

LAND USE INVENTORY STUDY REPORT

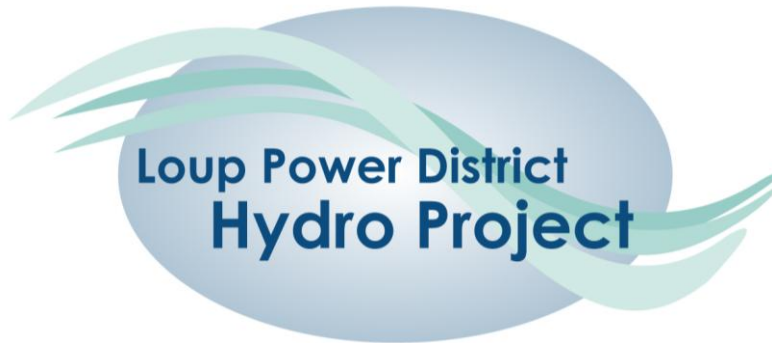
# LOUP RIVER HYDROELECTRIC PROJECT FERC PROJECT No. 1256

## LAND USE INVENTORY



Loup Power District  
Hydro Project

AUGUST 26, 2010



**Loup River Hydroelectric Project  
FERC Project No. 1256**

# **Study 10.0 Land Use Inventory**

**August 26, 2010**

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**Prepared by:**

Loup Power District  
2404 15<sup>th</sup> Street  
Columbus, NE 68602

**With assistance by:**

HDR Engineering, Inc.  
8404 Indian Hills Drive  
Omaha, NE 68114

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## **STUDY 10.0            LAND USE INVENTORY**

### **1.        INTRODUCTION**

The Loup River Hydroelectric Project (Project) is located in Nance and Platte counties, Nebraska, where water is diverted from the Loup River and routed through the 35-mile-long Loup Power Canal, which empties into the Platte River near Columbus. The Project includes various hydraulic structures, two powerhouses, and two regulating reservoirs. The Project passes through agricultural, commercial, and industrial land in Nance and Platte counties, through the community of Genoa, and near the communities of Monroe and Columbus; therefore, there are a variety of land uses adjacent to the Project. Based on the length of the Project and the variety of adjacent land uses, there may be incompatible land uses on adjacent properties (outside of the Project Boundary).

The Loup River Public Power District (Loup Power District or the District) previously did not have a detailed inventory of land uses adjacent to the Project Boundary. Such a record could be used to assist the District in evaluating land use conflicts and determining the need for future resource management plans. Therefore, the District conducted a general land use inventory of all Project lands and of all adjacent properties. Land use information was plotted on maps and analyzed to identify potential conflicts and opportunities relating to Project operations, public access, recreation, aesthetics, and environmental resource protection. This information will be used in the development of a recreation management plan (see Study 8.0, Recreation Use).

### **2.        GOALS AND OBJECTIVES OF STUDY**

The goal of the land use inventory is to determine specific land uses of Project lands and adjacent properties to identify potential conflicts and/or opportunities relating to Project operations, public access, recreation, aesthetics, and environmental resource protection.

The objectives of the land use inventory are as follows:

1.     To identify and record current and proposed future land uses of Project lands.
2.     To identify and record current and authorized future land uses of adjacent properties.
3.     To identify and map all existing public access points to the Loup Power Canal, regulating reservoirs, and defined recreation areas on Project lands.
4.     To identify and map any areas on Project lands or adjacent properties having potentially incompatible or conflicting land uses.

5. To identify and map potential opportunities for improving public access to Project lands and recreation areas.
6. To identify potential opportunities to improve aesthetics on Project lands and recreation areas.
7. To identify potential opportunities to enhance public safety on Project lands.
8. To identify potential solutions for any land use conflicts that may be identified.
9. To provide information on land use, land use conflicts, and access to be used in conjunction with the results of Study 8.0, Recreation Use, to develop a recreation management plan.

### **3. STUDY AREA**

The Project extends approximately 35 miles from the Headworks to the Outlet Weir, and the Project Boundary encompasses approximately 5,200 acres of land. Loup Power District owns all lands within the Project Boundary. It is District policy to allow public use of Project lands consistent with Project security and public safety considerations. No private facilities are allowed on District lands, although one private cottage still exists. The lease for this cottage will expire in 2013 and will not be renewed. A large portion of the Project consists of the Loup Power Canal, with a nominal width of 300 feet. The majority of adjacent land is agricultural and is considered compatible with the Project. Areas that may present conflicts or opportunities relating to Project operations, public access, recreation, aesthetics, and environmental resource protection include urban areas, public access points, the five developed recreation areas, and important environmental features or habitat. Specific land uses of Project lands and adjacent properties at the following sites were carefully evaluated:

- Headworks Park, including Headworks [Off-Highway Vehicle] OHV Park
- Lake Babcock Park (aka Loup Park)
- Lake North Park
- Columbus Powerhouse Park
- Tailrace Park
- Loup Lands Wildlife Management Area (WMA) (leased to the Nebraska Game and Parks Commission)
- Lake Babcock Waterfowl Refuge (regulated by the Nebraska Game and Parks Commission)

- North Sand Management Area
- South Sand Management Area
- Siphons
- Areas with evidence of heavy informal usage
- Urban areas of Genoa and Columbus

#### 4. METHODOLOGY

The methodology for the land use inventory included three tasks, described below. Standard land use inventory methods were employed, with modifications to account for the size of the Project Boundary.

##### **Task 1 Data Collection**

For Project lands, existing Project maps were used, and the District classified land uses. The specific land use classifications that were used are as follows:

- Developed Recreation Area (includes campsites, picnic areas, playground equipment, and swimming beaches)
- Bicycle and Pedestrian Trail
- Wildlife Management Area
- Intensive Recreation Area (includes motorized boating and OHV activities)
- Restricted Operations Area
- Informal Recreation Area

For adjacent properties, a preliminary land use inventory was completed using the existing *Nance County Comprehensive Development Plan* and *Columbus Comprehensive Plan Update* (Nance County, 1999; City of Columbus, October 2005). For areas not included in current comprehensive plans, 2009 National Agriculture Imagery Program, Nance and Platte Counties Mosaic aerial photographs were used to identify land use. These aerial photographs were also used to verify the accuracy of land use information from the existing comprehensive plans. Adjacent properties within 500 feet of the Project Boundary were classified according to the following land use designations:

- Agricultural – Land characterized by or used for the production of row crops or pasture. Agricultural land is sparsely populated but may include farmsteads, outbuildings, farm lanes, and animal holding areas.
- Open Space – Unimproved land not used for crop production or pasture.

- Single-Family Residential – Residential land use characterized by housing at a density greater than one (1) unit per acre. This applies to areas that are part of an incorporated town or city or developed as a subdivision.
- Mobile Home Residential – A single parcel of land on which sites or mobile homes/trailers are leased to tenants. Mobile home developments offer single-family housing, but at densities significantly higher than conventional single-family residential zones.
- Commercial – Land characterized by or zoned for office or retail use. Uses may include stores, restaurants, personal services, and lodgings.
- Institutional – Land characterized by government or private institutional uses such as churches, schools, cemeteries, or hospitals.
- Industrial – Land predominantly used for manufacturing, processing, or warehousing goods. Waste disposal sites and utility facilities are also considered industrial uses.
- Water – Areas ordinarily covered by water.
- Transportation Right-of-Way (ROW) – A regularly used paved or gravel public roadway.

Field observations were completed to gather detailed land use information for developed areas and for any other areas for which review of aerial photographs provided insufficient information. Field observations included “windshield” and walking surveys.

For the purposes of this study, a land use conflict is defined as an instance when typical activity or operations on adjacent parcels of land adversely affect the others. These effects may include: personal safety, environmental conditions, business operations, recreational enjoyment, or property rights.

## **Task 2    Map Generation**

Land use maps were developed based on the findings from the data collection and field observations. The maps are at a 1" = 1,000' scale and are on aerial photographs to allow for land use identification and interpretation. Available electronic data were used, including 2009 National Agriculture Imagery Program, and Nance and Platte Counties Mosaic aerial photographs. Land use and other relevant information were digitized and color coded. These land use maps are included at the end of this report as Figure 4-1, Sheets 1 through 14.



### **Task 3 Analysis**

Based on the data collection, including field observations, areas of current land use conflicts and potential future land use conflicts were identified. Any conflicts, including the specific land uses in conflict, the type of conflict (operational, environmental, nuisance, etc.), and possible mitigation measures to resolve the conflict, are described in Section 5, Results and Discussion.

Through the land use inventory, opportunities for improving Project operations, public access, recreation, aesthetics, and environmental resource protection were evaluated and are explained in Section 5, Results and Discussion.

## **5. RESULTS AND DISCUSSION**

The Project has operated for more than 70 years in rural Nance and Platte counties. The Project is a complementary land use to the surrounding area, providing irrigation and recreation opportunities. Despite its 35-mile footprint, the Project's impact on surrounding land is minimal. The Loup Power Canal is a passive presence, running adjacent to private agricultural land for the majority of its length.

Public interaction with the Project is concentrated at improved recreation areas, siphons, and major roadway intersections. These locations and other Project lands and adjacent properties identified in Section 3, Study Area, are described below from west to east by land use classification. In addition, public access opportunities are described.

### **Recreation Areas**

Improved recreation areas, including land classified as Developed Recreation Areas, Bicycle and Pedestrian Trails, Wildlife Management Areas, and Intensive Recreation Areas, are the public's primary contact with land and uses within the Project Boundary. Recreation areas are well used and are recognized as enhancing the quality of life in the region as well as having a positive economic impact.

### *Loup Lands WMA*

Loup Lands WMA is classified as a Wildlife Management Area (see Figure 4-1, Sheets 1 and 2). Within the Project Boundary, Loup Lands WMA is bordered by Open Space, the Loup River, and the Loup Power Canal. Outside of the Project Boundary, Agricultural land and Open Space lie immediately to the south of Loup Lands WMA. The WMA is accessible from Headworks Park, canal maintenance roads, and county roads. There are no observed land use conflicts at this location.

*Headworks OHV Park/South Sand Management Area*

Headworks OHV Park is classified as an Intensive Recreation Area (see Figure 4-1, Sheets 1 and 2). The Loup Power Canal and Loup River separate Headworks OHV Park from other uses on Project lands, limiting the impact of OHV activity on the North Sand Management Area (classified as a Restricted Operations Area) to the north, Loup Lands WMA (classified as a Wildlife Management Area) to the east, and unimproved Open Space and Agricultural land to the south and west. Headworks OHV Park does not abut lands outside the Project Boundary. The District closes Headworks OHV Park from mid-March to mid-May and from mid-August to mid-September for dredging of the Settling Basin. Because Headworks OHV Park is separated from adjacent land uses by the Loup Power Canal and Loup River and because the District closes the park for dredging of the Settling Basin, the District has limited the impact of intensive recreation and Project operations on surrounding land uses and prevented land use conflicts at this location.



Photo 1. Headworks OHV Park.

*Headworks Park*

Headworks Park is classified as a Developed Recreation Area located at the east, or downstream, end of the Settling Basin (see Figure 4-1, Sheet 2). The park includes several small lakes. It lies south of Open Space, Agricultural land, Nebraska State Highway 22 (classified as Transportation ROW), and an active UPRR rail line. There are no observed land use conflicts at this location.



