

Written Testimony of Dan Stelpflug

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House Small Business Subcommittee on Contracting and Infrastructure

“Broadband Mapping: Small Carrier Perspectives on a Path Forward.”

June 25, 2019 10:00 a.m.

Thank you Chairman Golden, Ranking Member Stauber and members of the committee for the opportunity to be here to share our small business perspective on the importance of more granular and accurate broadband mapping.

My name is Dan Stelpflug and I am the director of Operations, Engineering and Technology at Allamakee Clayton Electric Cooperative (ACEC), headquartered in Postville, Iowa. ACEC provides electricity to rural communities that investor-owned utilities bypassed, in part due to our sparse population. We serve less than 10,000 electric consumer-members, 95% of whom are farmers and rural residential customers. We serve these members on 2,508 miles of lines across eight northeastern Iowa counties near the Wisconsin and Minnesota border.

ACEC is part of a broader electric cooperative industry, represented by the National Rural Electric Cooperative Association that serves one in eight Americans and covers 56% of the U.S. landmass. Electric cooperatives are owned by the members they serve and they are uniquely suited to best understand and serve their members’ needs. Most electric cooperatives are small businesses; they don’t have investors or access to significant capital to help defray the costs of building and maintaining their infrastructure. These costs are borne directly by the farmers, ranchers, small businesses and other residents of the nation’s rural communities – including those in 93 percent of the nation’s persistent poverty counties.

**Electric cooperatives play a vital role in transforming communities.**

While our first priority at ACEC is to provide reliable, clean and affordable electricity to our members, our commitment to our communities extends well beyond that service. We also provide services that empower local communities to improve their quality of life. That includes participating in efforts to

make sure they have access to a robust communications infrastructure including access to quality and affordable broadband that enables rural communities to thrive and compete in an increasingly connected, global marketplace.

Many comparisons are drawn between the lack of access to robust broadband service today and the need for electrification in rural America 80 years ago - with the urban areas of the country well-served, and rural areas being left behind. In part because cooperatives are led by, and belong to, the communities they serve, there is an increasing number of electric cooperatives studying whether they should be part of the solution to close the digital divide. More than 100 electric co-ops, including my own, already are working toward meaningful and diverse solutions to bridge the digital divide and jump-start local economies. This cooperative commitment is vital for the one-quarter of all rural Americans who still lack access to broadband, compared to less than 2 percent in urban areas. Whether this estimate is accurate is an important question, and I thank the committee for its attention to this important issue.

In addition to my operations and engineering responsibilities at ACEC, I oversee AC Skyways, the broadband division of our cooperative. The cooperative has been delivering broadband to Northeast Iowa residents since 2014. Our wireless broadband service is available in Allamakee and Fayette counties, with plans for expansion in 2019 and beyond. ACEC commissioned an engineering study as the first step in evaluating its broadband technology options. While we recognize that fiber may be the preferred broadband technology, the estimated cost of system-wide deployment of fiber-to-the-home (roughly \$80 million) produced by the analysis exceeded the total value of the electric side of our business (around \$60 million) and thus was not a realistic option. That is the case for many electric co-ops because of the rural nature of their service areas.

Our cooperative delivers broadband service using a combination of fiber optic lines and fixed wireless technology—a “fiber to the section, wireless to the home” business model. The fiber connection is established on high elevation structures and the wireless signal is transmitted from that point to where it can be picked up by a small antenna located at a residence or business.

Our cooperative has invested approximately \$1.3 million to date in its fiber backbone, including one-third of that amount funded by a grant from the Federal Communications Commission’s Connect

America Fund (CAF) under the Rural Broadband Experiments (RBE) Program. The grant is being disbursed to ACEC over 10 years. Annual operating cost of the fiber-wireless hybrid system in 2019 is budgeted at \$836,000 with same-year budgeted revenues estimated at \$530,000. Payback of the investment is expected to take an additional five to seven years or longer. The cooperative's wireless broadband division, AC Skyways, serves 525 subscribers. In recognition of the relatively long time to recoup its investment, AC Skyways has slowed network buildout as it grows its subscriber base.

The primary impetus for ACEC's investment in its broadband network was, and continues to be, to serve members who lack affordable options to access the internet with at least 25 Megabits per second (Mbps) download speed. The project is the cornerstone of our community development efforts. We heard from economic development professionals and employers that rural broadband access is critical to creating jobs, attracting workers, retaining our youth and young professionals, maintaining a competitive agricultural community, and supporting our seniors through services like telemedicine and telepharmacies. Conversely, the absence of high-speed internet discourages businesses from investing in our communities, which hinders economic development and threatens the viability of anchor institutions like schools and healthcare facilities that require robust connectivity to best serve our community.

#### **Small business challenges ACEC has encountered with inaccurate data**

Some the challenges we have encountered as a small business include difficulty finding staff time to identify and apply for grants, insufficient staff to meet reporting requirements, and inaccurate data in federal broadband maps subsequently impacting existing federal grant funding and eligible areas for future grant funding.

