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### Jurisdiction

The geographic scope of the interview was Cass County, Michigan. Four Section 319 projects have been conducted in the county, in the Christiana Creek, Dowagiac River, Rocky River and Donnell Lake Watersheds. The county lies in the Lower and Middle River Valley Segments and included the City of Dowagiac and the Villages of Cassopolis, Vandalia, Marcellus and Edwardsburg. The county has the greatest number of hogs in the watershed and the second greatest number in the state. The primary crops grown are corn and soybeans. Little moldboard plowing is conducted. Most land is managed with no-till or reduced tillage practices.

### Projects/beneficial watershed features

It was noted that surface water quality is generally good in the watershed. Many tributaries have high quality aquatic habitats which are slowly fed by groundwater. Sandy soils and a lack of impervious land cover keep the streams from becoming flashy. The predominantly agricultural land uses in the watershed have allowed these conditions to persist. It was noted that agriculture land uses should be protected in order to maintain the streams' hydrology.

Section 319 grant projects conducted in the county have addressed and corrected former concerns. Groundwater quality is improving due to changes in farming practices and use of Best Management Practices. Donnell Lake water quality has also improved by the construction of sanitary sewers. Christiana Creek has shown dramatic improvements, which have been documented. Most hog production has changed from use of pastures to confinement, which has resulted in water quality improvements. Former use of land for hog pastures resulted in erosion, compaction and nutrient enrichment. Although Section 319 funding for those projects is no longer ongoing, many sewer and water projects are ongoing in the watershed. These have resulted in the removal of Christiana Creek from the 303(d) list. However, as the creek enters Indiana, it becomes impaired for pathogens. It was noted that the source is likely known and not attributed to land uses in Cass County.

An Army Corps of Engineers program to restore 1.2 miles of meanders to the Dowagiac River is ongoing. The Dowagiac River also has good water quality and is the subject of habitat rehabilitation and floodplain preservation.

Land use ordinances are developed on a township basis. Some townships received assistance from the Dowagiac River Section 319 project to prepare new Master Plans. Calvin and Wayne Townships were noted as examples of municipalities with good land use planning. Agricultural lands are zoned as prime or general. Prime agricultural land sold in the townships may only have one residence constructed on every forty acres. General agricultural areas allow smaller parcel divisions. Many of these plots are being used for small horse farms. This ordinance has prevented the development of small residential lots in the Christiana Creek Watershed.

There may be a new Farmland Preservation Committee led by the Farm Bureau convening by February 2004. Prime farmland is being identified. However, there are little funds to purchase the land to protect it. The purchase of development rights may be sought as an option. Education on the value of prime farmland will be the first step.

The county conducts free groundwater testing as a part of the Ag-Expo days. A reduction in the number of samples with detections of atrazine has been noted. This has been attributed to a reduction in the application rates. Historically, labeling recommended a five pound per acre rate. Today's rates are one pound per acre.

The MAEAP is funded through a Section 319 grant to address groundwater concerns in Cass County. It is gaining in popularity, and there are hopes to certify more producers in the future. Secondary containment facilities for agricultural chemicals are being constructed. Comprehensive Nutrient Management Plans are required for farms containing 1,000 animal units, and the county is encouraging smaller herds to also be involved. The Farmstead program will begin later this year and will include certifications for cropping systems (tillage and nutrient management). Forty-eight EQIP contracts on over 20,000 acres have been completed. Manure management is a major component of most work being conducted.

### Challenges in the watershed

It was noted that more riparian buffers are needed in the county. Some hog production hot spots remain, but much improvement has been seen in the past ten years. Milton Township and Ontawa Township are experiencing sprawl from the Elkhart and South Bend, IN area. High *E. coli* counts have been detected in the Lake of the Woods area (Dowagiac River headwaters). The source is unknown, and no livestock operations are present in the area. There were plans to construct sanitary sewers in the area. However, it was not known whether that had happened. Water quality has generally increased through the watershed, however, some pollutant spikes are still detected. It was also noted that toxic sediments have accumulated over time behind the Pucker Street Dam in the upper regions of the Dowagiac River Watershed. Some remaining agricultural chemicals from soil fumigation techniques are being detected in groundwater in the Decatur Muck area.

### Additional Needs for Jurisdiction

The Michigan Legislature had considered establishing an organization similar to the St. Joseph River Basin Commission in the past. However, it was not approved due to the political climate. It may be viable to consider the formation of such an organization in the future. However, it was noted that agencies can accomplish a lot even without such organizations in place. The bi-state fish ladder project on the St. Joseph River was provided as an example.

There is a need for farmers selling land to try to sell to individuals or organizations that will preserve the land. Many times it is seen as financially beneficial to sell to developers, even though the character of the land is lost and water quality is impacted. A network of sellers and buyers (other farmers, people interested in conservation or nature conservancies), or a method for farmers to receive financial incentives for preserving land is needed. Incentives are needed to prevent farmland from being developed. Targeted advertising to conservation-minded buyers would also help. However, that type of advertising is more expensive and time consuming.