Photo 2. Camping at Headworks Park.

*Lake Babcock Park (aka Loup Park)*

Lake Babcock Park is classified as a Developed Recreation Area (see Figure 4-1, Sheets 10 and 11). The park forms a portion of the northern Project Boundary. To the south, the park immediately abuts Lake Babcock. Suburban-style single-family homes (classified as Single-Family Residential) are located immediately to the north of the park. Lake Babcock Park does have some perimeter fencing and thus has limited public access from the adjacent residential areas. There are no recorded conflicts between recreation and residential land uses.

Other land uses north of Lake Babcock Park are 83<sup>rd</sup> Street/Lakeview Road (classified as Transportation ROW) and Agricultural. Two Lakes Trail (classified as a Bicycle and Pedestrian Trail) runs through the park and connects to Lake North Park (classified as a Developed Recreation Area) and Bob Lake Trail (classified as a Bicycle and Pedestrian Trail). There are no observed land use conflicts at this location.



Photo 3. View of Lake Babcock from the south dike at the outlet.

#### *Lake North Park*

Lake North Park is classified as a Developed Recreation Area (see Figure 4-1, Sheet 11). The park forms a portion of the northern Project Boundary between Lake North and 83<sup>rd</sup> Street/Lakeview Road (classified as Transportation ROW). The land opposite the park is in Agricultural use. Two Lakes Trail (classified as a Bicycle and Pedestrian Trail) runs through Lake North Park and connects to Lake Babcock Park (aka Loup Park). There are no observed land use conflicts at this location.



Photo 4. View of Lake North from the boat launch area in the northeast corner.



Photo 5. Camping at Lake North.

*Lake Babcock Waterfowl Refuge*

Lake Babcock Waterfowl Refuge is classified as a Wildlife Management Area (see Figure 4-1, Sheets 10 and 11). The refuge is managed by Nebraska Game and Parks Commission (NGPC). It is partially located within the Project Boundary and consists of Lake Babcock, Lake North, and adjoining lands. Although the boundaries of Lake Babcock Waterfowl Refuge extend 0.5 mile beyond the Project Boundary, the primary portion of the refuge is Lake Babcock and adjoining land to the west.

The refuge was established to provide and conserve waterfowl habitat. Hunting is prohibited, and boating and fishing are restricted on Lake Babcock during open waterfowl season but are allowed year-round on Lake North (163 Nebraska Administrative Code [NAC] 4-019). Because Lake Babcock and Lake North immediately abut Lake Babcock Park (aka Loup Park) (classified as a Developed Recreation Area), Two Lakes Trail (classified as a Bicycle and Pedestrian Trail), and Lake North Park (classified as a Developed Recreation Area), these areas, along with Agricultural land and residential subdivisions within 0.5 mile of the Project Boundary, all fall within the boundary of the Lake Babcock Wildlife Refuge. There are no observed land use conflicts at this location.



Photo 6. Lake Babcock Waterfowl Refuge.

*Columbus Powerhouse Park*

Columbus Powerhouse Park is classified as a Developed Recreation Area (see Figure 4-1, Sheet 12). The park is located on the west side of the Loup Power Canal, between the Columbus Powerhouse (classified as a Restricted Operations Area) and the Project Boundary. Unimproved Open Space and Agricultural land lie immediately to the north and south of the park. Third Avenue (classified as Transportation ROW) separates Columbus Powerhouse Park and the Project Boundary from suburban-style single-family residential development (classified as Single-Family Residential) to the west. There are no observed land use conflicts at this location.



Photo 7. Columbus Powerhouse Park facilities.



Photo 8. Columbus Powerhouse Park facilities.



*Tailrace Park*

Tailrace Park is classified as a Developed Recreation Area (see Figure 4-1, Sheet 14). The park is located at the southern end of the Tailrace Canal, on the east and west sides of the Outlet Weir, which is located at the confluence of the Tailrace Canal and the Platte River. To the south, the park is bounded by the Platte River; to the north and west, the park abuts Agricultural land; and to the east, the park abuts privately owned Open Space. The northeastern corner of the park abuts Southeast 16<sup>th</sup>/River Road (classified as Transportation ROW) and a single residence (classified as Single-Family Residential). A rail line crosses the Loup Power Canal immediately north of Tailrace Park. There are no observed land use conflicts at this location; however, the relative seclusion of Tailrace Park results in vandalism (aesthetic) and safety concerns.



Photo 9. Vandalism at Tailrace Park.

## **Restricted Operations Areas**

### *North Sand Management Area*

The North Sand Management Area is classified as a Restricted Operations Area (see Figure 4-1, Sheet 1). The Loup River and Loup Power Canal form its southern boundary. Agricultural and unimproved Open Space uses lie to the west, north, and east. Preferred Rocks of Genoa removes sand from the North Sand Management Area at the rate of approximately one train every other day and 30 truckloads per week. During the nesting/fledging season of the piping plover (*Charadrius melodus*) and interior least tern (*Sterna antillarum*), dredging is halted and sand extraction activities are limited to prevent disruption of the piping plover habitat. These measures limit the potential impact of Project operations on habitat, and the operation of the North Sand Management Area does not conflict with adjacent land uses.



Photo 10. Typical view of the North Sand Management Area.

*Monroe Powerhouse*

The Monroe Powerhouse is classified as a Restricted Operations Area (see Figure 4-1, Sheet 6). It is surrounded by unimproved Open Space and Agricultural uses. Unrestricted areas surrounding the Monroe Powerhouse are used informally for fishing. A 7-foot-high chain link fence topped with 1 foot of barbed wire separates the Restricted Operations Area from the public access areas. A caretaker lives on-site, so public access to restricted areas is unlikely. These measures limit the potential for safety conflicts in this location, and the operation of the Monroe Powerhouse does not conflict with adjacent land uses.



Photo 11. View of the downstream face of the Monroe Powerhouse.

*Columbus Powerhouse*

The Columbus Powerhouse is classified as a Restricted Operations Area (see Figure 4-1, Sheet 12). It is surrounded by Columbus Powerhouse Park as well as unimproved Open Space and Agricultural uses. A 7-foot-high chain link fence topped with 1 foot of barbed wire separates the Restricted Operations Area from the public recreation areas and private properties. Gates are kept locked at all times except for the west gate, which is unlocked during daytime operations hours, from 6:30 a.m. to 6:30 p.m. These measures limit the potential for safety conflicts in this location, and the operation of the Columbus Powerhouse does not conflict with adjacent land uses.



Photo 12. View of the Columbus Powerhouse from the Tailrace Canal.

### **Informal Recreation Areas**

Siphons are structures which convey Loup River tributaries across the Loup Power Canal. They are areas within the Project Boundary with relatively high levels of informal recreation use. While not designated developed recreation areas, they are commonly known to be good fishing locations.

#### *Beaver Creek Siphon*

The Beaver Creek Siphon is classified as an Informal Recreation Area and is located just south of Genoa along South Park Street/Nebraska State Highway 22/39 (see Figure 4-1, Sheet 3). Canal Road/Benson Avenue provides direct access from Park Street to the Loup Power Canal. Agricultural and Open Space uses surround the siphon. There are no observed land use conflicts at this location.



Photo 13. View of the Beaver Creek Siphon.

*Railroad Siphon*

The Railroad Siphon is located just east of Genoa (see Figure 4-1, Sheet 4). There is public access to both sides of the Loup Power Canal from West Pawnee Road on the west and from the canal maintenance road on the east. The siphon itself is railroad ROW and should not be used for public access due to railroad safety concerns. Outside of the Project Boundary, Single-Family Residential and Agricultural uses surround the siphon.



Photo 14. View of the approach to the Railroad Siphon at Genoa.

*Looking Glass Creek Siphon*

The Looking Glass Creek Siphon is classified as an Informal Recreation Area and is located just north of Nebraska State Highway 22 (see Figure 4-1, Sheet 5). The siphon can be directly accessed from 430<sup>th</sup> Avenue and is surrounded on all sides by Agricultural land. There are no observed land use conflicts at this location.



Photo 15. View of the Looking Glass Creek Siphon.

*Dry/Cherry Creek Siphon*

The Dry/Cherry Creek Siphon is classified as an Informal Recreation Area and is located along the canal maintenance roads approximately 0.6 mile north of Nebraska State Highway 22, halfway between 370<sup>th</sup> and 355<sup>th</sup> Avenues (see Figure 4-1, Sheet 6). Access to Project lands around the siphon is limited to either side of the canal, with an extension to the south along an irrigation canal. This southern extension also allows for public access from 250<sup>th</sup> Street, a minimum maintenance county road. The Dry/Cherry Creek Siphon is surrounded by Agricultural uses outside the Project Boundary. There are no observed land use conflicts at this location.



Photo 16. View of the Dry/Cherry Creek Siphon inlet.



### *Oconee Siphon*

The Oconee Siphon is classified as an Informal Recreation Area and is immediately adjacent to 310<sup>th</sup> Avenue (see Figure 4-1, Sheet 8). This allows the public direct access to the siphon, canal maintenance roads, and Project lands on which to fish. Outside the Project Boundary, immediately adjacent to the siphon, the land use is Agricultural. Railroad ROW runs parallel to the siphon to the east of the 310<sup>th</sup> Avenue bridge over the Loup Power Canal.



Photo 17. View of the Lower Power Canal at the Oconee Siphon.

### ***Public Access Opportunities***

Maintenance roads along both sides of the Loup Power Canal provide public access along much of its 35-mile length. Except for Restricted Operations Areas, the entire Project is accessible on foot. By vehicle, canal maintenance roads can be accessed from public ROW that intersects the canal. From the Settling Basin on the east to U.S. Highway 81 on the west, the Loup Power Canal is accessible by vehicle at least every mile along gravel section line roads. East of U.S. Highway 81, vehicle access is available at the following four access points over 9 miles: 63<sup>rd</sup> Avenue, 48<sup>th</sup> Avenue, 18<sup>th</sup> Avenue, and 3<sup>rd</sup> Avenue/53<sup>rd</sup> Street East. South and east of 3<sup>rd</sup> Avenue/53<sup>rd</sup> Street East, canal maintenance roads cannot be accessed from public ROW. In addition to the roads listed above, the Loup Power Canal is accessible from the following major roads:

- Nebraska State Highway 22, southwest of Genoa
- Park Street/Nebraska State Highway 22
- Cottonwood Street, just outside Genoa
- West Pawnee Avenue, east of Genoa
- 445<sup>th</sup> Avenue
- Loup River Bridge at 370<sup>th</sup> Avenue – Public ROW provides access to the canal and maintenance roads. Agricultural and commercial land abuts this access point.
- Loup River Bridge at U.S. Highway 81 – Public ROW provides access to the canal and maintenance roads. Agricultural land abuts this access point.



Photo 18. Canal maintenance roads offer vehicle access along much of the length of the canal.

### ***Future Land Use Plans***

The Project runs through two jurisdictions with adopted comprehensive plans and future land use plans – City of Columbus and Nance County. In Nance County, future land uses along the Canal are Agriculture and Institutional. In the City of Columbus, future land uses have been designated Single Family Residential,

Commercial, Open Space, Institutional, Transportation ROW, and Agriculture. No future land uses conflicts are anticipated based on these plans.