Four full-time equivalents staff the broadband unit and all are shared resources. Among these, two technicians split their time between broadband work and IT services, the customer service representative splits time with the cooperative's member services department, and the broadband department manager also is the co-op's operations manager. My co-op's experience with the shortcomings and inaccuracies of existing, federally available broadband mapping data is from the perspective of a broadband provider seeking opportunities for federal funding to deploy broadband service to more of our members and as a provider working to meet FCC requirements as an RBE grant recipient.

Our first experience with inaccurate data occurred while working to comply with federal grant guidelines. In 2014, the cooperative received a boost in the form of a \$1.45 million grant from the FCC's Connect America Fund RBE program. The grant was awarded for us to reach 665 potential customers in 209 census blocks with broadband. The potential customer total was identified by, and based on, FCC data that was assumed to be correct. The bidding process required us to ask for a subsidy per subscriber per month. Our bid was based on the subscriber count provided by the FCC, and at the time, the cooperative had no process or procedure in place to verify that the FCC data was correct. Had we known that the subscriber count was inaccurate, our bid per subscriber would have been incrementally higher. While preparing progress reports required by the FCC, we discovered a discrepancy in the number of potential customers; instead of 665 locations as indicated by FCC data, we counted 510, or 23% less than anticipated. The FCC was asked to verify how their count was determined, and it would not verify the process; it would only provide the count.

ACEC then developed the following process to determine potential customer sites within the eligible census blocks:

1. Fayette County provided aerial photography (2016) for the eligible census block area. We reviewed the photos to determine any residences and building sites.
2. We looked at the 2010 census data as an indicator of the number of households in each census block. This was the starting point to determine the number of potential customers.
3. In order to verify that no additional sites had been constructed since the 2016 aerial photo (or the 2010 census), we looked up each parcel within the eligible census block on the county assessor website. The assessor's office report on each parcel shows all buildings within the parcel and the value of those buildings. This was also an indicator of any structures that were torn down or in ill repair and thus not viable potential customers.
4. We used cooperative data to verify ACEC electric members within the census blocks. If a location received electricity, we verified it was included in the customer count.

Included with my testimony are illustrations of what I've described, including census blocks where the FCC identified a certain number of potential RBE customers where we subsequently found the true count to be fewer than initially indicated. In a perfect world, we would have been able to identify this discrepancy earlier. But the realities of a small business, the timeline, and our initial trust in the accuracy of the FCC data didn't allow for that to happen. Even if we had been able to identify the location number

discrepancy in advance of accepting the RBE grant, the FCC had no process in place at that time to resolve such an issue.

On September 26, 2018, we filed a petition with the FCC requesting to waive rules to allow the cooperative to meet requirements of the RBE program based on the actual number of potential customers. The lack of response from the FCC to this request has caused a budgetary hardship for our cooperative. We are reluctant to add new or upgrade equipment until we know the outcome of the ruling, considering we may have to pay back 23% of the grant. Had the FCC explained their methodology for determining the subscriber numbers and indicating that there was going to be some variability, we would have done additional subscriber research and changed the cost information included in our bid.

We hope the Congress will encourage the FCC to continue working with small carriers toward mutually agreeable resolutions to issues like ours that maintain program integrity, but recognize the challenges of small businesses and work constructively with us to improve our communities.

In addition to issues with data used to implement the RBE program, it is important to address concerns with the FCC's Form 477. As a broadband provider, we file the Form 477 with the FCC. And as a small business serving rural consumers, we have a vested interest in being able to consult Form 477 data to get a trustworthy view of where broadband is and isn't available in our service area.

We believe the FCC's existing Form 477 data overstates the availability of broadband, particularly in rural America. The concept that a census block should be deemed served in terms of fixed broadband service if one location in a census block is served is no longer viable. That model overstates broadband availability and does not provide a rational basis for policy determinations.

While recognition of its shortcomings has grown and various efforts are underway through congressional proposals and FCC proceedings to address them, electric cooperatives have firsthand experience with the existing maps wrongly excluding areas from eligibility in federal broadband programs.

Another frustrating aspect of the Form 477 data is the reporting requirement allowing carriers to report advertised maximum speeds in census blocks even if it can only provide that high speed to one customer. It isn't an accurate way of reporting and it leaves many residences with unacceptable bandwidth that cannot support everyday applications available in urban areas or simultaneous use of multiple applications or users at a single location. This is especially critical for telehealth, professionals working from home and students who require a robust, reliable internet connection. Grant money is

not available in these areas because the FCC assumes the census block is adequately covered with high-speed service.

### **What can be done to help address inadequate mapping information?**

Recent federal policy changes at the FCC and USDA lay the groundwork for an improved approach to making robust broadband access a reality throughout rural America, but improved data mapping showing broadband availability is an essential element of such an approach.

The FCC's Form 477 is asking the wrong questions. While the devil is always in the details, there are steps FCC can take to vastly improve broadband availability data.

