to donating the property that is necessary for development with the provision that the site be named after a family member.

In summation, three of the six locations appear at this time to be very probable for developing public access to the Elkhorn River. The first priority site for development is recommended to be at West Maple Road.

The staff recommends that the Sub-Committee recommend to the Board of Directors that the Elkhorn River Access Study be accepted and implemented, and that a proposal for professional services be negotiated with BCDM for design and construction of the West Maple Road public access site.

HARD COPY OF REPORT WILL BE SENT TO DIRECTORS VIA MAIL.

bcdm

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

ELKHORN RIVER ACCESS STUDY

In association with

BCDM # 2823
27 February 2004

INTRODUCTION

Rivers have provided man with necessities of life since the beginning of time. They have graciously provided him with the essentials of food and water. Rivers have advanced civilizations by providing transportation, recreation and natural beauty. The Elkhorn River valley is no different. As a major tributary to the mighty Missouri River, it has helped form settlement patterns in Douglas and Washington Counties. The Elkhorn River provides us with magnificent natural resources such as dramatic sandstone bluffs, stately cottonwood stands, and unparallel river vistas. It is a home to the majestic Bald Eagle. It is a river, which deserves to be seen.

The intention of the Elkhorn River Access Study is to do just that. This plan provides specific recommendations on how to enjoy the river. It outlines opportunities for making the river more accessible, more usable and consequently, more enjoyable. The planning process has been a grass roots effort with many agencies and property owners to ensure this plan respects the resource and is in concert with adjacent land uses. It is a practical plan.

With the implementation of this plan, the Elkhorn River will continue to contribute to the quality life of the region. It will become a recreational resource not experienced before. It will bring awareness to a natural resource too often overlooked. Most importantly, it will be a recreational corridor in which friends and families will build memories together.

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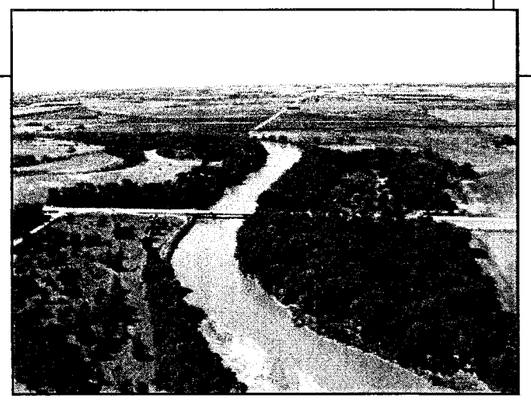


Methodology

METHODOLOGY FOR ELKHORN RIVER ACCESS STUDY

The Elkhorn River originates in the meadowland in the north-central counties of Holt and Rock and ends near Gretna at the Platte River. The river has been utilized for decades as an active recreation corridor for motorless watercraft. With an ever-increasing population base in the greater Omaha area, as well as numerous other cities in the central eastern Nebraska region, the number of people taking interest in the opportunities of the Elkhorn River has increased as well. The growing interest is creating the need for better public access at various points along the route to alleviate infringement on private land. Establishing public access sites along the river in areas with high visibility and access will provide opportunities for greater use, promotion, and tourism of this scenic river way.

Several tasks were involved in determining potential locations for public access along the Elkhorn River in Douglas and Washington counties. Key features desired at each site include good visibility, adjacency to a major roadway, available land area and compatible adjacent land use. Within the study area, these features defined six potential sites for public access. Of the six sites selected, all were located at or near a major roadway.

At each of the six sites, all four quadrants were evaluated using a Site Selection Matrix. The matrix was designed to evaluate each quadrant equally to determine where the best site to provide public access may be. The matrix took into account many features such as Existing and Adjacent Land Use, Land Characteristics for Recreational Use, Bank Slope and Material, Channel side, Visibility and Access from the Highway, Distance to Highway Access, Distance to nearest facilities, Area in Floodway, Elevation of Site in relation to the Flow Line and Slope of the Site. Basemap information was gathered prior to field inventory and analysis of each site.

BCDM used aerial photography with other cartography information to begin the mapping process. Land ownership and parcel information for the study area were also overlaid to determine the various property boundaries. This information was useful in identifying private and public land ownership along the Elkhorn River. Olsson Associates provided BCDM with highway traffic counts, bridge data, environmental analysis and natural resource data for each site. Using the base maps, field inventories, photo surveys, and field measurements were taken at each

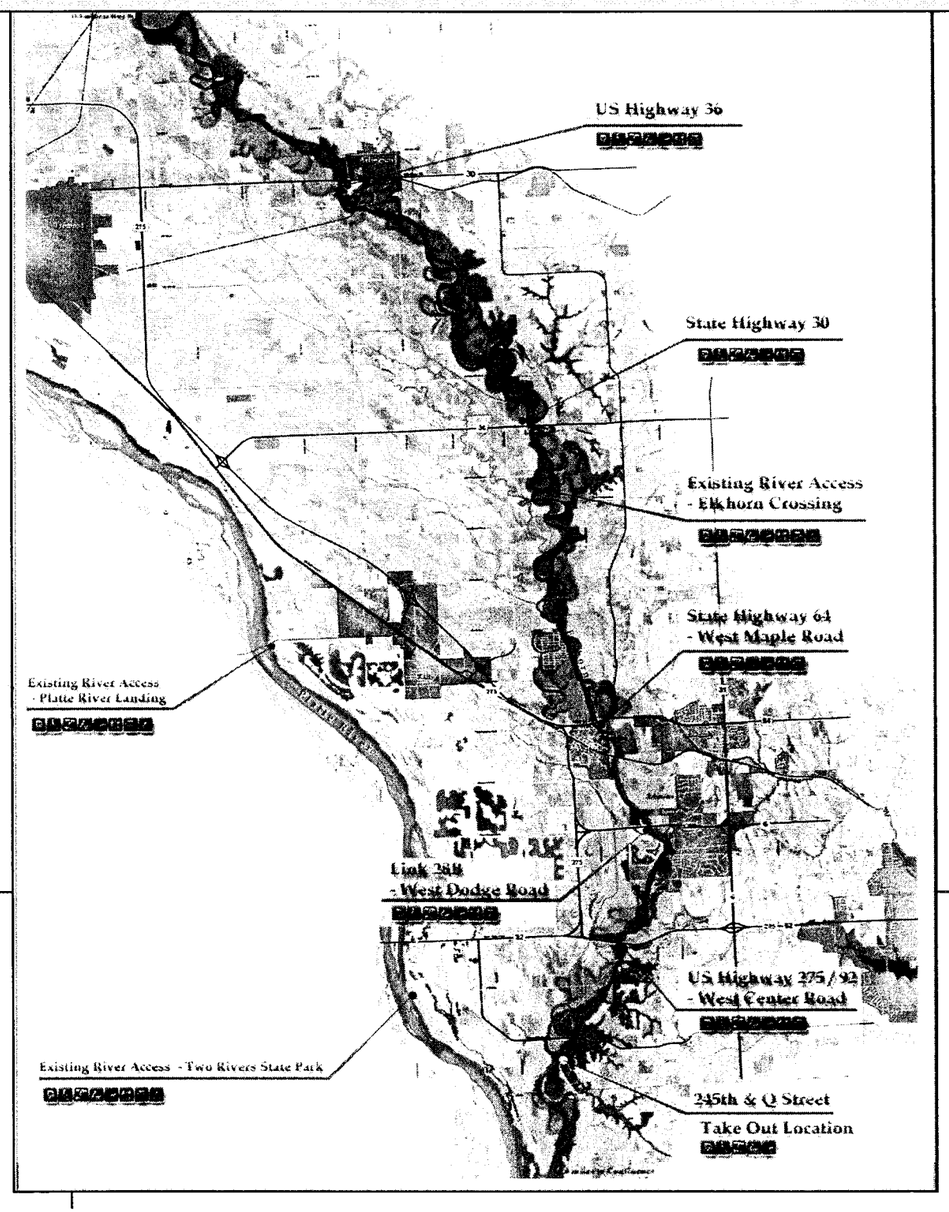
METHODOLOGY FOR ELKHORN RIVER ACCESS STUDY ■ CONT.

quadrant of the six potential sites. This data was entered into the matrix to evaluate the differences at each quadrant. After the field visits were completed, BCDM used the matrix results to narrow down the potential public access sites. The matrix results for each site are included in the appendix.

The last step in determining potential sites for public access on the Elkhorn river included a canoe trip covering the entire study area from Highway 30 south to West "Q" Street. Members from the NRD as well as BCDM participated in the two-day trip. While canoeing, additional benefits of the river were revealed. Each segment offered different qualities with regards to views, level of difficulty, places to rest and access to potential sites. In general, the canoe ride decreased in difficulty from north to the south. Navigational difficulty resulted from the number of bends in the river as well as obstructions due to fluctuating water depths.

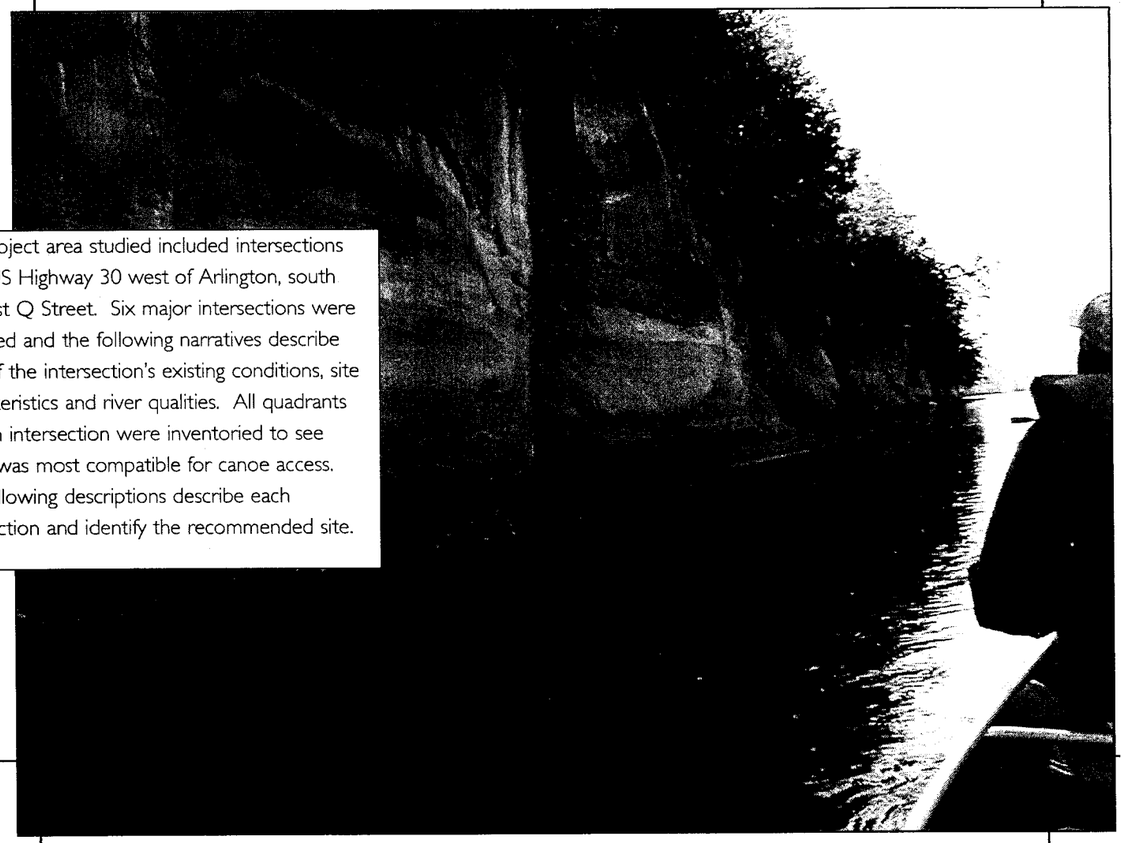
After selecting the most appropriate quadrant at each site; design solutions were prepared. During the design process, needs at each site were assessed individually. Signage, access roads, parking, canoe ramps and pit toilets were desired at all sites. Probable construction costs were also projected for each site. Following the design process, landowners were contacted in order to begin the process of acquiring appropriate land. The land acquisition process is one of the most important steps in achieving the goals of the study. To help with the construction costs of the project, funding opportunities were also explored.

METHODOLOGY FOR ELKHORN RIVER ACCESS STUDY ■ CONT.



Narratives

SITE SELECTION NARRATIVES FOR THE ELKHORN RIVER ACCESS STUDY

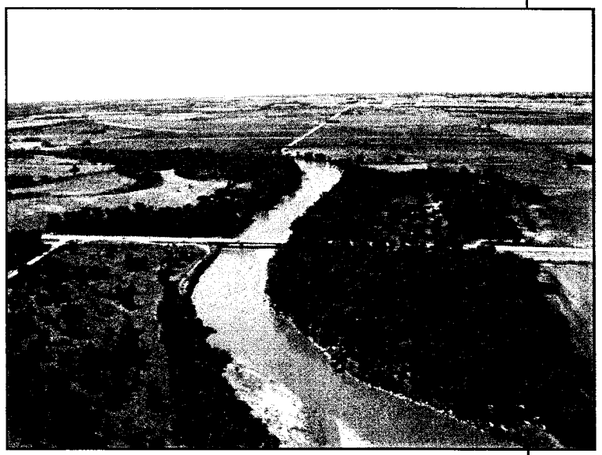


The project area studied included intersections from US Highway 30 west of Arlington, south to West Q Street. Six major intersections were identified and the following narratives describe each of the intersection's existing conditions, site characteristics and river qualities. All quadrants of each intersection were inventoried to see which was most compatible for canoe access. The following descriptions describe each intersection and identify the recommended site.

SITE SELECTION NARRATIVES ■ CONT.

US HIGHWAY 30 / ARLINGTON

- **Segment Description** The intersection of the Elkhorn River and US Highway 30 west of Arlington is the northernmost site in the Elkhorn River Access Study. Nearby towns include Fremont, Nickerson, Kennard, Blair and Arlington. The areas around this site are agricultural and residential, with many nice wooded areas north and south of the bridge. About one mile downstream, there is an active railroad bridge with a regular amount of traffic and significant noise. The current average Vehicles Per Day (vpd) on US Hwy 30 is about 5,410 vpd, which is relatively low. This means that minimal work would have to be done along the highway to develop access to the site. Currently, no parking areas or canoe access exists, however there are foot trails on the southwest side of the bridge to suggest the launching of canoes. This site is approximately 9.2 river miles north of State Highway 36 and 11.8 river miles south of State Highway 91, east of Nickerson. The current of the river is about 2-3 miles per hour depending on the water volume. The trip from Hwy 30 to Hwy 36 contains many turns as well as large brush piles and debris on the banks. There is one significant view of a large bluff and many large islands, which provide areas to rest along the way. The sandbars and wooded areas also provide plenty of wildlife viewing.



- **Site Selection.** Based on the matrix, the area southeast of the bridge is the preferred site. The northwest and southwest sites both have existing residential uses, which make them undesirable. The northeast site, which is second on the matrix, is undesirable for a few reasons; the bank contains an extensive amount of riprap extending upstream, its elevation above the Elkhorn's average daily flow and lack of any significant tree cover. The southeast site will be built entirely in an existing wooded area. The land available is sufficient. Adjacent uses include agricultural land and a rifle range. The rifle range faces the opposite direction and there is a significant tree buffer between the two.

SITE SELECTION NARRATIVES ■ CONT.

STATE HIGHWAY 36

■ **Segment Description** The Elkhorn River and State Highway 36 is the next bridge intersection downstream from US Highway 30. Nearby towns include Fremont, Blair, Arlington, Elkhorn, Bennington and Northwest Omaha. The area is surrounded mostly by agricultural land, with the exception of the northeast site, which has a significant amount of residential housing. This intersection is 9.2 river miles south of US Highway 30. Downstream 1.5 miles is Elkhorn Crossing, an existing canoe access and day use area owned and maintained by PMR-NRD. State Highway 64 / West Maple Road is 8.1 miles downstream from State Hwy 36. State Hwy 36 has an average traffic volume of about 5,695 vpd. Again, the relatively small amount of traffic results in minimal work to gain access to the selected site. Currently, no parking areas or canoe access exists. There is a gravel area northwest of the bridge being used for access. There are box culverts on both sides of the river under the highway. This could potentially create some drainage issues at the selected site. Based on the canoe trip observations, this area contains a few tight turns, brush piles and debris/rip-rap filled banks. There is a short stretch of river in this segment that has a very natural feel to it. Lots of wildlife was also observed while canoeing this segment. There are also many large sandbars and a few islands for resting. The last segment of this trip is straight and very easy to navigate as you approach State Hwy 64 / West Maple Road.

■ **Site Selection.** Based on the matrix, the area northwest of the bridge is the preferred site. The northeast site is undesirable because its proximity to existing residences and an existing swale that enters a large box culvert. The northeast site also has the least amount of available land area. The area southeast of the bridge is in the proximity of an existing residence, has a noticeable swale going through it and is not on the channel side. The southwest property is mostly agricultural land with few trees on it. The bank contains a lot of riprap for a considerable distance downstream, making it undesirable. The area northwest of the bridge, the preferred site, has large trees and is on the channel side. It is directly adjacent to an irrigated agricultural area, which could be used for parking and is great for visibility purposes. There is riprap north of the bridge, but changes to soil as you move north. The elevation above the average flow line is also ideal at this site.

