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December 30, 2014

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington DC 20426

Subject: The Central Nebraska Public Power and Irrigation District, Project No. 1417
License Article 421
FERC Project Boundary Review - Lake McConaughy and Lake Ogallala

Secretary Bose:

Pursuant to The Central Nebraska Public Power and Irrigation District's (Central or District) *Updated FERC Boundary Review Schedule* (Schedule),¹ Central is to complete a review of the Federal Energy Regulatory Commission (FERC) Project Boundary (Project boundary) at Lake McConaughy and Lake Ogallala² by December 31, 2014. Central has completed that review, and hereby submits to FERC the following summary and recommendations concerning the Project boundary at Lake McConaughy and Lake Ogallala.

Introduction

Central previously filed with FERC changes to the Project boundary for Lake McConaughy on August 9, 2004. FERC approved these changes in its December 23, 2004 *Order Amending License to Change Project Boundary*. Subsequent to this boundary amendment application and approval, Central determined that important areas were excluded from the Project boundary at Lake McConaughy, and that further revision to the Project boundary would need to be considered.³

¹ Submitted by Central as part of its July 18, 2011 *FERC Project Boundary Review 2011 Annual Progress Report* and accepted by FERC in its July 29, 2011 letter responding to Central's 2010 and 2011 Project Boundary Review Annual Reports. This Schedule adjusts the schedule of review provided for in Central's Land and Shoreline Management Plan.

² Though referred to commonly as "lakes", Lake McConaughy and Lake Ogallala are in fact reservoirs, and the terms may be used interchangeably for purposes of this letter.

³ Identified by Central in several of its annual progress reports to FERC from 2007 through 2011, and part of the basis for the Schedule proposed in 2011.

Description of Lake McConaughy and Lake Ogallala

Lake McConaughy and the associated Lake Ogallala are located on the North Platte River north of the city of Ogallala, Nebraska. Lake McConaughy is Central's primary storage reservoir, operated primarily for the purposes of storing water for irrigation and hydropower production.⁴ Lake McConaughy is impounded behind Kingsley Dam, an approximately three-mile long hydraulic fill dam that also includes a north dike, outlet structures, a hydropower plant, and an emergency spillway. Lake Ogallala sits below Kingsley dam, and serves as the downstream regulator for outflows from Lake McConaughy, as well as the diversion pool for Keystone Dam⁵ downstream.

When full, Lake McConaughy is approximately 21 miles long and up to 4 miles wide, with 30,500 surface acres. The terrain around Lake McConaughy is diverse. The western portion of Lake McConaughy is shallow, with the North Platte River moving in winding streams through a vast wetland area. The lake reaches its maximum depth of approximately 135 feet near the control structure of Central's Project. Grassland-dominant sand hills dominate the north shore of Lake McConaughy. The vegetation that covers the area holds much of the sand in place. Fine white-sand beaches are present along the shorelines, and trees line sandy beach pockets along the shoreline. High steep bluffs and cliffs border approximately five miles of the south shoreline closest to the dam, transitioning to the west into rocky outcrops and eventually sandy areas. Wind and wave erosion greatly shape and impact the shoreline and surrounding lands. The extent and rate of erosion are dependent on such things as pool elevation, water depth, frequency of water presence and absence, fetch, prevailing wind directions, shoreline configuration, shoreline slope, shoreline material, and shoreline vegetation. Much of the shoreline contains beach areas, as a consequence of erosion and reservoir operations. The beach material varies by location as a consequence of the material exposed to the reservoir or being eroded at each location.

Lake McConaughy supports diverse land uses along the shoreline, including public recreation, environmental uses, and residential development. The water surface, beaches, and much of the shoreline and adjacent lands, and in particular much of the land adjacent to the north shoreline, is used for public recreation, leased from Central and managed by the Nebraska Game and Parks Commission (NGPC) as the Lake McConaughy State Recreation Area, and includes such things as fishing, fully developed campgrounds and primitive camping, boat ramps, and commercial marinas. Environmental uses include

⁴ While irrigation and hydropower are the primary purposes for which water is stored in Lake McConaughy, water from McConaughy is also used for such things as instream flows and thermal cooling.

⁵ Part of FERC Project 1835, owned and operated by the Nebraska Public Power District.

beach nesting of the endangered⁶ Interior Least Tern and the threatened Northern Great Plains Piping Plover, and the lease from Central to NGPC of the west end of Lake McConaughy for use as the Clear Creek Wildlife Management Area. Private cabins⁷ are interspersed along both the north and south sides of the reservoir, mostly grouped into subdivisions or designated cabin “areas.” Some cabins are located on privately-owned lands, some are located within the NGPC-leased lands (usually coincident with a concessionaire), and some are on Central-owned lands which has been retained for purposes of an erosion and shoreline control buffer. Central also has cabins near the dam that it uses for District purposes (primarily on-site housing of Central employees). There is a Union Pacific Railroad line that runs along the north side of the reservoir which acts as an effective visual and practical boundary for management purposes.

Lake Ogallala⁸ was created when sand was pumped from the riverbed to provide material for the construction of the Kingsley Dam. Lake Ogallala covers approximately 650 surface acres and has roughly four miles of shoreline, and is composed of both lacustrine and wetland environments. Lake Ogallala is used for public recreation, primarily fishing and camping, and is leased from Central and managed by NGPC as the Lake Ogallala State Recreation Area. Portions of Lake Ogallala are used seasonally by bald eagles for roosting, perching, and feeding. The shoreline of Lake Ogallala experiences relatively little movement as a result of erosion due to the protected nature of the site from wind, small size, and relatively stable water levels.

Boundary Review and Recommendations

Central reviewed the boundary for the entirety of Lake McConaughy and Lake Ogallala, for purposes of assessing the current location of the boundary and for determining recommendations for any changes. For purposes of this report, the boundary review and recommendations are described in sequential abutting areas,⁹ starting at the northeast end of Lake McConaughy, proceeding counter-clockwise, and ending with the area around Kingsley Dam and Lake Ogallala.

⁶ May no longer be designated as endangered, as the U.S. Fish and Wildlife Service was in the process of de-listing at the time of drafting this letter.

⁷ The term “cabin” in the context of this letter refers to everything from traditional small recreational season cabins, to trailer houses, to full-time residential houses.

⁸ For purposes of this review, references to Lake Ogallala are only to those parts owned by Central and operated as part of P-1417; the eastern arm of the lake is part of the Nebraska Public Power District’s FERC Project 1835, below Kingsley Dam.

⁹ These “areas” and their numbering were designated for the purposes of this review and report to provide an orderly means of description, and did not previously exist as distinct designations for any other purpose.

Area 1

Area 1 encompasses an area along the north shoreline of Lake McConaughy, starting from where Nebraska Highway 61 runs in a north-south direction north of Kingsley Dam, and proceeding west to what is commonly known as the Cedar Vue area. The locations of the current and proposed Project boundary for this area are shown in Figures 1A, 1B, and 1C.

The beach in this area is used by nesting terns and plovers and for public recreation purposes. Adjacent lands north of the reservoir are used for lake-associated public recreation (i.e. camping and other recreational uses of the Lake McConaughy State Recreation Area). There are cabin areas interspersed within the recreation areas, some of which are on lands within the NGPC leased and managed recreation area, and some of which are within lands owned by Central as an erosion and management buffer, but surrounded by lands managed for public recreation. The shoreline in this area experiences significant and active erosion. At high pool elevations, the reservoir will have water in otherwise dry bays and draws, which causes water to back up into active drainages that flow from the north.

The current Project boundary approximately follows the reservoir shoreline and excludes the lake-associated public recreation area. This location does not provide for buffers in the vicinity of active erosion or for shoreline maintenance. In some areas that experience the most active erosion, the shoreline, beach, and water surface (at certain reservoir elevations) lay outside of the current Project boundary.

Central recommends that the Project boundary in this area be adjusted to include all lands located between the reservoir and the Union Pacific Railroad (Railroad) right-of-way (ROW). This will capture all lands needed for project operations, beach areas, erosion-prone areas, and the most significantly used lake-associated public recreation area. The Railroad ROW would serve as an easily identifiable Project boundary for this area. The Project boundary should continue to extend north of the railroad line where it follows drainages subject to flowage and backwater under high reservoir levels. The Project boundary would be set to match District ownership boundaries in this area, which are captured in metes and bounds descriptions in recorded public surveys.

Area 2

Area 2 is located along the north shoreline of Lake McConaughy, starting from where Lakeshore Subdivision abuts Cedar Vue Campground and proceeding west to and including what is commonly referred to as the K-2 cabin area. The locations of the current and proposed Project boundary for this area are shown in Figures 2A and 2B.

The beach in this area is used by nesting terns and plovers and for public recreation. Lands north of the shoreline are used for private residential and recreational cabins; some on privately-owned lands and some on lands owned by Central for purposes of an erosion and management buffer. Several cabins are close to actively eroding shorelines.

The current Project boundary roughly follows the reservoir shoreline. The current Project boundary does not include adequate buffers in the vicinity of active erosion or for purposes of shoreline maintenance. In some areas of active erosion, the shoreline, beach, and water surface (at certain reservoir elevations) lie outside of the current Project boundary. Within this area there are conflicts between private land ownership and use of the beach for public recreation and management for environmentally sensitive species.¹⁰

Central recommends that the Project boundary be adjusted to include all of the beach and shoreline, plus buffer areas for erosion, shoreline maintenance, and controlling access to project lands and waters. In the area of Lakeshore Albee's, and A&R subdivisions, where the shoreline consists of irregular small eroding lake-ward projections, the Project boundary would be described in metes and bounds capturing the eroding points of land. In the K-2 cabin area, where the shoreline is straighter and the distance between shoreline and Railroad is relatively narrow, the Project boundary would follow the ownership boundary between the District and the Railroad ROW.

