

WAFWA Lesser Prairie-Chicken Range-wide Plan Guidance for Electric Distribution Development

March 14, 2016

Committee Process, Recommendations, and Initiative Council Decision

Science Subcommittee Recommendation

The Science Subcommittee reviewed an earlier version of this proposal on April 16, 2015, and requested that proponents and WAFWA expand the analysis and resubmit the proposal. WAFWA worked with Electric Cooperatives from across the range to acquire data, conduct spatial analyses, and refine the proposal. provided individual comments and recommendations on the proposal. The updated version was submitted by the Advisory Council to the Science Subcommittee for review on October 27, 2015 and was discussed in meetings on December 3, 2015 and February 10, 2016. Comments from those meetings were incorporated into a final draft recommendation that was submitted to the Science Subcommittee on February 19, 2016 with responses to comments. The Science Subcommittee elected to provide individual responses to that recommendation instead of a unified response from the committee. Those individual responses were summarized by Jim Pitman and sent to the Advisory Council on March 3, 2016.

The Science Subcommittee was asked to indicate their concurrence with the electric distribution line proposal as a whole using one of 4 categorical responses (concur, concur with caveats, do not concur, or abstain). Ten of the 15 SSC members indicated their degree of concurrence in writing by the close of business on March 2, 2016. The below table summarizes their indications.

Category	Count
Concur	1
Concur with caveats	4
Do not concur	4
Abstain	1
Did not vote	5

The Science Subcommittee's individual comments have been be provided to the Initiative Council in a separate document for review. Most of those comments noted uncertainty with respect to how to determine what constitutes an affected lek by this proposal and what those effects might be. All those who concurred with caveats noted the need for future reviews of the implementation and emerging science to minimize impacts to LPCs.

Advisory Council Recommendation

The Advisory Council reviewed and discussed the initial proposal on October 27, 2015 before it was submitted to the Science Subcommittee. The LPCAC reviewed and discussed the final proposal on February 23, 2016. The LPCAC reviewed the individual comments from Science Subcommittee members on March 8, 2016. The Advisory Council recognizes the scientific uncertainty raised by the subcommittee, but also notes that addressing these issues is critical maintaining the current level of electric cooperative enrollment and to enrolling the cooperative that remain uncommitted. One member of the council also stated that the size and scope of the proposal could stretch the bounds of adaptive management, while others suggested that the adaptive management process was intended to address uncertainty and not to produce decisions that are inflexible, unworkable, or unchangeable.

Following this discussion, a member of the Advisory Council moved that the recommendation be approved with the following conditions and forwarded to the Initiative Council for a final decision:

- Rigorous reviews by the Science Subcommittee and Advisory Council of the implementation of the recommendation and emerging science related to the recommendation ; at one, two and five years intervals;
- Further reviews of the implementation of the recommendation and emerging science related to the recommendation at a frequency as determined by the Science Subcommittee and Advisory Council; and,
- The Advisory Council and Science Subcommittee shall ensure that the reviews occur.

The chair called for a vote on that motion and the motion carried, 9 votes in favor and 1 against.

LPCIC Decision

The Lesser Prairie-Chicken Initiative Council reviewed and discussed the Advisory Committee recommendation and the comments from the Science Subcommittee on March 14, 2016. The council discussed the concerns raised by the Science Subcommittee and agreed that regular reviews are the best approach to addressing that uncertainty. Two members of the Advisory Committee representing the electric cooperatives attended the meeting. They stated that the cooperatives were committed to that review process and were open to research efforts to further define relationships between lesser prairie-chicken habitat use and electric lines. The cooperatives also noted the importance of this guidance for the enrollment of other electric cooperatives across the range. Director Hatcher then moved to accept the recommendation from the Advisory Committee. Director Sandoval, the chair, called for a vote, and the motion was passed unanimously.

Document summary:

This guidance document was developed cooperatively by a group of rural electric cooperatives representing over 75% of the range of the lesser prairie-chicken (LPC) and WAFWA to address concerns with requirements within the Range-wide Plan to bury new electric distribution lines. WAFWA held a series of meetings with the electric coops to identify their concerns with burial of electric distribution lines under the Range-wide Plan (RWP) and to develop strategies to address those concerns while minimizing potential impacts on LPCs and their habitat. WAFWA and the electric coops conducted extensive spatial analyses to evaluate those impacts, and refined the document with feedback from the cooperatives.

This document contains a series of recommended guidelines designed to identify areas that already are developed to such an extent that they are unlikely to be suitable habitat for LPCs. Once identified, electric cooperatives and other participant companies can build overhead electric distribution lines in these areas under the CCAA and WCA agreements with fewer restrictions. Based on spatial analysis included in this document, the following seven elements are expected to affect less than 2% of all known active and historic leks identified over the last 10 years:

1. Allow the construction of above ground electric distribution lines without lek surveys within a 2-mile buffer of incorporated areas as defined in 2015.
2. Allow the construction of above ground electric distribution lines that follow primary roads and electric transmission lines.

3. Allow the construction of above ground electric distribution lines in un-surveyed areas of CHAT 2-4 along secondary roads with less than 50% potential suitable habitat within 1 mile as long as the road is bounded by cropland on one or both sides.
4. Allow the construction of above ground electric distribution lines within a 400 m buffer of identified electric meter clusters.
5. Outside of defined meter clusters, allow the construction of above ground tap lines or terminal spurs from existing primary and secondary roads where they extend to another impact buffer such that no new nesting habitat is affected.
6. Implement a retirement program that incentivizes the removal of existing distribution lines by giving cooperatives credit to build new lines in un-surveyed areas as long as it results in a net reduction in the miles of distribution line under their control within CHAT 1-3.
7. Allow the construction of above ground distribution lines within some agricultural and industrial sites (See definitions on page 13).

Problem statement and background:

Electric distribution cooperatives have expressed significant concerns over the Lesser Prairie-Chicken (LPC) Range-wide Plan (RWP) requirement for burial of electric distribution lines in areas that are within 1.25 miles of leks or in areas that are not surveyed for leks because:

- Electric coops are member-owned entities and have very limited resources.
- The cost of implementing the conservation measures such as the burial of electric distribution lines is significantly more expensive than mitigation. These costs are passed on to users, often rural residents.
- Rural residents consider electrical service to be a basic human right.
- Lek surveys are impractical because coops have large service areas (up to 12 counties) and distribution projects have a rapid timeline (generally two weeks or less).

The result is that many coops report that they cannot remain compliant with the RWP and provide service to their members.

