Mid-America Commerce Center Resource Plan

Prepared for the City of O’Fallon, Illinois

by the

Southwestern Illinois Resource Conservation & Development

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Introduction
This report is a basic comprehensive analysis and assessment of the resources throughout the study area. The study area is outlined in figure 1 and is defined as the Mid-America Commerce Center (MACC) in O’Fallon, Illinois. The area was analyzed independently of the planned future uses of the property and this report is strictly an assessment of the resources of the property: ecological, agricultural, hydrological, cultural, historical, and geological. Both quantity and quality of resources will be outlined for each category. Finally, this report contains our recommendations for preservation when development does take place.

The following pages and maps demonstrate the types of data that were included in this analysis. This analysis was done using Geographic Information Systems (GIS), with data provided by the City and data made available by the State. No new data was developed for this project, but data was generated during the analysis. A CD of this data is included with this report.

The overarching goal of this study is to reduce any future negative impacts from development of the MACC. A solid knowledgeable foundation of the area’s resources will assist policymakers and developers in avoiding future problems that may be compounded should these resources be lost. The City of O’Fallon will benefit from incorporating the findings of this report into their future planning efforts. By identifying all vital resources and charting a course to mitigate, protect, enhance and preserve these resources, the resulting product will be enhanced—both environmentally and economically.

Figure 1. Mid-America Commerce Center Development Plan
Because the eastern edge of the development plan abuts the Silver Creek corridor, the study area was expanded to the east to include the entire forested creek (see figure 2). The study area is defined by I-64 to the south, Scott Troy Road to the west, Hwy 50 to the north, and Pister Road to the east.

The inclusion of the Silver Creek corridor ensures that plans for this area take this important resource into consideration. The Silver Creek corridor is important for a number of reasons. The first is that this forested corridor is part of a forest system of international importance. As part of the Kaskaskia River watershed, the forested corridor along Silver Creek provides habitat for neotropical migratory songbirds. Each spring the birds fly from Central and South America to the bottomland hardwood forests of this region to nest. Bottomland forests occur near streams in areas that are periodically flooded. The songbirds require dense forest interior conditions without Figure 2. Study Area with development plan & Silver Creek
holes or gaps. Fragmented forests have more edges, which are the preferred habitats of nest predators such as raccoons, opossums, skunks and cowbirds.

Additionally, forested riparian corridors improve water quality by slowing and cooling stormwater runoff. Vegetation stabilizes soils and provides a natural filtration mechanism to prevent sediment and pollutants from entering the stream. The shade of the tree canopy cools the water temperature. The cooling function is important where stormwater runoff is heated by flowing across hot pavement.

The second reason the Silver Creek corridor is important for consideration in this analysis is that one of its tributaries, Little Silver Creek, is listed on the Illinois EPA’s 303d list of impaired waterways (shown in yellow in figure 2). This means that this waterway is already contaminated and further development in the vicinity could potentially make its contamination worse, or help spread the contamination to nearby waterways. In order to maintain the quality of our natural resources, it is essential that we are aware of their boundaries.

**Primary & Secondary Preservation**

Each resource category will include an inventory of existing resources, an analysis of their qualities, and our recommendations. Recommendations for preservation are divided into two categories: primary preservation and secondary preservation. Primary preservation is a distinction reserved for resources that are essential to the overall health of the region, and any impact from development should be limited as much as possible. Those resources that fall into the secondary preservation category are worth preserving, but can be incorporated into the development plan for use as stormwater management infrastructure, recreational space, or general common ground. These resources will add to the overall value of the property if they are utilized properly.

**Hydrology**

There are three components of the hydrologic analysis for the MACC site: streams, wetlands & floodzones. There are approximately 8.7 miles of streams within the study area. Current O’Fallon City code dictates that there be a buffer system placed on these streams, limiting development within certain distances of the stream centerlines. The core of the stream buffer system is defined as 150 feet on each side of the stream centerline, for a total of 300 feet. An additional 50 feet on each side of the core buffer is the secondary buffer. This leaves a total of 200 feet on each side of the streams in the project area protected by current City code. This distance is more than adequate for stream health preservation according to current biological recommendations. There are 325 acres of core stream buffer and 105 acres of secondary stream buffer.