Area 3

Area 3 encompasses the west end of Lake McConaughy, following the north shoreline from the west end of the K-2 cabin area to the north-west corner of District property, then cutting south across the North Platte River, and then heading east along the south shoreline to the west edge of what is known as the McKenzie subdivision. Much of this area is located in lands leased to the NGPC and managed by that agency as the Clear Creek Wildlife Management Area (WMA). The locations of the current and proposed Project boundary for this area are shown in Figures 3A, 3B, and 3C.

This area consists primarily of agricultural, riparian, transitional wetland, and backwater habitat areas. The south shoreline extending from the WMA habitat areas to the east has some beach areas that receive limited public recreation use (primarily accessed by boat or by following the beach from access points further east) and also receives some tern and plover nesting when conditions are favorable. Due to shallow water and frequent dewatered conditions, there are limited development pressures in this area. Erosion is fairly limited in these areas to instances when pool elevations are at the upper end of the lake's limit. There are some marginal agricultural uses within the area that do not

¹⁰ Where erosion has resulted in portions of the beach being on privately-owned lands, and the owner then restricts access to the beach on those lands.

conflict with Project operations and maintenance, recreation, or environmental resource protections.

The current Project boundary most generally encompasses the lake-associated habitats, beaches, flowage areas, lake-associated recreational uses, and access-control needs sufficiently throughout this area. There is one odd irregularity in the Project boundary path in the far northwest corner which is believed to be the result of complications with previous land surveys; the land encompassed by this Project boundary irregularity is not needed for Project purposes.

Central recommends that the Project boundary remain unchanged throughout most of this area, with the following exceptions:

1. That in two short stretches, one on the north side and one on the south side, it would be adjusted to match Central's ownership boundary as a matter of management convenience; and
2. That the described Project boundary irregularity at the far northwest corner of the District's property would be removed.

Area 4

Area 4 is along the south shoreline of Lake McConaughy starting from the McKenzie subdivision and proceeding eastward to just west of the area commonly referred to as Ogallala Beach.¹¹ The locations of the current and proposed Project boundary for this area are shown in Figures 4A, 4B, and 4C.

This area along the south shoreline is characterized by a mix of public recreation, environmental, private cabins, and agricultural uses. Public recreation is primarily limited to beach areas, access points, and concessionaire areas. The beach is also used as nesting habitat for terns and plovers. Private residential and recreational uses and agricultural uses primarily take place on privately-owned lands at higher elevations adjacent to the shoreline. Near-shoreline private development continues in this area as open pasture areas are converted to private residential and recreational use. This area spans the stretch of the southern shoreline that moves from areas of minimal erosion toward the west end to areas of significant erosion toward the east end; the result of water depth, water presence, fetch, shoreline slope, and shoreline vegetation all tending in favor of erosion from west to east; with erosion most significant on the north and west aspects of terrain that protrudes into the reservoir.

¹¹ Notwithstanding similarity in the name, Ogallala Beach is located on Lake McConaughy, and not on Lake Ogallala.

Much of the current Project boundary in this area is based upon prior estimates of shoreline location and ownership boundaries of the District. At several locations the shoreline has already eroded to or beyond the current Project boundary, and future erosion is expected to continue this process, resulting in more and larger areas where the beach and shoreline would extend beyond the current Project boundary.

Central recommends that the Project boundary be adjusted to include all of the beach and shoreline, plus buffer areas for erosion, shoreline maintenance, and controlling access to Project lands and waters. In areas of active erosion, primarily the lake-ward projections of lands, the Project boundary would be enclosed by appropriate metes and bounds. In areas where erosion is less of a concern, such as some areas to the west end and in bays, coves, and other areas sheltered from the most significant angles of attack by wave action, the Project boundary may be left unchanged, adjusted to the District ownership lines and similar recorded survey lines, or adjusted to boundaries of convenience, such as established fence lines.

Area 5

Area 5 is the south shoreline of Lake McConaughy starting from the Ogallala Beach area and extending to the east end of the reservoir where Nebraska Highway 61 runs in a north-south direction south of Kingsley Dam. The locations of the current and proposed Project boundary for this area are shown in Figures 5A and 5B.

Similar to Area 4, this area is characterized by private residential and recreation development with some undeveloped pasture areas on high ground overlooking the reservoir, and a beach area used for public recreation and tern and plover nesting. The greatest distinctions between this area and Area 4 are: this area experiences some of the greatest erosional forces on the lake, as a consequence of reservoir depths, water presence, fetch, and topography; the shoreline topography has much more severe cliffs and horizontal variations (i.e. bays and peninsulas), and the underlying materials are primarily rocky formations.

The current Project boundary in this area is based on a past approximation of shoreline location, with no consideration of or allowance for erosion. The shoreline is already eroding past the Project boundary at several locations, and this progress is expected to continue.

Central recommends that the Project boundary be adjusted to include a buffer for erosion and shoreline maintenance, and controlling access to Project lands and waters. Fortunately, the District already owns land outside the current Project boundary specifically for this purpose, and so the ownership boundary of the District can be used as the Project boundary for most of this area. An exception to this use of the ownership-

boundary for the Project boundary would be where the District owns some land in the far southeast corner of this area that is too far removed from shoreline to be necessary for a shoreline buffer, and provides no other operational, recreational, or resource protection needs of the Project; in this location those Central-owned lands would not be included in the Project, and an established road used to access the lake would instead be used for the Project boundary.

Area 6

This is the area of Kingsley Dam, the north dike, the emergency spillway, and Lake Ogallala. The locations of the current and proposed Project boundary for this area are shown in Figures 6A and 6B.

The primary uses in this area are the dam and associated structures and facilities, and Lake Ogallala. Lake Ogallala serves as the regulator for outflows from Lake McConaughy, and is also used for public recreation. Areas between the dam and Lake Ogallala, and a small area north of Lake Ogallala, are areas where seepage is monitored for purposes of dam safety. The “Hilltop” area at the south end of the dam provides an overlook of the main dam and outlet works. To the south and east of the dam is the drainage into which the emergency spillway would discharge if ever operated. Also to the south are borrow sites for material used during construction of the dam which are kept by Central in case there is ever a need for additional similar material for future work on the dam.

The current Project boundary encompasses the dam and north dike, Central’s portion of Lake Ogallala, and the constructed channel of the emergency spillway. The eastern Project boundary is the common boundary shared with FERC Project No. 1835. The current Project boundary does not include the land north of Lake Ogallala where seepage is monitored, the Hilltop area, the drainage into which the emergency spillway would flow, the borrow site area, and a small portion of road that is used for District and public access near the northeast corner of Lake Ogallala.

Central recommends that the Project boundary be adjusted to include all items mentioned above as being currently omitted. This can be accomplished by setting the Project boundary to match Central’s ownership boundary for lands east of Highway 61.

Special Items of Discussion

The following are special areas that Central believes should be mentioned:

No Boundary Adjustments Recommended for Reservoir “Surge”

Central does not recommend modification of the Project boundary for purposes of encompassing lands that would be affected by a “surge” of reservoir contents as a result of an extraordinary inflow event, such as would occur under a Probable Maximum Flood (PMF) or Inflow Design Flood scenario.¹² While in some cases it might be appropriate to include within the Project boundary lands that would be inundated by reservoir operations during a flood event, where such inundation would be important for safe operation of the Project and to protect lives, Central does not believe that Lake McConaughy is such a case.¹³ In the case of Lake McConaughy, the contributing drainage area and the reservoir size would combine to provide such a long advance warning and slow rate of rise that it is reasonable to assume that significant opportunity would exist to remove the public from the inundation area in a timely manner. Similarly, as any such event would presumably already be carrying significant debris from upstream areas into the reservoir,¹⁴ there is likely little benefit to be gained in protecting the Project by controlling what items may be placed in the reservoir inundation area.

Cultural Resources

There are some previously surveyed items of archeological significance located within the current Project boundary. The nature and location of these cultural resources are not publically disclosed. None of the recommended adjustments in the Project boundary would result in any of these cultural resources being removed from the Project boundary.

More than 200 feet

FERC regulations specify that the Project boundary at a reservoir “...must be located no more than 200 feet (horizontal measurement) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, except where deviations may be necessary in describing the boundary according to the above methods or where additional lands are necessary for project purposes, such as public recreation, shoreline control, or

¹² This is a reference to lands around the perimeter of the reservoir that would be inundated as part of the waters contained within the reservoir under the surge; not lands downstream that would be inundated as a result of passing flood flows downstream, or that would be inundated as result of a dam failure.

¹³ Central did consider the consequences of a PMF surge in its evaluation of the Project boundary for the Johnson Regulating Reservoir, filed on June 19, 2013.

¹⁴ The size of the inflow event necessary to exceed outflow capacities and cause an uncontrolled rise in Lake McConaughy would be so large as to likely inundate all or portions of several towns upstream.

protection of environmental resources.”¹⁵ While the recommended Project boundary adjustments at Lake McConaughy would result in several instances where the Project boundary would be located more than 200 feet from the shoreline, Central believes that all such cases fit within the stated exceptions.

Increases and Decreases in Project Lands

Central’s recommended changes in the Project boundary would result in an estimated 3,369.4 acres added to the FERC Project, and 14.7 acres removed from the FERC Project, for a net estimated change of 3,354.7 acres added to the FERC Project, or an addition of approximately 9.3% over the current 36,247.3 estimated Project acres for the Lake McConaughy and Lake Ogallala areas.