### **Possible Land Use Conflicts**

#### *Industrial Uses*

Industrial uses are located adjacent to the Project Boundary at several points along the Loup Power Canal. District operations are compatible with adjacent industrial uses. There are several industrial uses that discharge into the canal or have storage ponds near the canal; these uses are permitted and regulated by local requirements and the Nebraska Department of Environmental Quality (NDEQ). In the event of discharge violations or contamination of canal waters by these industrial uses, the District would be notified by NDEQ. To date, no contamination has occurred.

#### *Columbus Rifle Range*

The Columbus Rifle Range sits immediately to the east of the Loup Power Canal at 78<sup>th</sup> Avenue and Lakeview Road northwest of Columbus (see Figure 4-1, Sheet 9). There is no public vehicular access along the canal maintenance roads for 2 miles to the west and 1 mile to the east of the rifle range. There are signs at the rifle range warning passersby to “Keep Out” and be aware that shooting activities may be occurring. There are no observed land use conflicts at this location.



Photo 19. Sign notifying public of rifle range.

## **Conclusions**

The following conclusions have been reached regarding the land use inventory:

- In general, Project land use and operations were found to be compatible with adjacent properties.
- Future land use plans for Nance County and the City of Columbus do not indicate future land use conflicts.
- Restricted Operations Areas are safely separated from publicly accessible areas and do not conflict with recreation opportunities. Restricted Operations Areas total approximately 556 acres.
- Approximately 90 percent of the Project lands are accessible to the public from numerous locations—improved recreation areas, Wildlife Management Areas, the Loup Power Canal, and siphons.

## **6. STUDY VARIANCE**

Changes to the Land Use Inventory study plan, which was approved by the Federal Energy Regulatory Commission (FERC) in its Study Plan Determination on August 26, 2009, were relatively minor and were made to improve the consistency of findings and more accurately reflect the Project conditions and those of the adjacent properties:

- Land uses adjacent to the Project Boundary were classified for properties within 500 feet of the Project Boundary. The Land Use Inventory study plan did not define “adjacent properties.” The 500-foot distance was established to maintain a consistent evaluation along the length of the canal.
- Land use categories were revised to more accurately describe the uses adjacent to Project lands. Land uses were defined based on the predominant characteristics of the area surrounding the Project Boundary. Multi-family residential was not found adjacent to the Project Boundary. Mobile Home Residential is a more accurate description of higher-density housing adjacent to the Project Boundary.
- The Village of Monroe’s jurisdiction does not extend within 500 feet of the Project Boundary, so it was not included in the study.
- In the Land Use Inventory study plan, hunting was listed as an “intensive” recreation use. Hunting, however, is allowed only on the Loup Lands WMA, so while hunting is an “intensive” use, the land is better classified as a Wildlife Management Area.

## 7. REFERENCES

163 NAC 4-019. October 9, 1998. Lake Babcock Waterfowl Refuge.

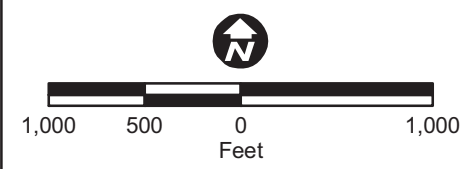
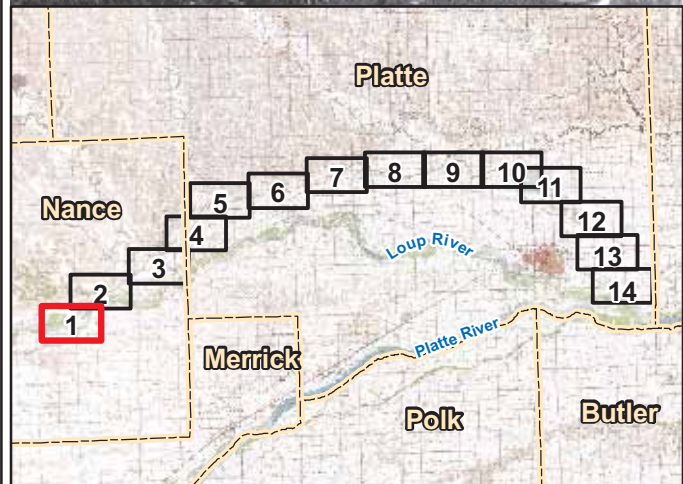
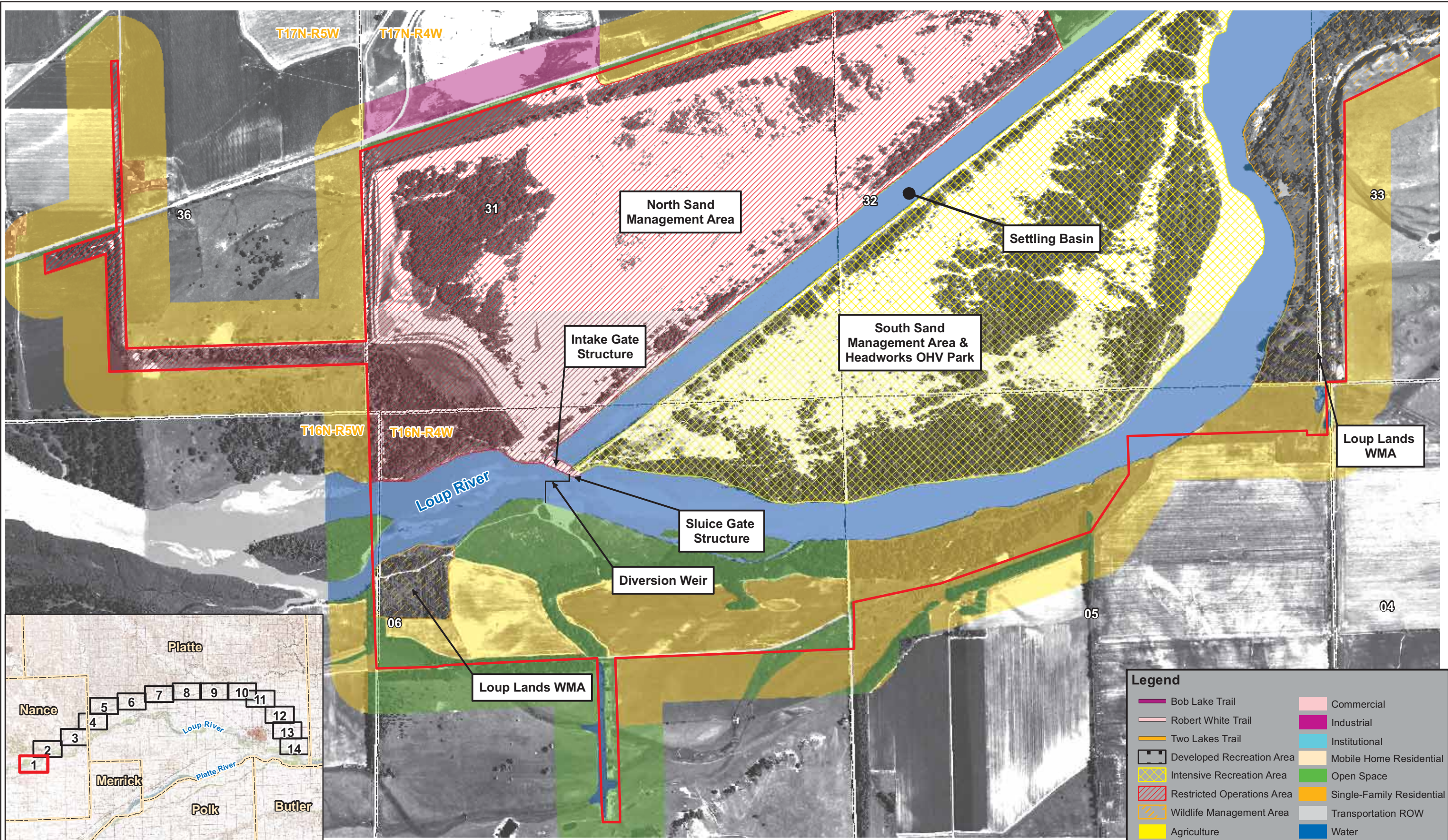
City of Columbus. October 2005. *Columbus Comprehensive Plan Update*.

Available online at

<http://www.columbusne.us/commdev/Columbus%20Plan.pdf>.

Nance County. 1999. *Nance County Comprehensive Development Plan*.

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- Legend**
- Approximate Project Boundary
  - Corporate Limits
  - County Line
  - Section Line

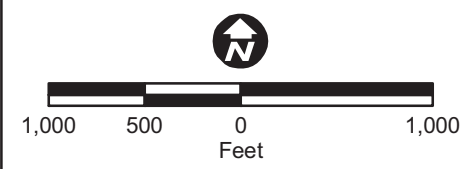


**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

- Legend**
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|--|---|
| <span style="color: magenta;">—</span> Bob Lake Trail                      | <span style="color: lightpink;">■</span> Commercial             |
| <span style="color: lightpink;">—</span> Robert White Trail                | <span style="color: magenta;">■</span> Industrial               |
| <span style="color: yellow;">—</span> Two Lakes Trail                      | <span style="color: cyan;">■</span> Institutional               |
| <span style="border: 1px solid black;">  </span> Developed Recreation Area | <span style="color: yellow;">■</span> Mobile Home Residential   |
| <span style="color: yellow;">■</span> Intensive Recreation Area            | <span style="color: green;">■</span> Open Space                 |
| <span style="color: red;">■</span> Restricted Operations Area              | <span style="color: orange;">■</span> Single-Family Residential |
| <span style="color: yellow;">■</span> Wildlife Management Area             | <span style="color: gray;">■</span> Transportation ROW          |
| <span style="color: yellow;">■</span> Agriculture                          | <span style="color: blue;">■</span> Water                       |

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Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

- Legend**
- Approximate Project Boundary
  - Corporate Limits
  - County Line
  - Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

