# SOUTH LICKING WATERSHED CONSERVANCY DISTRICT

## HISTORY AND PROJECT DESCRIPTION

South Licking Watershed Conservancy District (SLWCD) was established in 1968 to address flooding issues on the South Fork of the Licking River as an effort to remedy the flooding experienced in 1959. The District was established according to provisions of the Ohio Revised Code section 6101. The USDA Soil Conservation Service, currently the Natural Resources Conservation Service (NRCS), was the agency providing the planning assistance for the project under Public Law 566 (Small Watershed Act). An official plan was developed and published dated June 1980. The plan completion was delayed by enactment by the National Environmental Policy Act, which required the completion of an environmental impact statement.

The Conservancy District covers both Raccoon Creek and the South Fork Licking River. The original plan called for 6 flood-retarding structures, the South Fork by-pass channel along I-70, a dike around Sunny Acres subdivision, and clearing and snagging of South Fork from Hebron to Heath. The original plan also had some provisions for stream and lake recreation. In 1984, 4 flood- retarding structures were eliminated because they didn't meet new Office and Budget Management guidelines. Of the two remaining structures, one was near Pataskala and the other was in the Alexandria area.

The Directors and Board of Appraisers spent several years visiting other conservancy districts to review how they developed the methodology to complete the benefit appraisal. ORC 6101 requires that all benefits and damages as a result of the project implementation be appraised, ORC 6101 does not define and specific procedure to determine benefits and damages other than the method must be applied equitably to all properties.

The benefit appraisal was eventually completed and filed with the Conservancy Court. Notices of appraised benefits and damages were sent to all property owners in the watershed on November 23, 1993. In this appraisal of benefits, both direct and indirect benefits were appraised. Direct benefits were appraised to those properties receiving a reduction in flooding. Indirect benefits were appraised to all other properties in the watershed that contributed to the flooding problem. There were many exceptions filed to review appraised benefits and damages for individual parcels, which are allowed for in ORC Section 6101. Many of the exceptions were contesting the one time $100 appraisal of benefits per parcel for properties in the watershed and not receiving indirect flood reduction. These properties were mostly in non-flooding areas of the watershed. Unfortunately, confusion and problems with the benefit appraisal resulted in the Conservancy Court returning the Appraisal of Benefits record to the Conservancy District for reconsideration and revision.

Unfortunately, the Conservancy District had spent the remaining funds they had to mail the appraisal of benefits notice to some 37,000-property owners. While the Conservancy District was completing the appraisal of benefits record and filing it with the Conservancy Court, the Ohio Department of Natural Resources (ODNR) designed and built an emergency spillway at Sellers Point at Buckeye Lake. This construction was necessary as a safety issue to provide adequate relief for Buckeye Lake to safely pass the possible maximum precipitation event. This added an additional 2300 cubic feet per second flow from Buckeye Lake to the South Fork Licking River. This was new flow in a new area of the South Fork of the Licking River that probably only had a channel capacity of 2500 cubic feet per second at that time. Additional local flooding was immediately a problem in an area that was already plagued with frequent and significant flooding before the emergency spillway was built.

The situation by 1995 was SLWCD had no remaining operating funds and the original published plan was no longer functional as a result of the introduction of additional water flow at Sellers Point from Buckeye Lake. Development was also encroaching on the Alexandria reservoir site and consuming the

site at Pataskala. A decision was made to scrap the entire original appraisal of benefits. Flooding in the South Fork area adjacent to the Village of Buckeye Lake was at that point the worst it had ever been.

The SLWCD decided to pursue a working alliance with ODNR Division of Engineering. ODNR funded a new watershed study by engineers Fuller, Mossbarger, Scott and May (FMSM) to determine current conditions of the South Fork of the Licking River. ODNR also established a steering committee to guide the study efforts and a citizen's advisory group to seek input from the community. The entire watershed was digitally mapped and a working model was developed by FMSM. This model was calibrated for a period of time to ensure accuracy with actual storm events.

The goal of ODNR was to reduce flood levels on the South Fork of the Licking River back to what they were before the Sellers Point spillway was constructed. In no way would the ODNR project reduce the flooding in the Buckeye Lake area to the levels the SLWCD plan would accomplish when implemented. Both projects are needed to provide real flood relief to Buckeye Lake residents, agricultural fields and to Interstate 70.

FMSM held various meetings displaying the model. ODNR evaluated five possible plans to return the Sellers Point area to the original condition of flooding that existed before the Sellers Point Emergency Spillway was constructed. The plan selected would require enlarging a 2.9-mile stretch of the South Fork Licking River by about 85 feet with a benched one-sided construction. This construction should occur in 2005/2006.

The SLWCD requested and received funding from the county commissioners in Licking and Fairfield Counties in 1999 to assist with the completion of a new appraisal of benefits.

The decision not to build the water holding structures at Pataskala and Alexandria combined with additional potential flow from the Seller Point emergency spillway has forced NRCS to develop modifications in the flood control plans for the South Fork of the Licking River. These modifications have focused entirely on reduction of flood levels in the Hebron and Buckeye Lake region while not elevating flood levels in Heath or Newark.