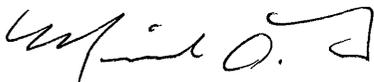
Next Steps

Central recommends that the Project boundary at Lake McConaughy and Lake Ogallala be adjusted as described in this letter. Central next plans to do the following:

1. Consult with the U.S. Fish and Wildlife Service, NGPC, and Nebraska State Historic Preservation Office regarding the proposed Project boundary changes at Lake McConaughy and Lake Ogallala; and
2. Pending the outcome of the consultations, file with FERC the appropriate changes to Exhibit G of Central’s FERC License.

As these steps are similar to the steps proposed by Central in its June 19, 2013 Johnson Regulating Reservoir Project boundary review filing accepted by FERC in its September 18, 2013 letter, and as similar steps are anticipated to follow the completion of the review of the remainder of the Project due December 31, 2016, Central may perform the consultations and filings all at one time following the submission of the final review.¹⁶

Respectfully submitted,



Michael A. Drain, P.E.
Natural Resources Manager

¹⁵ 18 C.F.R § 4.41(h)(2)(i)(B)

¹⁶ Central may also file site-specific consultations and Exhibit G amendment applications on a case-by-case basis where earlier adjustments might prove beneficial.

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Fifteen (15) Figures follow this page.

Copy of Letter with Figures (PDF via e-mail):

Robert Fletcher	FERC – Washington, DC
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Copy of Letter with Figures (paper via U.S. Mail):

L. Robert Puschendorf Deputy State Historic Preservation Officer (Lincoln, NE)

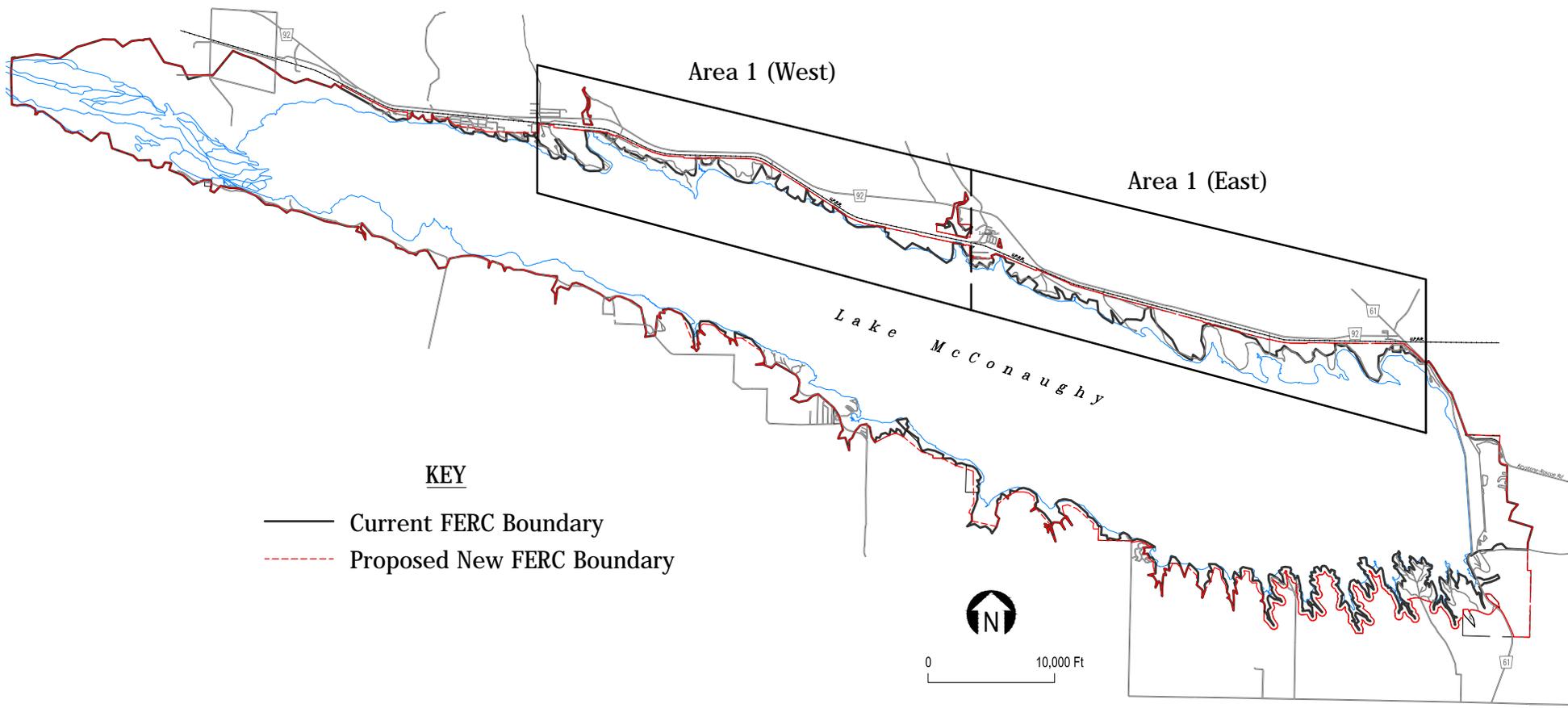


Figure 1A - Area 1 Location

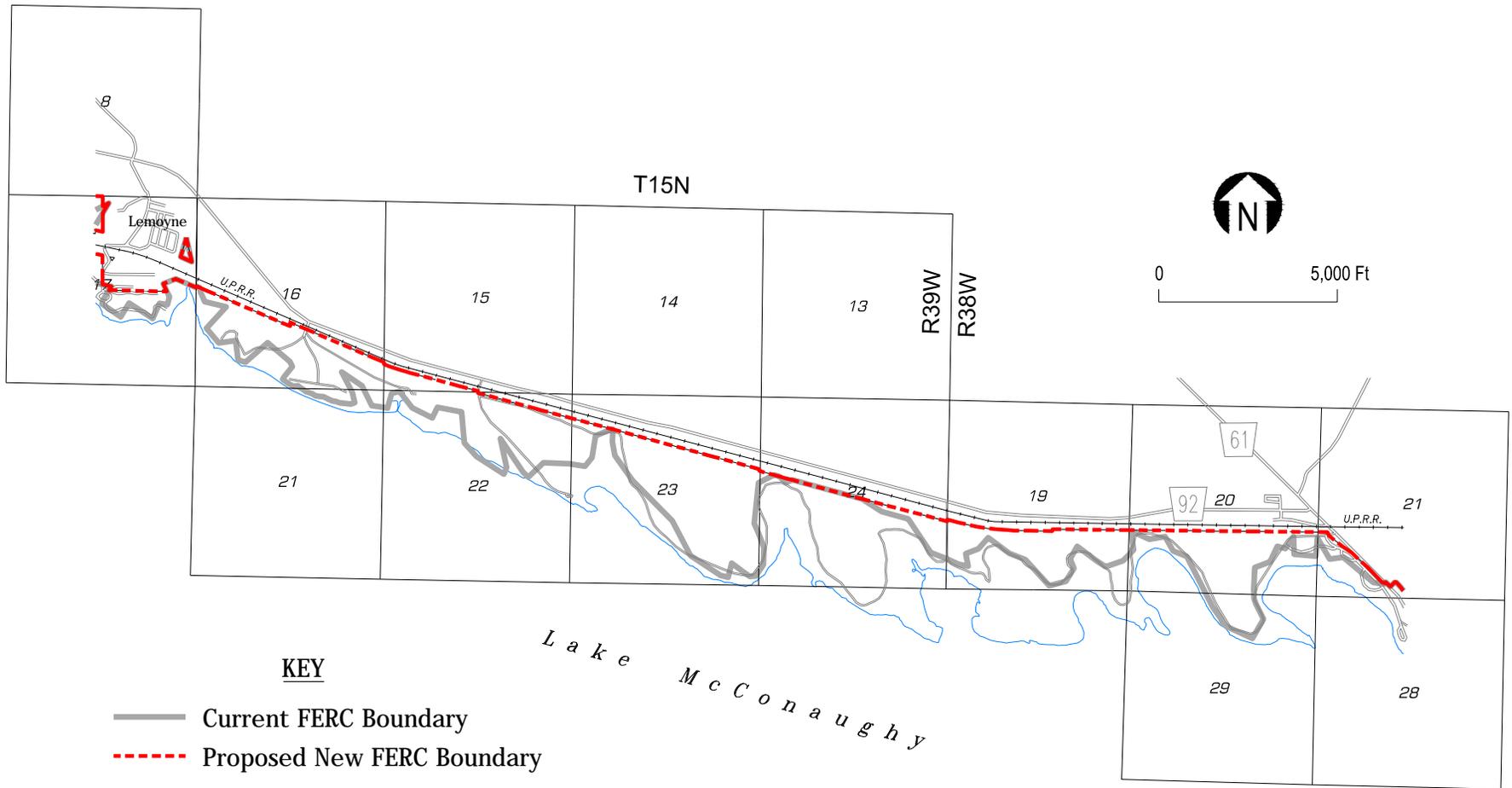


Figure 1B - Area 1 (East)