SITE SELECTION NARRATIVES ■ CONT.

STATE HIGHWAY 64 / WEST MAPLE ROAD

■ **Segment Description** The intersection of the Elkhorn River and State Highway 64 / West Maple Road just east of Waterloo is the next study area downstream. Nearby communities include Fremont, Waterloo, Elkhorn, Valley and West Omaha. The area around the intersection are Ag / Wooded to the east, Ag / Residential to the northwest and Commercial to the southwest. This roadway is the second busiest of the six study areas with a daily volume of 8,475vpd. Most of the highway users are from Fremont, Waterloo, Valley and Elkhorn. No parking areas or canoe access are currently provided. Observations show use of the southeast Highway right of way for river access. An existing active railroad bridge exists about 1 mile downstream with a fair amount of regular traffic. The southeast site contains the most potential for future development in the entire study. The area to the southeast lies along the old Hwy 64 road, which would provide access with the least amount of modifications to State Highway 64. Old Highway 64 is also a planned route of a future trail, pedestrian bridge and Active Use Sports Complex. It also has great visibility because of the openness created from the Ag fields. This site is downstream 8.1 miles from Highway 36, and upstream 2.5 miles from West Dodge Road. This segment of the Elkhorn River from Hwy 64 to West Dodge Road is narrow with lots of trees lining the banks. It provides an easy canoe trip for all canoeists. This segment has no significant views and very few brush piles were observed..

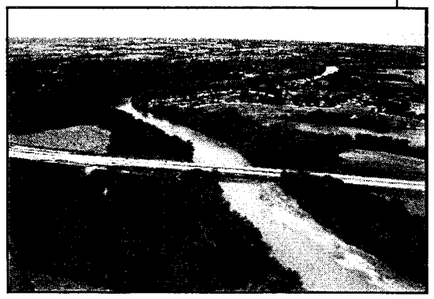
■ **Site Selection.** Based on the matrix, the area southeast of the bridge is the preferred site. The southwest site is undesirable for its lack of size and proximity to Waterloo. The area northwest of the bridge contains an existing residence. The area to the northeast has a large wooded area and is adjacent to an agricultural field. It ranks second and is only undesirable because of the moderate amount of work involved to gain highway access. The area southeast of the bridge is the preferred site. This area contains a parcel that is compatible in available area and land characteristics. With the future trails and pedestrian bridge being planned to use Old Hwy 64, this site woud provide a great place to rest. Existing access, visibility and site circulation are best at this site because of the potential use of Old Hwy 64. The large wooded area also provides a good area for day use activities, while having adjacent agricultural area for parking to minimize the environmental impact on the site.

SITE SELECTION NARRATIVES ■ CONT.

LINK 28B / WEST DODGE ROAD

- **Segment Description** The intersection of the Elkhorn River and Link 28B / West Dodge Road is the next study area downstream. Nearby communities include Waterloo, Elkhorn and West Omaha. The areas around this intersection include Ag/Wooded land at the southwest, northwest and northeast while Open Pasture/Wooded areas occupy the southeast. This is the busiest roadway out of the six study areas, with a daily volume of 11,685vpd. The two bridges were recently constructed in 1993. West Dodge Road and the Skyline Drive intersection are currently under construction with the intersection planned at 228th Street to be built before 2006. No break in access will be allowed on West Dodge Road, so access will be a large obstacle with this site. Visibility is great at all locations except the northwest, which is heavily wooded. This site is downstream 2.5 river miles from State Hwy 64 / West Maple Road and upstream 2.8 miles from US Hwy 275 / West Center Road. Currently no parking areas or canoe access is provided. Visible signs of access appear on all corners of the bridge. This segment of the Elkhorn River provides several unique views of high bluffs rising from the water. Brush and debris piles are very minimal and the river is narrow, straight and rather easy to navigate. Many residences sit atop the bluffs and are visible from the river. On the west bank of the river are a couple housing developments that have direct river access. The corridor is mostly wooded with high banks on the east side.

- **Site Selection.** The matrix shows the area southwest of the bridge as the preferred site. The southeast site is also very compatible. The area northwest of the bridge is undesirable for the extensive wooded areas, low visibility and difficulty of access from West Dodge Road. The area northeast of the bridge contains very little wooded area and mostly agricultural land. The areas to the south of the bridge have the best potential for a canoe landing area. The area to the southeast has great potential with a large wooded area and adjacent open space. It also has great visibility. Access would require extensive work, but less than the southwest. Also, with Skyline Drive currently under construction, access to the southeast site could be completed sooner than access from 228th Street for the southwest site. There is a potential for wetland issues at the southeast site. The southeast site is potentially out of the floodway, whereas all the other sites are in it. The southwest has a large wooded area, close proximity to agriculture land and good site visibility. The bank contains a large sandbar, which would allow canoeists to stop and rest, or just to stage canoes while loading/unloading them. With the intersection of 228th Street to be under construction before 2006, temporary site access will be required until completion.

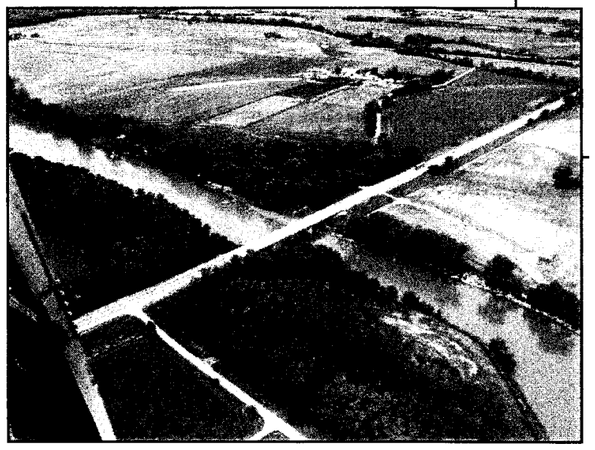


SITE SELECTION NARRATIVES ■ CONT.

US HIGHWAY 275 & 92 / WEST CENTER ROAD

- **Segment Description** The intersection of the Elkhorn River and US Hwy 275 / West Center Road is the next downstream study area. Nearby communities include Waterloo, Elkhorn, West Omaha. The area around this intersection is mostly Ag/Wooded to the northwest, Residential/Wooded to the northeast and southwest and Wooded/Open Pasture to the southwest. The daily volume of this roadway is 7,700 vpd, which is the third busiest intersection in the study. Currently, access from the roadway would be minimal, however the road will be reconstructed from 2005 to 2007. This may impact the controlled access from the highway. This site is downstream 2.8 river miles from West Dodge Road and upstream 2.2 river miles from Q Street. Its proximity to West Maple, West Dodge and Q Street is excellent as it provides an area for canoeists to take a break. It contains many nice views of tall natural stone bluffs rising out the east riverbank. There is a balance of wooded bank and banks open to pastures and agricultural land. The banks are mostly soil with the exception of the large number of residences that line the east bank of this segment. There are a few brush/debris piles and the segment is straight and easy to navigate. This segment is fairly quiet as you move from West Center Road towards Q Street. With the steep bluffs and gentle water, this is a very enjoyable segment of the river.

- **Site Selection.** The matrix shows the area southeast of the bridge as the preferred site. The area southwest of the bridge contains a residence, providing very little available land and little visibility. The area to the northwest of the bridge is primarily agricultural with very little tree cover. The bank also contains large amounts of debris and rock. The area to the northeast has multiple uses from commercial to residential. It also has a large amount of riprap on the bank that continues upstream. The area to the southeast is the most compatible with the characteristics for recreational use. The southeast site is out of the floodway, is mostly wooded and has an adjacent open space / pasture and is on the channel side. Site visibility is good and access from the highway may require moderate work until reconstruction. The characteristics of the site have more potential than any of the other three. Based upon meeting with the land owner, site acquisitions will be unlikely due to future land use. The second best option will be the northeast site.



SITE SELECTION NARRATIVES ■ CONT.

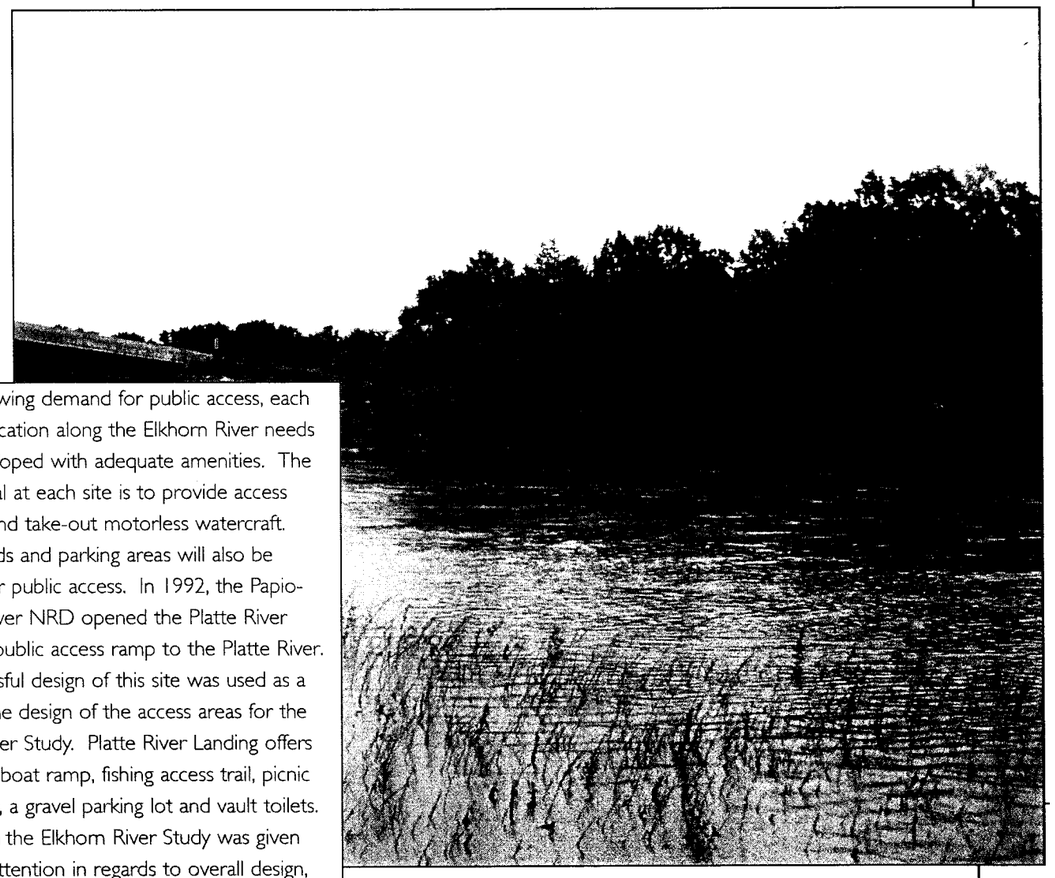
WEST Q STREET NEAR 245TH STREET

■ **Segment Description** The intersection of the Elkhorn River and West Q Street is the southernmost access area in the study. Nearby communities include Gretna, Elkhorn and West Omaha. The area around the intersection is wooded/residential to the southwest, wooded/hunting to the northwest, wooded/residential to the northeast and wooded/road R.O.W to the southeast. The daily volume of this roadway is 300-500vpd, which is the lowest of all six locations. There are no controlled access issues for Q Street. Currently no parking or canoe access exists, but observations show that people use the area along 245th Street. Access to the southeast site may require a one-way access because of the narrow area between the road and the river and the steep riverbank. This site is 2.2 river miles downstream from West Center Road, 7 river miles upstream from the confluence with the Platte River and 17.3 river miles upstream from Schramm State Park.

■ **Site Selection.** This landing was determined to function as canoe take-out area only, since no access areas south of here were selected for the study and because of the increased distance to the next canoe landing at Schramm State Park. The matrix shows the area northwest of the bridge as the preferred site, however because of its proximity to the private hunting grounds, it was not chosen. The area southwest of the bridge has an existing residence on it, making it less desirable. The northeast area is the least desirable because of its proximity to residential / commercial use and because of the ravine that drains into the river. The area northwest of the bridge is best suited for the take out because of its land characteristics and existing access. The land is flat, wooded and in good proximity to the average flow line. The one major disadvantage of this site is that it is on a private hunting ground. The proximity to Q Street and the buffer between the potential canoe landing area and the hunting area may be a safe distance. More research may be needed if this site is to be used. The area to the southeast has very limited available land. As you travel south on 245th Street, there becomes more useable space between the river and the road. Approximately one-half mile south on 245th Street is an undeveloped area used currently to access the river. This area would require unique access and would have to be one way. The site contains a large elevation change between the river and the road. Minimal site clearing would need to take place for a new access drive.

Design Solutions

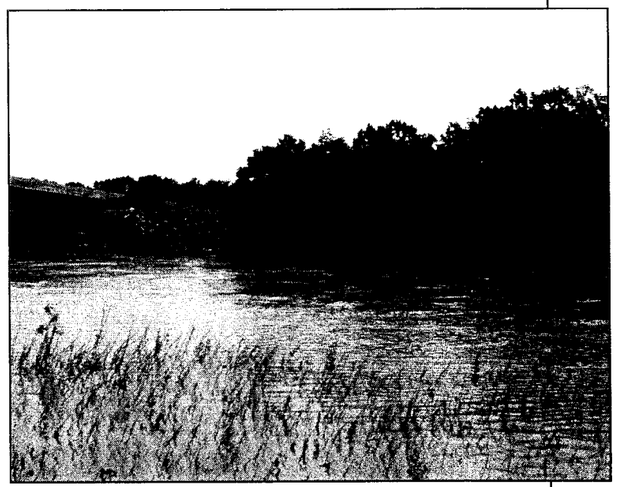
DESIGN SOLUTIONS FOR THE ELKHORN RIVER ACCESS STUDY



With a growing demand for public access, each potential location along the Elkhorn River needs to be developed with adequate amenities. The primary goal at each site is to provide access to launch and take-out motorless watercraft. Access roads and parking areas will also be required for public access. In 1992, the Papio-Missouri River NRD opened the Platte River Landing, a public access ramp to the Platte River. The successful design of this site was used as a model in the design of the access areas for the Elkhorn River Study. Platte River Landing offers a concrete boat ramp, fishing access trail, picnic tables, grills, a gravel parking lot and vault toilets. Each site in the Elkhorn River Study was given individual attention in regards to overall design, while amenities at each site were to be similar to those at the Platte River Landing.

DESIGN SOLUTIONS FOR US HIGHWAY 30 NEAR ARLINGTON, NEBRASKA

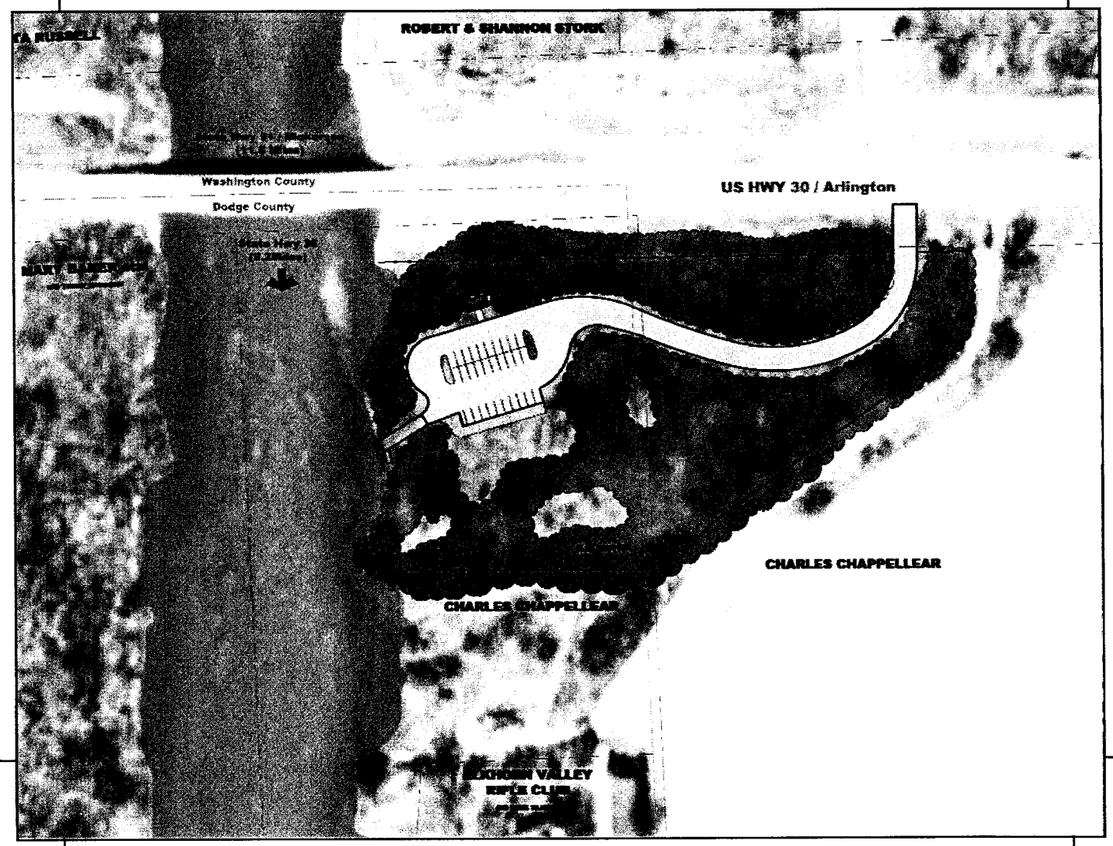
US Highway 30 near Arlington is the northernmost access in the study area. At US Highway 30, the southeast quadrant proved to be the optimal choice for public access. The adjacency to the roadway is excellent, providing for good visibility. The adjacent land uses include agriculture use and a rifle range. Initially, there was concern with regards to the rifle range, however since the rifle range faces away from the potential design area and plenty of buffer space is provided within the forested site, the southeast quadrant was chosen as the best place. An access road other than the existing road used for the rifle range most likely will be required. All access from roadways shall be reviewed with Nebraska Department of Roads (NDOR) prior to final design. The entire site contains mature forested areas with good understory. Any development at this site would require demolition of trees, but the mature and dense growth of surrounding areas will provide excellent protection to the new recreation area. The topography at this site is very desirable due to the fact it is higher near the roadway sloping downward to the south. This allows the vault toilets to be elevated from the river's flow line. It also allows better transition for the canoe ramp due to its relation to the flow line and being in close proximity to the river current. Provided amenities shall be as follows: signage, access road, concrete ramp for river access, parking, fencing, vault toilets and picnic units including table and grill on a concrete pad.