NRCS proposed constructing a 1000-acre floodwater storage area West of State Route 37 and North of Interstate 70. NRCS used the FMSM model to evaluate the proposal and found the ideal combination of flow down South Fork, size of storage area and flow down the by-pass channel to not only keep Newark's protection unaffected, but to increase flood reduction benefits to agricultural land, residences and to Interstate 70 in the Buckeye Lake area. The ODNR project to be built in the near future and the proposed SLWCD project actually share some common channel alignment that will be constructed entirely by ODNR in 2005.

**Conservancy District's Proposal:**

The SLWCD proposal is to construct a 1000-acre storage area northwest of the I-70/SR 37 interchange. This temporary storage area will be made by constructing a dam from just west of South Fork along the north side of I-70 and then north behind the Pilot Oil station. The dam will end near US 40. Flow under I-70 will be restricted to about 650 cubic feet per second. All flows above 650 cubic feet per second will flow over a weir in the by-pass channel and flow east. The by-pass channel will be a constructed channel with a 92-foot bottom width and 3:1 side slopes. Soil from the by-pass channel will be used to build the dam. The by-pass channel will cross SR 37 just north of the CB repair shop. A bridge will need to be constructed in this location. The by-pass channel will angle south to I-70 and will follow along the north side of I-70. The by-pass channel will cross Canal Road where another bridge will have to be built and will join up with the South Fork Licking River between I-70 and SR 79.

As part of ODNR's project, the section of South Fork between I-70 and SR 79 and extending about 2000 feet downstream of SR 79 will be reconstructed to a bottom width of 80 feet. This section of South Fork will not

have to be touched when the SLWCD project is built. The SR 79 Bridge north of I-70 will have to be increased in span to accommodate the flows from South Fork and the by-pass channel.

From the downstream end of ODNR's project to US 40 a new channel will be built in the crop fields paralleling the existing South Fork channel. This channel will be a benched channel and will be 120 feet wide. The reason the new channel will be built in the crop fields is to avoid clearing the woody vegetation along South Fork and to avoid wetlands in the area. The new channel will be transitioned into the existing channel at the US 40 Bridge.

The SLWCD proposal for the 1000-acre dry dam is a new concept. The addition of flows from the Sellers Point emergency spillway added peak flooding to the I-70/SR 79 area. The loss of the ability to construct water-holding structures at Pataskala and Alexandria prevents Newark from accepting the additional peak flow from Hebron and Buckeye Lake.

The only possible solution at this point to protect Newark/Heath and provide flood relief for Hebron and Buckeye Lake is to hold some water in the Pigeon Swamp area during larger storm events. This area, although farmed, is already frequently flooded and historically was a wetland with many areas of hydric soil types. Currently it is believed that only one home on the very edge of the reservoir has a basement that would be affected by the estimated 2-foot deeper flooding. Unfortunately, the home's basement was recently inadvertently built below now existing 100-year flood plain levels. When the SLWCD project is built, a remedy would be designed and built for the homeowners.

The deeper flooding of the approximate 1000-acre storage area would only occur in larger storm events. The most frequent smaller storm events actually would not cover as many acres as they do under existing conditions today. Large storm events would actually flow out of the dry dam in 49 hours or less. Most years there probably would be little impact during the growing season for the dry dam area. Water would exit the deeper flooded dry dam area through a notched weir to control flow in the 92-foot by-pass channel.

Additional channel capacity of approximately 120 feet in width would be constructed by NRCS between the downstream end of ODNR's project east of SR 79, north of I-70 downstream to US 40. No new construction would occur between US 40 and Heath. However, removal of dead, fallen, or significantly leaning trees would be performed. Logjams, debris, and other issues impacting flow would be the responsibility of SLWCD in this and other areas constructed in the project.

Negative impacts of the proposed project center on the Pigeon Swamp temporary flood storage area. A 100-year maximum flood level has a 1% chance of occurring every year. A 50-year event has a 2% chance. These types of events certainly would result in total crop loss if they occur during the April thru September growing season, as is the case currently with existing conditions for much of the 1000 acres. Smaller storm events would probably impact less of the 1000 acres. Many storm events occur during the winter/early spring months and those particular events would not have much more effect on the area than existing flooding conditions.

A significant amount of the 1000-acre deeper flooded area consists of the Wallkill Soil Series, which are described as a naturally very poorly drained soil on flood plains. Areas of Carlisle Muck soils are adjacent. Both soils are hydric and existed as natural wetlands before being drained to allow farming. Farming these particular soils today with the existing limiting conditions of drainage and flooding is far less than ideal.

Positive impacts resulting from the proposed SLWCD project would include most or all of the homes along North Bank and West Bank being removed from the 100-year flood plain. Many of the residential areas in the Village of Buckeye Lake would be removed from the 100-year flood plain as well. This would eliminate damages from river flow flooding. Once the Federal Emergency Management Agency (FEMA) reviews and ap-

proves a Letter of Map Amendment (LOMA) flood insurance for these residences may not be required.

