

East Locust Creek Project

Boundary Selection Procedures

September 23, 2010

The goal in selecting the proposed land acquisition property boundaries for the East Locust Creek reservoir was to reduce the amount of land that needed to be purchased while keeping property owners reasonably close to the lake, but without compromising the quality of the lake. This set of goals necessitated the need to have boundaries that come closer to following ground contours than a more typical reservoir land acquisition strategy would. A more traditional acquisition would tend to square corners off and follow existing property boundaries in a reasonable effort to keep the property boundaries simple and easy for owners to respect. In fact an early iteration of the property boundaries did utilize a traditional acquisition strategy and was used as a yardstick to evaluate the reduction in property acquisition and the increase in complexity that would come with a more detailed strategy.

In an effort to get ahead of the compensatory mitigation requirements, the acquisition strategy was also configured to include consideration for acquiring or controlling areas that can be used for mitigation. As a result, the project ended up with a three phase approach to identifying areas to be acquired. The three phases are:

1. Identify the minimum amount of property that must be acquired or controlled to meet the minimum acquisition requirements of the NRCS.
2. Identify areas that are needed for the sighting of amenities
3. Identify areas that are beyond the boundaries identified in steps 1 and 2 but which would be of value for mitigation.

Phase 1. Minimum property boundaries

The basic criteria used for selecting the minimum property boundaries were:

- A. All property below top of dam will be acquired. Areas below top of dam were identified based on the LIDAR data provided by NRCS.
- B. A 100' buffer between the normal pool and privately owned lands will be provided where reasonably possible. The normal pool outline was based on the LIDAR data provided by NRCS.
- C. Portions of properties that did not need to be acquired per the above two requirements but for which the lake appears to cut off access were identified and

included in the total acquisition amount, with the understanding that some of them are still of value and may be resold to other owners.

- D. Added complexity of the boundary comes at a cost, so additional property corners were avoided when they did not significantly reduce the required acquisition area.
- E. The total amount of property to be acquired should be significantly less than the amount that would have been acquired under a more traditional approach. The goal was to get it below 4,310 acres.

The above goals were implemented by first identifying the top of dam elevation outline, the normal pool outline and a 100' buffer to the normal pool outline from the LIDAR data. Once these were identified, boundaries were iteratively drawn based on the first three criteria and the results were compared to the original acquisition strategy with regards to the last two criteria. The original, traditionally defined boundary included around 5,700 acres of total acquisition and 234 vertices in the shape describing the acquired property. The first iteration using the above criteria resulted in 3922 acres of basic acquisition and 2,225 vertices in the shape describing the acquired property. This was viewed to be an unmanageable number of corners, so further iterations were defined with the current proposed result that includes 4,3470 acres of basic acquisition (including 301 acres in remnant tracts as described in goal C) and 1,390 vertices.

Phase 2. Property boundaries for amenities

In addition to the base boundaries described above, some additional areas will be needed to provide the amenities that are needed to operate a first class reservoir. At this point in time, the amenities that have been specifically considered have been a marina and boat ramps and all the support facilities they require. The considerations included in the selection of sites for these amenities were as follows.

- Distance to population centers and access to major roadways - Because of the existence of Milan just to the South of the reservoir and State Routes 5 and 6 to the West and South of the reservoir, the Southwest portion of the reservoir is ideal for the marina and a boat ramp from a general access standpoint. However, there are people living closer to the North end of the lake and on the east side of the lake, so boat ramps on the North and East side of the lake are needed to provide minimum access.
- Depth of water available – Because the proposed reservoir is needed for water supply, the water levels should be expected to fluctuate significantly. It is therefore sensible to locate the Marina and at least some boat ramps where they will be near the deepest portions of the reservoir. Doing so will allow maximum flexibility in providing access to the lake during periods with low lake levels. It will also minimize the amount of time required to fill the reservoir to a useable level.
- Existing topography – The ideal site topography would have areas with existing slopes at about 12.5% that extend all the way from a little above the emergency spillway elevation

to several feet below the design low pool elevation for boat ramps. For the marina site, it would also have relatively flat areas at an elevation just above the top of dam for location of support buildings. It would have areas for parking that would be near the lake, but have the potential to be sloped away from the lake to prevent runoff directly from parking areas into the lake.

- Amount of required grading – From both an environmental and an economic perspective, sites that require the minimum amount of grading are preferable. Areas that require the least amount of grading are therefore highly valued.
- Availability of adjacent area for parking, restrooms, picnic areas etc. – The selected site must have adequate space for the necessary supporting elements. Sites with area in excess of the minimum needed for the necessary supporting elements will provide additional opportunities for amenities.
- Protection from prevailing winds and waves - Prevailing winds are predominantly from the west and southwest and coves tend to have smaller waves than the main channel, so a cove on the west side of the lake is preferred.
- Infrastructure costs – The preferred site should not need excessive amounts of infrastructure improvements to be useable.

The preferred location for the marina is in NRCS' proposed borrow area. The benefit of doing so is that we can get the grading right without having to remove as much additional vegetation. This will result in both economic and environmental benefits. The economic benefits will occur because the borrow areas are being acquired anyway and because of the overlap in grading effort for both acquiring fill for the dam and for configuring the site for the marina. The environmental benefits will come from reducing the amount of vegetation that must be removed and from reducing the total area of disturbed soil. This location is adjacent to deep water, and easily accessible to Milan and the major highways (coincidentally, "Milan and the Major Highways" could be the name of the lake's house rock and roll band). It also benefits from being in a protected area off the main channel. The current presence of a large pond at the proposed site also means that the amount of needed removal of vegetation beneath the floating portions of the marina will be less. This approach will require careful coordination with NRCS to verify that it will not unduly restrict the availability of fill for dam construction and will necessitate a request for NRCS to leave the site with a specific topography suitable for the marina.

Phase 3. Boundaries for mitigation areas

After selection of the base and amenity boundaries a separate set of parcels will be identified for potential use as compensatory mitigation areas. The selection of these parcels will be based on

their potential value for earning mitigation credits as either wetland or stream mitigation sites. Each mitigation parcel will be evaluated and assigned a potential mitigation value which the acquisition team can use to inform their decisions regarding acquisition of the sites. Final determination as to whether these areas will be acquired by the Commission or put in Conservation Easements or not be acquired at all will be done during the negotiation for the property. Areas that contribute flow into the reservoir will be preferred because the project will receive the double benefit of earning mitigation credits and improving the source water supply. Example areas that will be identified for mitigation are:

- Areas that have slopes, existing soils and contributing drainage areas conducive to wetland creation
- Riparian corridors where buffers could be created, enhanced or preserved.
- Unstable stream channels that could be stabilized to reduce sediment loading into the reservoir.