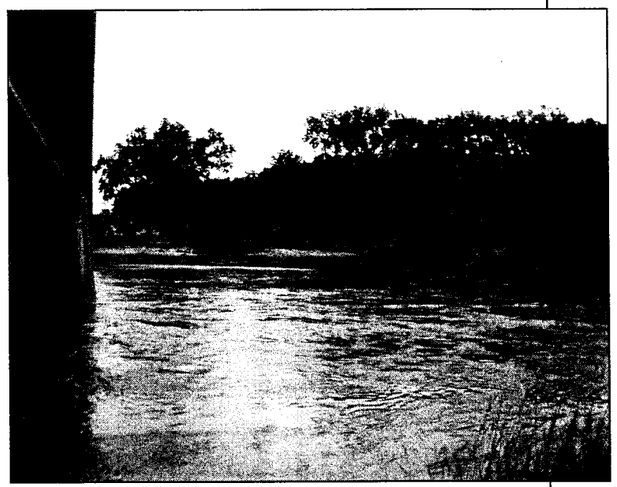
SITE CHARACTERISTICS

Land Area - Needed:	5 acres
Landowner Contacted:	Unable to contact at time of study
Permits Needed:	Section 404/Section 10 Permit
Probable Construction Cost:	$157,021 (See appendix for itemized cost)
Distance to next access area:	9.2 river miles / 3-4 hours (State Highway 36)

US HIGHWAY 30 NEAR ARLINGTON, NEBRASKA ■ CONT.



DESIGN SOLUTIONS FOR STATE HIGHWAY 36

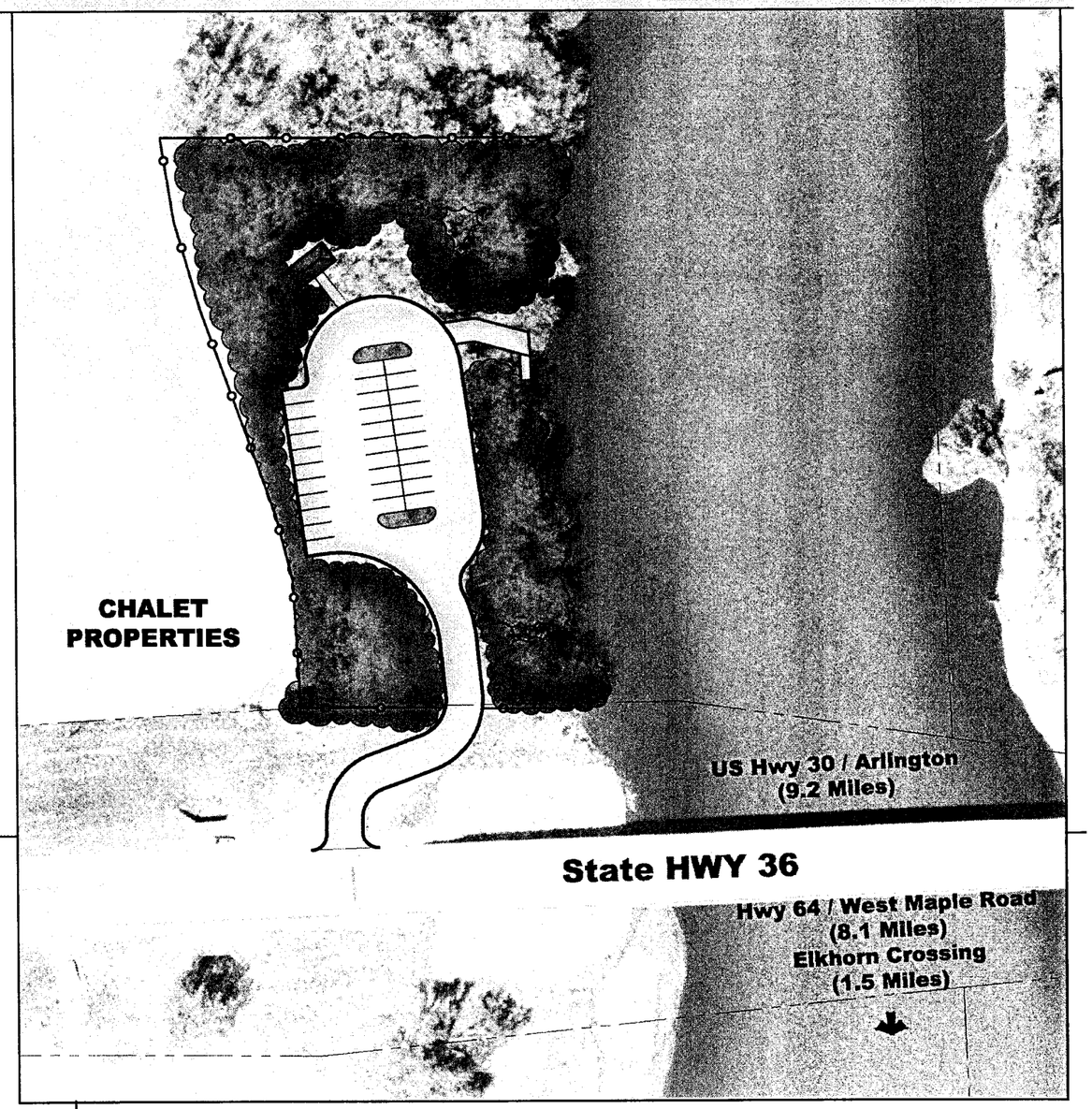


The northwest quadrant of State Highway 36 was chosen as the optimal site for public access. Of the four quadrants at this location, the northwest is the only without residential housing. As compared to the southwest quadrant, the second choice, the northwest quadrant provides more wooded area, which is a very desirable feature at all potential locations. There appears to be current access provided from the roadway, but final approval shall be by NDOR prior to the final design of the recreation area. There is an existing box culvert under the roadway located just west of the proposed site access that should be considered. With the close adjacency to the roadway, excellent site visibility is achieved. The site is in good proximity to users from all area population centers. The distance to other access areas upstream and downstream also make this location desirable for half and full day trips. This potential site lies in good proximity to river flow line and current. The bank material consists of a sand/soil material that is desirable. The entire recreation area should be within the limits of the existing tree cover. Although demolition of trees will need to occur for construction, the finished area will have excellent protection provided from the remaining forested areas. The design takes on a more linear shape due to the limited amount of area available. Amenities to this location shall include signage, access road, concrete ramp for river access, parking, fencing, vault toilets and picnic units including table and grill on a concrete pad.

SITE CHARACTERISTICS

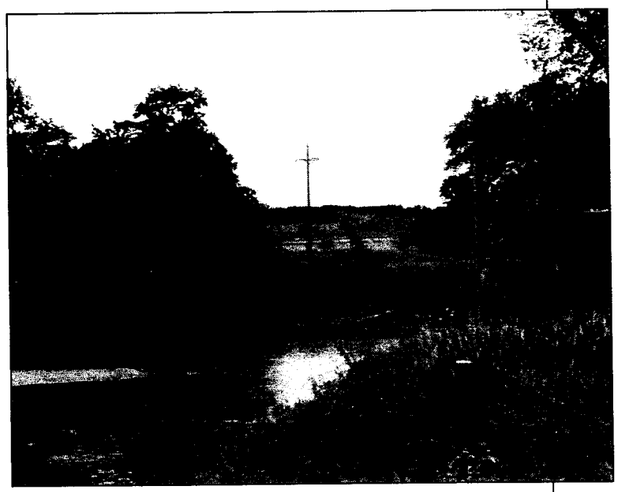
Land Area - Needed:	1.75 acres
Landowner Contacted:	Yes, no decision on land acquisition at time of study.
Permits Needed:	Section 404/Section 10 Permit
Probable Construction Cost:	$134,019 (See appendix for itemized cost)
Distance to next access area:	1.5 river miles / 1 hour (Elkhorn Crossing) 8.1 river miles / 2-3 hours (Hwy 64 / West Maple Road)

STATE HIGHWAY 36 ■ CONT.



DESIGN SOLUTIONS FOR STATE HIGHWAY 64 / WEST MAPLE ROAD

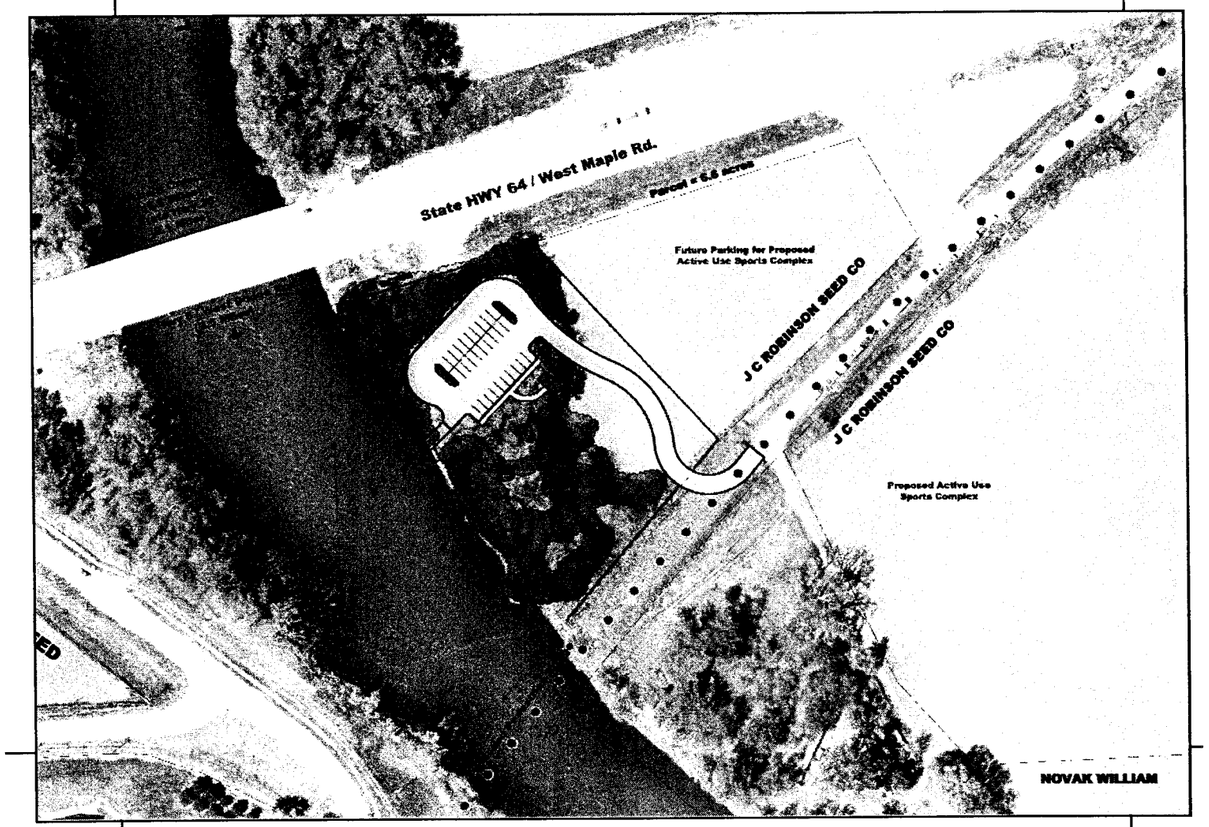
State Highway 64 / West Maple Road provides the best opportunity of the six locations in the Elkhorn River Access Study for development into a recreation area for public access. Available land area, high visibility, existing adjacency / access from the roadway and the potential of a future trail/pedestrian bridge and active use sports complex all complement any future public access area at this location. This site is within excellent proximity of population centers and has potential for very high visibility with its given adjacency to West Maple Road. The southeast site proved to be the most compatible for potential access area. Given the available land and the proposed future use of adjacent properties, it was determined the recreation area should be placed inside the wooded area along the river. Current access from West Maple Road is available using the old Highway 64 right of way. The access road was placed outside the wooded area to decrease the amount of tree and vegetation removal. While some tree clearing will need to occur for construction, the finished area will have excellent protection provided from the remaining forested areas. The bank materials vary from sand/soil to riprap. The site also sits well above the flow line, potentially protecting it from high water conditions. A longer ramp may be required due to this difference in elevation. This site should provide facilities desirable for day use activities such as river access, trail access and picnicking. Amenities required are signage, access road, concrete ramp for river access, parking, fencing, vault toilets and picnic units including table and grill on a concrete pad.



SITE CHARACTERISTICS

Land Area - Needed:	3 acres
Landowner Contacted:	Yes. Owner willing to provide land as needed.
Permits Needed:	Section 404/Section 10 Permit
Probable Construction Cost:	$145,257 (See appendix for itemized cost)
Distance to next access area:	2.5 river miles / 1 hour (West Dodge Road)

STATE HIGHWAY 64 / WEST MAPLE ROAD ■ CONT.



DESIGN SOLUTIONS FOR LINK 28B / WEST DODGE ROAD

Potential public access at West Dodge Road yielded two sites, both on the south side of the bridge. The largest obstacle in development of these sites will be access from West Dodge Road. The NDOR will not grant vehicle access from Dodge Street, therefore it must be provided from Lacy Drive at the southeast quadrant, or from 228th Street at the southwest quadrant. With a longer access road, the construction cost for this location is significantly increased. However, West Dodge Road has the largest amount of daily traffic of all the locations in the study area, which would provide excellent visibility and awareness of the recreation area. Public access at this location will also provide adequate parking for the large demand of fishing access. These sites also are in proximity to planned trails on 228th Street and Skyline Drive. The southeast and southwest sites were both used in the design of a recreation area due to the similar nature of both sites. Future adjacent land use and potential future access may help determine which site would be more suitable. Amenities required at both locations are signage, access road, concrete ramp for river access, parking, fencing, vault toilets and picnic units including table and grill on a concrete pad.