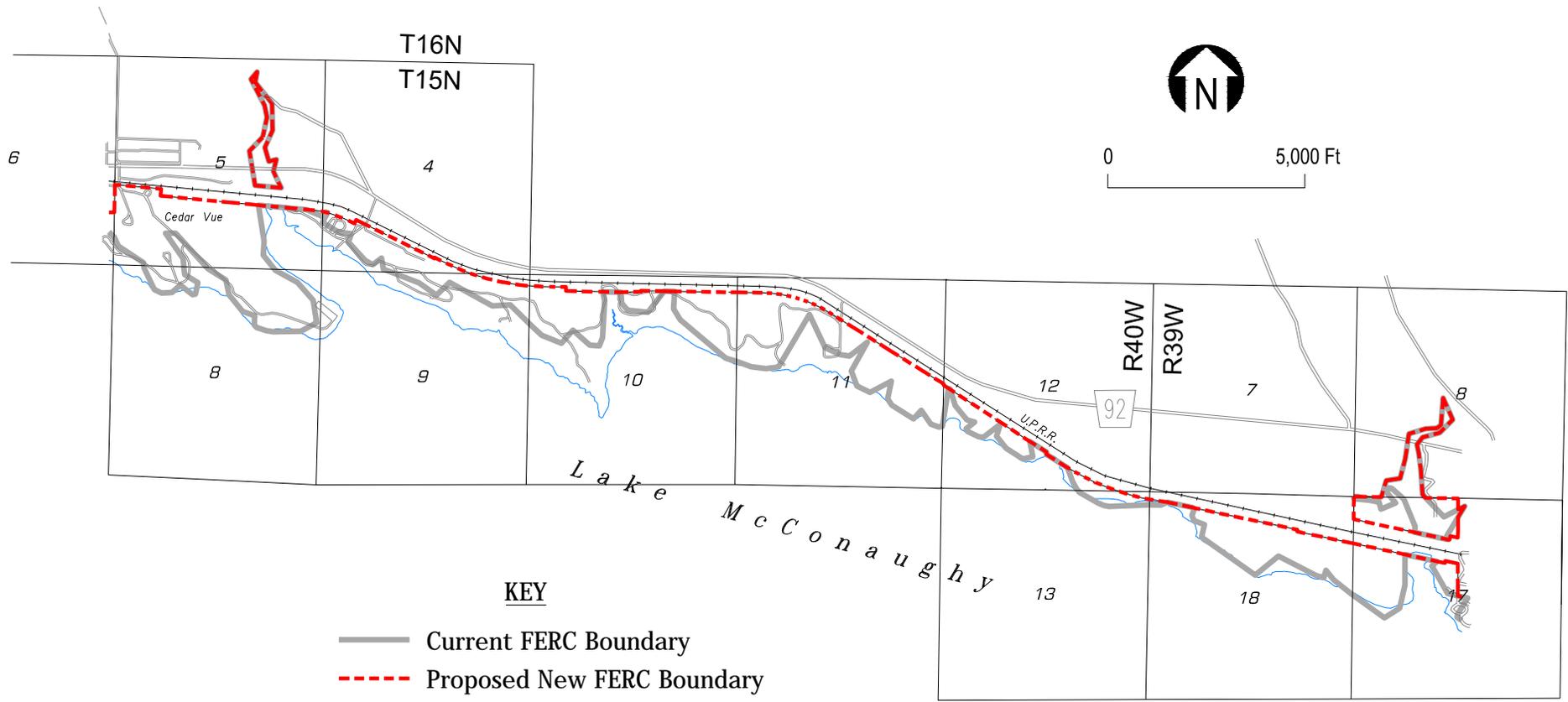


Figure 1C - Area 1 (West)