Sheet 2 of 14

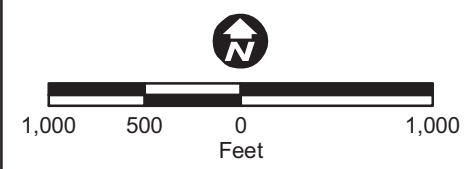
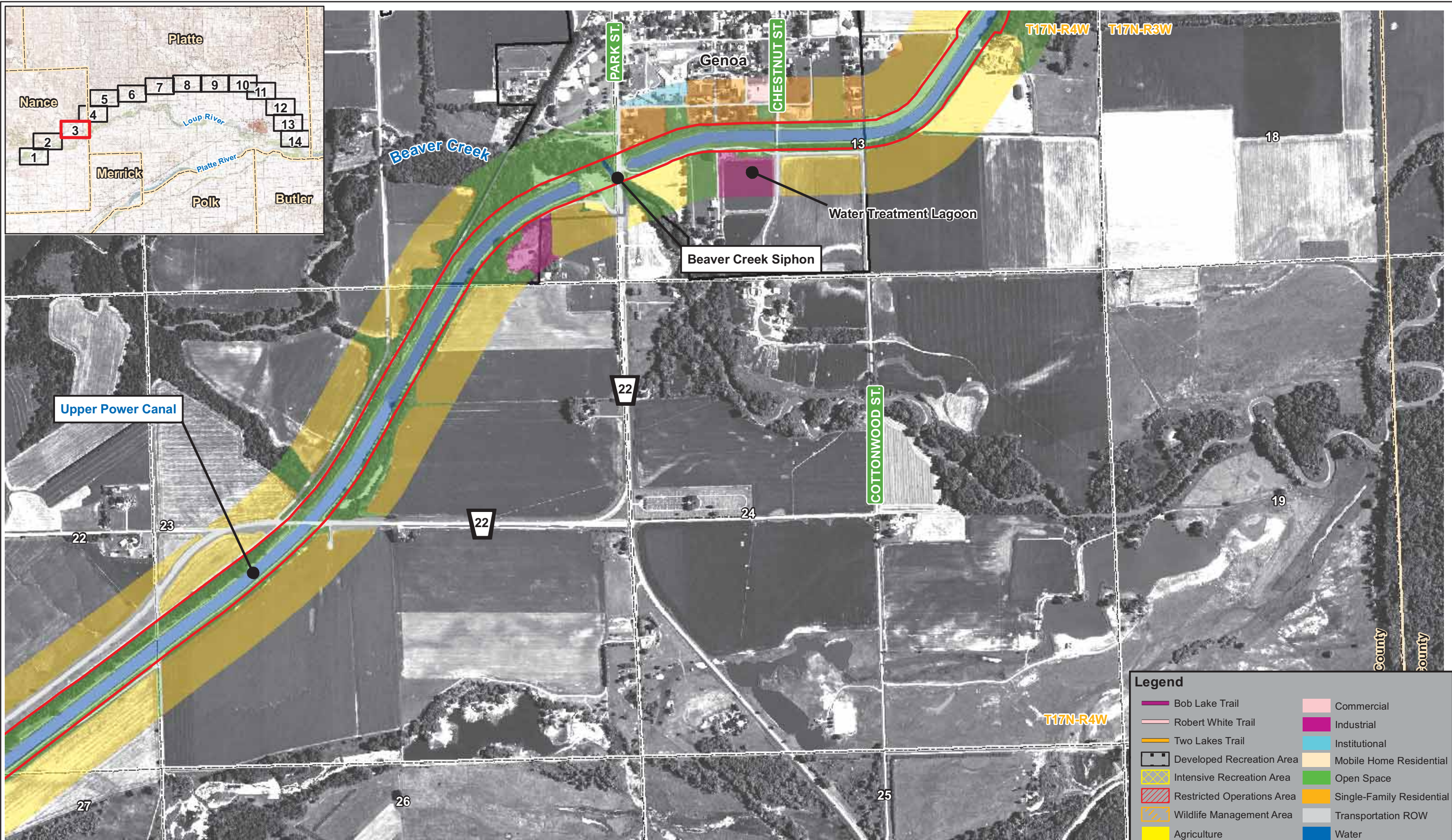
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FIGURE  
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Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

- Legend**
- Approximate Project Boundary
  - Corporate Limits
  - County Line
  - Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

- Legend**
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|---|---|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #800080; border: 1px solid black;"></span> Bob Lake Trail  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFC0CB; border: 1px solid black;"></span> Commercial                |
| <span style="display: inline-block; width: 15px; height: 10px; border-bottom: 1px solid black;"></span> Robert White Trail  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FF00FF; border: 1px solid black;"></span> Industrial                |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFA500; border: 1px solid black;"></span> Two Lakes Trail   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black;"></span> Institutional             |
| <span style="display: inline-block; width: 15px; height: 10px; border: 1px solid black; border-style: dashed;"></span> Developed Recreation Area  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFDAB9; border: 1px solid black;"></span> Mobile Home Residential   |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00; border: 1px solid black;"></span> Intensive Recreation Area   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> Open Space                |
| <span style="display: inline-block; width: 15px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, red 2px, red 4px); border: 1px solid black;"></span> Restricted Operations Area | <span style="display: inline-block; width: 15px; height: 10px; background-color: #FF8C00; border: 1px solid black;"></span> Single-Family Residential |
| <span style="display: inline-block; width: 15px; height: 10px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, red 2px, red 4px); border: 1px solid black;"></span> Wildlife Management Area  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #D3D3D3; border: 1px solid black;"></span> Transportation ROW        |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00; border: 1px solid black;"></span> Agriculture   | <span style="display: inline-block; width: 15px; height: 10px; background-color: #0070C0; border: 1px solid black;"></span> Water                     |

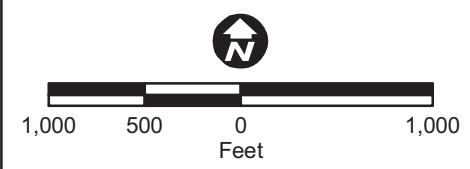
Sheet 3 of 14

DATE	August 2010
FIGURE	4-1

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Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

- Legend**
- Approximate Project Boundary
  - Corporate Limits
  - County Line
  - Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

- Legend**
- |   |   |
|---|---|
| <span style="color: magenta;">—</span> Bob Lake Trail   | <span style="background-color: lightpink; width: 15px; height: 10px; display: inline-block;"></span> Commercial             |
| <span style="color: lightcoral;">—</span> Robert White Trail  | <span style="background-color: magenta; width: 15px; height: 10px; display: inline-block;"></span> Industrial               |
| <span style="color: orange;">—</span> Two Lakes Trail   | <span style="background-color: cyan; width: 15px; height: 10px; display: inline-block;"></span> Institutional               |
| <span style="border: 1px solid black; width: 15px; height: 10px; display: inline-block;"></span> Developed Recreation Area                            | <span style="background-color: yellow; width: 15px; height: 10px; display: inline-block;"></span> Mobile Home Residential   |
| <span style="background-color: yellow; border: 1px dashed black; width: 15px; height: 10px; display: inline-block;"></span> Intensive Recreation Area | <span style="background-color: green; width: 15px; height: 10px; display: inline-block;"></span> Open Space                 |
| <span style="background-color: red; border: 1px solid black; width: 15px; height: 10px; display: inline-block;"></span> Restricted Operations Area    | <span style="background-color: orange; width: 15px; height: 10px; display: inline-block;"></span> Single-Family Residential |
| <span style="background-color: orange; border: 1px dashed black; width: 15px; height: 10px; display: inline-block;"></span> Wildlife Management Area  | <span style="background-color: lightgrey; width: 15px; height: 10px; display: inline-block;"></span> Transportation ROW     |
| <span style="background-color: yellow; width: 15px; height: 10px; display: inline-block;"></span> Agriculture   | <span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> Water                       |

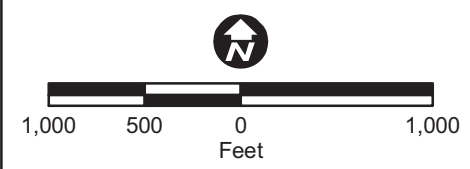
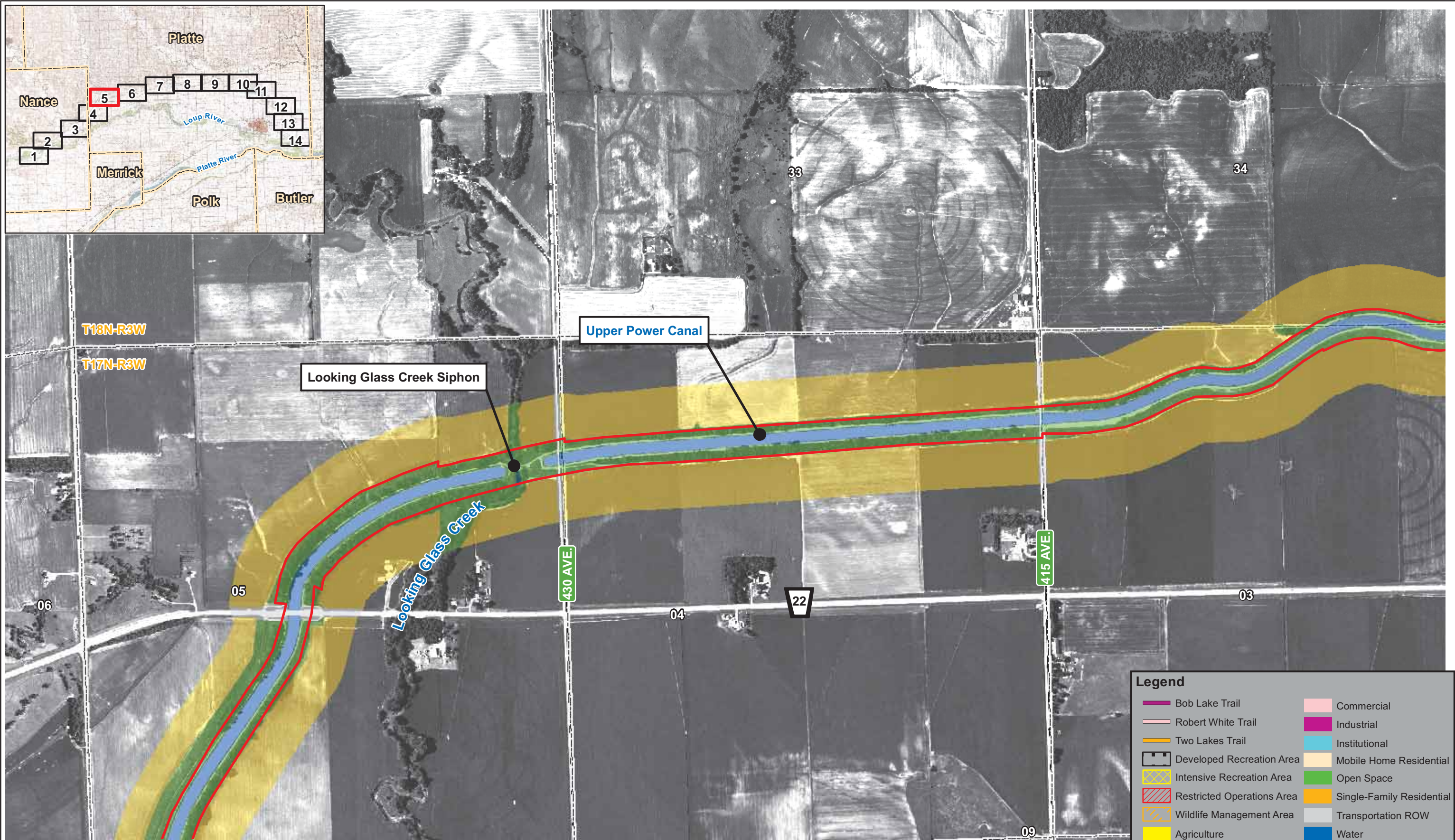
Sheet 4 of 14

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August 2010

FIGURE  
4-1

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- Legend**
- Approximate Project Boundary
  - Corporate Limits
  - County Line
  - Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

- Legend**
- |   |   |
|---|---|
| <span style="color: purple;">—</span> Bob Lake Trail  | <span style="background-color: pink; border: 1px solid black;">   </span> Commercial                  |
| <span style="color: brown;">—</span> Robert White Trail   | <span style="background-color: magenta; border: 1px solid black;">   </span> Industrial               |
| <span style="color: orange;">—</span> Two Lakes Trail   | <span style="background-color: cyan; border: 1px solid black;">   </span> Institutional               |
| <span style="border: 1px solid black;">   </span> Developed Recreation Area                           | <span style="background-color: yellow; border: 1px solid black;">   </span> Mobile Home Residential   |
| <span style="background-color: yellow; border: 1px solid black;">   </span> Intensive Recreation Area | <span style="background-color: green; border: 1px solid black;">   </span> Open Space                 |
| <span style="background-color: red; border: 1px solid black;">   </span> Restricted Operations Area   | <span style="background-color: orange; border: 1px solid black;">   </span> Single-Family Residential |
| <span style="background-color: orange; border: 1px solid black;">   </span> Wildlife Management Area  | <span style="background-color: gray; border: 1px solid black;">   </span> Transportation ROW          |
| <span style="background-color: yellow; border: 1px solid black;">   </span> Agriculture               | <span style="background-color: blue; border: 1px solid black;">   </span> Water                       |