The cooperatives also state that the burial requirements for electric distribution lines hold them to a higher standard than other energy industries covered under the RWP. With the exception of pipelines, no other activities require burial under the RWP. While there is significant scientific information documenting the impact of above ground energy infrastructure on LPC, electric transmission lines, oil and gas wells, compressor stations, wind towers, and communication towers may all be built above ground under the RWP. These activities can even occur within 1.25 miles of active leks as long as companies mitigate for their impacts and abide by timing, off-road travel, and noise restrictions defined in the RWP.

Detailed description and analysis of individual elements:

We define a lek that is potentially affected from an electric distribution as one within 200 m of an existing structure. Those potential impacts could include direct mortality through collision, indirect mortality through predation, direct or indirect habitat loss, or harassment due to activities associated with the construction and maintenance of the structure. Current science has not identified collision or predation of breeding birds on leks as a significant threat to the species. However, there is some research in progress in New Mexico on the correlation between raptor and corvid densities and densities of roads and electric lines. Preliminary results suggest there may be a positive correlation, but the extent to which an individual electric line may affect LPC leks is unclear from that research at this time. The RWP addresses the loss of nesting habitat from electric distribution lines through impact buffers and requires mitigation of new impacts that

are not collocated with existing impacts. Harassment is also addressed under the conservation measures in the RWP, CCAA, and WCP through breeding season timing and off-road travel restrictions. Given a lack of additional scientific information on this issue, we believe the 250 m figure represents a conservative assumption of level of potential impact on leks from an electric distribution line.

WAFWA analyzed the potential impacts of the following seven elements on LPC leks using a WAFWA spatial database of 2,499 known lek locations identified between 2005 and 2015. Of those leks, 1,655 are classified as active because birds have been recorded displaying on that site at least once since 2011. The remaining 844 are classified as historic because birds have not been detected on the site since 2011. This is the largest database of LPC lek locations in existence, and it includes all known and publicly shareable lek locations identified by the State Fish and Wildlife Agencies, WAFWA range-wide aerial surveys, project clearance surveys conducted by participant companies under the RWP, as well as some leks identified through State or Federally funded research. It does not, in any way, represent all leks because lek surveys do not have 100% detectability rates. The database may not represent all known leks because some locations may be covered under confidentiality laws. Finally, some of the lek locations within this database may be recorded multiple times by multiple observers.

We identified the percentage of leks in that database that could be affected by each element individually and the total cumulative number of leks potentially affected by all seven elements together. This analysis likely overestimates the number of leks that could be affected by the elements in this guidance because some of the leks are recorded multiple times in the database. We did not have time to address those double counted leks, so the results presented here should be considered conservative in the favor of the LPC. In addition, this analysis represents the number of leks that could be affected by disturbance based on a full build-out under this guidance, however, full build-out is a highly unlikely outcome. Rural populations have been declining in these regions for decades and other types of development covered under the RWP have very heterogeneous distributions.

Element #1—Allow for the construction of above ground electric distribution lines without lek surveys within a two mile buffer of incorporated areas as defined in 2015, excluding a 1.25 mile buffer around any known active leks within those areas.

- Incorporated areas are defined by the Incorporated Areas data set from the Department of Commerce, U.S. Census Bureau Tiger data.
- Any future additions to incorporated areas will require individual review by WAFWA through the adaptive management process.
- Buffered incorporated areas define areas where there is often substantial existing development and a high potential for new development. These areas are also unlikely to be used by LPCs.
- Areas within 2 miles of incorporated areas will be added to the non-survey layer on the CHAT.
- Total new area = 2,252 sq. miles
- WAFWA analyzed the potential impacts to LPCs for this element based on a dataset containing the locations on all known leks identified during 2005-2015 (N = 2,499, active = 1,655, historic = 844). Full build out has the potential to affect 9 known active leks (0.54%) and 6 known leks recorded as historic (0.71%). Overall, this amounts to 0.60% of all known active and historic leks (Figure 1). The numbers of potentially affected leks are summarized by CHAT category and ecoregion in Figure 1.