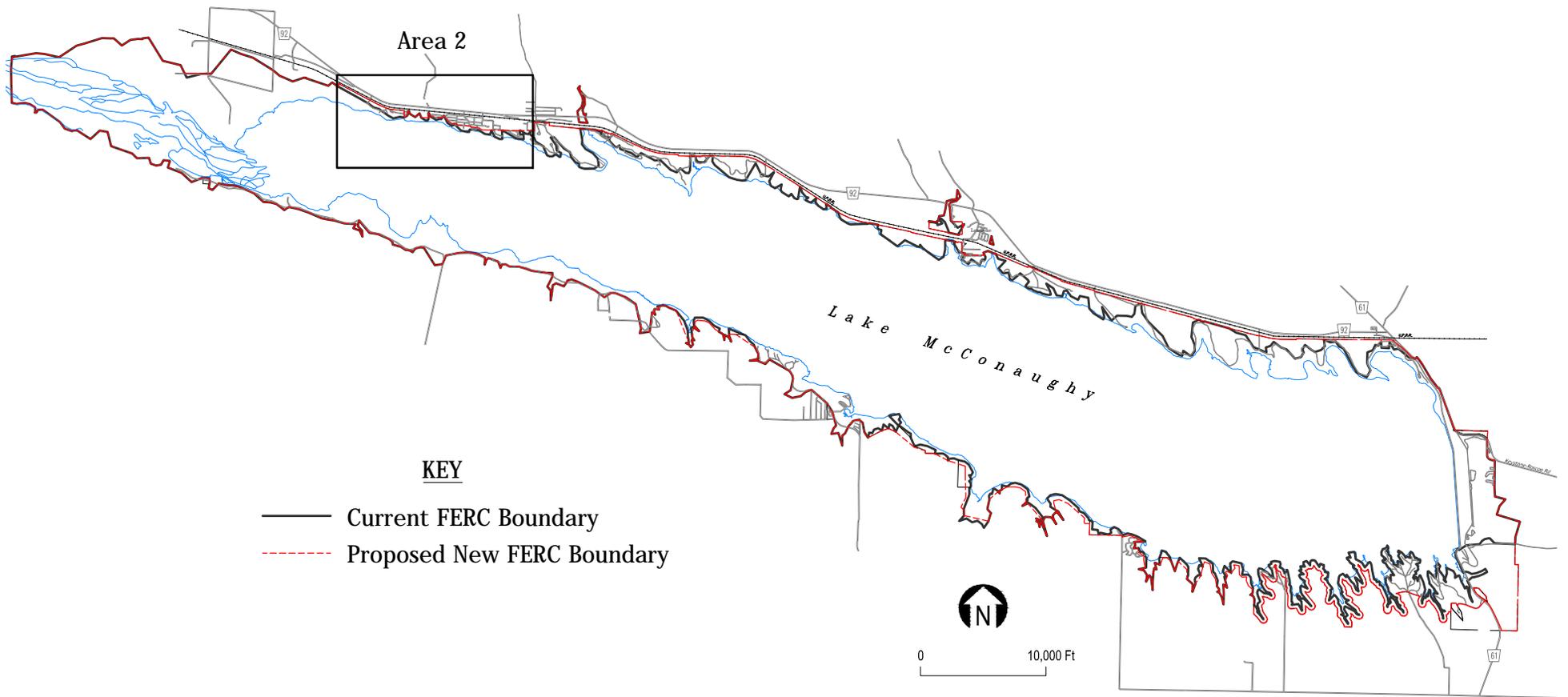


Figure 2A - Area 2 Location

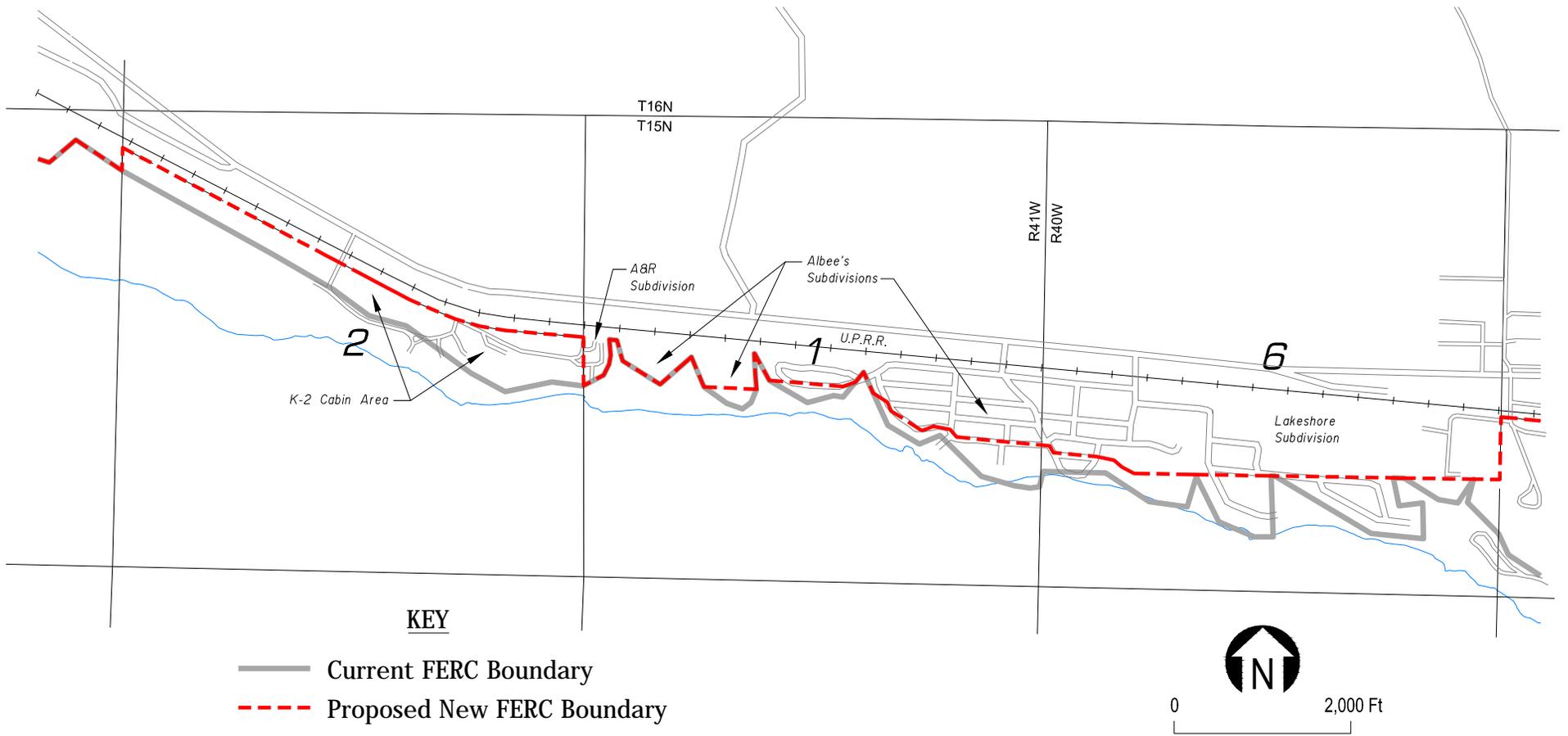


Figure 2B - Area 2

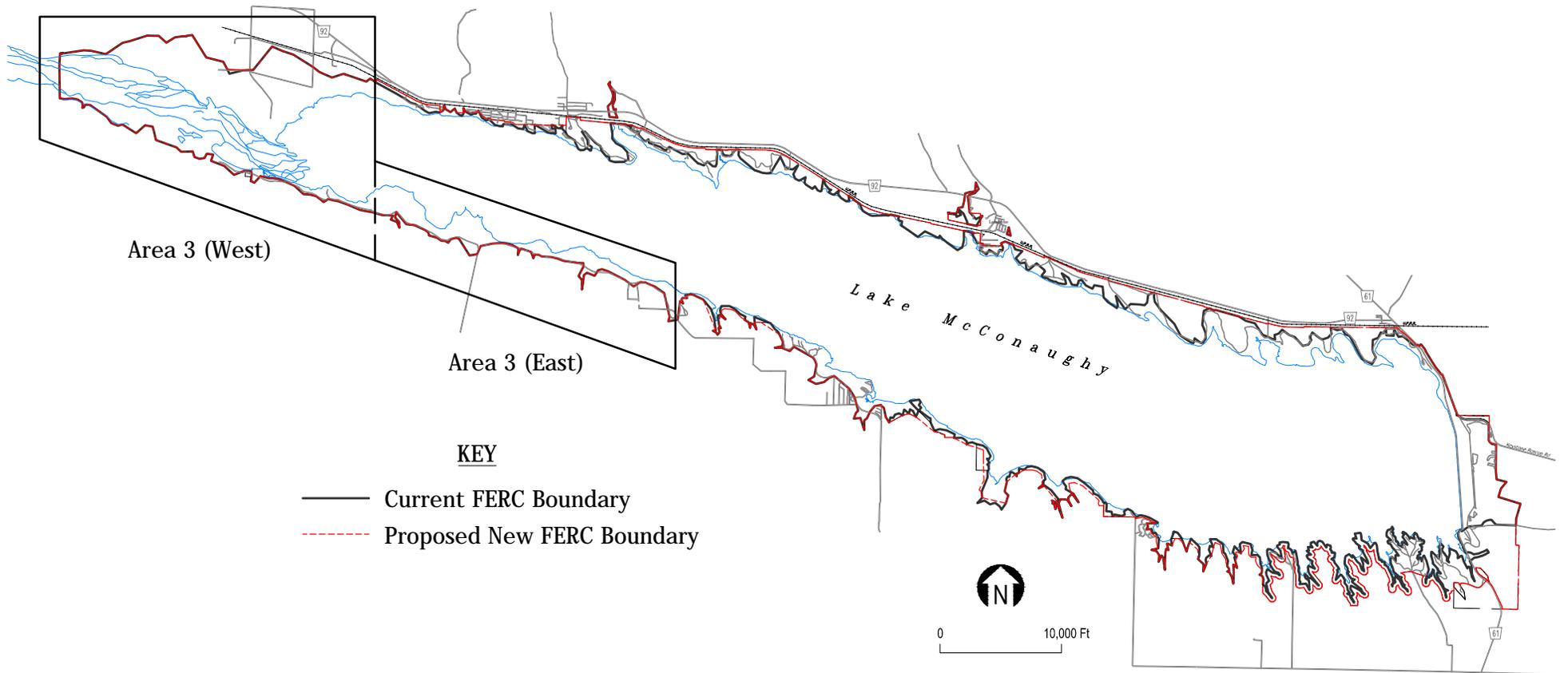
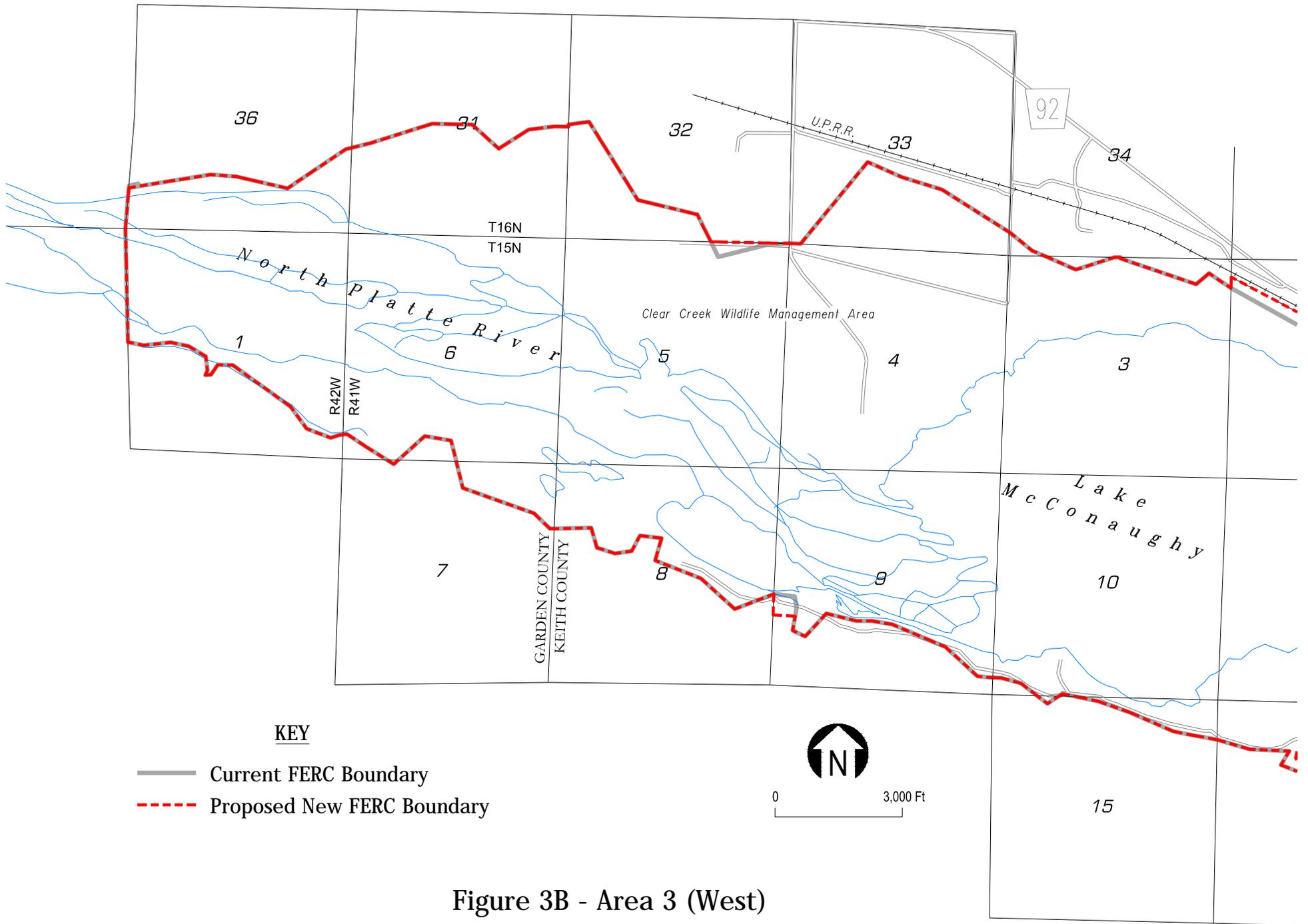