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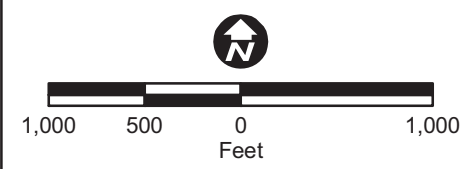
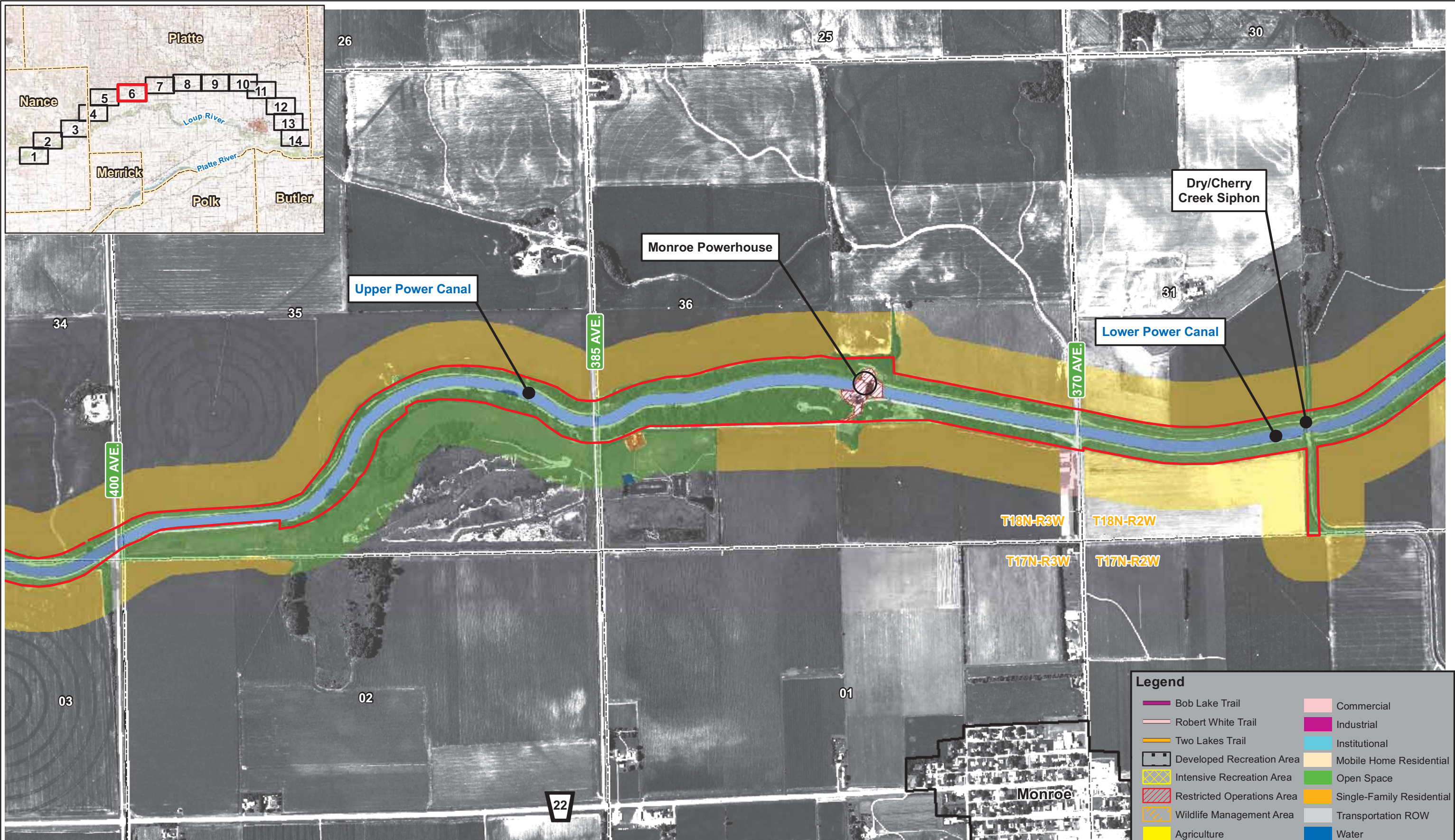
DATE  
August 2010

FIGURE  
4-1

Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

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- Legend**
- Approximate Project Boundary
  - Corporate Limits
  - County Line
  - Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

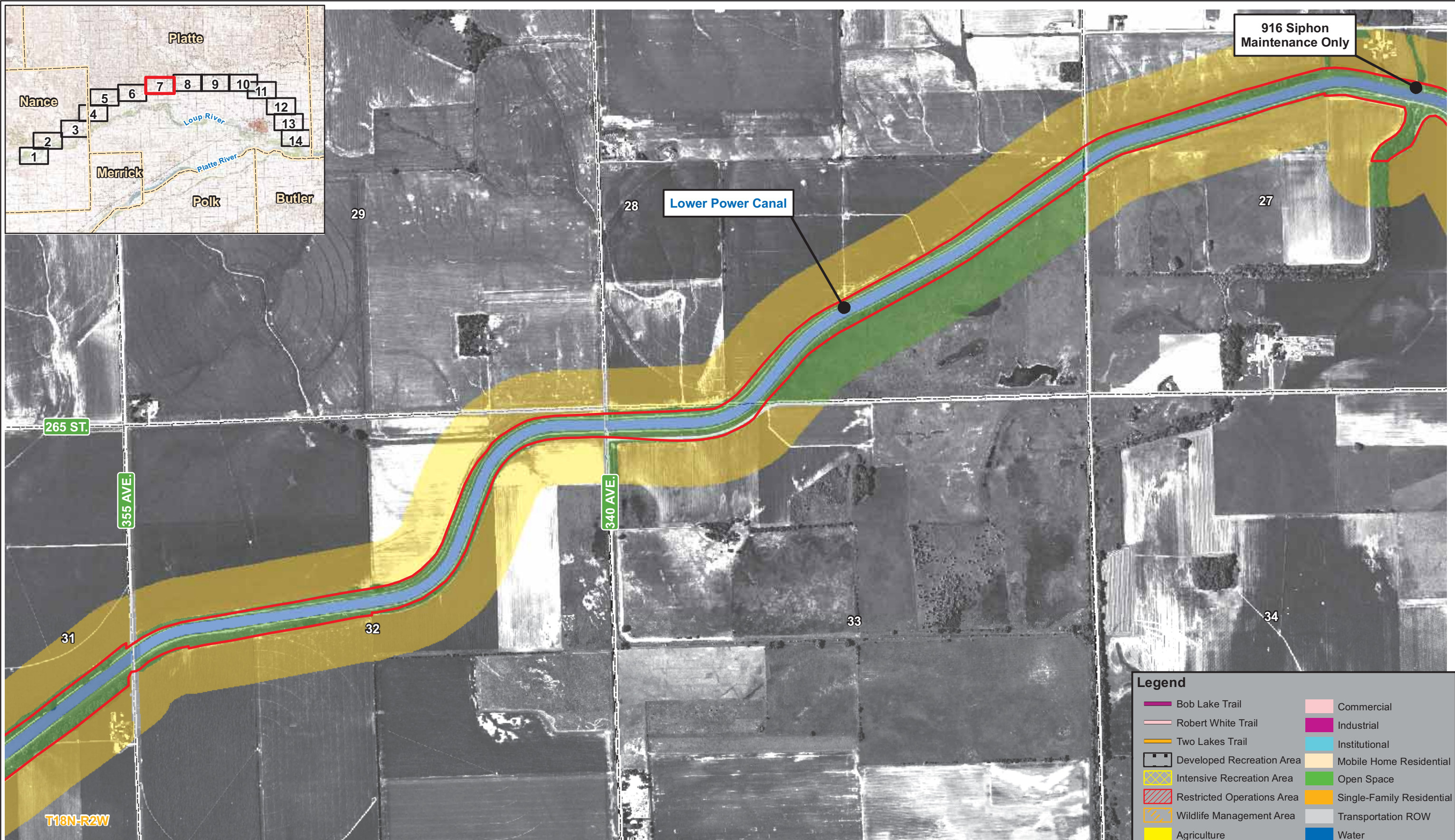
- Legend**
- |  |   |
|--|---|
| <span style="color: purple;">—</span> Bob Lake Trail   | <span style="color: pink;">—</span> Commercial                  |
| <span style="color: lightblue;">—</span> Robert White Trail  | <span style="color: magenta;">—</span> Industrial               |
| <span style="color: orange;">—</span> Two Lakes Trail  | <span style="color: cyan;">—</span> Institutional               |
| <span style="border: 1px solid black;">  </span> Developed Recreation Area                           | <span style="color: yellow;">—</span> Mobile Home Residential   |
| <span style="background-color: yellow; border: 1px solid black;">  </span> Intensive Recreation Area | <span style="color: green;">—</span> Open Space                 |
| <span style="background-color: red; border: 1px solid black;">  </span> Restricted Operations Area   | <span style="color: orange;">—</span> Single-Family Residential |
| <span style="background-color: orange; border: 1px solid black;">  </span> Wildlife Management Area  | <span style="color: grey;">—</span> Transportation ROW          |
| <span style="background-color: yellow;">  </span> Agriculture  | <span style="color: blue;">—</span> Water                       |

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DATE  
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FIGURE  
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Legend			
	Bob Lake Trail		Commercial
	Robert White Trail		Industrial
	Two Lakes Trail		Institutional
	Developed Recreation Area		Mobile Home Residential
	Intensive Recreation Area		Open Space
	Restricted Operations Area		Single-Family Residential
	Wildlife Management Area		Transportation ROW
	Agriculture		Water

Legend	
	Approximate Project Boundary
	Corporate Limits
	County Line
	Section Line