The southwest quadrant was the preferred choice according to the site selection matrix. This particular site would require the longest access road of all locations, however, the site

SITE CHARACTERISTICS

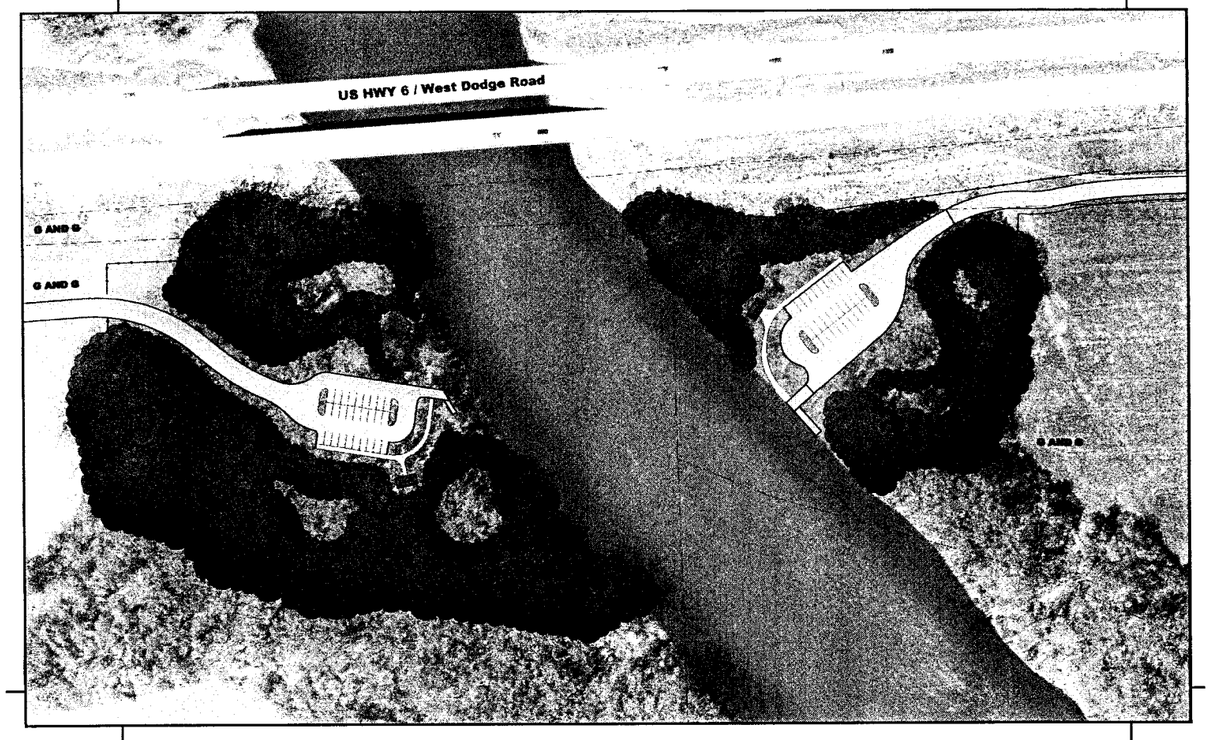
Land Area - Needed:	4.75 acres/Southeast Quad, 7 acres/Southwest Quad
Landowner Contacted:	Yes. Landowner is willing to provide land as needed.
Permits Needed:	Section 404/Section 10 Permit
Probable Construction Cost:	$178,735/Southeast Quad, $221,153/Southwest Quad
Distance to next access area:	2.8 river miles / 1 hour (West Center Road)

LINK 28B / WEST DODGE ROAD ■ CONT.

itself provides all the characteristics desired for public access and recreation development. The available area is more than required for this site, so the design had no restrictions. This site slopes up as you move west from the river and the bank material is soil/sand as well as some riprap. This particular site has an excellent view of the bluffs rising from the river downstream. Picnic areas should be placed to take advantage of the view downstream when possible. This site contains forested areas with good understory. Tree clearing will occur prior to construction. The overall impact to forested areas should be minimized when possible.

The southeast quadrant was the second choice, according to the matrix. This site provides characteristics that are very desirable for public access. Adjacent land use is currently open meadow with forested areas to the south. The elevation of the site in relation to the river flow line is desirable and provides good protection from rising waters. The river channel at West Dodge Road fluctuates often, which should not impact the overall design of the access ramp. This site would have a more open feel than most of the other sites due to lack of tree cover. The future vehicle access route may impact the design. Currently, vehicle access is shown parallel to West Dodge Road. A tree buffer will also want to protect this site from traffic noise.

LINK 28B / WEST DODGE ROAD ■ CONT.



DESIGN SOLUTIONS FOR US HIGHWAY 275 & 92 / WEST CENTER ROAD

At US Highway 275/92 and West Center Road future public access has good potential. Of the six locations identified in the study, this site may be the least desirable due to land availablity. Adjacency to the roadway, high traffic volume and good visibility all suggest this site as an ideal location. The optimal site for new public access is at the southeast quadrant. It contains excellent tree cover and relation to the river flow line and current. Following meetings with the landowner, it is unlikely land acquisition will occur due to future land use plans adjacent to the proposed public access area. Therefore, the northwest site was studied for potential access.

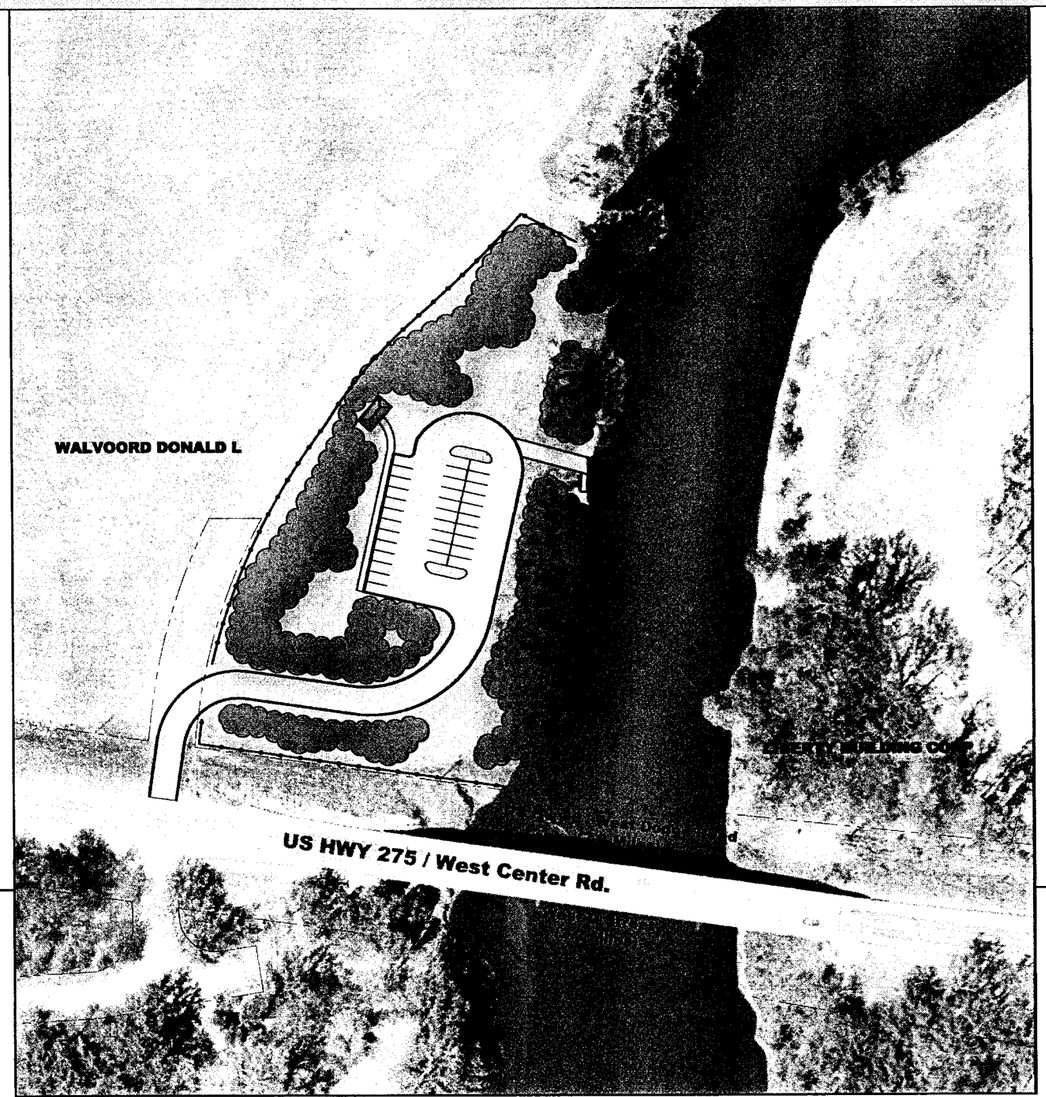
The northwest site presented many challenges in the design process. This site had negative aspects such as lack of significant tree cover, existing agricultural use and bank material. Available land area, available access from the roadway and the flat terrain were positive features. Of all the locations in the study, this site would require the most landscaping in order to provide shade and screening from West Center Road.

There is currently an overhead line with poles that are located on the proposed site providing service to a property about one-quarter mile upstream. Relocation of the service may have to occur prior to developing site. The site is desirable for it's ability to look upstream at the high bluffs. Good site distance is also provided for users of the river to see the landing area when approaching

SITE CHARACTERISTICS

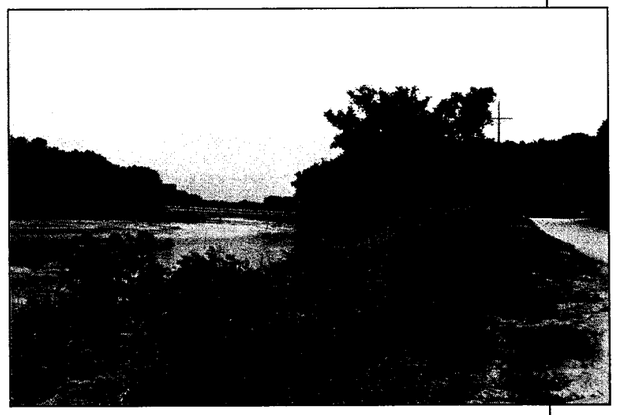
Land Area - Needed:	2.6 acres
Landowner Contacted:	No contact has been made at time of report
Permits Needed:	Section 404/Section 10 Permit
Probable Construction Cost:	$136,778 (See appendix for itemized cost)
Distance to next access area:	2.8 river miles / 1 hour (West Q Street)

US HIGHWAY 275 & 92 / WEST CENTER ROAD ■ CONT.



DESIGN SOLUTIONS FOR 245TH NEAR WEST Q STREET

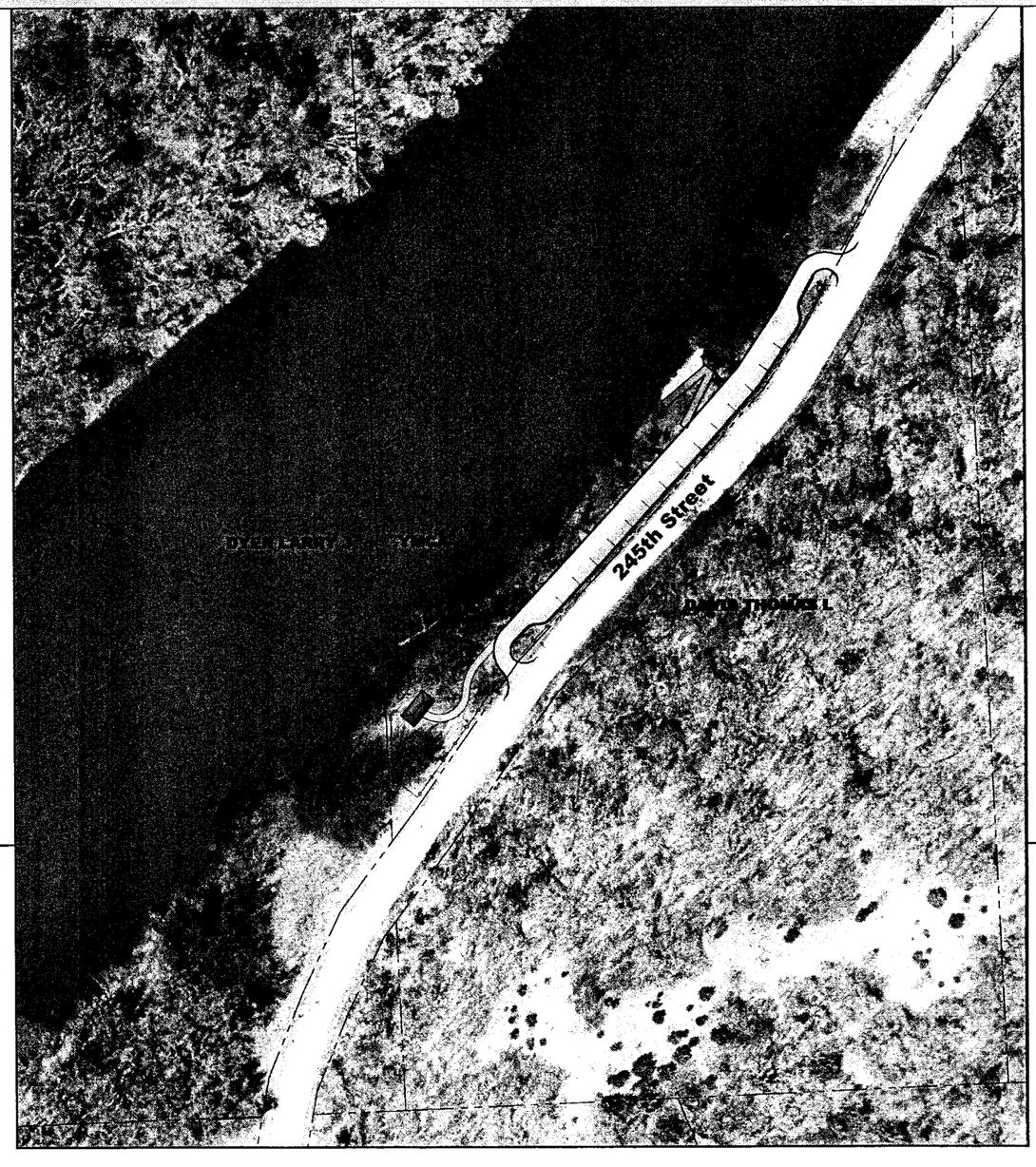
Access at 245th Street near West Q was one of the more challenging areas to provide access. It was determined that the southeast quadrant was the optimal choice, however sufficient land area adjacent to the Q Street roadway was unavailable. This unavailability was due to a narrow shoreline because of 245th Street running parallel with the Elkhorn River. Due to limited space to provide full day use activities, this location would be designed as a take-out facility only. Field measurements were taken to help identify if access could be provided, but the distance between the road and river were too narrow to provide safe access due to dangerous vehicle sightlines and an unsafe vehicle turn around radius. After canoeing the Elkhorn River, the appropriate site at this location revealed itself downstream one-half mile from West Q Street on the east riverbank. With a take out facility, there is a decreased demand on parking and picnic areas, which decreases the land area needed. Due to the narrow site and vehicle sight lines, this was designed with one-way access only. Amenities at this site include a concrete ramp, access drive / parking, fencing and vault toilets. A retaining wall with guardrails will most likely be required due to the large difference in elevation of the roadway in relation to the river flow line. There is also available land to the south for any expansion of this area into a full day use area. The take-out location at 245th Street is important to the overall goal of the Elkhorn River Access Study. It provides users with a convenient place to take out if they are interested in a half-day trip from West Maple or West Dodge Streets, a full day trip from Highway 36 or even a multiple day trip from further upstream. The Elkhorn joins the Platte River about 6 miles south of West Q Street.



SITE CHARACTERISTICS

Land Area - Needed:	1.25 acres
Landowner Contacted:	Yes. Landowner is willing to provide land as needed.
Permits Needed:	Section 404/Section 10 Permit
Probable Construction Cost:	$175,831 (See appendix for itemized cost)
Distance to next access area:	17.3 river miles (Schramm State Park)

245TH NEAR WEST Q STREET ■ CONT.



Project Funding Assistance

PROJECT FUNDING ASSISTANCE

The unique nature of this project fits well with several potential funding assistance grants and likewise, detracts from the likelihood of obtaining funding from others. Our team has met with local, State and Federal entities to attempt to identify all potential funding assistance avenues. A list of the funding programs with potential to contribute significant dollars is presented below.

Land and Water Conservation Fund (LWCF)
The LWCF program provides matching grants up to 50% of the total project costs to States and local governments for the acquisition and development of public outdoor recreation areas and facilities. The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities and to stimulate non-federal investments in the protection and maintenance of outdoor recreation resources across the United States.

The LWCF is administered locally by NGPC, but authorized by the National Park Service. It will, therefore, require NEPA documentation and other federal guidelines to be followed through the planning process.

Trail Development Assistance Fund (TDA)
The TDA fund provides grant assistance up to 50% of the total project cost for the development of trails and their facilities. The fund is administered by NGPC at the State level. Still, fund information indicates that an in-depth environmental assessment be conducted.

Recreational Trails Program (RTP)
The Recreational Trails Program (RTP) is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). Federal transportation funds benefit recreation by making funds available to the States to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses.

RTP funds are distributed to the States by legislative formula. Half of the funds are distributed equally among all States, and half are distributed in proportion to the estimated amount of nonhighway recreational fuel use in each State-fuel used for off-highway recreation by snowmobiles, all-terrain vehicles, off-road motorcycles, and off-road light trucks.

RTP, like TDA provides grant assistance up to 80% of the total project cost for the development of trails and their facilities. The fund is administered by NGPC at the State level, providing funds through the U.S. Department of Transportation's Federal Highway Administration. Additionally, it will require NEPA documentation and other federal guidelines to be followed through the planning process.

Wallop-Breaux Dingell-Johnson Sport Fish Restoration Fund
The Wallop-Breaux Dingell-Johnson Sport Fish Restoration Fund (Referred to as DJ hereto) is administered by the U.S. Fish and

PROJECT FUNDING ASSISTANCE ■ CONT.

Wildlife Service (USFWS), handled on the local level by NGPC Fisheries and provides funding for facilities that enhance the habitat for sport fish. The total grant available is 75% of total project costs applicable to the grant's goals.

While providing additional canoeing access increases the opportunities for sport fishing, it could be argued that sport fish are rare, and warm-water species would dominate the fish population. Additionally, DJ is funded through fuel taxes on the Federal level and is therefore geared towards increasing opportunities for boats with internal combustion engines. Motorboats and Airboats are certain to comprise a percentage of the use on the Elkhorn River, and that percentage would have to be used to prorate funds for the facilities requesting grant assistance. At the current time, Nebraska Game and Parks Commission (NGPC) officials believe that percentage may be around ten percent. Therefore, the grant may not be best suited for this project.