1. More granular data is needed to eliminate the "false positives" in classifying census blocks as served or unserved per the current Form 477 data.
2. FCC needs a system of checks and balances to help ensure providers are reporting actual speeds that are reliably available to consumers.
3. Federal agencies must undertake increased data verification efforts, including the implementation of a challenge process.

### Data Granularity

Several proposals among industry, Congress and the FCC could improve the granularity of broadband data. As a small business, ACEC recognizes the need to balance the need for granular data with meaningful, yet simple filing requirements. While address-level data would be the most accurate, it is also potentially the most onerous. There are multiple government and industry lead pilot projects underway, including one to determine the feasibility of an address-level approach.

The FCC uses Form 477 census block data to develop the broadband map. However, many providers, including ACEC, create GIS maps of their service areas in shape files or other geolocated formats. Instead of requiring filers to complete the Form 477 spreadsheet, providers could be required to submit shape files or GIS maps of their service territory. This would improve accuracy and reduce the reporting burden on providers. There may be some carriers that do not create maps of their service territory and may lack the capability to do so at this time. In these cases, the FCC could provide technical assistance to such ISPs, especially in the initial years. The FCC could also issue an RFP for a contractor to create these types of maps or provide the technical assistance needed to ISPs lacking the requisite expertise.

## Data Accuracy: Broadband Service Characteristics and Verification

Collecting more granular data alone won't solve the problem. We must have information like speed and latency of the available broadband service and confidence in its accuracy. Advertised speed is just that – advertised and likely not illustrative of the consumer experience. Data should be collected showing actual speeds customers receive and the latency, or delay, that they experience. Fortunately, the FCC has adopted, but not yet implemented, a mandatory, uniform framework for measuring the speed and latency for the fixed broadband services. Recipients of various FCC high-cost support program—including the CAF II competitive auction winners, Rural Broadband Experiment grantees, rate-of-return of carriers, and price cap carriers accepting state-wide offers—will be required to implement one of three methodologies to determine their networks' fixed broadband service download and upload speeds and latencies.

The framework also prescribes the frequency of required testing over the course of a year and sets the time of day during which testing must be conducted. These parameters are important to ensure providers cannot cherry-pick testing frequency and time of day to yield the most favorable results. As an RBE grant recipient, my cooperative will be subject to these requirements, as will many other NRECA members who were awarded bids in the CAF II auction. NRECA will continue working with the FCC toward implementation of the framework with an eye toward ensuring a final implementation plan is workable for small businesses. We will keep Congress apprised of these developments.

Further, some level of verification will be needed to ensure accuracy of broadband data filings. Verification could include a challenge process by which consumers have a remedy should they not receive the speeds reported by their provider. Such a process would enable various types of entities, including local governments, existing broadband providers and consumers, to provide public feedback with a determined resolution process. Acquisition of third-party commercial datasets on broadband availability and creation of a field verification process would be useful tools in resolving instances where provider-reported data, third-party data and consumer feedback conflict. Periodic discrepancies between data and actual coverage reported by an ISP will occur. However, penalties could be considered for flagrant and repeated misreporting of broadband coverage data by ISPs.

We appreciate members of Congress working to solve this issue through legislation such as the Broadband Data Improvement Act of 2019 by Reps. O'Halleran, McMorris Rodgers, Butterfield, Kuster, and McKinley. This bill would require more granular data to be reported and implement much-needed

validation processes, including the creation of a mechanism to collect and integrate public feedback. NRECA supports this proposal. Additionally, we look forward to the FCC's intent to circulate a Report and Order in the Form 477 proceeding this August.

### **Conclusion**

Electric cooperatives know how challenging it is to build infrastructure throughout rural America to provide a service that is integral to the prosperity and future of our communities. Thanks to the dedication of the generation(s) before us and the strong working relationship among cooperatives, our communities and the federal government, we all have the privilege of saying, "We did it!" when it comes to electrifying the rural and remote parts our country.

Reaching all rural Americans with high-speed broadband service is a similar, but much more complex challenge. More accurate maps showing broadband availability are a key part of reaching that goal, enabling us to clarify existing gaps in coverage and harmonize the diverse solutions that will be required to help rural Americans keep pace with their urban counterparts. We look forward to a continued partnership with Congress to work toward that goal.