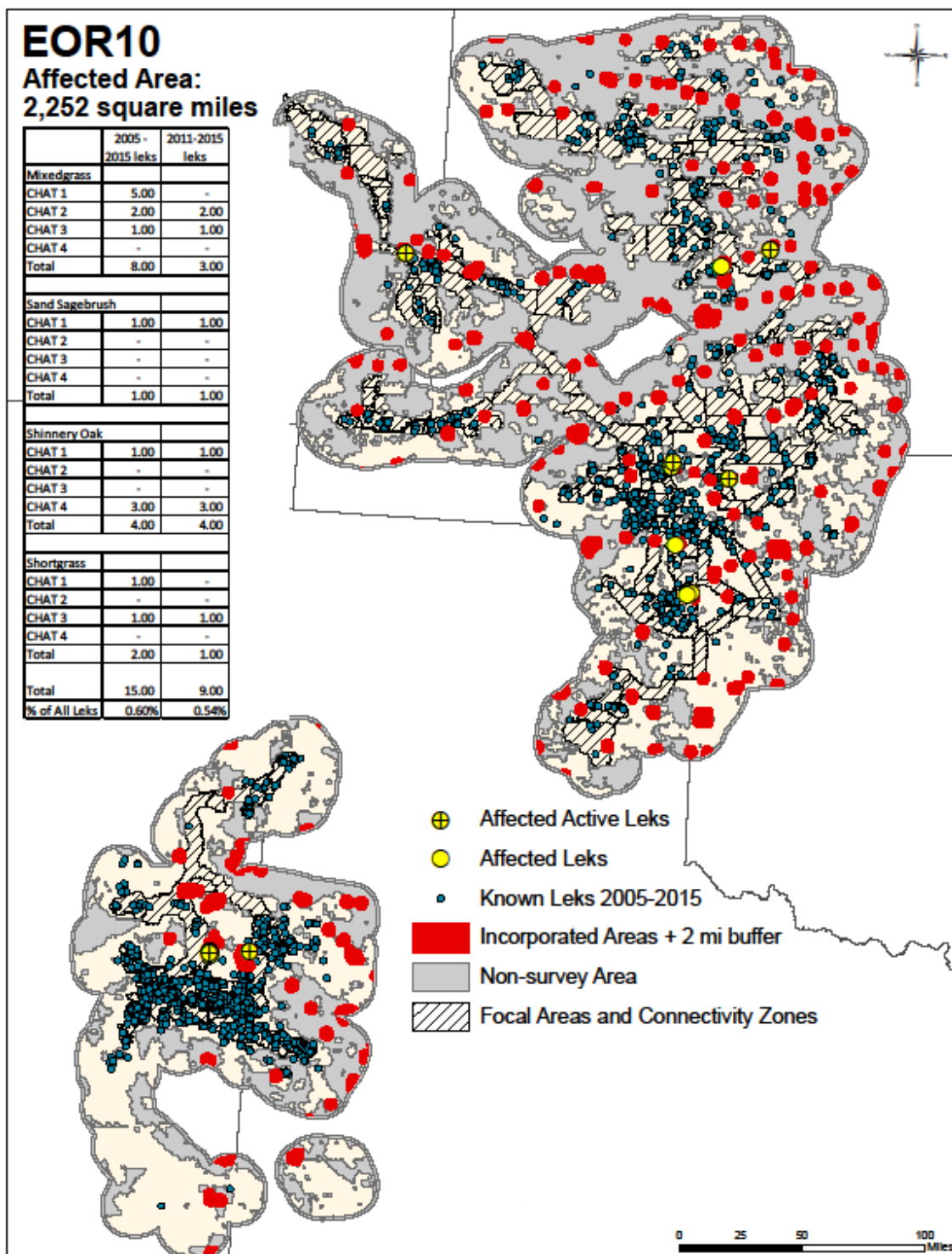


Figure 1. This map represents the 2,252 square miles in red where distribution line burial and lek survey are not required within a 2-mile buffer of incorporated areas. It also, represents and summarizes active and historic lek location that may potentially be affected by that line burial, given a full build-out. The figure also includes a summary of potentially affected leks by CHAT category and ecoregions.

Element #2—Allow for the construction of above ground electric distribution lines without lek surveys if they follow the right-of-way boundary for primary roads and electric transmission lines within CHAT 2-3.

- Burial requirements will remain in effect within 1.25 miles of leks and un-surveyed areas within CHAT 1. CHAT 1 contains nearly 80% of the known active and historic leks detected over the past 10 years.
- Construction of above ground distribution lines is allowed along primary roads and electric transmission lines within CHAT 2 and CHAT 3, but all other conservation measures apply where appropriate
- Lines must be within or following the right-of-way boundary of the primary road or transmission line
- Scientific research has documented significant avoidance of primary roads and electric transmission lines by LPCs, and the designated impact buffers for these structures (500 m and 400 m respectively) are substantially larger than that of a distribution line (10 m), therefore we assume that additional disturbance impacts related to a distribution line will be negligible and will not add to the effects of the road or transmission line.
- WAFWA analyzed the potential impacts to LPCs for this element based on a dataset containing the locations on all known leks identified during 2005-2015. Total build out has the potential to affect 5 known active leks (0.30%) and 4 known historic leks (0.47%) (Figure 2). The total percentage of known active and historic leks that could be potentially affected is 0.36%. The numbers of potentially affected leks are summarized by CHAT category and ecoregion in Figure 2.
- Due to a lack of complete data for transmission lines, we did not assess the potential disturbance impacts of this development type.

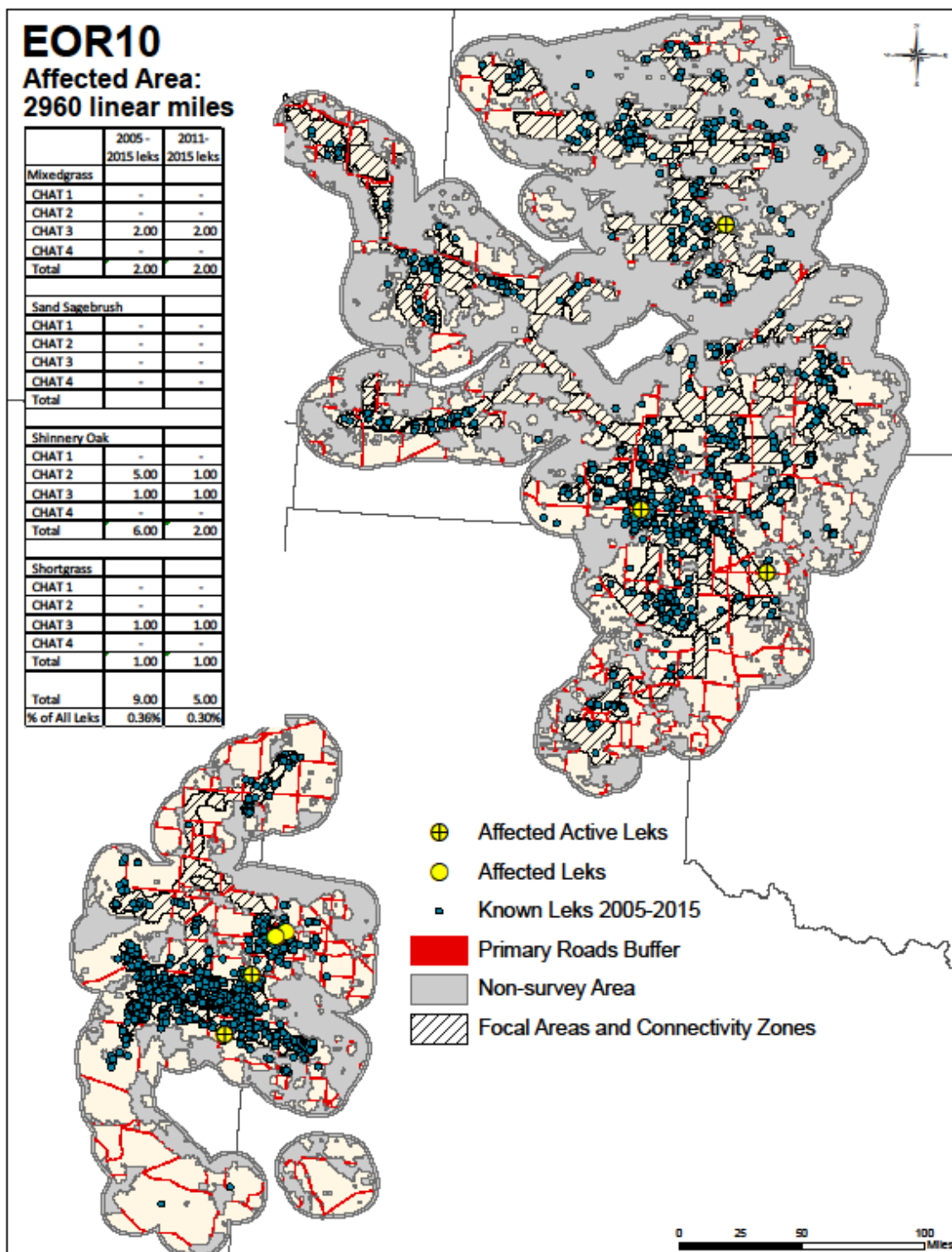


Figure 2. This map represents in red the 2,960 miles of primary road where the construction of above ground distribution lines will be allowed along primary roads in CHAT 2-3, and the active and historic leks that might be potentially affected under full build-out. The figure also represents a table of potentially affected leks by CHAT category and ecoregion.