In addition, all federal grant money will require that the planning process for the projects adhere to National Environmental Protection Act (NEPA) guidelines. This will add significant costs to the alternatives analysis and environmental investigations.

15% of each State's allocation must be spent on Motorboat Access facilities associated with the project.

Five Star Restoration Program

The National Association of Counties, the National Fish and Wildlife Foundation, and the Wildlife Habitat Council, in cooperation with the U.S. Environmental Protection Agency (EPA), the Community-Based Restoration Program within NOAA Fisheries, and other sponsors (e.g., Office of Surface Mining), solicit applications for the Five-Star Restoration Matching Grants Program. The Five-Star Restoration Program provides modest financial assistance on a competitive basis to support community-based wetland, riparian, and coastal habitat restoration projects that build diverse partnerships and foster local natural resource stewardship through education, outreach and training activities. In 2003, 56 projects received grants of on average $10,000 out of approximately 240 applications received.

The grant has been used by the National Park Service on canoe trail projects across the Midwest.

Outside of these structured grant programs, opportunities may exist on more local levels including municipalities, grass roots environmental groups, charitable organizations and philanthropists aimed at providing additional recreational opportunities in this region.

Appendix

Elkhorn River Access Study

Site Analysis Matrix

Characteristics (Scale: 1 - Worst 5 - Best)	Q Street				West Center Road (US Highway 275/92)				West Dodge Road (Link 28B)				Maple Road (Highway 64)				State Highway 36				US Hwy 30 / Arlington			
	NW	NE	SW	**SE**	NW	NE	SW	**SE**	NW	NE	**SW**	SE	NW	NE	SW	**SE**	**NW**	NE	SW	SE	NW	NE	SW	**SE**
Existing Land Use	2	1	1	**5**	4	1	1	**5**	4	4	**5**	5	2	4	5	**4**	**4**	2	4	5	1	4	1	**4**
1 - Residential																								
2 - Commercial																								
3 - Agriculture																								
4 - Agriculture / Wooded																								
5 - Wooded																								
Adjacent Land Use	1	2	2	**5**	3	2	2	**4**	4	3	**3**	4	2	3	1	**3**	**3**	2	3	2	3	4	2	**3**
1 - Commercial																								
2 - Residential																								
3 - Agriculture																								
4 - Open / Pasture																								
5 - Wooded																								
Land Characteristics for Recreational Use	5	1	5	**5**	3	2	2	**5**	5	5	**5**	5	5	5	5	**5**	**5**	5	4	5	5	4	2	**5**
1 - Hilly / Rock / Debris																								
2 - Residential																								
3 - Agriculture																								
4 - Openspace																								
5 - Wooded / Flat																								
Bank Slope	3	1	3	**1**	3	1	3	**3**	5	3	**5**	3	3	3	3	**3**	**3**	3	3	3	3	1	3	**3**
1 - Steep Slope																								
3 - Average Slope																								
5 - Low Slope																								
Bank Material	5	4	4	**4**	2	5	5	**3**	5	3	**5**	5	5	5	5	**5**	**5**	5	1	5	5	1	5	**5**
1 - Rip-Rap																								
2 - Debris																								
3 - Debris / Clay																								
4 - Natural Stone / Soil																								
5 - Sand / Soil																								
Channel Side	3	3	3	**3**	5	1	1	**5**	3	5	**5**	5	3	3	3	**3**	**5**	1	5	1	1	5	1	**5**
1 - Opposite																								
3 - Middle																								
5 - Same																								
Visibility from Roadway	5	3	5	**5**	5	3	3	**5**	3	5	**5**	5	3	5	3	**5**	**5**	3	5	3	3	5	3	**3**
1 - Poor																								
3 - Good																								
5 - Excellent																								
Vehicle Access from Roadway	5	5	5	**5**	5	5	5	**3**	1	1	**1**	1	3	3	5	**5**	**3**	3	3	3	3	5	5	**5**
1 - Difficult																								
3 - Moderate																								
5 - Easy																								
Distance to Roadway Access	5	5	3	**5**	3	5	3	**5**	1	1	**1**	1	3	5	3	**5**	**5**	5	5	5	5	5	5	**5**
1 - >1500'																								
3 - <500'																								
5 - 500'-1500'																								
Distance to nearest facilities (Supplies)	3	3	3	**3**	3	3	3	**3**	3	3	**3**	3	5	5	5	**5**	**1**	1	1	1	5	5	5	**5**
1 - >5 miles																								
3 - 1-5 miles																								
5 - <1 mile																								
Area in Floodway	1	5	1	**5**	1	5	1	**5**	1	1	**1**	3	1	1	1	**1**	**1**	5	1	1	1	1	1	**1**
1 - Yes																								
3 - ??																								
5 - No																								
Elevation in Relation to Flow Line	5	1	5	**1**	5	5	5	**5**	5	5	**5**	3	1	5	1	**5**	**5**	1	5	3	1	5	5	**5**
1 - >10'																								
3 - <5'																								
5 - 5'-10'																								
Slope of Site	5	4	5	**2**	5	5	5	**5**	5	5	**5**	5	5	5	3	**5**	**5**	3	5	5	5	5	5	**5**
1 - Steep																								
3 - Some slope																								
5 - Flat																								
Total Points	48	38	45	**49**	47	43	39	**56**	45	44	**49**	48	41	52	43	**54**	**50**	39	45	42	41	50	43	**54**

Elkhorn River Access Study
Inventory & Analysis

Site: Q Street

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Wooded / Hunting	Wooded / Residential	Wooded / Residential	Wooded / R.O.W.
Bank Slope	2:1	1:1	2:1	1:1
Bank Material	Rip-Rap / Soil	Soil / Natural Stone	Soil	Soil / Natural Stone
Channel Side	Centered	Centered	Centered	Centered
Distance to Highway Access	490'	560'	290'	60' (245th Street)
Distance North to Next River Access (River Miles) (US Hwy 275)	2.2 miles	2.2 miles	2.2 miles	2.2 miles
Distance South to Next River Access (River Miles) (Scrhamm SRA)	17.3 miles	17.3 miles	17.3 miles	17.3 miles
Distance to Nearest Facilities (Provisions) (264th & West Center Road)	3.5 miles	3.5 miles	3.5 miles	3.5 miles
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	Wetlands	No	No	No
Bank Elev Below 100 Year Flood Elev	14' (VFY)	3'	14' (VFY)	0
Bank Elevation Above Average Flow	5'	16'	5'	16'
Slope of Site	Flat	Flat with Ravine	Flat	Bluff / River Bank
Available Land Area	2.2 acres	2 acres	.6 acres	0 acres

Comments: Very heavy truck traffic - Gravel trucks
South East side would be impossible to build on because of terrain

Elkhorn River Access Study
Inventory & Analysis

Site: US Highway 275 / West Center Road

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Agriculture	Residential, Construction, Business	Residential	Wooded / Pasture
Bank Slope	1:1	1:1 - Vertical	1:1	1:1
Bank Material	Rip-Rap/Soil	Soil	Soil	Soil (VFY)
Channel Side	Yes	No	No	Yes
Distance to Highway Access	300'	410'	300'	410'
Distance North to Next River Access (River Miles) (US Hwy 6 / West Dodge Road)	2.8 miles	2.8 miles	2.8 miles	2.8 miles
Distance South to Next River Access (River Miles) (Q Street)	2.2 miles	2.2 miles	2.2 miles	2.2 miles
Distance to Nearest Facilities (Provisions) (264th & West Center Road)	2.8 miles	2.8 miles	2.8 miles	2.8 miles
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	No	Wetlands	No	Wetlands
Bank Elev Below 100 Year Flood Elev	4'	4'	4'	4'
Bank Elevation Above Average Flow	8'	8'	8'	8'
Slope of Site	Flat	Flat	Flat	Flat
Available Land Area	2.86 acres	2.8 acres	1 acres	3.5 acres

Elkhorn River Access Study
Inventory & Analysis

Site: US Highway 6 / West Dodge Road

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Wooded/Agriculture	Agriculture/Wooded	Wooded/Agriculture	Wooded/Pasture
Bank Slope	3:1	1:1	3:1	1:1
Bank Material	Soil	Soil	Soil	Soil
Channel Side	No	Yes	No	Yes
Distance to Highway Access	2200'	2250'	2250'	2200'
Distance North to Next River Access (River Miles) (State Hwy 64 / West Maple Road)	2.5 miles	2.5 miles	2.5 miles	2.5 miles
Distance South to Next River Access (River Miles) (US 275 / West Center Road)	2.8 miles	2.8 miles	2.8 miles	2.8 miles
Distance to Nearest Facilities (Provisions) (Elkhorn)	2 miles	2 miles	2 miles	2 miles
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	Wetland	No	No	Wetland
Bank Elev Below 100 Year Flood Elev	7'	5'	7'	5'
Bank Elevation Above Average Flow	10'	8'	10'	8'
Slope of Site	Flat	Flat	Flat	Flat
Available Land Area		4 acres		5.1 acres

Elkhorn River Access Study
Inventory & Analysis

Site: State Highway 64 / West Maple Road

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Residential	Agriculture/Wooded	Wooded	Agriculture/Wooded
Bank Slope	1:1	1:1	1:1	1:1
Bank Material	Soil	Soil	Soil	Soil
Channel Side	Centered	Centered	Centered	Centered
Distance to Highway Access	290'	1400'	290'	1400'
Distance North to Next River Access (River Miles) (Elkhorn Crossing)	6.6 miles	6.6 miles	6.6 miles	6.6 miles
Distance South to Next River Access (River Miles) (US 6 / West Dodge Road)	2.5 miles	2.5 miles	2.5 miles	2.5 miles
Distance to Nearest Facilities (Provisions) (Waterloo)	1 miles	1 miles	1 miles	1 miles
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	No	No	No	No
Bank Elev Below 100 Year Flood Elev	3.5'	5.5'	3.5'	5.5'
Bank Elevation Above Average Flow	14'	12'	14	12
Slope of Site	Flat	Flat	Flat	Flat
Available Land Area	0	3.5 acres	1 acre	2.8 - acres (?)

Elkhorn River Access Study
Inventory & Analysis

Site: State Highway 36

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Agriculture	Residential/Wooded	Agriculture	Wooded
Bank Slope	1:1	1:1	1:1	1:1
Bank Material	Rip-Rap	Soil	Rip-Rap	Soil
Channel Side	Yes	No	Yes	No
Distance to Highway Access	175'	600'	400'	600'
Distance North to Next River Access (River Miles) (State Hwy 30 / Arlngton)	9.2 miles	9.2 miles	9.2 miles	9.2 miles
Distance South to Next River Access (River Miles) (Elkhorn Crossing)	1.5 miles	1.5 miles	1.5 miles	1.5 miles
Distance to Nearest Facilities (Provisions) (Bennington)	7.5 miles	7.5 miles	7.5 miles	7.5 miles
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	No	No	No	No
Bank Elev Below 100 Year Flood Elev	7'	7'	7'	7'
Bank Elevation Above Average Flow	11'	11'	11'	11'
Slope of Site	Flat	Flat with swale	Flat	Flat
Available Land Area	2.86 acres	1 acres	4 acres	8 acres

Elkhorn River Access Study
Inventory & Analysis

Site: US Highway 30 / Arlington

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Wooded / Residential	Pasture	Residential / Wooded	Wooded / Rifle Range
Bank Slope	1:1	.5:1	1:1	1:1
Bank Material	Rip-Rap Soil	Rip-Rap	Soil	Rip-Rap 100' South
Channel Side	No	Yes	No	Yes
Distance to Highway Access	725'	325'	725'	675'
Distance North to Next River Access (River Miles) (State Hwy 91 / Nickerson)	11.8 miles	11.8 miles	11.8 miles	11.8 miles
Distance South to Next River Access (River Miles) (State Hwy 36)	9.2 miles	9.2 miles	9.2 miles	9.2 miles
Distance to Nearest Facilities (Provisions) (Arlington)	1/2 mile	1/2 mile	1/2 mile	1/2 mile
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	No	No	No	No
Bank Elev Below 100 Year Flood Elev	7'	0'	7'	5'
Bank Elevation Above Average Flow	15'	22'	15'	17'
Slope of Site	Flat	Flat	Flat	Flat
Available Land Area	5.0 acres	5.5 acres	2.3 acres	7.5 acres

Comments: Area North of Bridge is in Washington County while area South of Bridge is in Dodge County.
NGPC website says there is possible access at the northeast side of the bridge.

Elkhorn River Access Study
Inventory & Analysis

Site: State Highway 91 / Nickerson

Characteristics	Northwest	Northeast	Southwest	Southeast
Land Use	Agriculture	Woods	Residential/Agriculture	Wooded
Bank Slope	1:1	2:1	.5:1	1:1
Bank Material	Soil	Soil	Rip-Rap	Soil
Channel Side	Yes	No	Yes	No
Distance to Highway Access	625'	900'	625'	900'
Distance North to Next River Access (River Miles) (State Hwy 81 / Winslow)	6 miles	6 miles	6 miles	6 miles
Distance South to Next River Access (River Miles) (US Hwy 30 / Arlington)	11.8 miles	11.8 miles	11.8 miles	11.8 miles
Distance to Nearest Facilities (Provisions) (Nickerson)	1 mile	1 mile	1 mile	1 mile
Site Distance East	Good	Good	Good	Good
Site Distance West	Good	Good	Good	Good
Potential Environmental Issues	No	Wetlands	No	Wetlands
Bank Elev Below 100 Year Flood Elev	0'	2'	0'	0'
Bank Elevation Above Average Flow	20	18	20	20
Slope of Site	Flat	Flat	Flat	Flat
Available Land Area				

Comments: Bridge and surrounding area is in Dodge County.
Possible access exist northeast of bridge, but may be difficult, according to NGPC website.

Elkhorn River Access Study
Inventory & Analysis

Elkhorn River Miles Chart

Locations (Launch Site)	River Miles (To next River Access)	Existing Access	Estimated Time	Notes
Norfolk	16	Southeast corner of TaHaZouka Park	6-7 Hours	
Stanton	9	Fairgrounds in Stanton	3-4 Hours	Not desirable
Red Fox WMA (Pilger Bridge)	8	East Side of Hwy 15, North side of River	3-4 Hours	Primitive Camping and Parking Available
Wisner River Park	16	Southwest side of Bridge	6-7 Hours	Good River access, Camping and Restrooms
West Point (Hwy 32 Bridge)	9	East Side of Westpoint Riverside Park	3-4 Hours	Camping and Restrooms
US 275 Bridge (Dead Timber WMA	6	Southeast side of Bridge	2-3 Hours	3 Miles to Dead Timber SRA
Scribner	8	Southwest side of Bridge	3-4 Hours	
Hooper	7	Southeast side of Bridge	3-4 Hours	Access not desirable because of roadway
State Hwy 81 / Winslow	6	Access and Egress Difficult	2.5-3 Hours	Access may be difficult.
State Hwy 91 / Nickerson	11.8	Northeast Side of Bridge	4-6 Hours	Access may be difficult.
US Hwy 30 / Arlington	9.2	Northeast	3-4 Hours	
State Hwy 36	1.5	West Side of River	1 Hour	Camping, Boat Ramp, Restrooms, Picnicking
Elkhorn Crossing	6.6	N/A	2-3 Hours	
Hwy 64 / West Maple Road	2.5	N/A	1 Hour	
US Hwy 6 / West Dodge Road	2.8	N/A	1 Hour	
US 275 / West Center Road	2.2	N/A	1 Hour	
Q Street - Schramm State Park	17.3	North Side of River	6-7 Hours	Modern / Primitive Camping Facilities
Scramm State Park - Louisville State Recreation Area	5	South Side of River	1.5-2.5 Hours	Modern / Primitive Camping Facilities

Bridge Data Chart

Bridge Location	Bridge Floor Elevation	Bridge Depth	B.O. Girder Elevation	High Water Elevation	Flow Line	Avg. Water Surface Elev
State Hwy 91 / Nickerson	1202.01-1202.74	5.53'	1196.48	1192.9	1170	1171
US Hwy 30 / Arlington	1175.4-1174.84	6.32'	1168.52	1165	1138.3	1143
State Hwy 36	1151.05-1152.2	5.68'	1145.37	1143.1	1124	
Hwy 64 / West Maple Road	1133.77-1133.11	6.11'	1127	1126.3	1107.9	1110.72
US Hwy 6 / West Dodge Road (Eastbound)	1127.92-1128.16	5.70'	1122.22	1120	1097.9	1102
US Hwy 6 / West Dodge Road (Westbound)	1127.83-1128.84	5.70'	1122.13	1120	1097.9	1102
US 275 / West Center Road	1123.44-1126.82	5.80'	1117.62	1113.6	1090.6	1091.6
Q Street - Platte River	1115.57-1117.07	5.725'	1109.85	1106.1	1088.94	1088.6

MEMO

OLSSON ASSOCIATES
ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS

2120 S. 72nd Street, Suite 1400
Omaha, Nebraska, 68124,
(402) 341-1116, Fax (402) 341-5895

Date: October 16, 2003
To: Kevin Strehle
From: Steve Garbe
Re: Elkhorn River Access Study

The following is a summary of the traffic advantages and disadvantages at each location:

Highway 30 – West of Arlington

Advantages

Due to the relatively low Average Daily Traffic volumes (5,410 vpd), minimal work would have to be done along Highway 30 to develop the site. In addition, the location of this site north of Omaha makes it more accessible to the residents of Fremont, Blair, and Arlington.