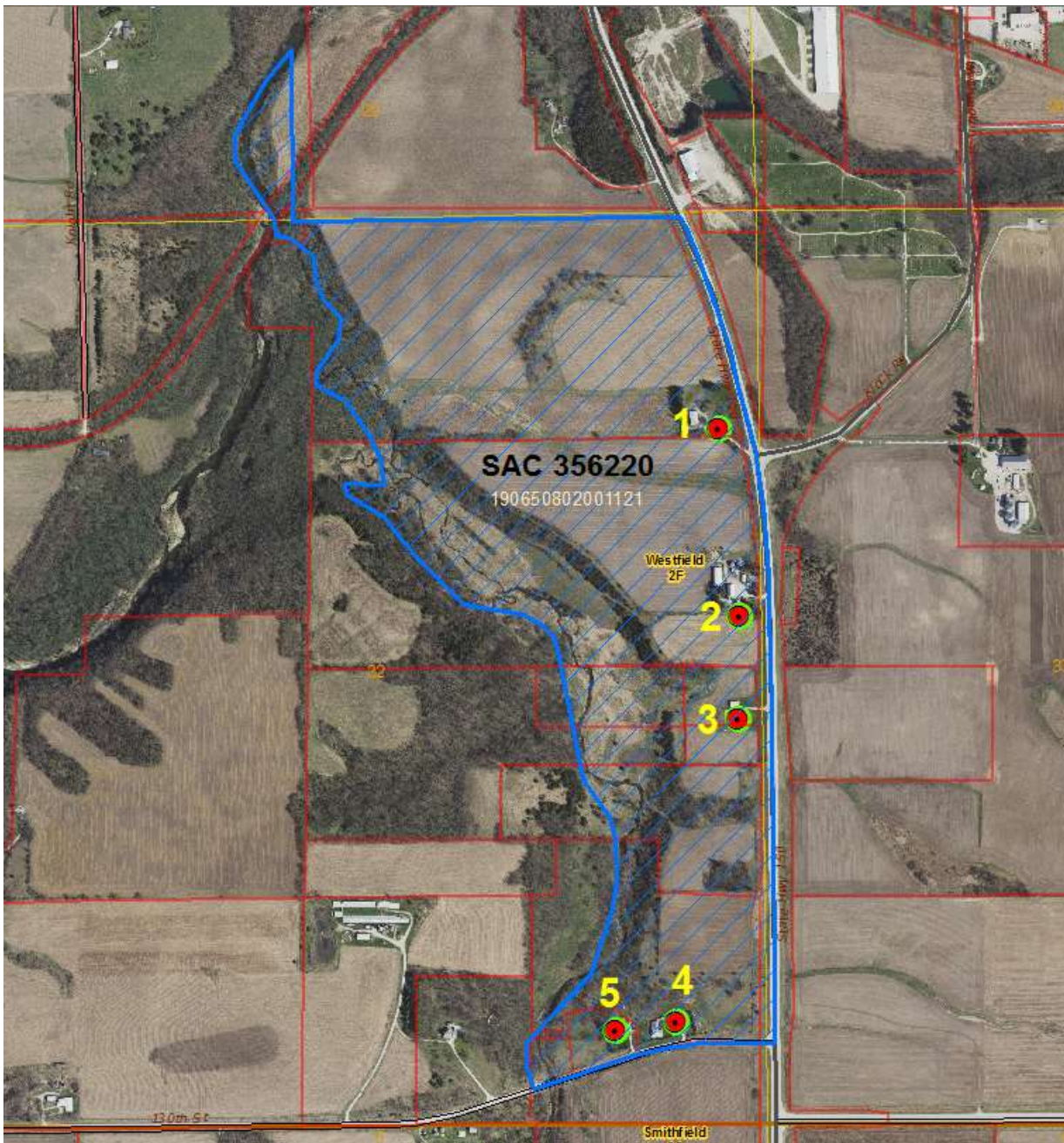


# Allamakee Clayton Rural Broadband Experiment Location Discrepancy Examples

The following figures include the number of locations the FCC said existed and depict ACEC's research and identification of the true number of potentially serviceable locations in those areas. ACEC identified locations are indicated with a yellow number. The result demonstrates why ACEC found fewer potential locations than the FCC's data said exist.