Element #3—Allow for the construction of above ground electric distribution lines in un-surveyed areas without known active leks (1.25 mile buffer) along secondary roads in CHAT 2-3 areas with less than 50% suitable habitat, as long as the road is bounded by cropland on one or both sides.

- A layer depicting 50% suitable habitat has been added to the CHAT website which can be used with the modified cropland layer to plan new above-ground distribution lines. Cooperatives or companies may provide field documentation for areas of cropland that are not identified on the CHAT.
- This element includes 5,169.8 linear miles of secondary road in CHAT 2-3 where burial is not required based on this guidance. These linear mile estimates are based on current GIS data for croplands area; actual field areas and associated available line routes may be slightly different.
- Presence or absence of croplands is field verified for all development projects submitted for mitigation.
- WAFWA analyzed the potential impacts to LPCs for this element based on a dataset containing the locations on all known leks identified during 2005-2015. Full build out has the potential to affect 12 known active leks (0.72%) and 3 known inactive leks (0.36%) (Figure 3). The total percentage of known active and historic leks potentially affected by this element is 0.60%. The potentially affected leks are summarized by CHAT category and ecoregion in Figure 5.

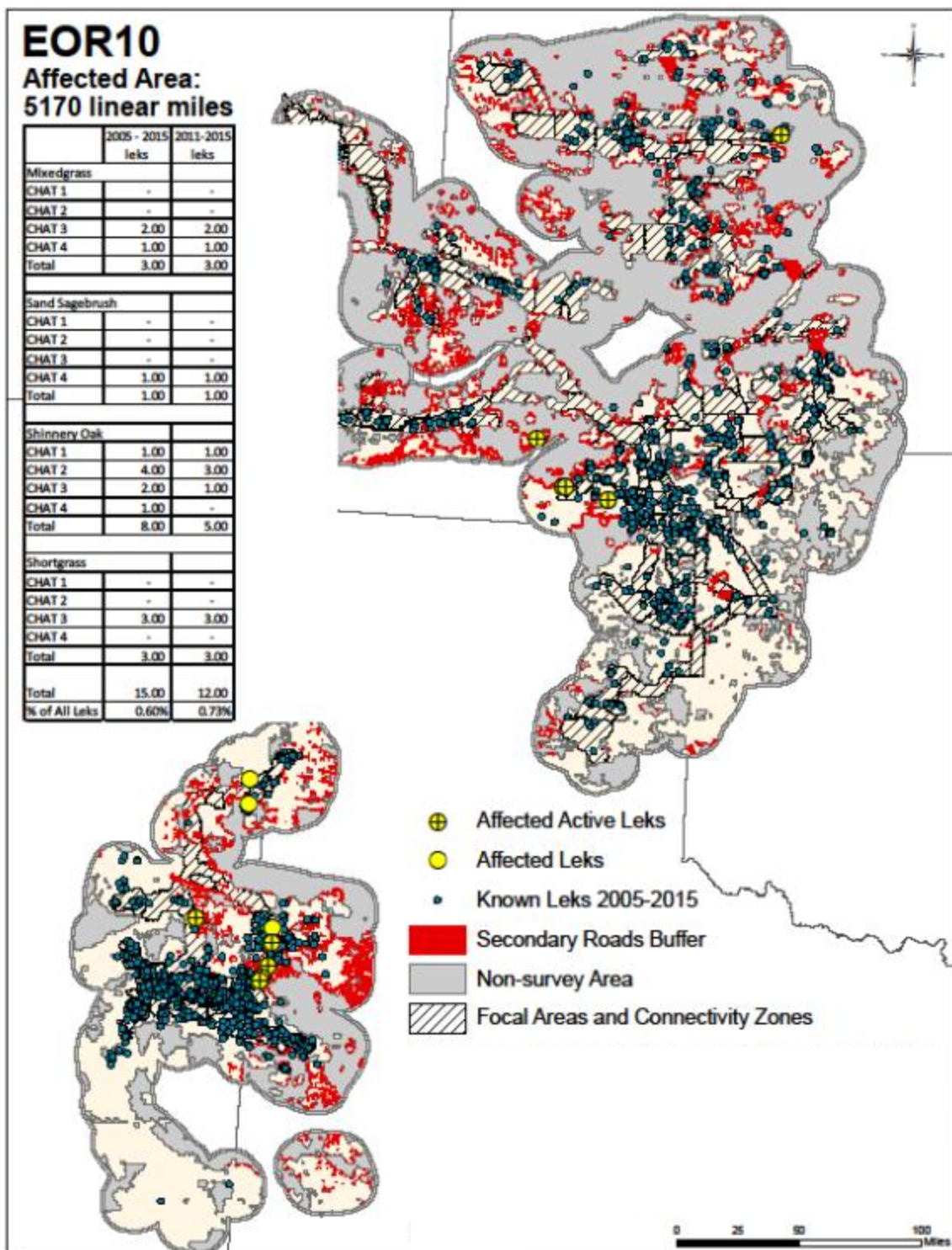


Figure 3. This map represents in red the 5,170 miles where the construction of above ground distribution lines will be allowed along secondary roads along croplands in areas with less than 50% potential habitat and in CHAT 2-4. It also represents the potentially affected active and historic leks in yellow and in a summary table by CHAT category and Ecoregion.

Element #4—Allow for the construction of above ground electric distribution lines within a 400 m buffer of identified electric meter clusters, unless they overlap the 1.25 mile buffer of a known active lek.

- We assume that areas with existing electric meters have existing development which LPCs are likely to avoid. These are the areas where new distribution line development is most likely to occur, especially short above-ground line extensions.
- 19 electric cooperatives provided electric meter coordinates for this analysis, representing 73 counties across the EOR+10.
- Meter clusters are defined as four or more residential or commercial meters within a 200 m radius of each other, or as a single primary meter. A primary meter has multiple tap lines extending outward to surrounding developments. Areas where above ground construction will be allowed are based on a 400 m buffer of polygons created by the overlap of the radii of a cluster (Figure 4) or of the location of a primary meter.
- The construction of above ground distribution lines is allowed within these areas, but all other restrictions apply where appropriate (off-road travel, timing restrictions, etc.).
- The total area within the EOR+10 affected by this guidance is 1,279 square miles.
- The data for this analysis is incomplete because not all cooperatives have coordinates for meter locations. However, the data covers more than three quarters of the EOR+10. Cooperatives who have not provided WAFWA with information may submit additional meter locations until Dec 31, 2016 for inclusion in this guidance. After this date, additional meter clusters must be independently evaluated through the adaptive management process.
- WAFWA analyzed the potential impacts to LPCs for this element based on a dataset containing the locations on all known leks identified during 2005-2015. Full build out has the potential to affect 3 known active leks (0.18%) and 3 known historic leks (0.36) (Figure 5). The total percentage of potentially affected leks is 0.24%. Potentially affected leks are summarized by CHAT category and ecoregion in Figure 5.
- The extent of the data used in the analysis is shown in Figure 6. This element does not designate areas outside of that extent where above ground infrastructure can be built without surveying for leks.