Disadvantages

The location of the site far from Omaha and the relatively lower ADT volumes may not attract the desired number of users. Furthermore, controlled access is an issue at the proposed entrance. A break in access would be required from NDOR Access Control Committee.

Rank (1-5): 3

Highway 36

Advantages

There are no controlled access restrictions along this segment of the roadway and access will be provided from an existing driveway. Like Highway 30, the relatively low ADT (5,695 vpd) will minimize the amount of work required along Highway 36. The location is still north of Omaha enough to attract residents of Fremont, Arlington, and Blair, as well as residents of the northern parts of Omaha.

Disadvantages

Box culverts located on both sides of the river under the highway create drainage issues on the land immediately adjacent to the river and highway (at the proposed site). This may constrain the access that can be provided to the site.

Rank: 4

Highway 64 (West Maple Road) – Between Waterloo and Elkhorn

Advantages

While there are some access restrictions, access would be provided at an existing driveway, so work along Highway 64 would be minimized. The location fits well with the future plan of a pedestrian bridge and trails along the river. This location also provides good visibility to motorists along an arterial roadway. Many of the roadway users are residents of Waterloo, Elkhorn, Valley, and Fremont.

Disadvantages

Because of the higher ADT (8,475 vpd), minor modifications to the turn lanes may be needed to accommodate the four-lane, divided roadway.

Rank: 5

Link 28B (West Dodge Road) – Between Skyline Drive and 228th Street

Advantages

Good visibility is provided along the roadway. This is the most heavily traveled roadway in the study area (11,685 vpd). Any access work that will be done will not affect West Dodge Road (since no access will be provided). Skyline Drive to the east is presently under construction and 228th Street to the west will be reconstructed before 2006.

Disadvantages

No access will be provided directly off West Dodge when its reconstruction is complete. Access will need to be provided at Skyline Drive (off Lacy Drive) or 228th Street (either at Wilson Avenue or a field access) more than ½ mile away.

Rank: 2

Highways 275 & 92 (West Center Road) – Between 222nd & 240th Streets

Advantages

This location also provides good visibility to an arterial roadway with approximately 7,700 vpd. There are no controlled access issues at the proposed entrance. The roadway is planned for reconstruction between 2005 and 2007.

Disadvantages

The existing steep grade along the roadway may require a substantial amount of work (turning lanes) to provide safe access to the site until reconstruction. In addition, more access restrictions may be implemented when construction is completed.

Rank: 3.5

Q Street – Near 245th Street

Advantages

Because this roadway is not a state route, there are no controlled access issues along the corridor or 245th Street (along the east side of the river). Any work on the roadway would cause little inconvenience due to the low ADT (300-500 vpd) in the area.

Disadvantages

There is no connection to Harrison Street or other roads to the south. Because the area is primarily undeveloped, the public may be unfamiliar with how to access it. The narrow width of the proposed site along 245th Street may require unique access (one-way circulation).

Rank: 3

Additional Information

Highway 36

Without the access control restrictions along Highway 36, the north and south quadrants west of the Elkhorn River could be developed with relative ease. Minor mitigation to existing field drives may be necessary once the boat/canoe access location is defined.

Link 28B (West Dodge Road) – Between Skyline Drive and 228th Street

Each of the quadrants (east/west bank of the river and north/south side of West Dodge Road) was evaluated for possible access. Nebraska Department of Roads will construct new interchanges at the intersections of 228th Street and Skyline Drive with West Dodge Road. Access to the river will be provided via frontage roads.

Along 228th Street, access control stops approximately 500 feet north of Wilson Avenue. Access could be provided at a proposed field drive located approximately 300 feet north of Wilson Avenue. Boat/canoe access from 228th Street will require a substantially longer frontage road than from the southeast side of the river.

As part of the Skyline Drive interchange project, Skyline Drive will be realigned north of West Dodge Road to avoid existing businesses. This realignment will create a substantially longer frontage road on the north side of West Dodge Road. South of West Dodge Road, access will be provided via Skyline Drive and Lacy Drive. Lacy Drive is located approximately 900 feet south of the West Dodge Road eastbound ramps.

Olsson Associates
2002 Average Daily Traffic Volumes & Controlled Access Locations
Elkhorn River Access Study

Location	ADT	Controlled Access Notes
Highway 91		
East of Nickerson	1,660	No CA east or west of the river.
Highway 30		
West of Arlington	5,410	CA extends 3000' west and 2000' east of the river.
East of Arlington	4,260	CA at proposed entrance.
		Aerial denotes unrestricted access points.
Highway 36		
West of Highway 31	5,695	CA east of Sta 402+00 (approx 1 mile east of river).
East of Highway 31	5,860	No CA at proposed entrance.
Hwy 64 (West Maple Road)		
at Waterloo	7,185	CA both east and west of river.
b/w Waterloo & Elkhorn	8,475	Driveway immediately east of river
		is not shown on ROW maps
Link 28B (West Dodge Rd.)		
near 228th Street	11,685	CA along West Dodge. Access only provided at
		Skyline Drive and 228th Street (future interchanges).
Hwys 275/92 (W. Center Rd.)		
East of 240th Street	7,765	CA 4300' west and 2200' east of the river.
West of Highway 31	9,015	No CA at proposed entrance.
Q Street		
estimated	300-500	No CA east or west of the river.
East of 204th Street	3,900*	Possible sites 0.5 and 1 mile south of Q St. on 245th St.
*From MAPA 2002		or 1 mile south of Q St. on 255th Street.

All ADTs are from NDOR 2002 Nebraska Highway Traffic Flow Map unless otherwise noted.
http://www.nebraskatransportation.org/maps/#traffvol
CA information based on NDOR ROW maps.

The primary environmental concerns along the Elkhorn River are impacts to wetlands, and removal of potential roosting or loafing trees for bald eagles.

Impacts to wetlands require a Section 404 permit from the Corps of Engineers, and may also require mitigation (replacement). Before final design, selected sites may require a wetland determination (a pedestrian survey and review of existing resources) to verify the presence or absence of wetlands. If a determination indicates that wetlands are present, a wetland delineation (detailed study and mapping of the boundaries) would be required. Wetlands can easily be avoided during final design, but if impacts were necessary, a Section 404 permit would be required. For small impacts, a Nationwide Permit can be obtained.

Impacts to bald eagle roost trees require avoidance, if possible, or replacement if they are removed. Trees that are at least 50 feet tall, or have a dbh (diameter at breast height) greater than 24 inches, and are located within 100 feet of open water, qualify as potential roost trees. Before final design, selected sites may require a cursory review of the trees on site to determine the potential for roosting or loafing sites for eagles.

For this phase, a desktop evaluation of 8 of the 24 sites was conducted. Existing resources, including published maps and aerial photography, were reviewed to determine the possibility of encountering either of the two primary concerns at each site.

In general, all sites will require, at least, a Section 404/Section 10 Permit from the Corps of Engineers for the construction of a Boat Ramp. If the proposed boat ramp meets the following conditions, it will qualify for a Nationwide Permit 36:

- The boat ramp requires a discharge of less than 50 cubic yards of concrete, rock, crushed stone or gravel into forms, or placement of pre-cast concrete planks or slabs.
- The boat ramp does not exceed 20 feet in width.
- The base material is crushed stone, gravel, or other suitable material
- The excavation for the ramp is limited to area necessary for site preparation and all excavated material is removed to upland.
- No material is placed in special aquatic sites, including wetlands. (the boat ramp cannot be placed in wetlands and qualify for this NWP)

Depending on the results of the wetland determination and delineations (as needed), additional permits may be required from the Corps for construction of access roads, parking areas and associated features. Except for the mapped wetland on the SE corner of HWY 275, the preliminary review of the remaining sites indicates a low potential for encountering any wetlands.

Hwy 30 (SE corner) There are no mapped wetlands, but a large number of trees on this site. Therefore, a wetland determination will be required to determine the presence or

absence of wetlands, and a tree survey will be required to determine the potential for bald eagle roosting and loafing sites.

Hwy 36 (NW corner) There are no mapped wetlands, but a large number of trees on this site. Therefore, a wetland determination will be required to determine the presence or absence of wetlands, and a tree survey will be required to determine the potential for bald eagle roosting and loafing sites.

Maple Road/Hwy 64 (SE corner) There are no mapped wetlands, but a large number of trees on this site. Therefore, a wetland determination will be required to determine the presence or absence of wetlands, and a tree survey will be required to determine the potential for bald eagle roosting and loafing sites.

Dodge Road/Hwy 6 (SW corner) There are no mapped wetlands, but a large number of trees on this site. Therefore, a wetland determination will be required to determine the presence of wetlands, and a tree survey will be required to determine the potential for bald eagle roosting/loafing sites. Additionally, there appears to be a stream that would be crossed by the long access road. This stream area would need to be inspected as well.
(SE corner) There are no mapped wetlands, and a limited number of trees on this site. Therefore, a wetland determination will be required to determine the presence or absence of wetlands, and a tree survey will be required to determine the potential for bald eagle roosting and loafing sites.

Hwy 275 (SE corner) There is one mapped forested wetland, and a large number of trees on this site. Therefore, a wetland determination will be required to verify the presence of wetlands, and a tree survey will be required to determine the potential for bald eagle roosting and loafing sites.
(NW corner) There are no mapped wetlands, and very few trees on this site. Therefore, a wetland determination will be required to determine the presence or absence of wetlands, and a limited tree survey may be required to determine the potential for bald eagle roosting and loafing sites.

Q Street (SE corner) There are no mapped wetlands and no trees on this site. It is very unlikely that wetlands occur on this site, or that any trees would be removed. Therefore only a windshield survey will need to be completed to verify this assumption.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: ELKHORN RIVER ACCESS STUDY

PROJECT #: 2823 US Highway 30 / Arlington Site Area 5.0 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 7,851.08	$ 7,851.08
			SUBTOTAL:	$ 7,851.08
DEMOLITION:				
Site Clearing	1.50	AC	$ 5,000.00	$ 7,500.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 7,500.00
EARTH WORK:				
Cut and Fill	2,485.00	CY	$ 3.25	$ 8,076.25
Scarify and Recompact	4,300.00	SY	$ 1.75	$ 7,525.00
Culverts	45.00	LF	$ 40.00	$ 1,800.00
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 17,761.25
PAVING:				
Rock Surfacing (Roadway/Parking)	4,300.00	SY	$ 7.00	$ 30,100.00
Concrete Accessible Parking Pad (7"	50.00	SY	$ 45.00	$ 2,250.00
Concrete Walks (5")	150.00	SY	$ 36.00	$ 5,400.00
Concrete Ramp (10'x50')	50.00	SY	$ 50.00	$ 2,500.00
			SUBTOTAL:	$ 40,250.00
SITE AMENITIES:				
Pit Toilet	1.00	EA	$ 16,000.00	$ 16,000.00
Picnic Units (Table and Grill on Pad)	4.00	EA	$ 1,500.00	$ 6,000.00
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	1,550.00	LF	$ 1.00	$ 1,550.00
Fencing (Perimeter)	1,600.00	LF	$ 4.00	$ 6,400.00
			SUBTOTAL:	$ 42,950.00
			SUBTOTAL:	$ 116,312.33
			CONTINGENCY (15%):	$ 17,446.85
			SOFT COSTS	$ 23,262.47

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 157,021.65

**Probable construction costs does not include land acquisition costs.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: ELKHORN RIVER ACCESS STUDY

PROJECT #: 2823 State Highway 36 Site Area 1.75 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 6,700.96	$ 6,700.96
			SUBTOTAL:	$ 6,700.96
DEMOLITION:				
Site Clearing	0.85	AC	$ 5,000.00	$ 4,250.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 4,250.00
EARTH WORK:				
Cut and Fill	1,300.00	CY	$ 3.25	$ 4,225.00
Scarify and Recompact	2,650.00	SY	$ 1.75	$ 4,637.50
Culverts	45.00	LF	$ 40.00	$ 1,800.00
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 11,022.50
PAVING:				
Rock Surfacing (Roadway/Parking)	4,300.00	SY	$ 7.00	$ 30,100.00
Concrete Accessible Parking Pad (7"	50.00	SY	$ 45.00	$ 2,250.00
Concrete Walks (5")	100.00	SY	$ 36.00	$ 3,600.00
Concrete Ramp (10'x50')	50.00	SY	$ 50.00	$ 2,500.00
			SUBTOTAL:	$ 38,450.00
SITE AMENITIES:				
Pit Toilet	1.00	EA	$ 16,000.00	$ 16,000.00
Picnic Units (Table and Grill on Pad)	4.00	EA	$ 1,500.00	$ 6,000.00
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	850.00	LF	$ 1.00	$ 850.00
Fencing (Perimeter)	750.00	LF	$ 4.00	$ 3,000.00
			SUBTOTAL:	$ 38,850.00
			SUBTOTAL:	$ 99,273.46
			CONTINGENCY (15%):	$ 14,891.02
			SOFT COSTS	$ 19,854.69

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 134,019.17

**Probable construction costs does not include land acquisition costs.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: **ELKHORN RIVER ACCESS STUDY**

PROJECT #: 2823 **Highway 64 - West Maple Road** Site Area 2.75 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 7,262.86	$ 7,262.86
			SUBTOTAL:	$ 7,262.86
DEMOLITION:				
Site Clearing	0.85	AC	$ 5,000.00	$ 4,250.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 4,250.00
EARTH WORK:				
Cut and Fill	2,500.00	CY	$ 3.25	$ 8,125.00
Scarify and Recompact	3,200.00	SY	$ 1.75	$ 5,600.00
Culverts		LF	$ 40.00	$ -
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 14,085.00
PAVING:				
Rock Surfacing (Roadway/Parking)	4,300.00	SY	$ 7.00	$ 30,100.00
Concrete Accessible Parking Pad (7"	50.00	SY	$ 45.00	$ 2,250.00
Concrete Walks (5")	225.00	SY	$ 36.00	$ 8,100.00
Concrete Ramp (10'x50')	55.00	SY	$ 50.00	$ 2,750.00
			SUBTOTAL:	$ 43,200.00
SITE AMENITIES:				
Pit Toilet	1.00	EA	$ 16,000.00	$ 16,000.00
Picnic Units (Table and Grill on Pad)	4.00	EA	$ 1,500.00	$ 6,000.00
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	600.00	LF	$ 1.00	$ 600.00
Fencing (Perimeter)	800.00	LF	$ 4.00	$ 3,200.00
			SUBTOTAL:	$ 38,800.00
			SUBTOTAL:	$ 107,597.86
			CONTINGENCY (15%):	$ 16,139.68
			SOFT COSTS	$ 21,519.57

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 145,257.10

**Probable construction costs does not include land acquisition costs.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: **ELKHORN RIVER ACCESS STUDY**

PROJECT #: 2823 **Link 28B / West Dodge Road** Southwest Site Area 7.0 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 11,057.69	$ 11,057.69
			SUBTOTAL:	$ 11,057.69
DEMOLITION:				
Site Clearing	1.00	AC	$ 5,000.00	$ 5,000.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 5,000.00
EARTH WORK:				
Cut and Fill	9,700.00	CY	$ 3.25	$ 31,525.00
Scarify and Recompact	11,700.00	SY	$ 1.75	$ 20,475.00
Culverts	45.00	LF	$ 40.00	$ 1,800.00
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 54,160.00
PAVING:				
Rock Surfacing (Roadway/Parking)	4,300.00	SY	$ 7.00	$ 30,100.00
Concrete Accessible Parking Pad (7"	50.00	SY	$ 45.00	$ 2,250.00
Concrete Walks (5")	200.00	SY	$ 36.00	$ 7,200.00
Concrete Ramp (10'x50')	55.00	SY	$ 50.00	$ 2,750.00
			SUBTOTAL:	$ 42,300.00
SITE AMENITIES:				
Pit Toilet	1.00	EA	$ 16,000.00	$ 16,000.00
Picnic Units (Table and Grill on Pad)	4.00	EA	$ 1,500.00	$ 6,000.00
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	900.00	LF	$ 1.00	$ 900.00
Fencing (Perimeter)	3,850.00	LF	$ 4.00	$ 15,400.00
			SUBTOTAL:	$ 51,300.00
			SUBTOTAL:	$ 163,817.69
			CONTINGENCY (15%):	$ 24,572.65
			SOFT COSTS	$ 32,763.54

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 221,153.89

**Probable construction costs does not include land acquisition costs.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: **ELKHORN RIVER ACCESS STUDY**