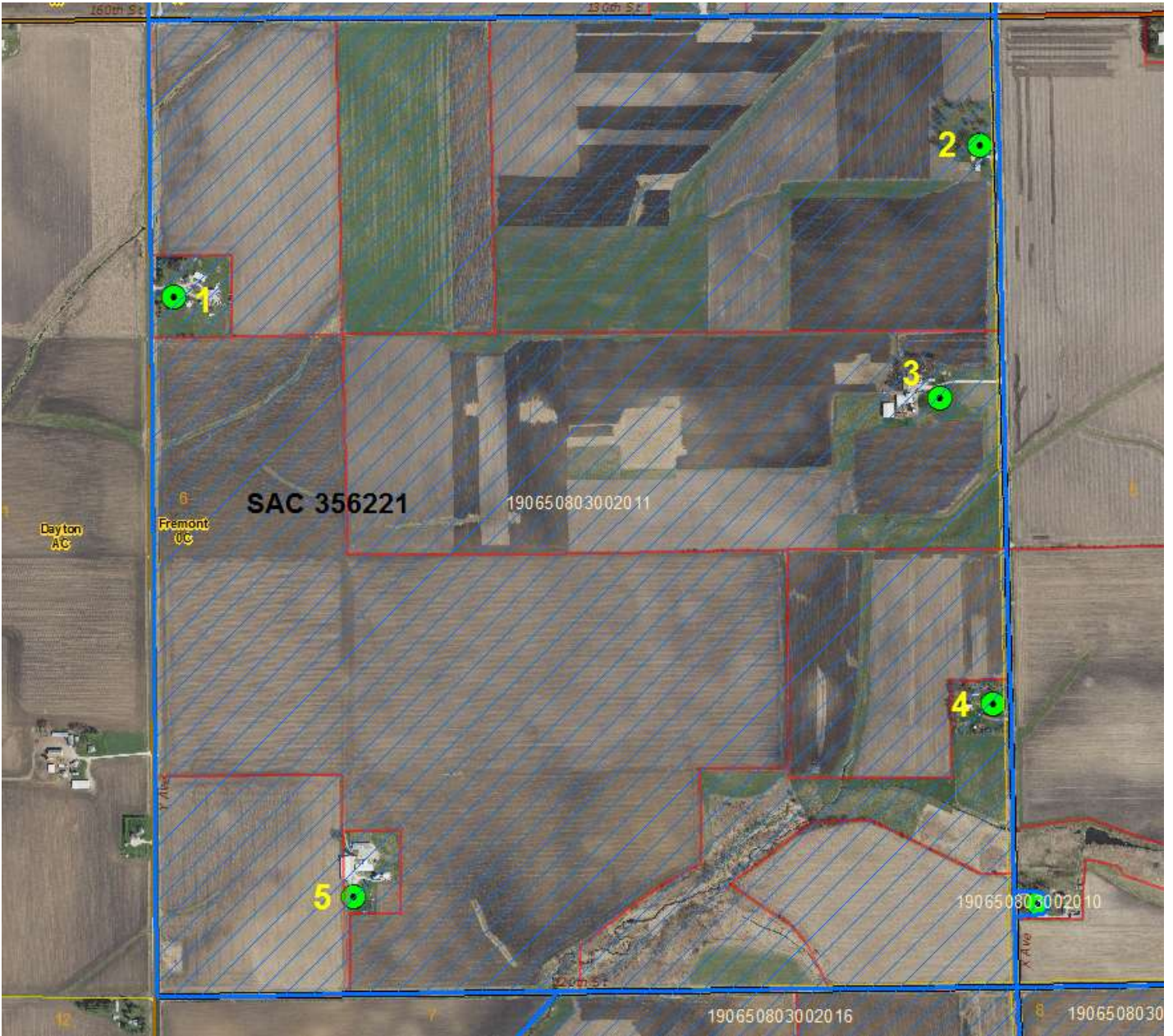
**Figure 1 -**

Census Block:	190650802001121
Location:	Westfield Twp, Sections 32 & 29
2010 Census Housing:	5
FCC Total Locations:	8
ACEC Locations:	5



**Figure 2 -**

Census Block: 190650803002011  
Location: Fremont Twp, Section 6  
2010 Census Housing: 6  
FCC Total Locations: 9  
ACEC Locations: 5