METER CLUSTERS

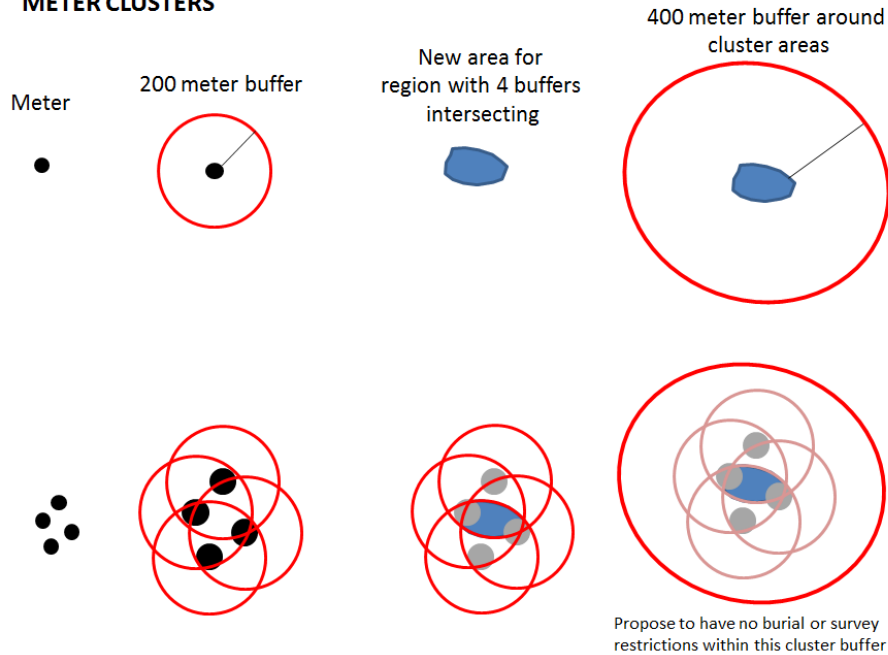


Figure 4. Visual representation of the process for designating commercial/residential electric meter clusters. Meter clusters are defined as four or more residential or commercial meters within a 200 m radius of each other, or as a single primary meter. A primary meter has multiple tap lines extending outward to surrounding developments. Areas where above ground construction will be allowed are based on a 400 m buffer of polygons created by the overlap of the radii of a cluster.

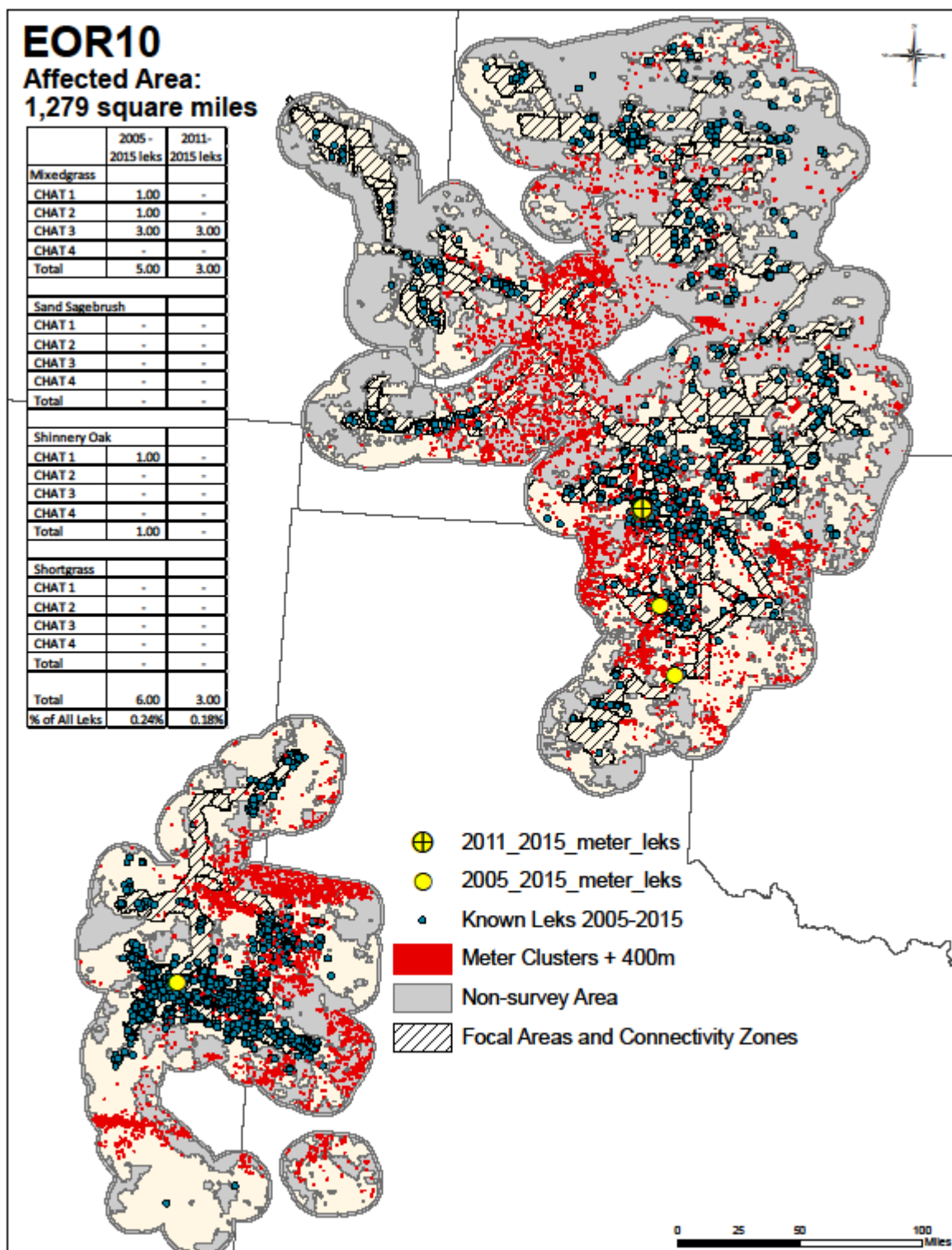


Figure 5. This map represents in red the meter clusters where the construction of above ground distribution lines is allowed within 400m of identified meter clusters. The active and historic leks that may potentially be affected are identified in yellow and are summarized by CHAT category and ecoregion in the table.