PROJECT #: 2823 **Link 28B / West Dodge Road** Southeast Site Area 4.75 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 8,936.78	$ 8,936.78
			SUBTOTAL:	$ 8,936.78
DEMOLITION:				
Site Clearing	1.00	AC	$ 5,000.00	$ 5,000.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 5,000.00
EARTH WORK:				
Cut and Fill	6,200.00	CY	$ 3.25	$ 20,150.00
Scarify and Recompact	7,400.00	SY	$ 1.75	$ 12,950.00
Culverts	45.00	LF	$ 40.00	$ 1,800.00
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 35,260.00
PAVING:				
Rock Surfacing (Roadway/Parking)	4,300.00	SY	$ 7.00	$ 30,100.00
Concrete Accessible Parking Pad (7"	50.00	SY	$ 45.00	$ 2,250.00
Concrete Walks (5")	200.00	SY	$ 36.00	$ 7,200.00
Concrete Ramp (10'x50')	55.00	SY	$ 50.00	$ 2,750.00
			SUBTOTAL:	$ 42,300.00
SITE AMENITIES:				
Pit Toilet	1.00	EA	$ 16,000.00	$ 16,000.00
Picnic Units (Table and Grill on Pad)	4.00	EA	$ 1,500.00	$ 6,000.00
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	700.00	LF	$ 1.00	$ 700.00
Fencing (Perimeter)	1,300.00	LF	$ 4.00	$ 5,200.00
			SUBTOTAL:	$ 40,900.00
			SUBTOTAL:	$ 132,396.78
			CONTINGENCY (15%):	$ 19,859.52
			SOFT COSTS (20%):	$ 26,479.36

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 178,735.66

**Probable construction costs does not include land acquisition costs.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: **ELKHORN RIVER ACCESS STUDY**

PROJECT #: 2823 **US Highway 275/92 - West Center** Site Area 2.6 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 6,838.94	$ 6,838.94
			SUBTOTAL:	$ 6,838.94
DEMOLITION:				
Site Clearing	1.00	AC	$ 5,000.00	$ 5,000.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 5,000.00
EARTH WORK:				
Cut and Fill	1,775.00	CY	$ 3.25	$ 5,768.75
Scarify and Recompact	3,200.00	SY	$ 1.75	$ 5,600.00
Culverts	45.00	LF	$ 40.00	$ 1,800.00
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 13,528.75
PAVING:				
Rock Surfacing (Roadway/Parking)	3,200.00	SY	$ 7.00	$ 22,400.00
Concrete Accessible Parking Pad (7"	50.00	SY	$ 45.00	$ 2,250.00
Concrete Walks (5")	150.00	SY	$ 36.00	$ 5,400.00
Concrete Ramp (10'x50')	50.00	SY	$ 50.00	$ 2,500.00
			SUBTOTAL:	$ 32,550.00
SITE AMENITIES:				
Pit Toilet	1.00	EA	$ 16,000.00	$ 16,000.00
Picnic Units (Table and Grill on Pad)	4.00	EA	$ 1,500.00	$ 6,000.00
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	1,000.00	LF	$ 1.00	$ 1,000.00
Fencing (Perimeter)	1,050.00	LF	$ 4.00	$ 4,200.00
			SUBTOTAL:	$ 40,200.00
LANDSCAPE:				
Trees	12.00	EA	$ 200.00	$ 2,400.00
Seeding	0.50	AC	$ 1,600.00	$ 800.00
			SUBTOTAL:	$ 3,200.00
			SUBTOTAL:	$ 101,317.69
			CONTINGENCY (15%):	$ 15,197.65
			SOFT COSTS (20%):	$ 20,263.54

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 136,778.89

**Probable construction costs does not include land acquisition costs.

PRELIMINARY

PROBABLE CONSTRUCTION COSTS

PROJECT NAME: **ELKHORN RIVER ACCESS STUDY**

PROJECT #: 2823 **Q Street, South on 245th Street** Site Area 1.25 Acres

ITEM	QUANTITY	UNIT	UNIT COST	TOTAL
MOBILIZATION:	1.00	LS	$ 8,791.56	$ 8,791.56
			SUBTOTAL:	$ 8,791.56
DEMOLITION:				
Site Clearing	0.25	AC	$ 5,000.00	$ 1,250.00
Miscellaneous Demo (site specific)		LS	$	$ -
			SUBTOTAL:	$ 1,250.00
EARTH WORK:				
Cut and Fill	750.00	CY	$ 3.25	$ 2,437.50
Scarify and Recompact	1,775.00	SY	$ 1.75	$ 3,106.25
Culverts		LF	$ 40.00	$ -
Riprap	12.00	TON	$ 30.00	$ 360.00
			SUBTOTAL:	$ 5,903.75
PAVING:				
Rock Surfacing (Roadway/Parking)	1,775.00	SY	$ 7.00	$ 12,425.00
Concrete Accessible Parking Pad (7"	45.00	SY	$ 45.00	$ 2,025.00
Concrete Walks (5")		SY	$ 36.00	$ -
Concrete Ramp (10'x50')	55.00	SY	$ 50.00	$ 2,750.00
			SUBTOTAL:	$ 17,200.00
SITE AMENITIES:				
Pit Toilet		EA	$ 16,000.00	$ -
Picnic Units (Table and Grill on Pad)		EA	$ 1,500.00	$ -
Canoe Dock	1.00	EA	$ 5,000.00	$ 5,000.00
Entry Gate	1.00	EA	$ 3,000.00	$ 3,000.00
Signage	1.00	LS	$ 5,000.00	$ 5,000.00
Bollards	700.00	LF	$ 1.00	$ 700.00
Fencing (Perimeter)	600.00	LF	$ 4.00	$ 2,400.00
Retaining Wall	2,800.00	SF	$ 28.00	$ 78,400.00
			SUBTOTAL:	$ 94,500.00
LANDSCAPE:				
Trees	12.00	EA	$ 200.00	$ 2,400.00
Seeding	0.25	AC	$ 1,600.00	$ 400.00
			SUBTOTAL:	$ 2,400.00
			SUBTOTAL:	$ 130,245.31
			CONTINGENCY (15%):	$ 19,536.80
			SOFT COSTS (20%):	$ 26,049.06

TOTAL PROBABLE CONSTRUCTION COST - SITE: $ 175,831.17

**Probable construction costs does not include land acquisition costs.

Memorandum

To: Programs, Projects, and Operations Subcommittee
From: Paul Woodward, Water Resources Engineer
Date: March 3, 2004
Re: Floodway Property Purchase at Elbow Bend

Fred and Janet Proksel submitted the attached Floodway Purchase Program Application dated October 16, 2003 to request that the District consider the purchase of their property located at 14010 Elbow Bend Road, Bellevue, NE (see attached map). According to the Flood Insurance Rate Map for Sarpy County, Panel 31153C 0135F, the property is located in a Zone AE floodway of the Missouri River.

Following receipt of this application, the District hired Ag One Appraisal on November 12, 2003 to perform an appraisal of the 1.11 acre property. In Mr. Kenneth L. Beckstrom's opinion, the market value of the property and improvements as of December 5, 2003 was $50,000. After receiving this report, District staff and legal council prepared the enclosed purchase agreement for this property. In addition, a title search and land surveyor's certificate were obtained for the parcel and are attached. All of these documents were forwarded to the Proksels for their consideration and a meeting is scheduled with them for Monday, March 8, 2004.

In summary, the District is proposing to purchase the property at 14010 Elbow Bend Road from Mrs. Proksel for $50,000.

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the enclosed Purchase Agreement with Mrs. Janet Proksel for the purchase price of $50,000.

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17.30

PAPIO-MISSOURI RIVER
NATURAL
RESOURCES
DISTRICT

8901 S, 154TH ST
OMAHA, NE 68138-3621
(402) 444-6222
FAX (402) 895-6543

FLOODWAY PURCHASE PROGRAM APPLICATION

Owner: Fred + Janet Proksel Phone: 402-293-1057

Address: 10510 Cedar Island Rd. Bellevue, Ne. ZIP 68123

Tenant: None. Phone: _____

Address: _____ ZIP _____

Applicant: Fred + Janet Proksel Phone: 402-293-1057

Address: 10510 Cedar Island Rd. Bellevue, Ne ZIP 68123

Address of Property: 14010 Elbow Bend Rd. ZIP _____

Legal Description of Property: Tax Lot 3B 17-13-14 C (1.11AC) La Platte

Size of Property: 1.11 Acres County Treasurer's Key No.: 010626190

According to Flood Insurance Map Panel 31153C 0135F effective 01-19-1995

the Property is located in a Zone AE floodway of the Missouri River

The Applicant requests the District to consider the purchase of the above described property in accordance with District Policy 17.30 (Floodway Purchase Program), and hereby requests the District to perform an appraisal of said property.

Applicant Signature: Janet Proksel Date 10-16-03
Fred Proksel

PAPIO-MISSOURI RIVER
NATURAL
RESOURCES
DISTRICT

8901 S. 154TH ST.
OMAHA, NE 68138-3621
(402) 444-6222
FAX (402) 895-6543
www.papionrd.com

February 27, 2004

Mrs. Janet Proksel
10510 Cedar Island Rd
Bellevue, NE 68123

RE: Purchase Agreement for 14010 Elbow Bend Road

Dear Mrs. Proksel:

In response to your application for Floodway Purchase Program assistance dated October 16, 2003, the District has prepared the enclosed purchase agreement for your consideration. In this agreement, the District is proposing to purchase your property at 14010 Elbow Bend Road for $50,000 based on the attached independent appraisal prepared by Kenneth Beckstrom of Ag One Appraisal Service on December 5, 2003.

Also included with the purchase agreement is a land surveyor's certificate prepared by Michael L. Sharp, R.L.S. on January 14, 2004 and a title search prepared by Dakota Title and Escrow on January 8, 2004.

In conclusion, the District encourages you to consider our offer to purchase your property. Please review the enclosed purchase agreement and attached documents at your earliest convenience. If you would like to meet and go over the agreement, please contact me at the letterhead address or phone number to make arrangements. If you have any other questions, feel free to contact me at anytime.

Sincerely,

Paul Woodward

Paul Woodward, Project Manager
Water Resources Engineer

Enclosure

Cc: Steve Oltmans and Marlin Petermann, P-MRNRD

\533\Ellbow Bend\040227-Proksel-Floodway Purchase Agreement.doc File: 533

PURCHASE AGREEMENT
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT
FLOODWAY PURCHASE PROGRAM

THIS AGREEMENT, hereinafter referred to as "this AGREEMENT", is dated as of this _____ day of _____, 2004, by and between JANET PROKSEL, surviving joint tenant (hereinafter referred to as "SELLER") and the PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT (hereinafter referred to as "PURCHASER").

The SELLER hereby agrees to sell and convey to the PURCHASER, and the PURCHASER hereby agrees to purchase and accept from the SELLER, certain real property upon the following terms and conditions:

1. Property. The Property of the SELLER to be sold to the PURCHASER pursuant to this AGREEMENT consists of the marketable fee simple title to the parcel of land, including all improvements, in Sarpy County, Nebraska, described in the legal description attached hereto and incorporated herein by reference as Exhibit "A" (hereinafter referred to as "the PROPERTY").

2. Price. The purchase price which the PURCHASER agrees to pay to the SELLER for the PROPERTY is the sum of FIFTY THOUSAND DOLLARS ($50,000).

3. Payment. The purchase price for the PROPERTY shall be paid by the PURCHASER to the SELLER at the time of closing, by PURCHASER'S bank check.

4. Deed. The PROPERTY shall be conveyed by SELLER to PURCHASER by Warranty Deed, free and clear of all leases, mortgages, liens (including real estate taxes) and other encumbrances, except easements and protective covenants now of record, all such excepted items hereinafter being referred to collectively as "the PERMITTED EXEMPTIONS."

5. Title Insurance. Within 60 days after the date of this AGREEMENT, the PURCHASER shall deliver to the SELLER a commitment for a title insurance policy for the PROPERTY.

(a) Such commitment shall be issued by an authorized company in the amount of the purchase price and shall show marketable fee simple title to the PROPERTY to be vested in the SELLER, subject only to the PERMITTED EXEMPTIONS aforesaid and liens and encumbrances of an ascertainable amount which may be removed by the payment of money at the time of closing and which the SELLER may so remove at that time by using a portion of the purchase price to be paid at closing, including deposit of same for SELLER'S account with the title insurer pursuant to a "title indemnity" or similar escrow arrangement pending removal or release of such liens or encumbrances. The aforesaid policy or commitment shall be conclusive evidence of good title as therein shown as to all

matters insured or to be insured by the policy, subject only to the exceptions as therein stated.

(b) If the aforesaid commitment discloses any exceptions to title, hereinafter referred to as NONPERMITTED EXEMPTIONS, other than the PERMITTED EXEMPTIONS, the SELLER shall have 30 days from the date of delivery of the commitment to the SELLER to have the NONPERMITTED EXEMPTIONS removed from the policy or commitment, or, at the SELLER's expense, to have the title insurer commit to insure against loss or damage that may be occasioned by such NONPERMITTED EXEMPTIONS, and in such event, the time of closing shall be the day following the date of such removal of exceptions or commitment to insure, or the date for closing as provided pursuant to Paragraph 8 hereof, whichever comes later.

(c) If SELLER fails to have the NONPERMITTED EXEMPTIONS removed, or in the alternative, to obtain the commitment for title insurance specified above as to such exceptions within the specified time, PURCHASER may, at PURCHASER's election, terminate this AGREEMENT as to all of the PROPERTY or take title as then is, in either case by giving the SELLER written notice of PURCHASER's election and, in the latter case, by tendering performance on PURCHASER's part. If PURCHASER fails to give notice of such election within ten days after the expiration of the aforesaid 30 days, then PURCHASER shall be deemed to have elected to take title as it then is, and this transaction shall close in accordance with the preceding provisions hereof. If the PURCHASER shall give notice of PURCHASER'S election to terminate this AGREEMENT, as aforesaid, within the time provided, then this AGREEMENT shall thereupon, without further action by any party, become null and void and neither party shall have any obligation hereunder.

6. Survey. All surveys which the PURCHASER may require in connection with the closing of this transaction, shall be at the expense of PURCHASER.

7. Eminent Domain. It is agreed among the parties that this AGREEMENT is entered into voluntarily, SELLER having been informed that this is a voluntary program and that PURCHASER will, not use its power of eminent domain (condemnation) to acquire the PROPERTY.

8. Closing. This transaction shall be, closed upon a date and at a time to be designated in a written notice mailed by the PURCHASER to the SELLER. The transaction shall be closed at the address of the PURCHASER, set out below, or at such other place as may he agreed upon by SELLER andPURCHASER.
All taxes relating to the PROPERTY must be paid out prior to closing and SELLER shall provide proof of payment at closing. Between the date when this AGREEMENT is fully executed and the date of closing, SELLER assumes all risk for destruction of or damage

to the PROPERTY, and SELLER agrees that the purchase price set forth above may be adjusted, at PURCHASER'S sole discretion, according to the damage or destruction sustained.

9. Delivery of possession. Possession of the PROPERTY, subject to the PERMITTED EXEMPTIONS, shall be delivered to PURCHASER at closing or at such other time as may be agreed upon in writing by SELLER and PURCHASER.

10. Revenue Stamps. All documentary stamp taxes shall be paid by PURCHASER to the extent that this transaction is not exempt therefrom.

11. Assignment. This AGREEMENT, and/or any interest of SELLER hereunder, may not be assigned in whole or in part by the SELLER without the prior written consent of the PURCHASER.

12. Recordation. This AGREEMENT may be recorded in whole or in part.

13. Entire Agreement. This AGREEMENT contains the entire AGREEMENT between the parties, and SELLER agree that neither the PURCHASER, nor any of its officers, agents, or employees, have made any representation or promise with respect to, or affecting the PROPERTY or adjoining real estate, or this AGREEMENT, not expressly contained herein.

14. Governing law. The provisions of this AGREEMENT shall be governed by, and construed in accordance with, the laws of the State of Nebraska.

15. Captions. The captions contained in this AGREEMENT are for convenience only and are not intended to limit or define the scope or effect of any provision of this AGREEMENT.

16. Time. Time is of the essence of this AGREEMENT.

17. Default; specific performance. If SELLER shall default hereunder, PURCHASER shall be entitled to enforce specific performance of this AGREEMENT or may terminate this AGREEMENT, at PURCHASER'S option.

18. Notices. All notices herein required shall be in writing and shall be served on the parties at the addresses set out below, or at such other address as either party may hereafter designate in writing for service of notice to itself. The mailing of a notice by certified or registered mail, return receipt requested, or delivery thereof by messenger, shall be sufficient service.

19. Survival of conditions. The terms and conditions of this AGREEMENT, and all representations, covenants, warranties, and AGREEMENTS made herein, shall survive the closing of this transaction, and shall not be deemed to have merged or terminated upon closing.

20. Binding effect. The provisions of this AGREEMENT shall inure to the benefit of, and shall be binding upon, the successors in interest and assigns of the respective parties hereto.