There are 905 acres of wetlands within the study area, according to the National Wetlands Inventory. There are 6 wetland types as shown in the table at right. The primary wetland type is Bottomland Forest, which is the type of forest that makes up the Silver Creek corridor. This forested wetland is excellent for flood storage and stormwater management. These locations should be surveyed to verify existence and determine quality.

<table>
<thead>
<tr>
<th>Wetland Type</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTTOMLAND FOREST</td>
<td>749</td>
</tr>
<tr>
<td>LIMNETIC LAKE</td>
<td>44</td>
</tr>
<tr>
<td>SHRUB-SCRUB WETLANDS</td>
<td>41</td>
</tr>
<tr>
<td>SHALLOW MARSH/WET MEADOW</td>
<td>26</td>
</tr>
<tr>
<td>OPEN WATER WETLANDS</td>
<td>25</td>
</tr>
<tr>
<td>DEEP MARSH</td>
<td>20</td>
</tr>
</tbody>
</table>

There are 1,333 acres of floodzone within the study area. This is 100 year floodzone and generally follows the forested Silver Creek corridor. This area is frequently flooded and therefore should be preserved from intense development to protect the investment from damage.

**PRIMARY PRESERVATION**: 150 ft stream buffer & wetlands  **SECONDARY PRESERVATION**: 200 ft stream buffer & Floodzones
Soils & Slopes

Two major factors come into play when analyzing the topography of the study area. The first is soil type. The type of soil on a site can help decide where certain elements of a development should be placed, such as buildings. Whether or not a soil is prone to erosion or flooding (even simple ponding) and the depth to the water table are all valuable pieces of information in site planning. For this particular study, the soils on this site were analyzed for their limitations (if any) using the USDA NRCS soil data mart. For each section of the development plan (figure 1), the soils were analyzed for two possible uses: Dwellings and Small Commercial Buildings and Roads and Streets, Shallow Excavations, and Lawns and Landscaping. The reports generated from the data mart are included in Appendix A. These were assumptions made about the types of development that would occur on the site—more detailed engineering-level analyses are possible at the data mart website.

Floodzones were addressed in the hydrology section, so for this category, the erodibility and slopes of the site soils were analyzed. Highly erodible soils can be problematic for development, as well as contribute to sediment and siltation impairment in local waterways. Loss of soil should be avoided at all costs. Highly erodible soils as defined in the state soil data layer are often found in conjunction with steeper slopes. Slopes greater than 5% are of concern when development is proposed due to the fact that disturbance of soil on steep slopes can also lead to erosion, sedimentation and siltation. However, these concerns can be mitigated to a certain extent, therefore the site’s highly erodible soils (which also coincide with soils that have slopes from 5% to 18%) have been placed in the secondary preservation category: they should be preserved if possible, and handled with care if not. There are 683 acres of highly erodible soils in the MACC—20% of the study area. There are 22.5 acres of soils with slopes greater than 18%. There are also 21.5 acres of soils that is “potentially highly erodible”, meaning under the right conditions, this area could also become unstable.

**PRIMARY PRESERVATION:** Slopes greater than 18%

**SECONDARY PRESERVATION:** Highly erodible soils, Soils with 5%-18% slopes, & Potentially highly erodible soils

An example of soil erosion in Madison County, Illinois
Important Farmland

Another component of soil data that is available for analysis pertains to farmland. Each soil type is classified by whether or not it could be used for productive farmland. The map below shows the three categories of farmland present on the MACC site: Prime Farmland, Farmland of Statewide Importance and Prime Farmland if Drained. Prime farmland is a designation assigned by U.S. Department of Agriculture defining land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for those uses. Generally, farmland of statewide importance includes those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. And finally, prime farmland if drained is soil that is expected to perform well if tiled or altered in some way that removes ponding water. A table showing total acres for each farmland type is below. In total, these soils make up 32% of the study area. While these soils are not included in the recommendations for primary or secondary preservation, this information can still be valuable during site planning.