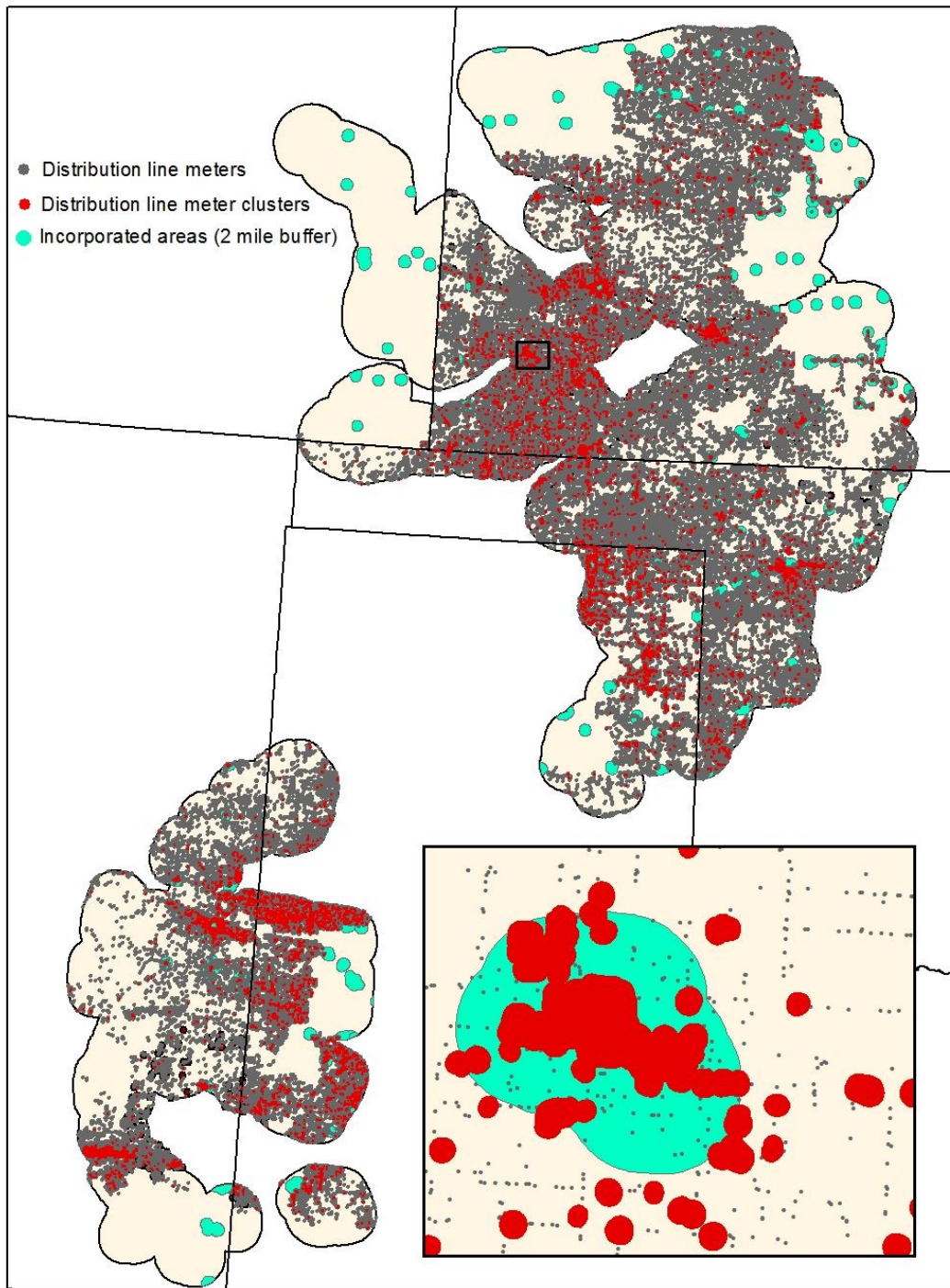


Figure 6. This map represents the raw electrical meter locations in gray, the identified meter clusters in red where construction of above ground electric distribution lines are allowed, and the incorporated areas in blue.

Element #5—The construction of above ground tap lines or terminal electric distribution lines outside of the two-mile buffer around incorporated areas, meter clusters, and 1.25 mile buffers of known active leks are allowed if they:

- Extend from a primary or secondary public road to any type of non-linear structure with a defined impact buffer and,
- Extend from the road right-of-way no further than the sum of the impact buffer distance for the road and the impact buffer distance for the structure that will be connected. The use of other existing impact buffers such that the new line crosses additional buffers to reach farther from the public road to a terminal structure is not allowed.
- This provision extends the previous limit of 200 m in cases where the structure being connected has a large impact buffer, e.g. communications towers. While it is not possible to estimate the percentage of leks that may be affected by this element, the new line will be contained within existing impact buffers so no additional habitat will be affected.

Element #6—Implement a retirement program that incentivizes the removal of existing distribution lines by giving cooperatives credit to build new lines in un-surveyed areas as long as it results in a net reduction in the miles of distribution line under their control within CHAT 1-3.

- The WAFWA RWP incentivizes the removal and remediation of existing infrastructure by providing mitigation credit that can be used for development of other projects. However, because distribution lines commonly follow existing roads that also have impact buffers, their removal will provide no mitigation credit or other incentive.
- WAFWA proposes a distribution line retirement credit system, whereby the cooperative or company that removes an existing above-ground electric distribution line will receive credit to build a specified length of above-ground line elsewhere based on the following table:

Remove a mile in this CHAT				
	CHAT	1	2	3
Receive credit in this CHAT (miles)	1	0	0	0
	2	0.75	0.5	0
	3	1	0.75	0.5

- New lines constructed using retirement credit may be built in un-surveyed areas as long as they follow a pre-existing primary, secondary, or private road and are not located within 1.25 miles of a known active (5 years) or historic lek (5-10 years).
- While this guidance has the potential to affect an unknown number of leks, the above restrictions minimize that potential by:
 - Restricting building in CHAT 1 where roughly 80% of the leks occur and within 1.25 miles of all known active and historic leks within the previous 10 years.
 - Restricting new lines to existing road corridors ensure no additional nesting habitat loss from this retirement credit program.
 - Ensuring a net benefit in terms a reduction in miles of distribution line across CHAT 1-3.

Element #7--Allow construction of above-ground electric distribution lines for radial or tap lines that are contained within the boundary of a farm, ranch, or home lot or industrial facility where aboveground electric service has already been connected.