21. Salvage. A fter the execution of this AGREEMENT and before closing, SELLER shall have the right, at SELLER'S cost, to remove from the PROPERTY and convert to SELLER'S own use any and all personal property on the PROPERTY, including contents of structures and fences. Until the closing, SELLER shall bear the risk of loss of all structures or other improvements on the PROPERTY and shall have an insurable interest therein. SELLER shall not commit waste as to any structure or improvement on the PROPERTY. Any partial salvage of a building or other structure on the PROPERTY by SELLER shall be done in a good and workmanlike manner so as not to impair the structural integrity of the building or structure. The openings for any doors or windows which are removed from any structure shall he boarded up so as to prevent entry into the structure. The PROPERTY shall be left by SELLER in good and broom clean condition. SELLER agrees to hold harmless and defend PURCHASER from any and all claims, actions, or damages resulting from SELLER'S salvage as described herein. Simultaneously with the signing of this AGREEMENT, SELLER shall submit to PURCHASER for PURCHASER'S approval a detailed plan outlining SELLER'S salvage plan. The proposed plan shall include a list of what is to be salvaged and the location of any real estate intended as a permanent site for any structure salvaged from the PROPERTY. As soon as salvage is completed according to the approved plan, SELLER shall notify the General Manager of the PURCHASER and an agent of the PURCHASER will conduct an inspection of the PROPERTY prior to closing.

_____
JANET PROKSEL, SELLER

SELLER'S ADDRESS _____
_____

PAPIO-MISSOURI RIVER NATURAL
RESOURCES DISTRICT
8901 South 154th Street
Omaha, NE 68138-3621

By _____
STEVEN G. OLTMANS, General Manager

STATE OF _____)
) SS.
COUNTY OF _____)

On this ____ day of _____, 2004, before me, a Notary Public in and for said County, personally came the above named JANET PROKSEL and she acknowledged the execution of the above AGREEMENT as her voluntary act and deed.

WITNESS my hand and Notarial Seal the date last aforesaid.

_____
Notary Public

Instructions

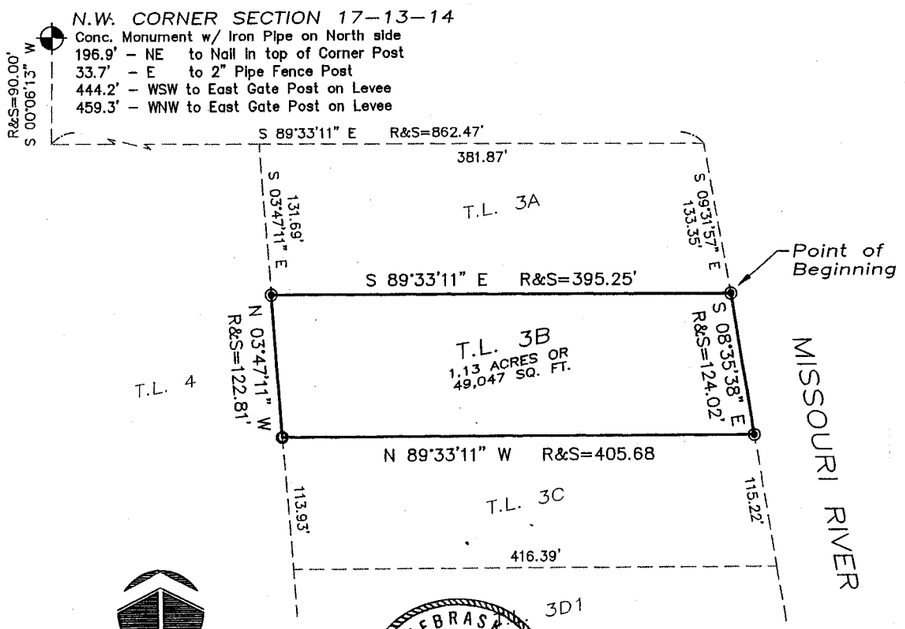
Label copy of legal description as Exhibit A and attach to deed.

LAND SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT, MAP, SURVEY OR REPORT WAS MADE BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEBRASKA.

LEGAL DESCRIPTION:

TAX LOT 3B, TOGETHER WITH ANY ACCRETIONS THERETO, LOCATED IN THE NORTHWEST ONE-QUARTER OF SECTION 17, TOWNSHIP 13 NORTH, RANGE 14 EAST OF THE SIXTH P.M., SARPY COUNTY, NEBRASKA, AND BEING MORE PARTICULARLY DISCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 17, THENCE S 00°06'13" W (ASSUMED BEARING) FOR 90.00 FEET ALONG THE WEST LINE OF SAID SECTION 17 TO THE NORTHWEST CORNER OF TAX LOT 4; THENCE S 89°33'11" E FOR 862.47 FEET ALONG THE THE NORTH LINE OF SAID TAX LOT 4 AND TAX LOT 3A TO THE WEST HIGH BANK OF THE MISSOURI RIVER AS LOCATED IN JUNE 1994; THENCE S 09°31'57" E FOR 133.35 FEET FEET ALONG SAID HIGH BANK TO THE POINT OF BEGINNING; THENCE S 08°35'38" E FOR 124.02 FEET ALONG SAID HIGH BANK; THENCE N 89°33'11" E FOR 405.68 FEET ALONG THE SOUTH LINE OF SAID TAX LOT 3B; THENCE N 03°47'11" W 122.81 FEET ALONG THE WEST LINE OF SAID TAX LOT 3B; THENCE S 89°33'11" E FOR 395.25 FEET ALONG THE NORTH LINE OF SAID TAX LOT 3B, TO THE POINT OF BEGINNING, DESCRIBED TRACT CONTAINS 49,047 SQUARE FEET, MORE OR LESS, INCLUDING ANY INTEREST IN ROADWAY EASEMENTS OR RIGHT-OF-WAY.



NEBRASKA REGISTERED LS-515 LAND SURVEYOR MICHAEL R. SHARP

SIGNATURE OF LAND SURVEYOR

REGISTRATION NO. 515

DATE OF SURVEY 01-14-04

PROJECT NO. 04-011

BOOK & PAGE N/A

W.O.#04-011
JANUARY 14, 2004

R = RECORD DIMENSION
S = SURVEY DIMENSION
P = PLAT DIMENSION
◉ = PROPERTY CORNER FOUND (#5 Rebar)
O = PROPERTY CORNER SET (#5 Rebar w/ Cap #515)
O.T. = OPEN TOP PIPE

Hill-Farrell Associates, Inc.
Architects, Engineers, Land Surveyors
1008 Lincoln RD., Bellevue, NE 68005 402-291-6100

Exhibit "A"

DAKOTA TITLE AND ESCROW COMPANY
Bonded Abstracters

SS-10869

TITLE SEARCH

Total Fee Charged: $100.00

To: Papio-Missouri Natural Resources District
Attn: Paul Woodard
8901 South 154th St.
Omaha, NE 68138

This is to certify that we have carefully examined the records in the Register of Deeds Office, Sarpy County, Nebraska, with reference to:
A parcel of land situated in the Northwest Quarter of Section Seventeen, Township Thirteen North, Range Fourteen East of the Sixth P.M., Sarpy County, Nebraska, described as follows: Commencing at the Northwest corner of Section Seventeen, Township Thirteen, Range Fourteen; thence Southerly on the West line of said Section Seventeen, 90.0 ft.; thence Easterly at right angles to said West line of said Section Seventeen, 854.49 ft.; thence Southeasterly with a deflection angle of 79 degrees 54' to the right with the previous course a distance of 133.5 ft. to the place of beginning; thence Westerly with an interior angle of 100 degrees 06' with the previous course, 387.33 ft.; thence Southeasterly with an interior angle of 85 degrees 46' with the previous course, 122.81 ft.; thence Easterly with an interior angle of 94 degrees 14' with the previous course and parallel with the North line of this described tract, 400.62 ft.; thence Northwesterly with an interior angle of 79 degrees 54' with the previous course a distance of 124.5 ft. to the point of beginning, together with a parcel of land 10 ft. more or less in width Easterly of and adjacent to the previous course to the West bank of the Missouri River, being a part of the NW Quarter of the NW Quarter of Section Seventeen, Township Thirteen, Range Fourteen East of the Sixth P.M., in Sarpy County, Nebraska, together with all accretions thereto. (Also known as Tax Lot 3B)

The record title is vested in Fred Proksel and Janet Proksel, husband and wife, as joint tenants, not as tenants in common.
No Mortgages Appear of Record.

This Search is issued for present ownership purposes only and should not be construed as a search for the issuance of any Title Insurance without further requirements of Dakota Title and Escrow Company.

This Search does not insure title to land comprising the shores or bottoms of navigable waters or to accretions or numbers of acres purchased.

This property lies within the 100 year Flood Plain, as defined by the Corps of Engineers.

We have examined the records in the Clerk of the County court and the Clerk of the District Court of Sarpy County, Nebraska, and the Clerk of the United States District court for the District of Nebraska, Omaha Division and find no unsatisfied judgments, suits pending, federal tax liens or bankruptcy proceedings filed or recorded and indexed in said office, involving any of the following named persons, that in any manner affect the title to or operate as liens upon the above described property:
Fred Proksel----------at date hereof
Janet Proksel----------at date hereof

TAXES: Taxes for year 2003 and all subsequent years
Tax Card Key No. 010626190 (Tax Lot 3B, 17-13-14)
(1.11AC)
2003 County Taxes $82.28 UNPAID

SPECIAL ASSESSMENTS: There are no unpaid special assessments of record at date hereof.

NOTE: All special assessments are liens from the date of levy, but are not shown until properly indexed and of record in the Office of the County Treasurer.

WITNESS OUR HAND this 8th day of January, 2004 at 8:00 A.M.

Abstracter:

By _____
Registered Abstracter
Dakota Title and Escrow Co.

TITLE INSURANCE • ABSTRACTING • REAL ESTATE CLOSINGS • ESCROW SERVICES

Dakota Title and Escrow Co.

1801 ST. MARYS AVENUE ( )
OMAHA, NEBRASKA 68102
402-341-8400

REAL ESTATE CLOSING OFFICE
2512 S. 132 COURT ( )
OMAHA, NE 68144
402-691-8500

1246 GOLDEN GATE DRIVE #4 ( )
PAPILLION, NEBRASKA 68046
402-339-8400

522 N. MAIN ( )
FREMONT, NEBRASKA 68025
402-727-8400

508 SOUTH 6TH STREET ( )
COUNCIL BLUFFS, IOWA 51501
712-328-8400

JAYNE E. MC GUIRE
PRESIDENT

DAKOTA TITLE AND ESCROW COMPANY

PRIVACY POLICY

You entrust us with personal information, and at Dakota Title and Escrow Company we take that trust very seriously.

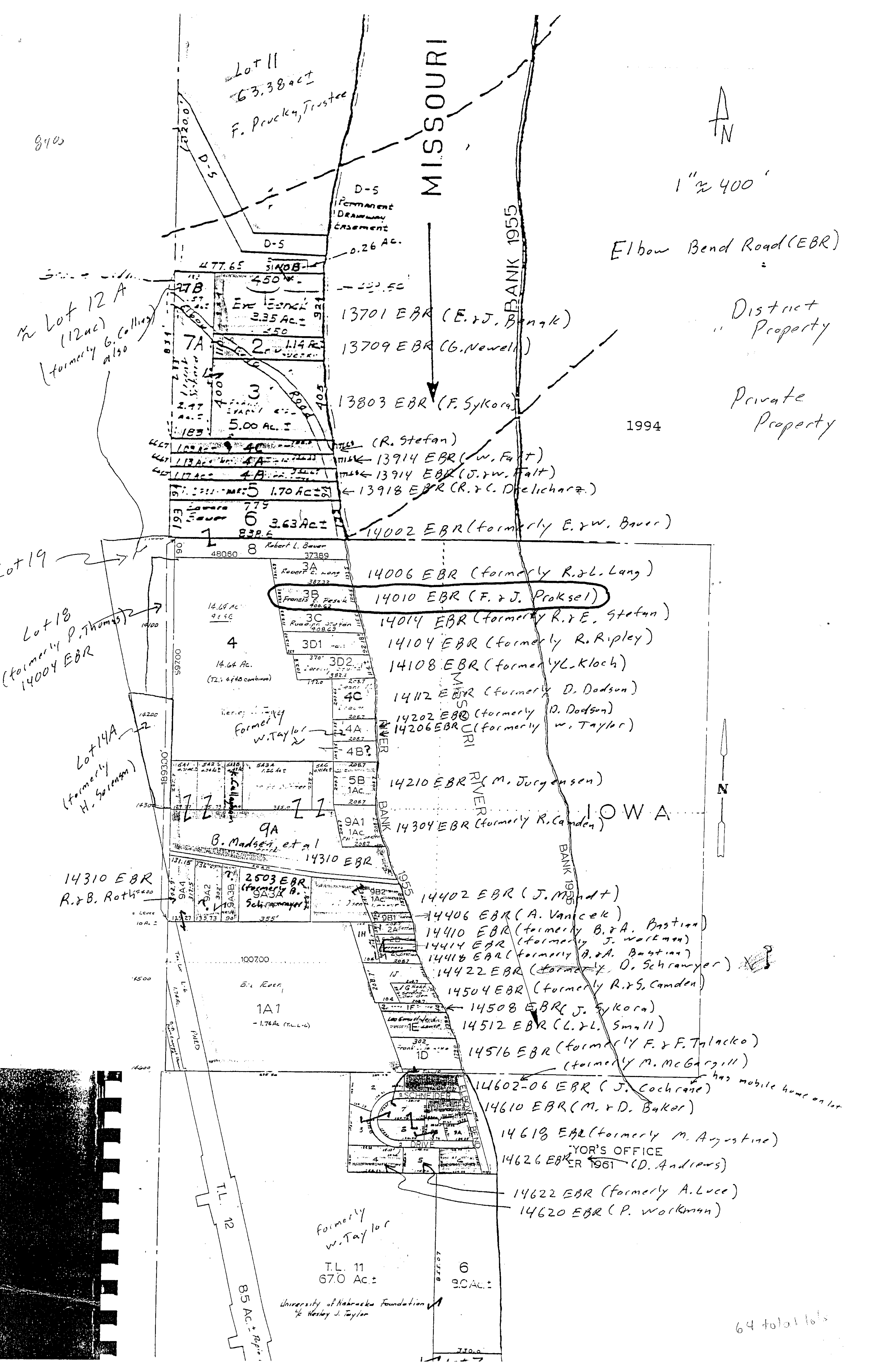
We collect nonpublic personal information about you from the following sources:

* Information we receive from you, such as your name, address, telephone number, or social security number
* Information about your transactions with us, our affiliates, or others. We receive this information from your lender, attorney, real estate broker, and others; and
* Information from public records

We do not disclose any nonpublic personal information about our customers or former customers to anyone, except as permitted by law.

We restrict access to nonpublic personal information about you to those employees who need to know that information to provide the products or services requested by you or your lender.

We maintain physical, electronic, and procedural safeguards that comply with appropriate federal and state regulations.



MISSOURI
IOWA
N
1" ≈ 400'
Elbow Bend Road (EBR)
District Property
Private Property
1994
BANK 1955
MISSOURI RIVER
RIVER BANK 1955
Lot 11
63.38 ac±
F. Prucka, Trustee
D-5
D-5 Permanent Drainway Easement
0.26 Ac.
½ Lot 12A (12 ac) (formerly G. Collins) also
13701 EBR (E. & J. Benak)
13709 EBR (G. Newell)
13803 EBR (F. Sykora)
(R. Stefan)
13914 EBR (W. Falt)
13914 EBR (J. & W. Falt)
13918 EBR (R. & C. Drelicharz)
14002 EBR (formerly E. & W. Bauer)
Lot 19
14006 EBR (formerly R. & L. Lang)
14010 EBR (F. & J. Proksel)
Lot 18 (formerly P. Thomas) 14004 EBR
14014 EBR (formerly R. & E. Stefan)
14104 EBR (formerly R. Ripley)
14108 EBR (formerly L. Kloch)
14112 EBR (formerly D. Dodson)
14202 EBR (formerly D. Dodson)
14206 EBR (formerly W. Taylor)
formerly W. Taylor
Lot 14A (formerly H. Sorensen)
14210 EBR (M. Jurgensen)
14304 EBR (formerly R. Camden)
B. Madsen, et al
14310 EBR
14310 EBR R. & B. Roth
2503 EBR (formerly B. Schramayer)
14402 EBR (J. Mundt)
14406 EBR (A. Vanicek)
14410 EBR (formerly B. & A. Bastian)
(formerly J. Workman)
14414 EBR (formerly B. & A. Bastian)
14418 EBR (formerly D. Schramyer)
14422 EBR (formerly R. & S. Camden)
14504 EBR
14508 EBR (J. Sykora)
14512 EBR (L. & L. Small)
14516 EBR (formerly F. & F. Tulacko)
(formerly M. McGargill)
14602-06 EBR (J. Cochrane)
has mobile home on lot
14610 EBR (M. & D. Baker)
14618 EBR (formerly M. Augustine)
14626 EBR (D. Andrews)
14622 EBR (formerly A. Luce)
14620 EBR (P. Workman)
ELBOW BEND DRIVE
SCHNEIDER
formerly W. Taylor
T.L. 11
67.0 Ac.±
University of Nebraska Foundation c/o Wesley J. Taylor
T.L. 12
85 Ac.±
6
9.0 Ac.±
1A1
1.74 Ac.
Robert L. Bauer
Robert E. Lang
Francis E. Pesek
Rudolph Stefan
14.64 Ac.
5.00 Ac.±
3.35 Ac.±
1.14 Ac.
1.70 Ac.±
3.63 Ac.±
8400
64 total lots