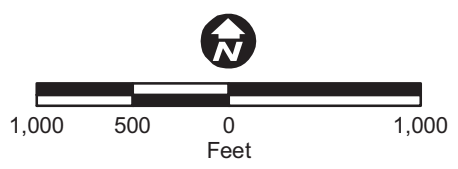


### Existing Land Use

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

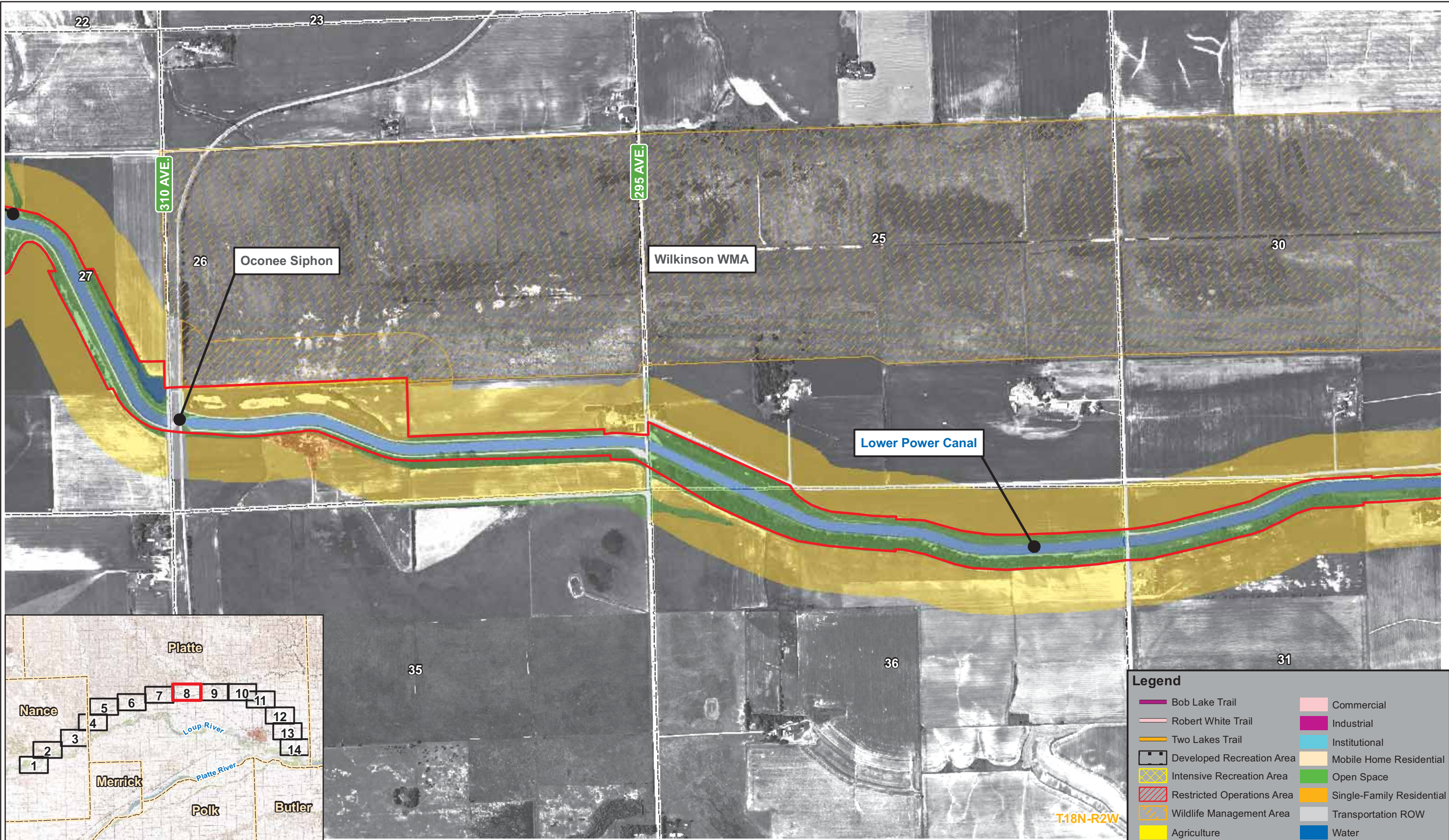
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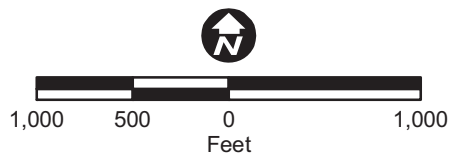
Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

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Legend			
	Bob Lake Trail		Commercial
	Robert White Trail		Industrial
	Two Lakes Trail		Institutional
	Developed Recreation Area		Mobile Home Residential
	Intensive Recreation Area		Open Space
	Restricted Operations Area		Single-Family Residential
	Wildlife Management Area		Transportation ROW
	Agriculture		Water

Legend	
	Approximate Project Boundary
	Corporate Limits
	County Line
	Section Line



Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic



### Existing Land Use

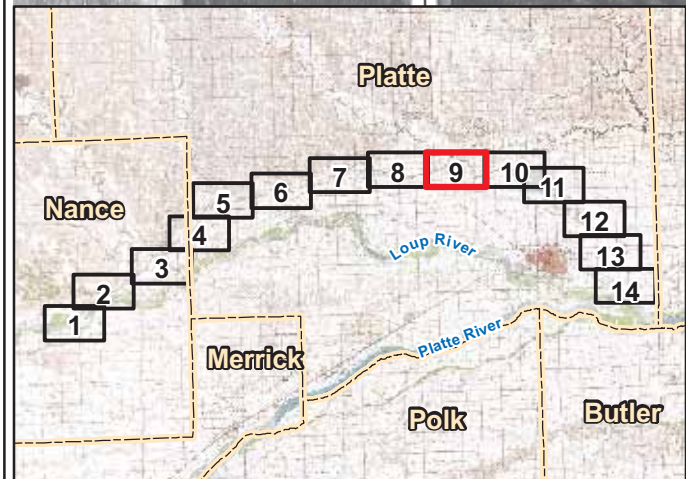
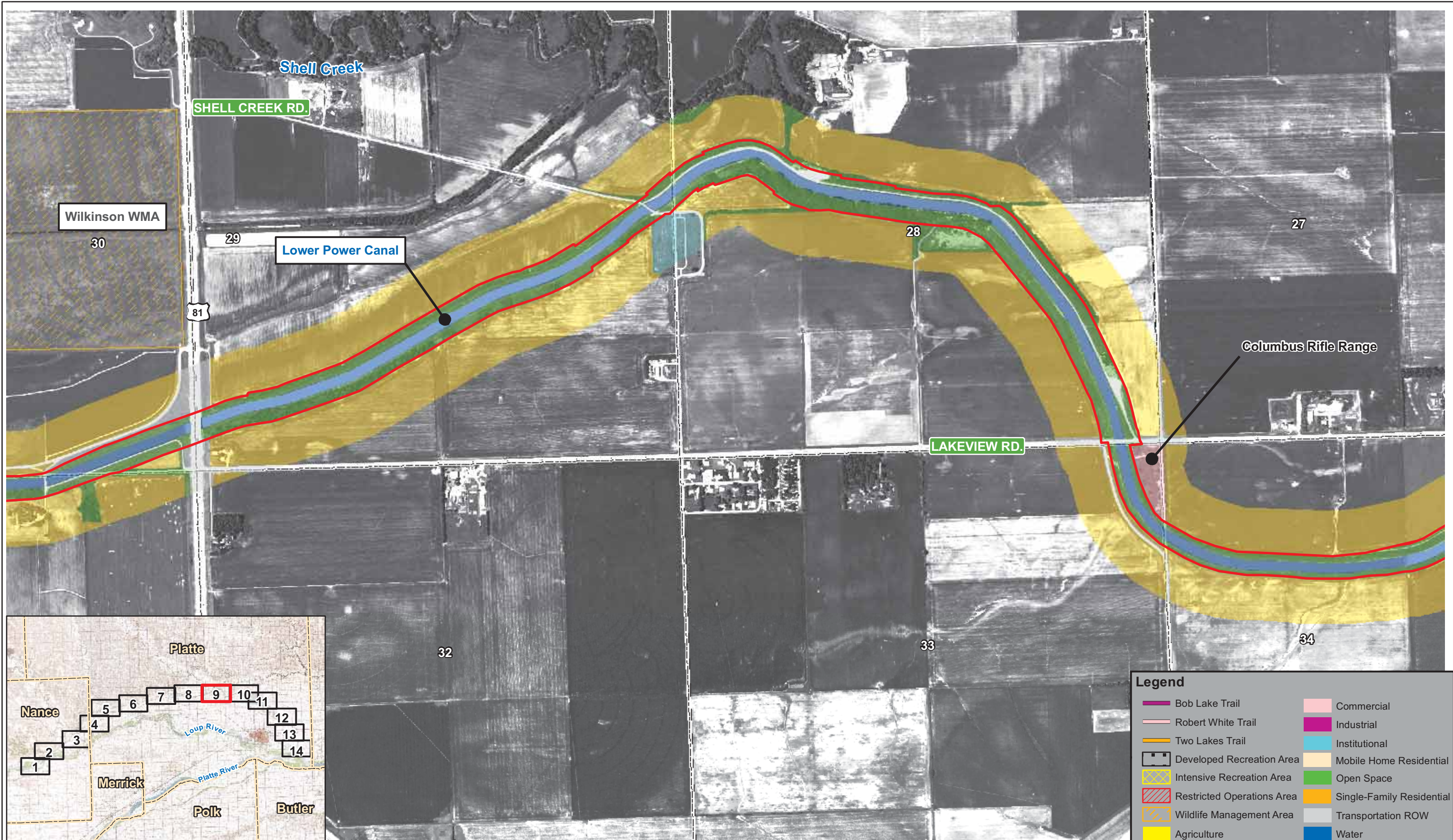
Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

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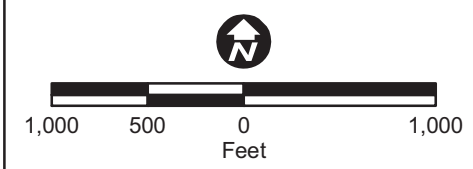
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DATE	August 2010
FIGURE	4-1

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Legend			
	Bob Lake Trail		Commercial
	Robert White Trail		Industrial
	Two Lakes Trail		Institutional
	Developed Recreation Area		Mobile Home Residential
	Intensive Recreation Area		Open Space
	Restricted Operations Area		Single-Family Residential
	Wildlife Management Area		Transportation ROW
	Agriculture		Water



Legend	
	Approximate Project Boundary
	Corporate Limits
	County Line
	Section Line