- A farm, ranch, or home lot may contain any combination of the following: houses, barns, garages, equipment sheds, silos, corrals etc., and must have a clearly defined boundary. WAFWA has responsibility for defining that boundary.

- An industrial facility may contain any infrastructure with a defined impact buffer and must have a clearly defined facility boundary.
- The new aboveground radial or tap line can extend to other infrastructure on the lot or facility and may follow the lot or facility boundary. New radial or tap lines cannot cross rangeland or cropland because this would extend beyond the boundary of the defined lot or facility.
- Because this guidance covers areas that may be primary residences, breeding season timing restrictions and off-road travel restrictions do not apply within these season within the boundary of the lot or facility.
- Spatial data to evaluate the effects of this guidance with respect to farms, ranches, and other residences does not exist. However, given the pre-existing industrial, residential, or industrial infrastructure and pre-existing overhead electric lines, it is unlikely that the addition of one or more tap or radial lines within the boundary of the lot or facility will significantly increase avoidance or disturbance.

Cumulative effects analysis:

When considered together, the seven elements described above overlap in space across the EOR+10, so the results are not additive. When analyzed together, this guidance has the potential to allow development of above ground electrical distribution lines in an additional 5,184 square miles (Figures 7-9). The resulting increased disturbance area from full buildout could potentially impact a total of 29 known active leks (1.75%) and 16 known historic leks (1.90%). The total percentage of all potentially affected leks is 1.8%. Numbers of potentially affected leks are summarized by CHAT category and ecoregion in Figure 7.

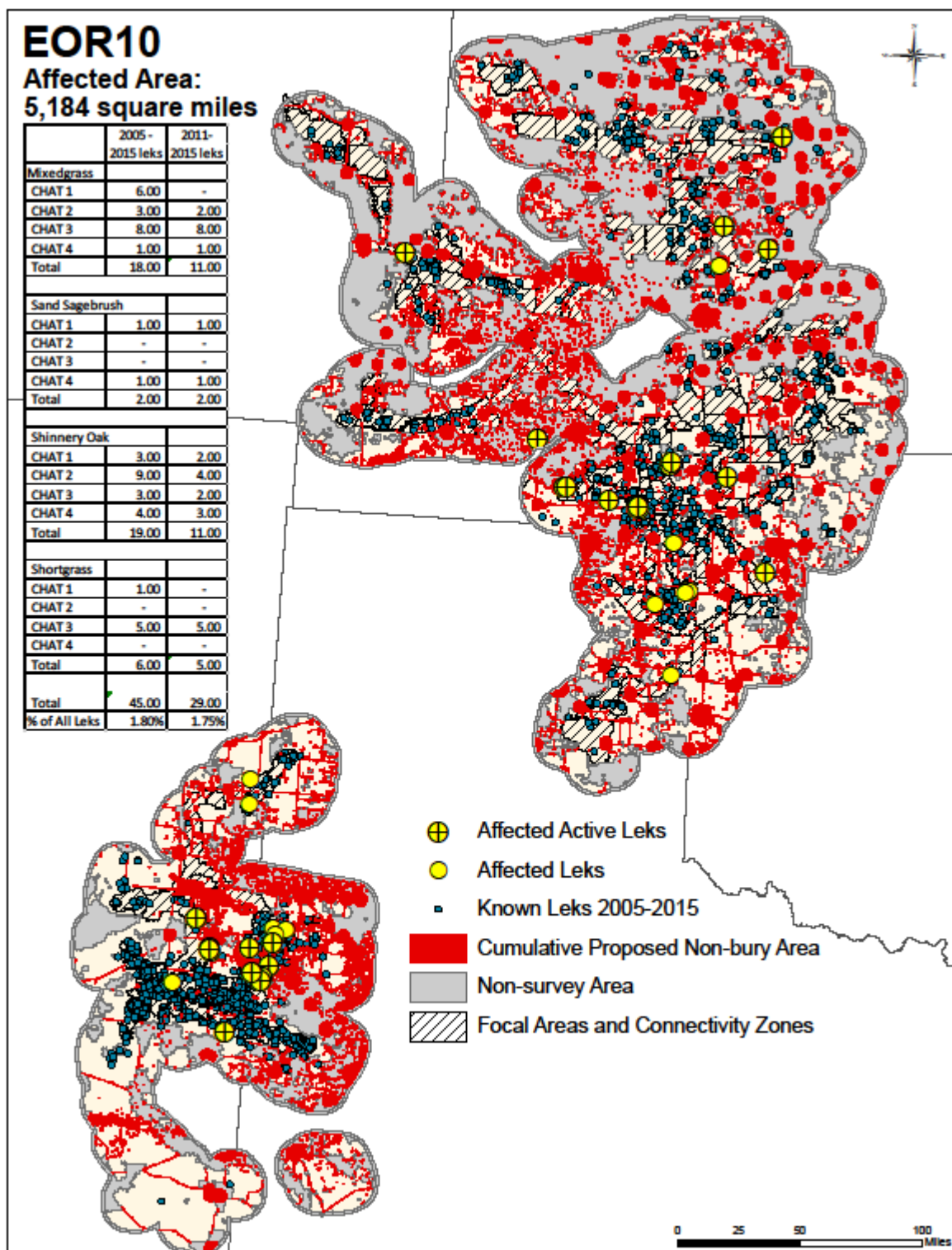


Figure 7. This map represents all areas in red where proposed where above ground distribution line construction will be allowed without lek surveys and the leks that may be potentially affected in yellow with a summary table of all potentially affected leks by CHAT category and ecoregion.