**Figure 3 -**

Census Block: 190650807001093

Location: Windsor Twp, Section 2, 3 & 4

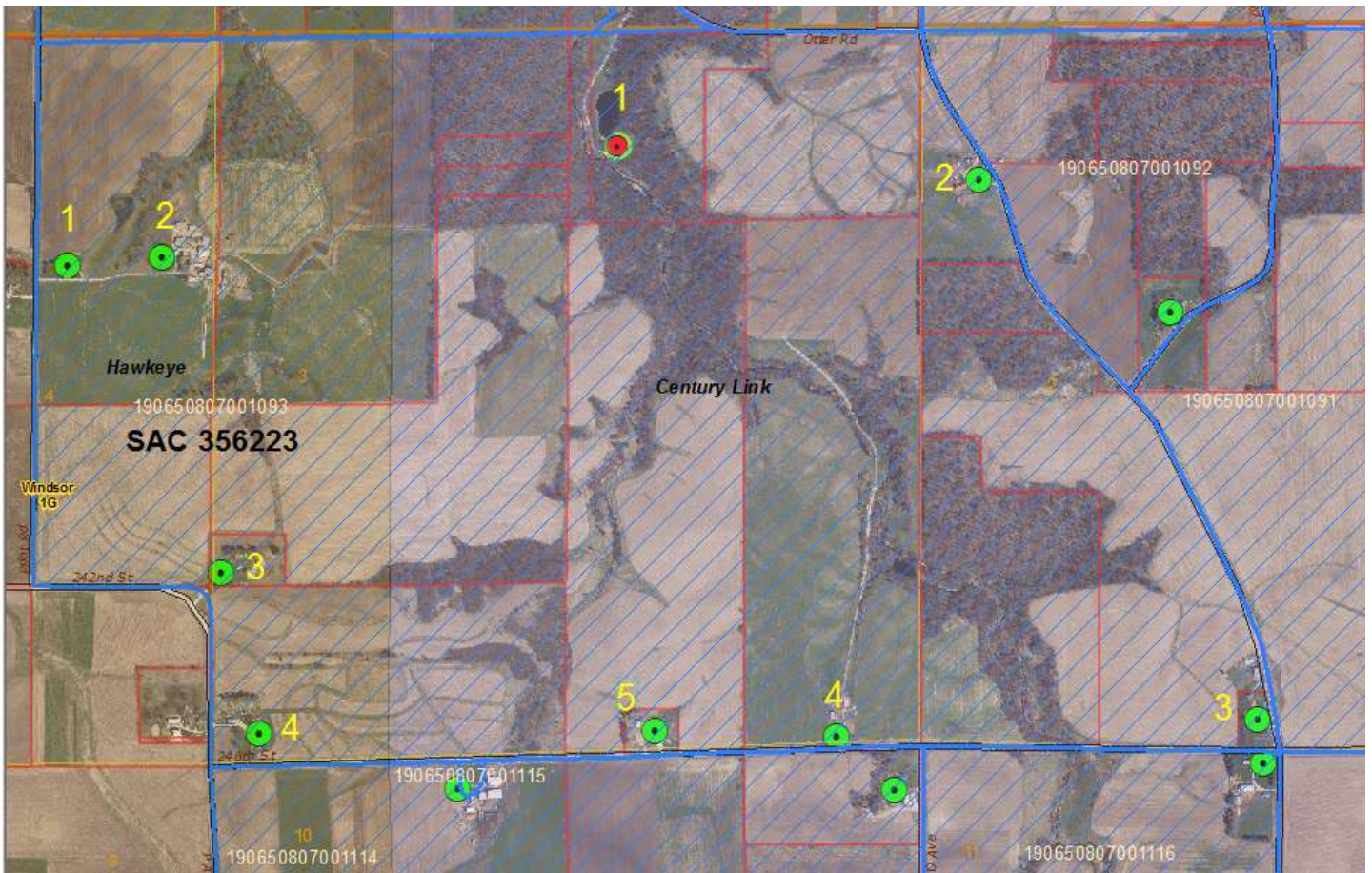
2010 Census Housing: 9

FCC Total Locations: 14

ACEC Locations: 5 in Century Link Territory

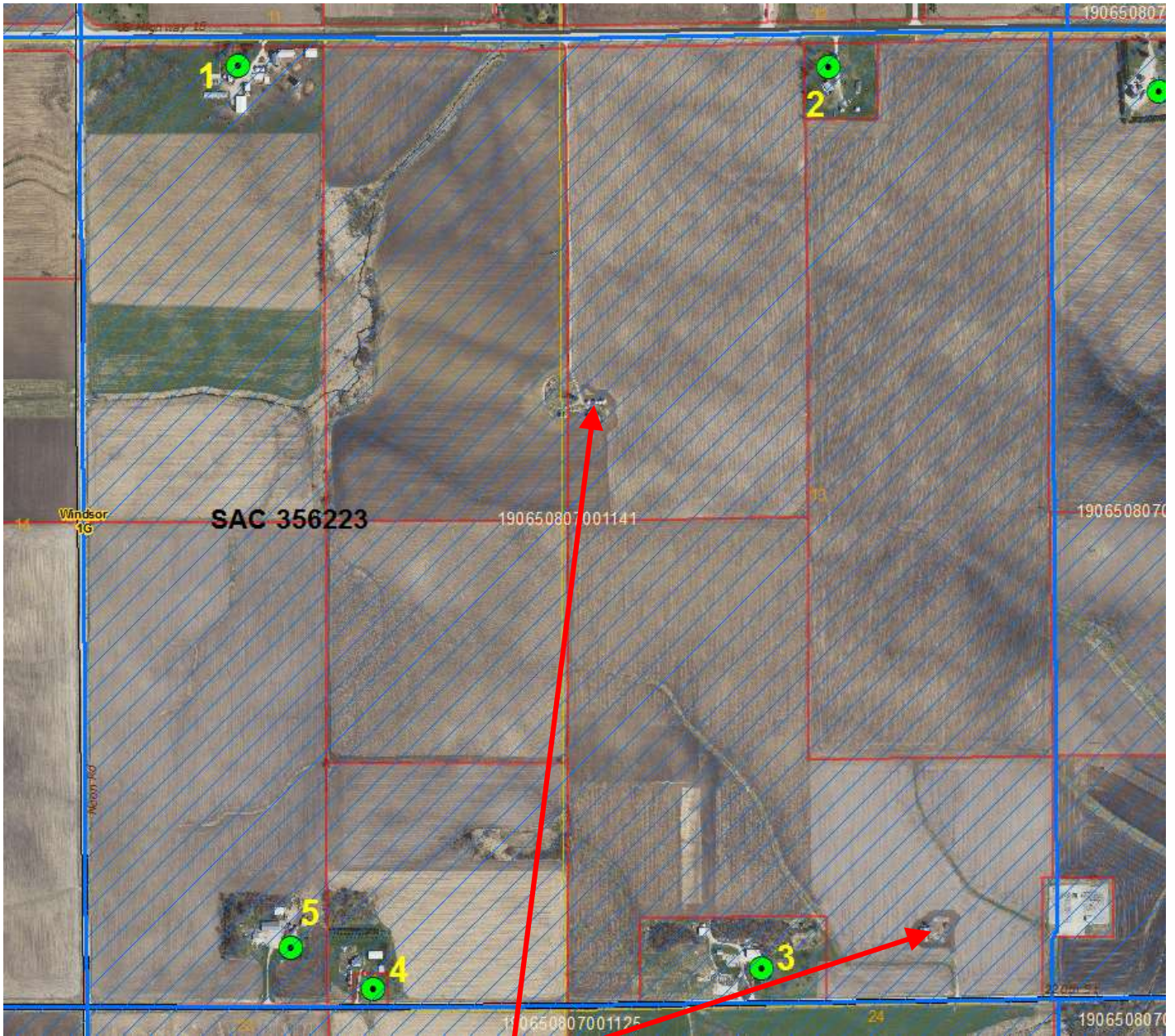
4 in Hawkeye Territory (identified on the left side, but these are not in an eligible exchange territory under the RBE grant rules).