<table>
<thead>
<tr>
<th>Farmland Type</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>All areas are prime farmland</td>
<td>624</td>
</tr>
<tr>
<td>Prime farmland if drained</td>
<td>323</td>
</tr>
<tr>
<td>Farmland of statewide importance</td>
<td>109</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,055</strong></td>
</tr>
</tbody>
</table>

There are also three Centennial Farms within the study area. These are farms that have been in operation for 100 years or more, usually within the same family. The three farms total 217 acres and the history and heritage associated with their designation should be considered during site planning.
Forest Blocks

Forest “blocks” are sections of forested land that are contiguous enough to be considered a valuable resource for multiple reasons. The first is that these blocks provide essential wildlife habitat in our urbanizing regions. The second is stormwater: forested areas are highly efficient at slowing, cleaning and infiltrating stormwater. The final component is air quality. These tree blocks are currently providing clean air to residents of the O’Fallon area, and will continue to do so if they are left undisturbed (not fragmented or destroyed). As seen in the map below, it is important that the stream buffers mentioned in the hydrology analysis are vegetated. This specific type of natural ecosystem is often referred to as a “riparian” corridor. The vegetated buffers are a crucial component of a healthy stream ecosystem. As the riparian corridors in the MACC are already vegetated, we recommend they remain in their current state.

As mentioned in previous sections, the Silver Creek corridor is bottomland forested wetland. This forested area is actually one contiguous block over 84 acres in size. This includes the forest that continues along the western tributary that bisects the MACC. There are also eight smaller forest blocks, from 3 acres to 26 acres. These should be preserved or incorporated into the development plan if possible. In addition to the resource benefits mentioned above, preserving the existing vegetation will be a cost-saving measure for developers.

**PRIMARY PRESERVATION:** 150 ft stream buffer & 84 acre forest block  
**SECONDARY PRESERVATION:** 50 ft stream buffer & small forest blocks
Other Resources

In addition to the resources analyzed on previous pages, investigations into other resources were conducted, with no results. While it is crucial to know what resources are present on a site, it is also helpful to know what is not there.

At the time of the writing of this report, there are no threatened or endangered species located on the site.

There do not appear to be any major archaeological sites located in the MACC, although the Silver Creek Corridor is listed as a probable location for findings.

There are no federal or state lands located within the study area, and there are no natural areas or important natural resource sites (as identified by the Illinois Department of Natural Resources) within the study area.

There are no karst soils identified on the site.

There are no sesquicentennial farms within the study area.

A specialized aircraft parked at Scott Air Force Base, which is located directly south of the MACC site. The forested Silver Creek corridor can been seen in the background. Photo courtesy of the US Air Force.
Primary Preservation

The map below shows the combined coverage of the recommended areas for “primary preservation”. These resources are either so sensitive or valuable that it is recommended no development or impacts from development take place on these locations. The total acreage is: 1,268, or 38% of the site. This is mostly comprised of the Silver Creek corridor, which is not included in the site plan on page 2. There are multiple justifications for this classification, including wetlands, steep slopes, forest blocks and stream buffers. Once these data layers were combined, individualized editing was done to close small gaps and create a more contiguous layer. Combined, they demonstrate the resource powerhouse that is Silver Creek and its forested floodplain.

Preservation of these resources will not only protect them for future generations, but allow their utilization today. If these spaces are preserved and their high quality ensured, they can assist in providing “ecosystem services”: clean air, clean water, stormwater management, flood storage, wildlife habitat, etc.

Mechanisms for preservation of these spaces while allowing desired development on the site include:

- Cluster development
- Stream buffer ordinances
- A conservation zoning overlay
- Conservation easements
Secondary Preservation

The map below shows the combined coverage of the recommended areas for “secondary preservation”. These resources are sensitive enough to be classified as important considerations when developing detailed site and construction plans. The total acreage is: 879, or 26% of the site. This is mostly comprised of highly erodible soils, steep slopes, stream buffers, small forest blocks, and floodzone.

Development with an eye to preserving these resources when possible will not only protect them for future generations and protect the investment of the development, but allow their full utilization today.

Mechanisms for low impact use of these spaces while allowing desired development on the site include:

- Green infrastructure, such as rain gardens and bioswales
- Common ground with passive recreation amenities, such as trails & picnic tables
- Permeable pavement in parking lots or sidewalks
- Roadways designed at 90 degree angles to streams and drainageways

The map at right shows the combined recommendations for preservation.