The area removed from the 100-year flood plain in the vicinity of I70/SR37 would have the potential of commercial development. This could result in increased tax base, employment and local revenue generation as a result of its great location near a major interstate highway.

Many acres of cropland down stream of the temporary reservoir and along the north side of I70 would also be eliminated from flooding. Even the areas of cropland in the I70/SR79 area that continue to flood would do so less frequently and have approximately 2 foot less flood depth in the 100 year (1%) event. Results would be either elimination or reduction in damage to growing crops and reduced damage from debris and erosion.

Currently SLWCD is sharing information with Ohio Department Of Transportation (ODOT) District 5 in order to communicate potential flood reduction to Interstate 70 if the by-pass channel and temporary flood storage area are built. ODOT is well aware of the need to eliminate flooding on I70 and the I70/SR 79 interchange. Our goal is to encourage ODOT to participate in some of our costs in exchange for the reduction in flooding of Interstate 70. ODOT has also used information from the FMSM model to assist in their analysis of the situation, as it exists and in their planning efforts for future improvements to Interstate 70.

**Who Pays For What:**

Costs are divided into two categories, Local and Federal.

**Local Costs:**

The local people as represented by the Conservancy District, are responsible for what is called "Local Costs". Examples of local costs are; land and/or easements to be purchased to construct the project; utilities that need to be relocated, built and/or lowered; wetlands or other environmental issues that may need to be mitigated; and maintenance of the project once it is built.

**Federal Costs:**

The Federal Government, through the USDA Natural Resources Conservation Service, will pay 100% of the construction cost of the portion of the project that is for flood reduction.

**Where does the money come from?**

"Local Costs" are paid for from assessments against the appraised benefits to property as approved by the Conservancy Court.

Federal costs are paid for from Congressional earmarked appropriations to the USDA Natural Resources Conservation Service.

SLWCD is working with State Legislators, ODNR, local government, and others to obtain a budget increase for a state agency to have their capitol budget increased to allow for a pass thru of funds to assist with local costs. This could be part of the Capitol Appropriations Bill for fiscal 2007-2008.

| Entity | Estimated Costs |
|---|---|
| USDA Natural Resources Conservation Service | $5,000,000.00 |

By-pass Channel, Dam, New Channel

| | |
|---|---|
| Ohio Department of Transportation | ** |
| SR 37 Bridge | |
| SR 79 Bridge span increase | |
| Canal Road Bridge | |
| Conservancy District (Local People) | |
| Land purchase and/or easements in reservoir area | * |
| Land purchase and/or easements for dam | * |
| Land purchase for by-pass channel | * |
| Land purchase/easements for new channel | * |
| Utility Costs: | |
| Lowering pipelines | * |
| Relocating phone lines | * |
| Bridges not constructed by ODOT | * |

** No information has been provided to the District concerning the costs of new or improvement of existing bridges.

* Because of the recent changes made to the by-pass channel and the addition of the temporary storage area, costs for land rights and utility changes are not yet available.

Maintenance – This will be an annual expense and will be assessed back to landowners based on their appraised benefits. Since there is federal money involved in the construction of the project, the SLWCD must maintain the project to assure benefits to landowners are maintained for the planned life of the project. More than likely, a maintenance agreement will be entered into with ODNR to do the maintenance of their project as well. This will ensure the integrity and effectiveness of the total flood reduction project.

**Conclusions:**

The goal of the SLWCD is to eliminate or reduce flooding and related potential flood damage in the Hebron and Buckeye Lake area. Today the SLWCD is building and maintaining working alliances with ODNR, ODOT, Licking and Fairfield County Planning Commissions, local government entities, and citizen groups. Our purpose today is not limited to design, construction, and maintenance of flood management practices. The SLWCD should be a key partner in the coordination of construction that could impact flooding in the South Fork of the Licking River watershed by any and all agencies.

The flood relief proposal offered at this juncture probably offers the most benefits to the most areas possible. The concept of removing major already developed areas from the 100-year flood plain and corresponding FEMA determination of the same is phenomenal. This will affect hundreds of structures and property owners.

The concept of removing hundreds of acres of cropland from the 100-year flood plain is huge. Flood level reduction would be experienced by hundreds of acres of cropland as well.

The elimination of 100-year FEMA flood level determination allowing further economic development for the I70/SR 37 can be very important to the local economy.

The 1000-acre dry reservoir may have some areas experiencing flood reduction in the most frequent low level flooding events with the SLWCD project. In the moderate and large flooding events this is not the case. However, under existing conditions without the project, much of the 1000 acres would experience a total crop loss in a 50 or 100-year flood event that occurred during the growing season. A 50 or 100-year flooding event with the SLWCD project, probably would only result in additional crop loss to the fringe area of the reservoir because many crops would have been destroyed anyway by the same flooding event without the SLWCD project.

The directors of the SLWCD are confident this is a sound and very necessary project that has the best engineering and design available today.