9 in total but only 5 are in RBE eligible areas.



**Figure 4 -**

Census Block: 190650807001141  
Location: Windsor Twp, Section 13 & 14  
2010 Census Housing: 6  
FCC Total Locations 10  
ACEC Locations 5

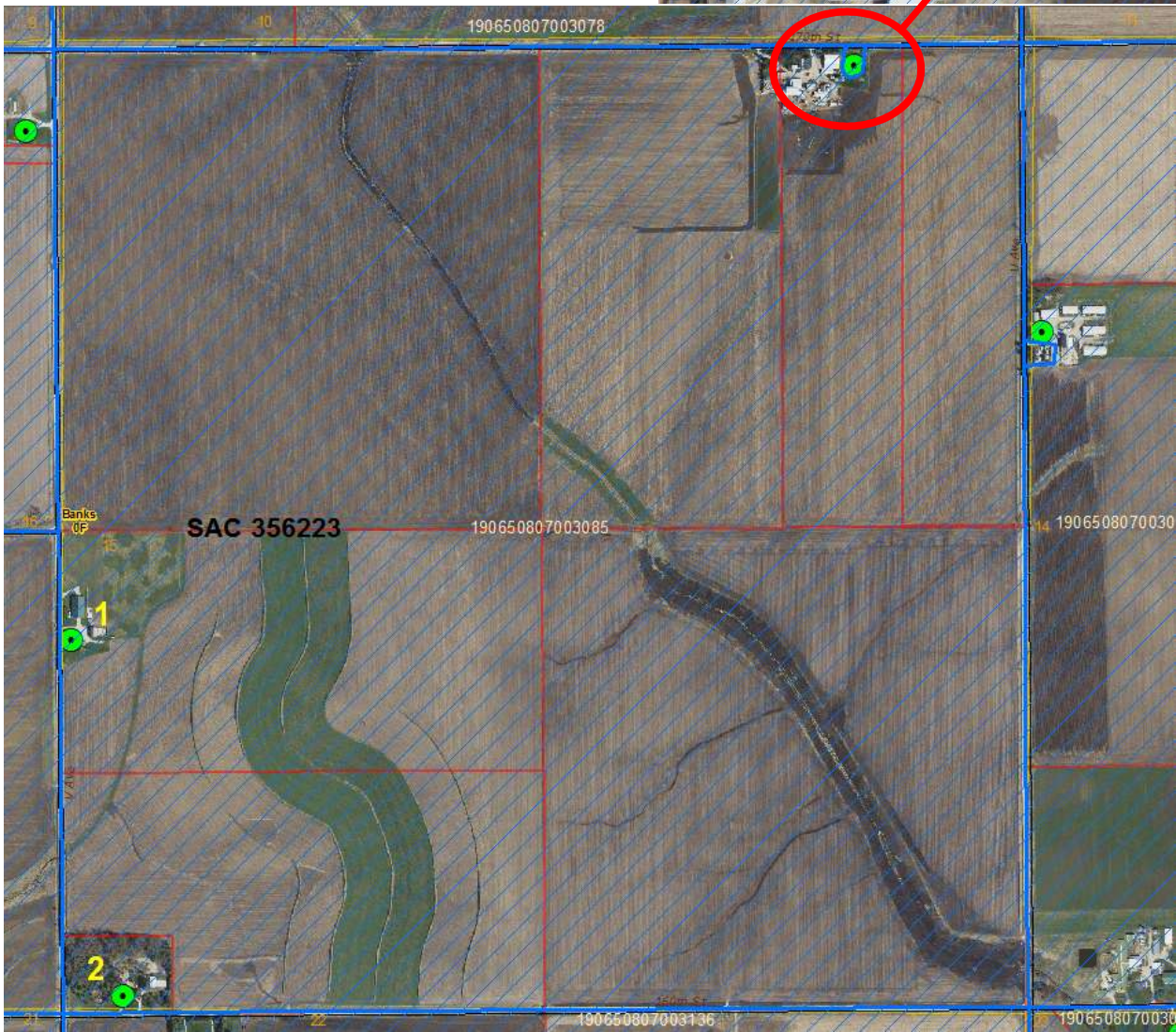


Note: Old barns falling apart or torn down

**Figure 5 -**

Census Block: 190650807003085  
Location: Banks Twp, Section 15  
2010 Census Housing: 3  
FCC Total Locations: 6  
ACEC Locations: 2