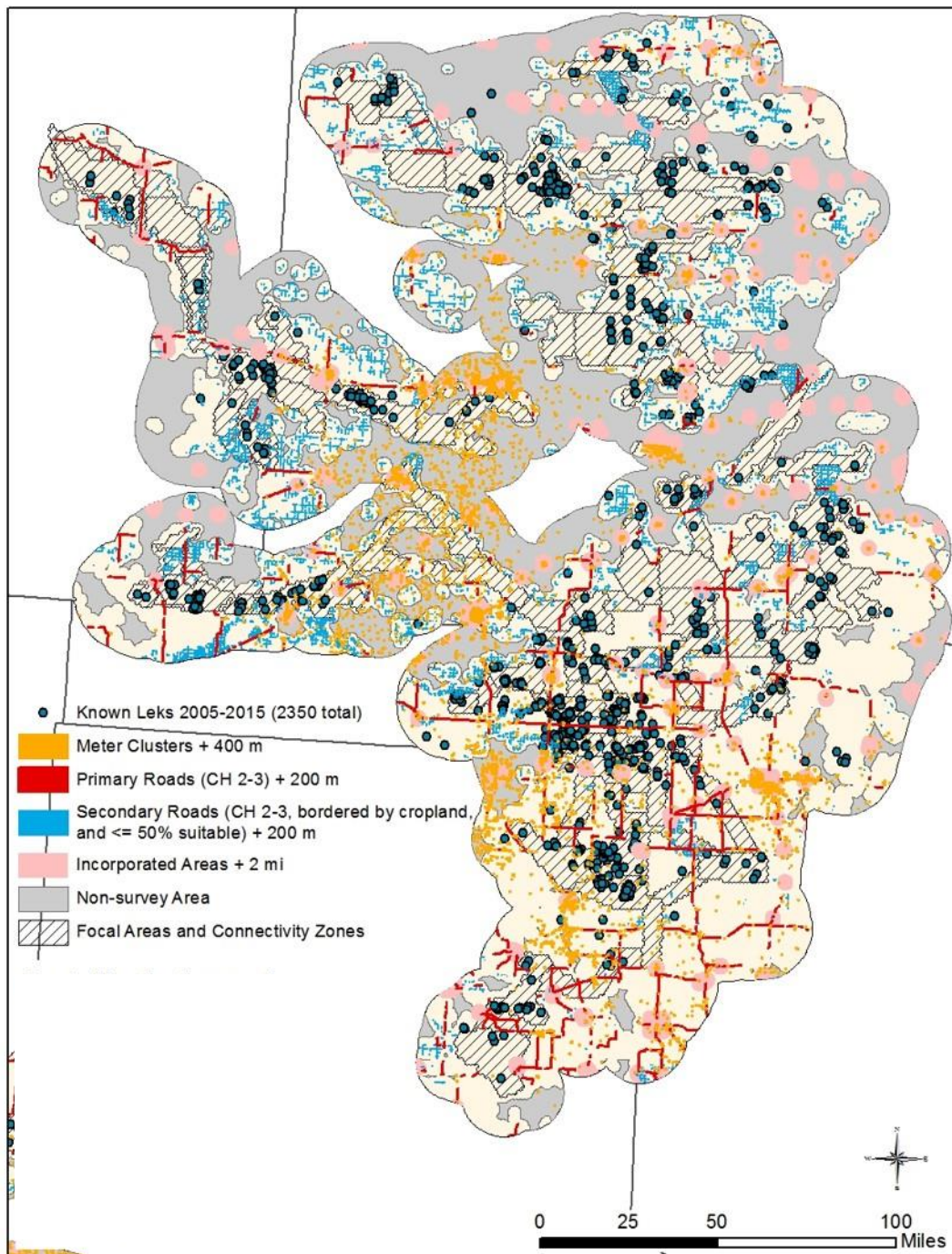


Figure 8: Detailed view of the layers included in this electrical distribution line guidance in the Mixed Grass, Sand Sage, and Shortgrass Ecoregions.

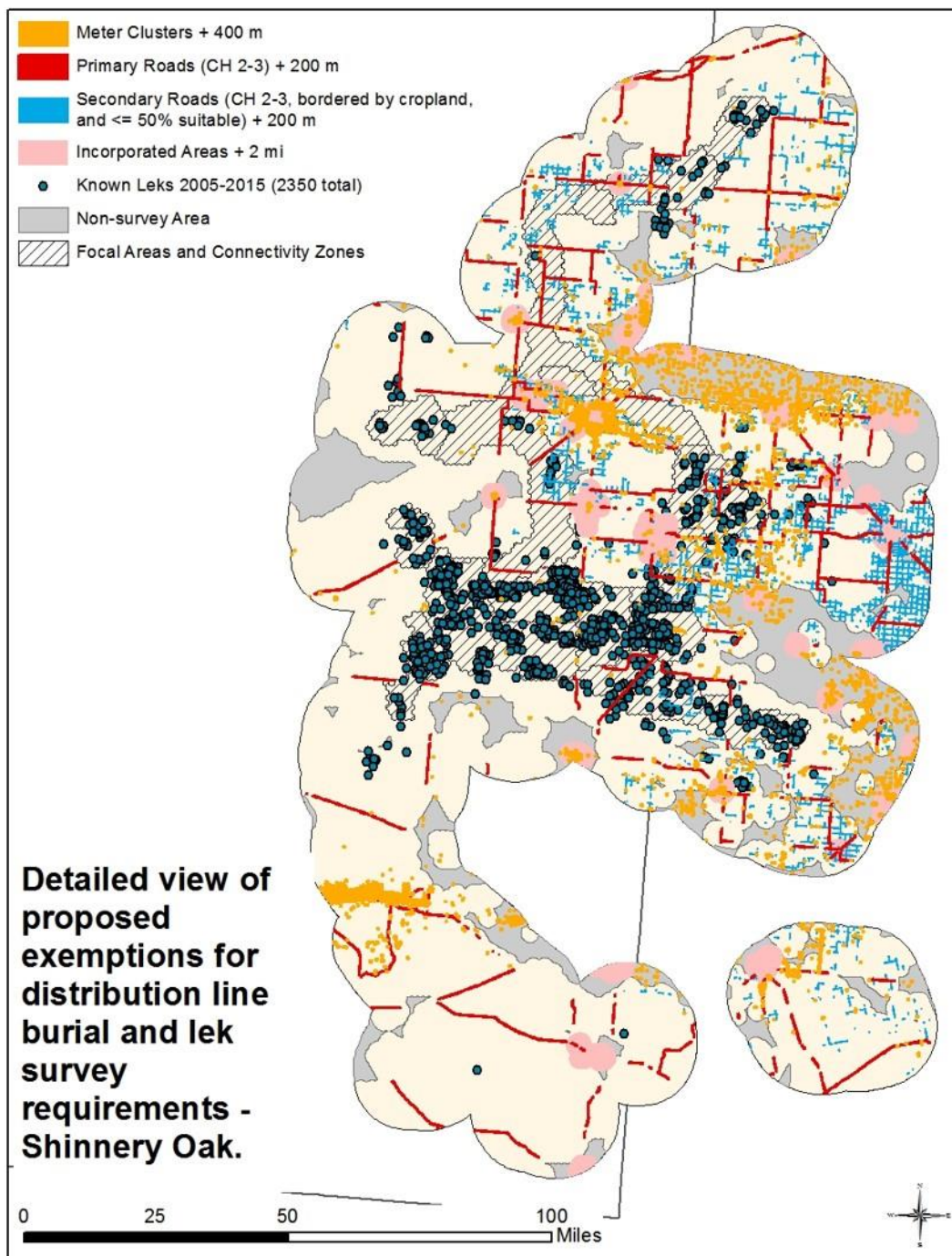


Figure 9. Detailed view of the layers included in this electrical distribution line guidance in the Shinnery Oak Ecoregion.