**Existing Land Use**  
 Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

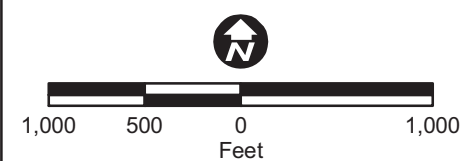
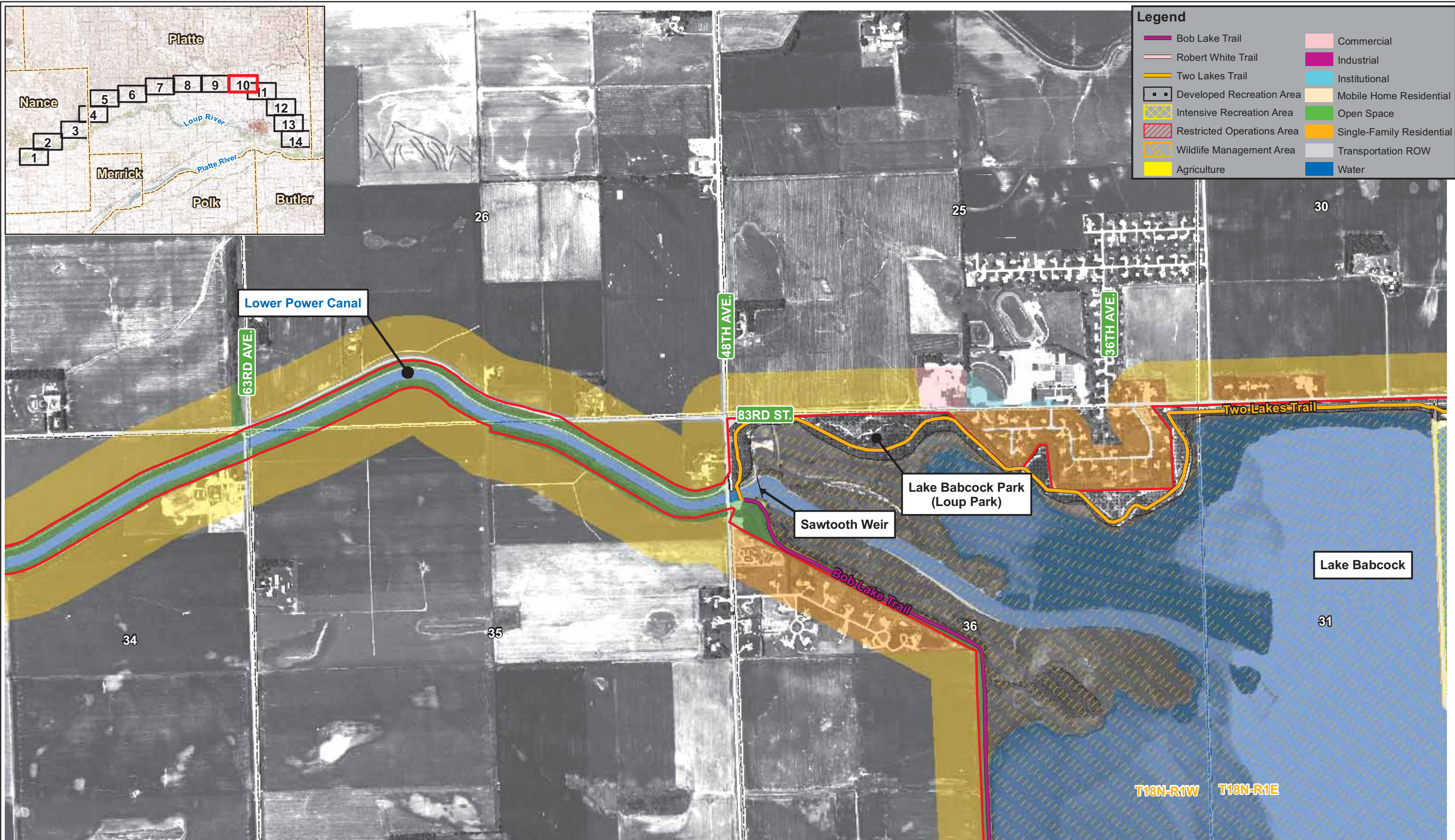
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DATE	August 2010
FIGURE	4-1

Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

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Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

**Legend**

- Approximate Project Boundary
- Corporate Limits
- County Line
- Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
FERC Project No. 1256  
Study 10.0 Land Use Inventory

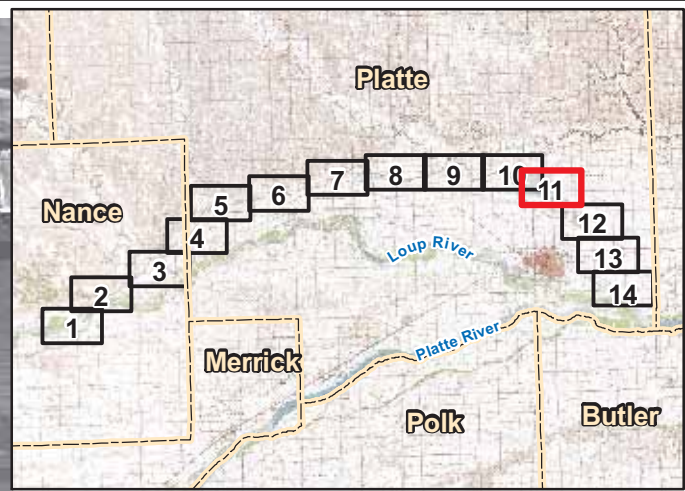
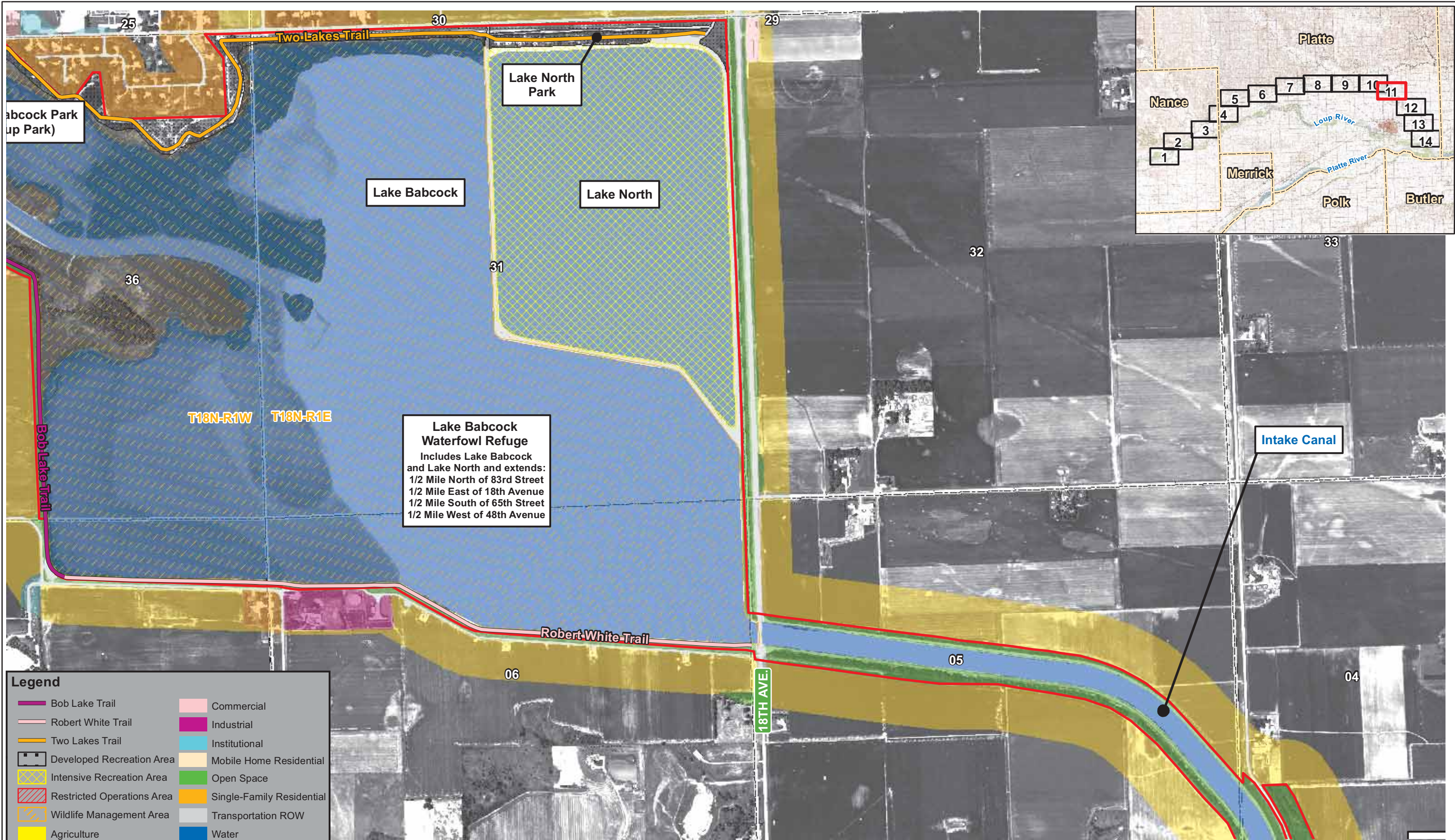
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FIGURE  
4-1

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**Legend**

Bob Lake Trail	Commercial
Robert White Trail	Industrial
Two Lakes Trail	Institutional
Developed Recreation Area	Mobile Home Residential
Intensive Recreation Area	Open Space
Restricted Operations Area	Single-Family Residential
Wildlife Management Area	Transportation ROW
Agriculture	Water

**Legend**

Approximate Project Boundary
Corporate Limits
County Line
Section Line

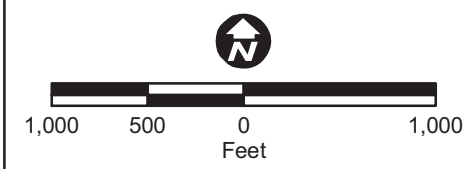


**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

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DATE	August 2010
FIGURE	4-1

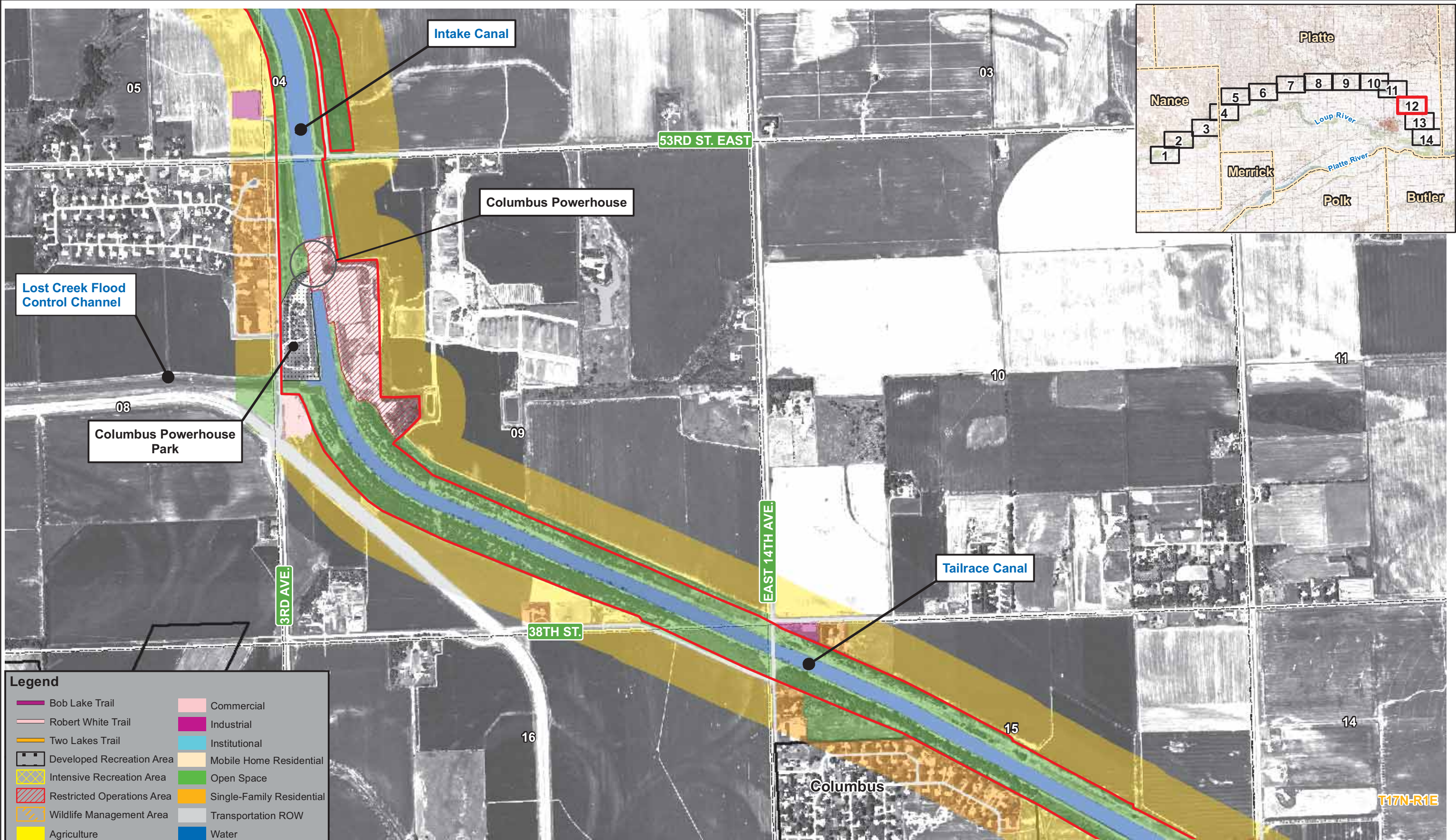


Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

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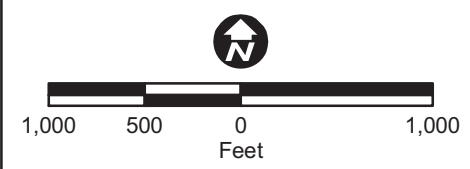