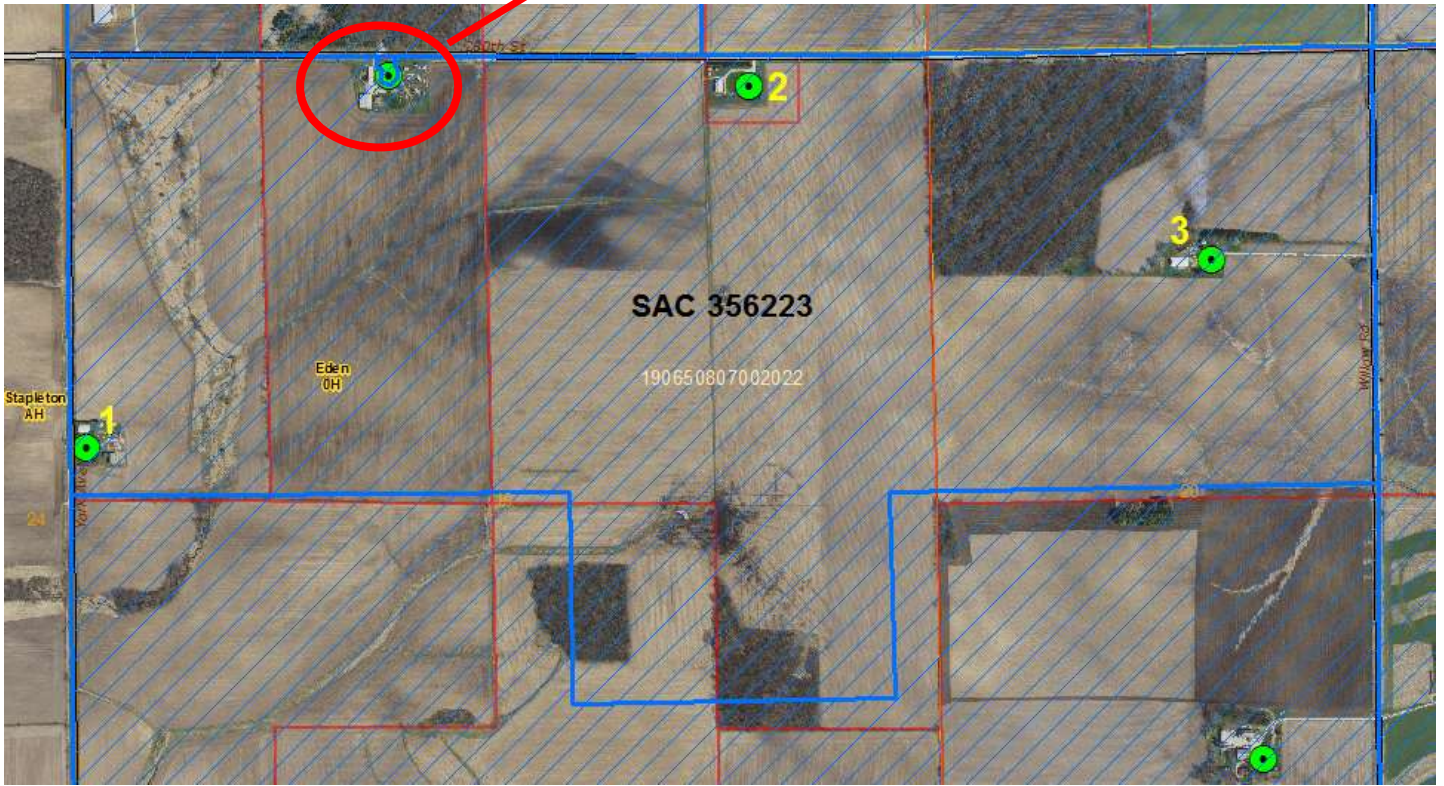
Note: Detail on the right shows the main part of the farm is in a different Census Block (Number 190650807003085) than the rest of the image below.



**Figure 6 -**

Census Block: 190650807002022  
Location: Eden Twp, Section 19 & 20  
2010 Census Housing: 3  
FCC Total Locations: 7  
ACEC Locations: 3

Note: Detail shows the main part of the farm  
is in Census Block Number  
190650807002023.



**Figure 7 -**

Census Block: 190650803001033  
FCC Total Locations: 2  
ACEC Locations: 0