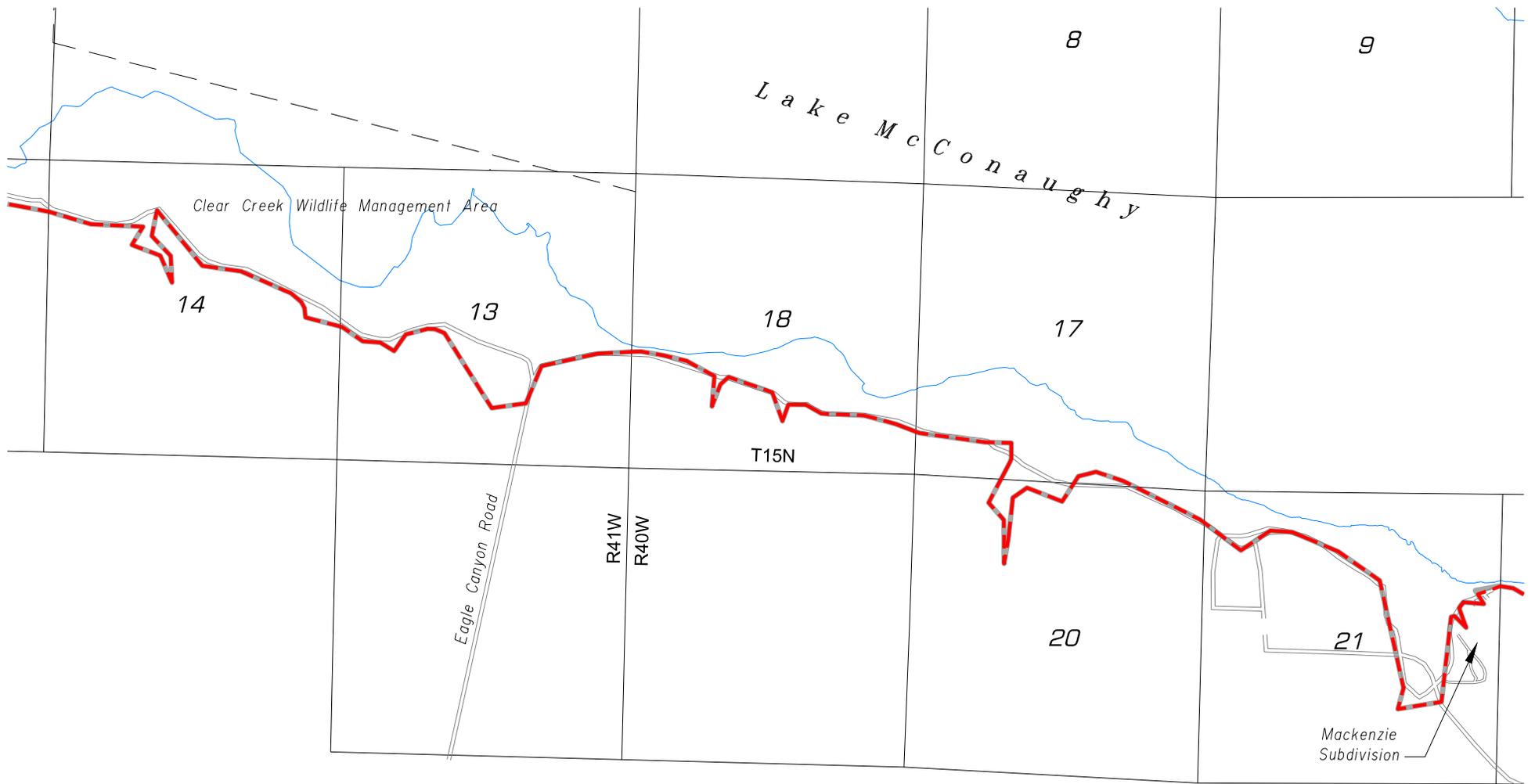
Figure 3A - Area 3 Location



KEY

- Current FERC Boundary
- - - Proposed New FERC Boundary

Figure 3B - Area 3 (West)



KEY

- Current FERC Boundary
- - - Proposed New FERC Boundary

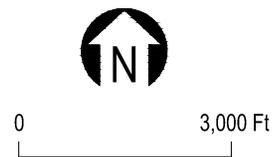


Figure 3C - Area 3 (East)

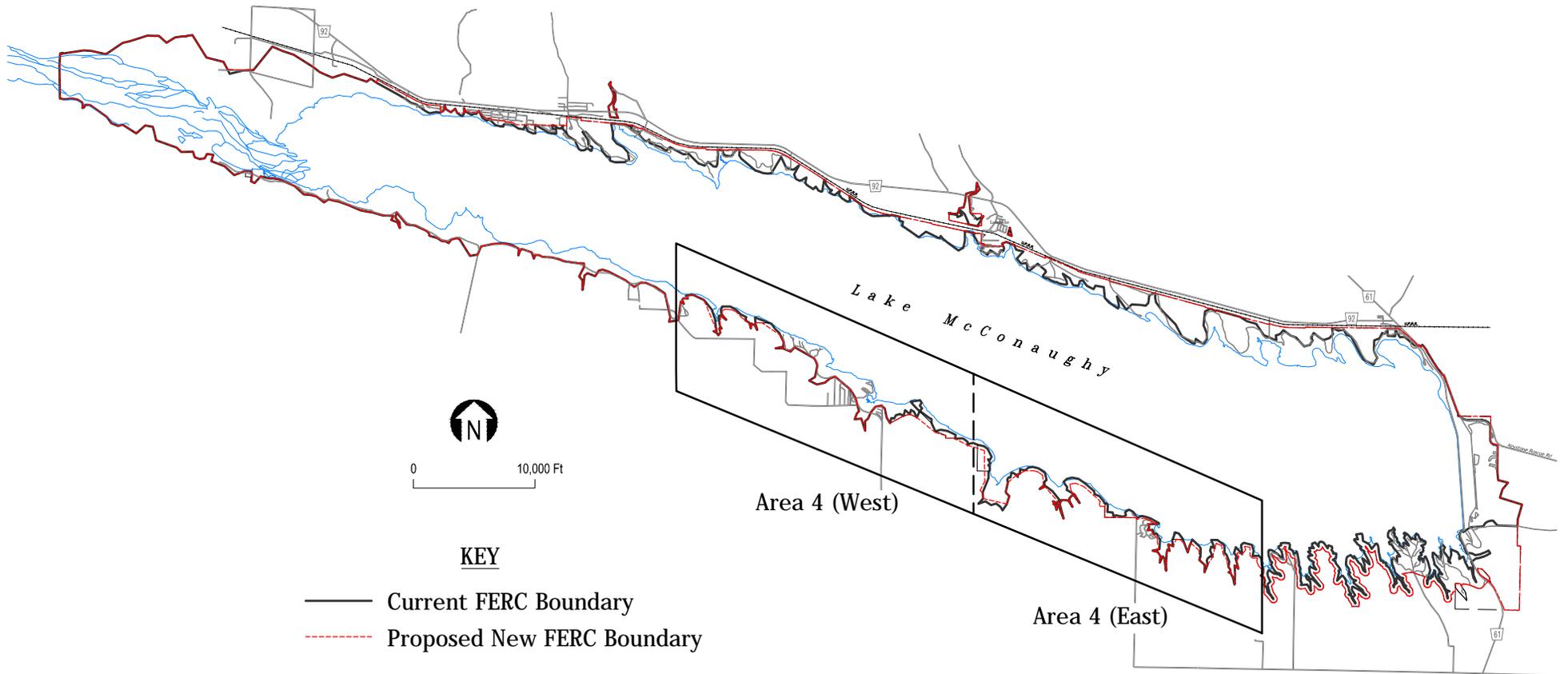


Figure 4A - Area 4 Location

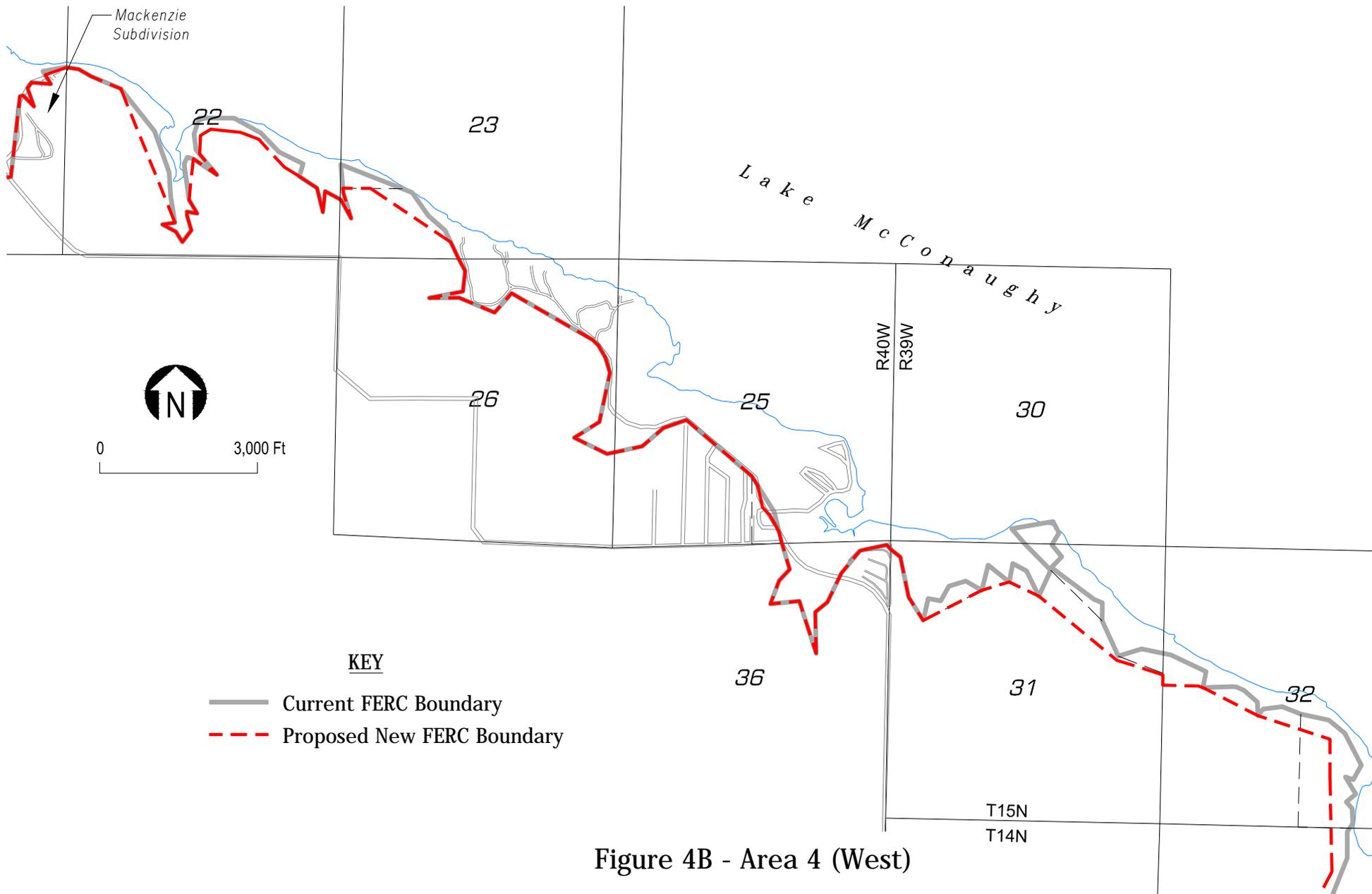


Figure 4B - Area 4 (West)