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**Legend**

Bob Lake Trail	Commercial
Robert White Trail	Industrial
Two Lakes Trail	Institutional
Developed Recreation Area	Mobile Home Residential
Intensive Recreation Area	Open Space
Restricted Operations Area	Single-Family Residential
Wildlife Management Area	Transportation ROW
Agriculture	Water



**Legend**

- Approximate Project Boundary
- Corporate Limits
- County Line
- Section Line



**Existing Land Use**

Loup River Hydroelectric Project  
 FERC Project No. 1256  
 Study 10.0 Land Use Inventory

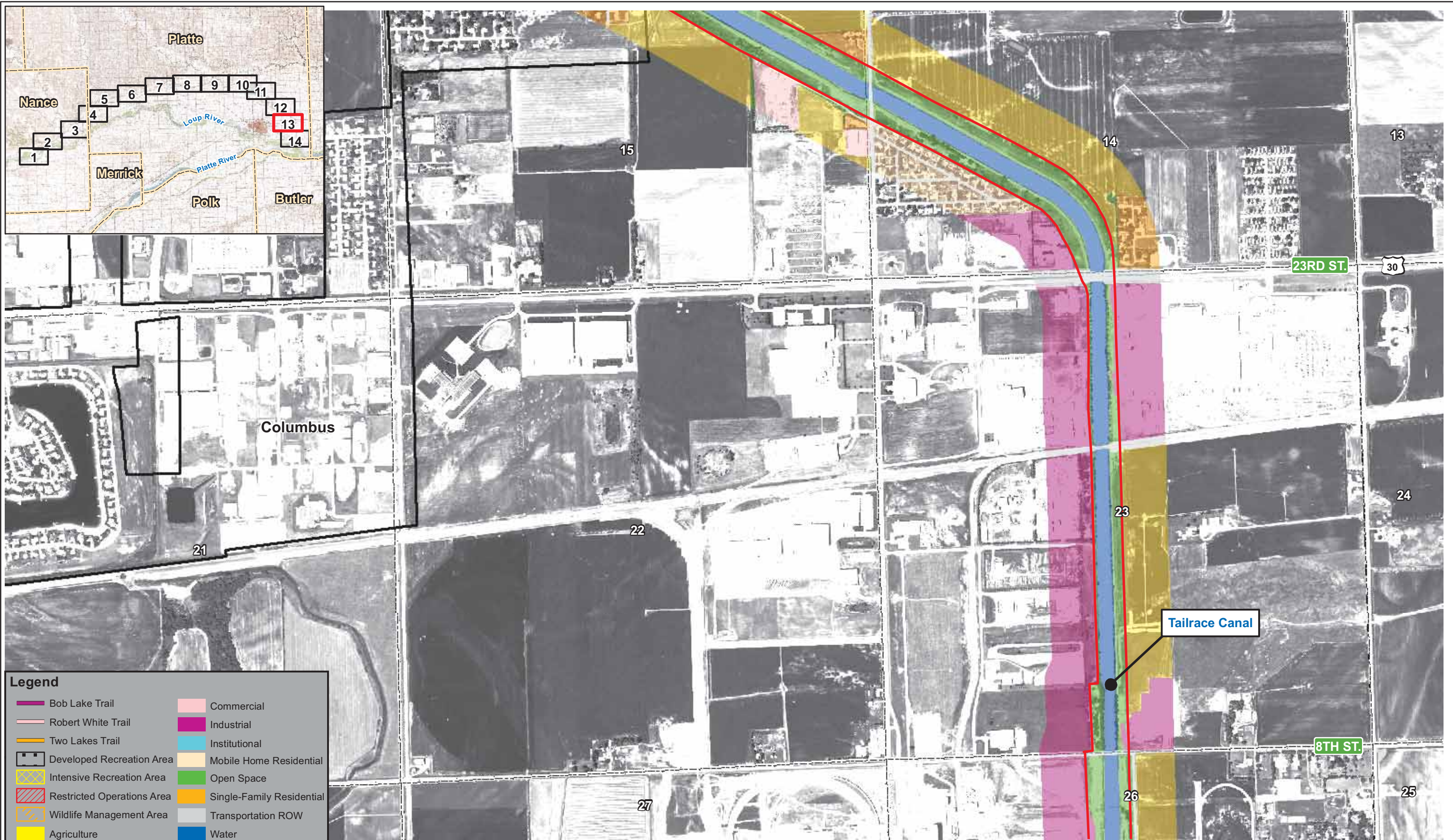
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DATE	August 2010
FIGURE	4-1

Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

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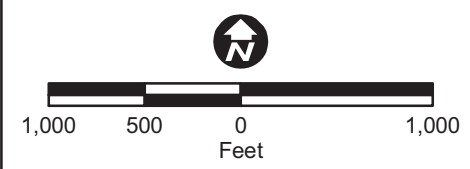


**Legend**

Bob Lake Trail	Commercial
Robert White Trail	Industrial
Two Lakes Trail	Institutional
Developed Recreation Area	Mobile Home Residential
Intensive Recreation Area	Open Space
Restricted Operations Area	Single-Family Residential
Wildlife Management Area	Transportation ROW
Agriculture	Water

**Legend**

- Approximate Project Boundary
- Corporate Limits
- County Line
- Section Line

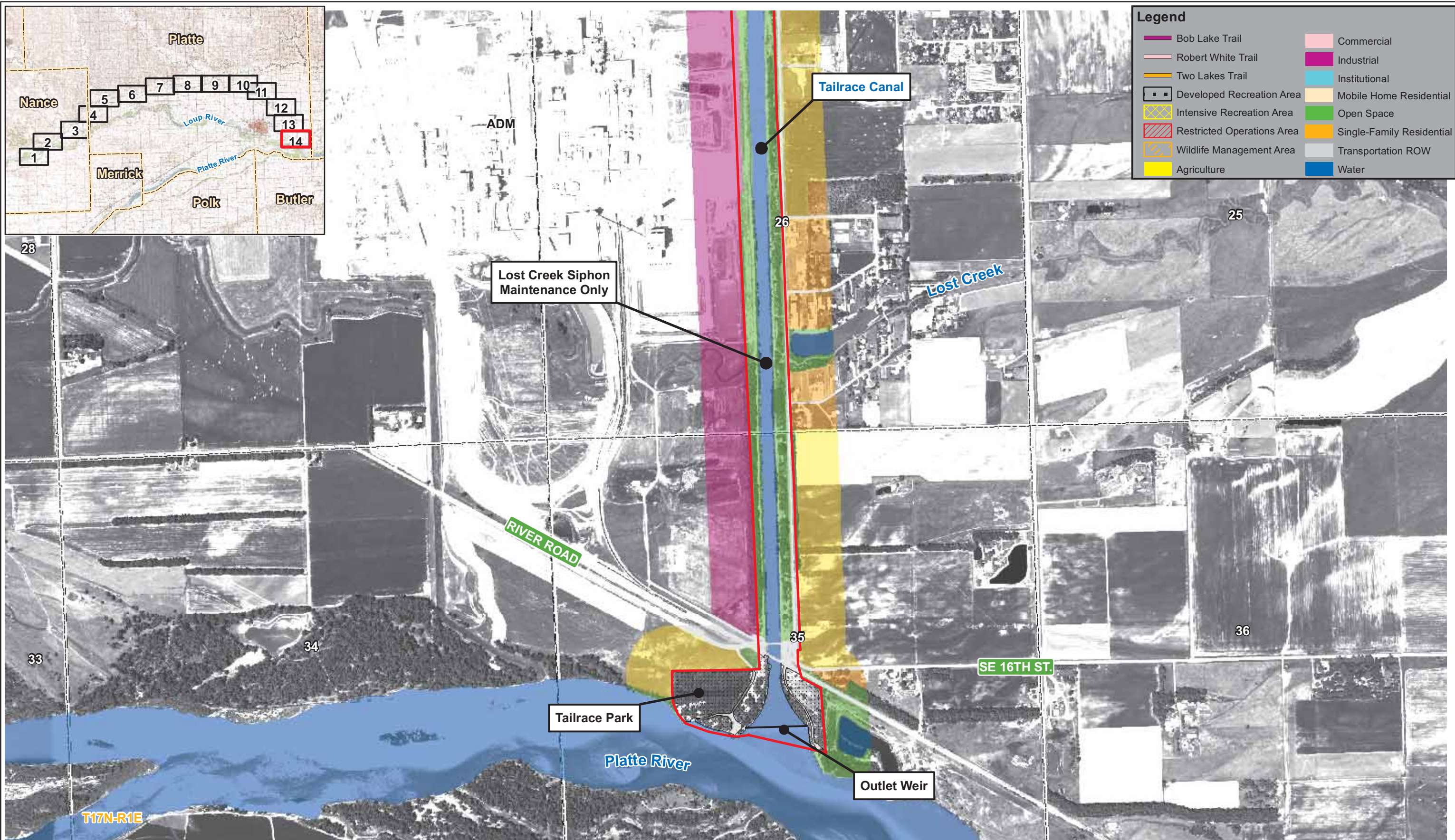


Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic



<b>Existing Land Use</b>	Sheet 13 of 14	DATE August 2010
Loup River Hydroelectric Project FERC Project No. 1256 Study 10.0 Land Use Inventory		FIGURE 4-1
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Legend			
	Bob Lake Trail		Commercial
	Robert White Trail		Industrial
	Two Lakes Trail		Institutional
	Developed Recreation Area		Mobile Home Residential
	Intensive Recreation Area		Open Space
	Restricted Operations Area		Single-Family Residential
	Wildlife Management Area		Transportation ROW
	Agriculture		Water

1,000 500 0 1,000  
Feet

Aerial Imagery: 2009 National Agricultural Inventory Project, Nance and Platte Counties Mosaic

Legend	
	Approximate Project Boundary
	Corporate Limits
	County Line
	Section Line



<h3>Existing Land Use</h3> <p>Loup River Hydroelectric Project FERC Project No. 1256 Study 10.0 Land Use Inventory</p>	<p>Sheet 14 of 14</p>	<p>DATE August 2010</p>
	<p>© 2010 Loup River Public Power District</p>	<p>FIGURE 4-1</p>