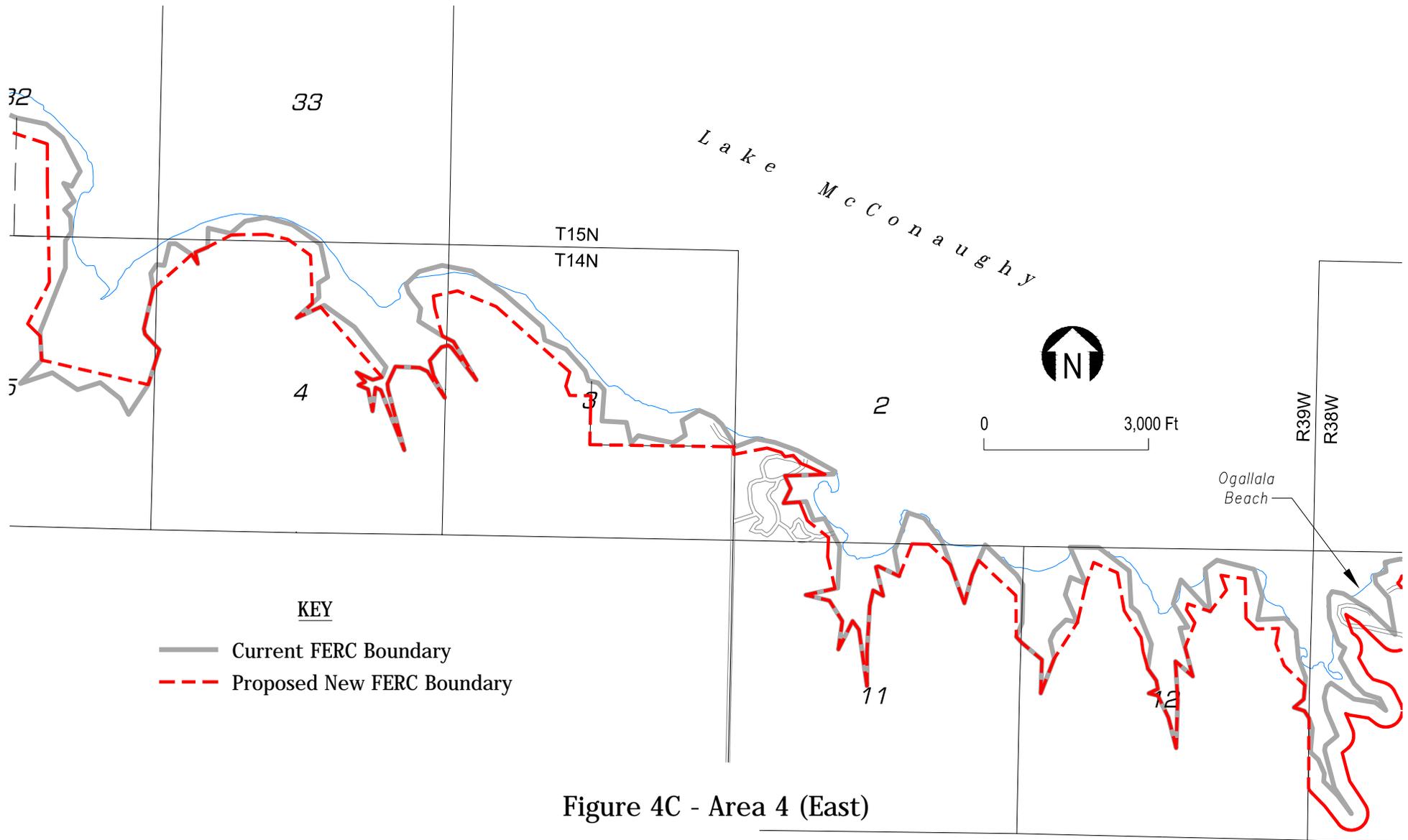


Figure 4C - Area 4 (East)

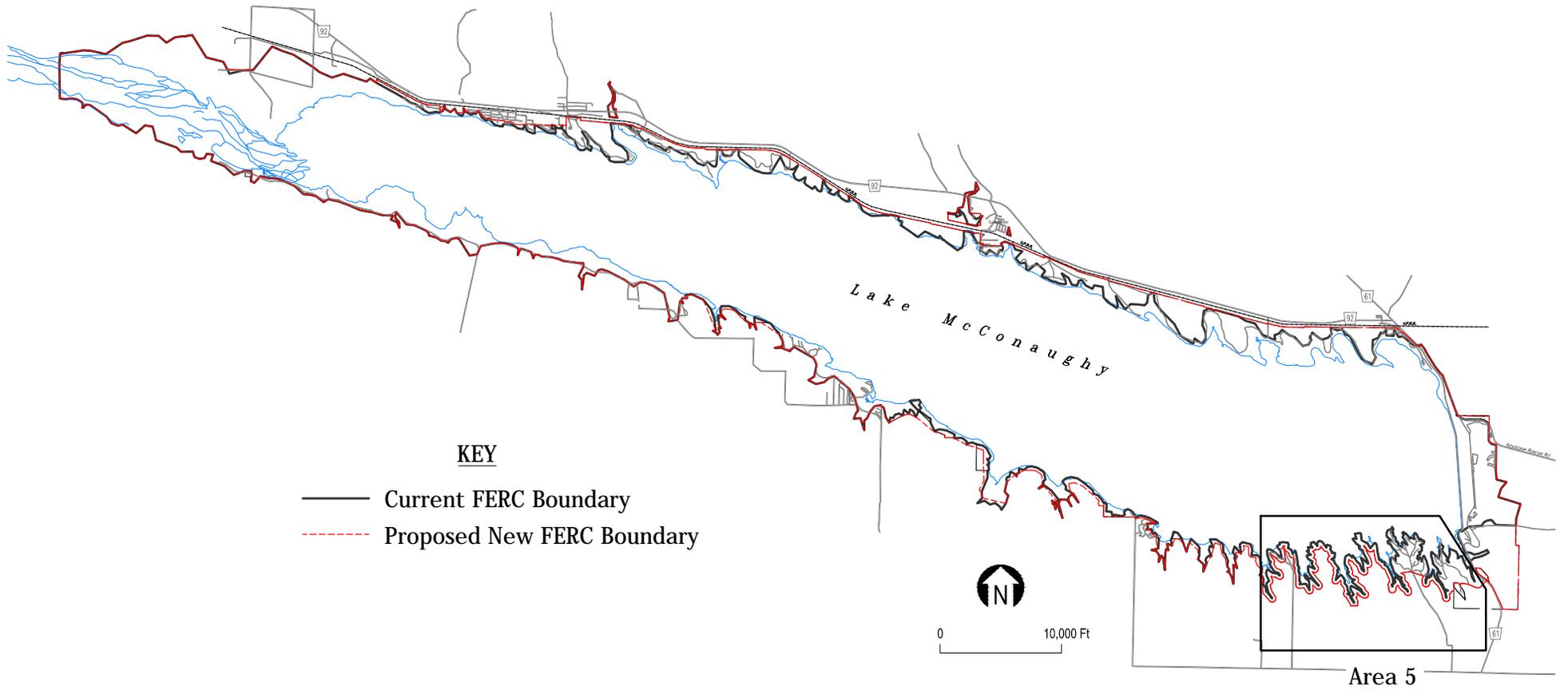
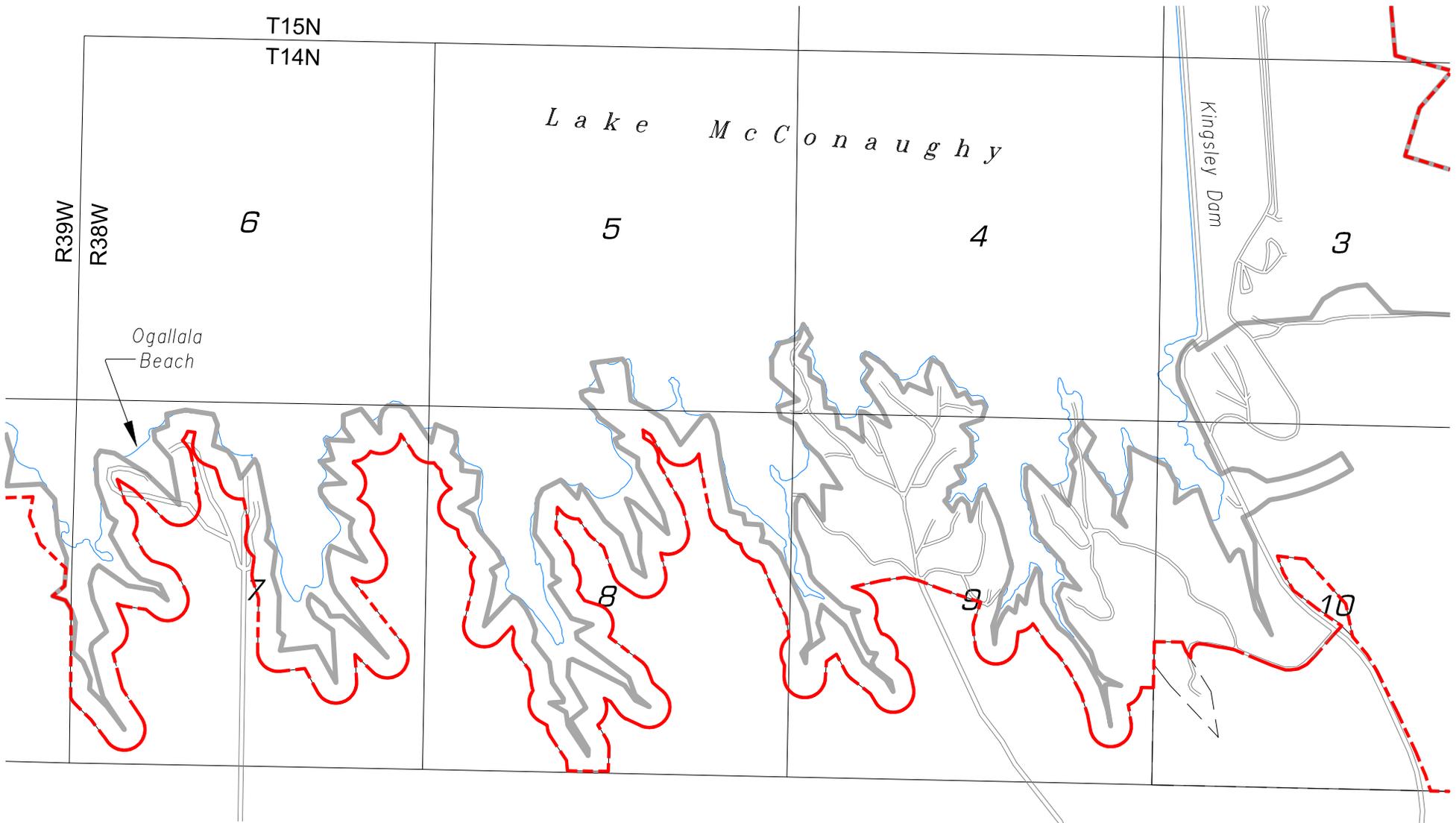


Figure 5A - Area 5 Location



KEY

- Current FERC Boundary
- - - Proposed New FERC Boundary

0 2,000 Ft

61

A north arrow is located above the scale bar. The scale bar indicates a distance of 2,000 feet. A shield-shaped marker with the number 61 is positioned to the right of the scale bar.

Figure 5B - Area 5

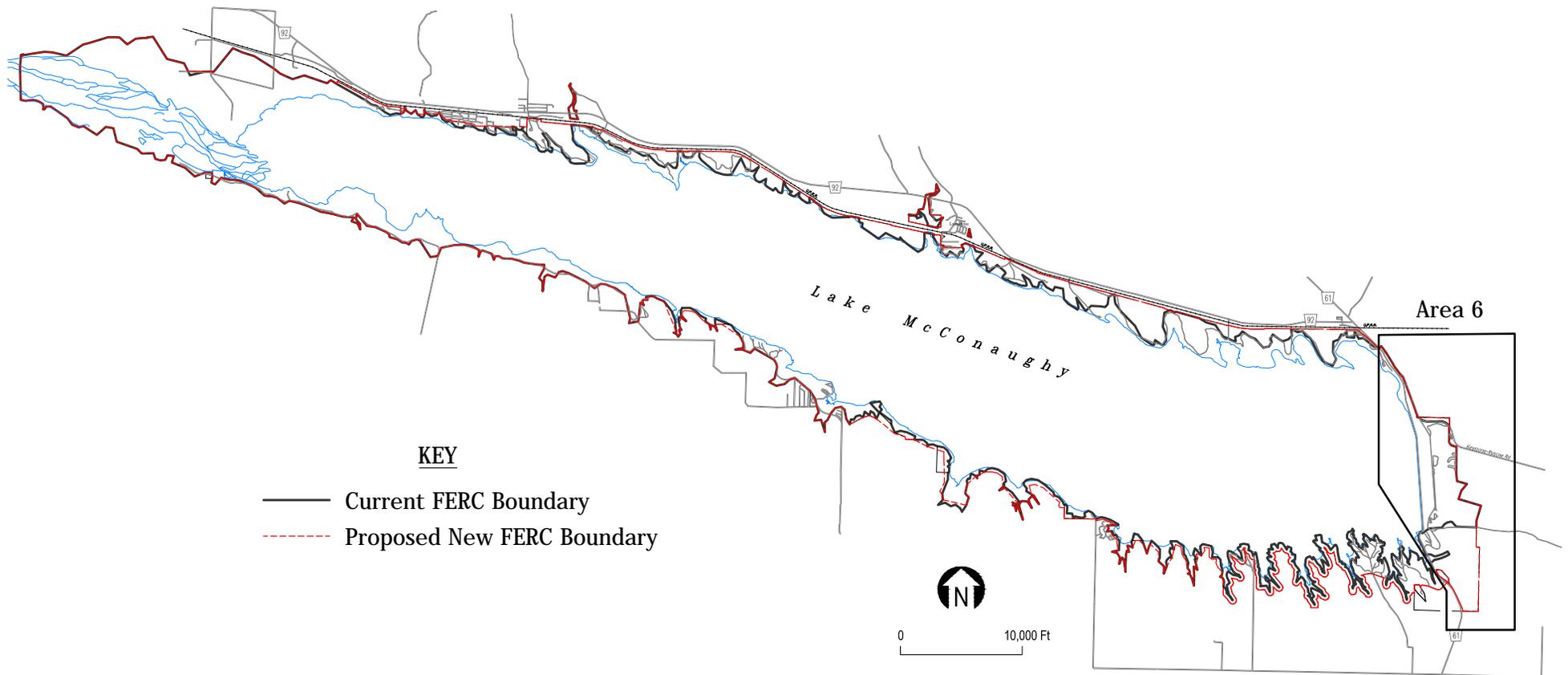


Figure 6A - Area 6 Location

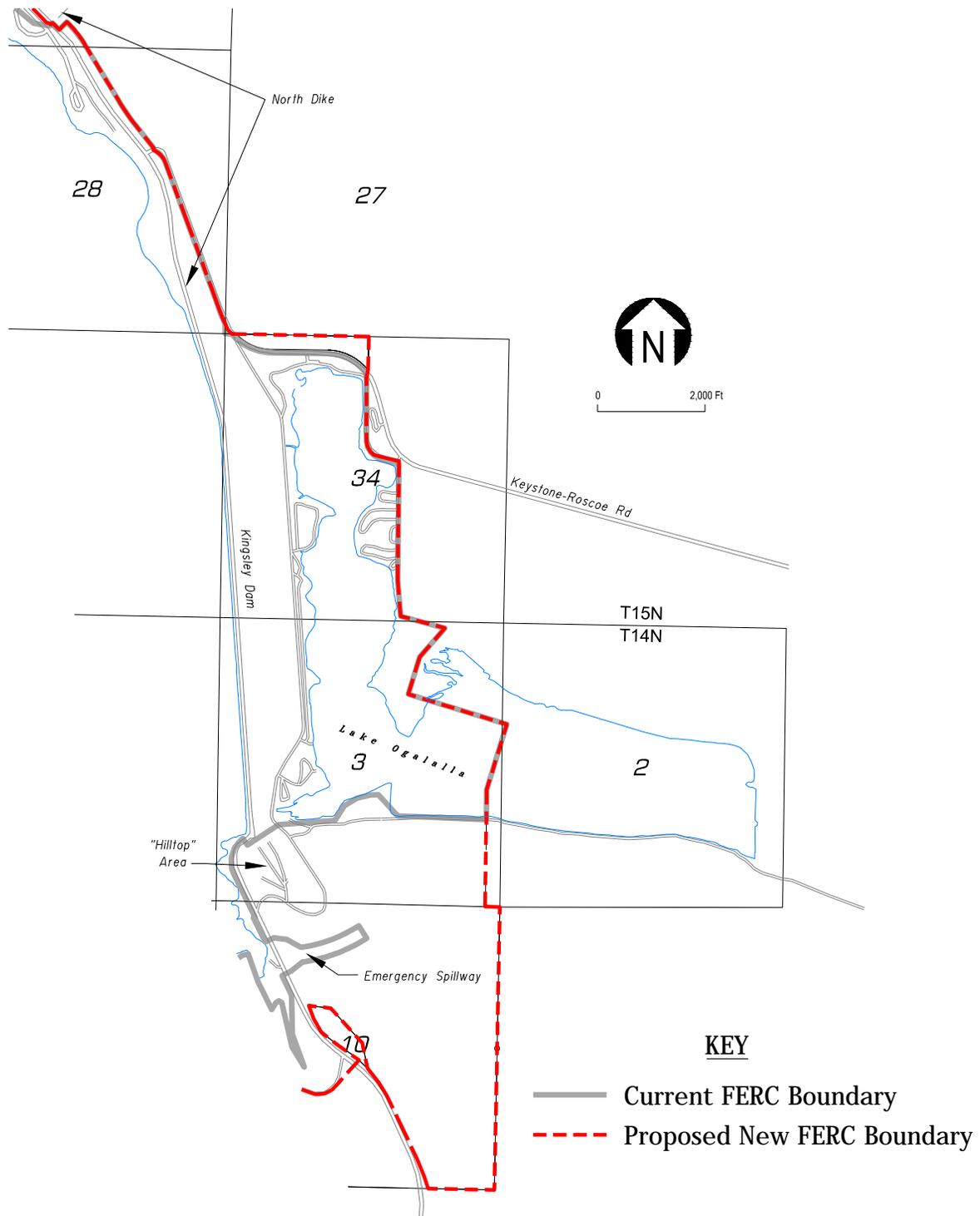


Figure 6B - Area 6