<center>**APPENDIX B:**</center>

NOTES ON DATA:

Land Cover Data (Township Level)-
The following are additional notes helpful in understanding and analyzing land cover data from the Multi-Resolution Land Characteristics (MRLC) National Land Cover (NLCD) data set.

General Information-

To create the MRLC data set, scenes from land sat images were taken from the late to early 1990's and labeled by land cover type into twenty one land cover classes. Land cover classification was identified at a 30-meter resolution, meaning that land cover was identified at a scale of 30 square meters. The corresponding land cover data set uses a 30 square meter pixel size as the smallest area of identification. Along with satellite data, agricultural and census statistics, land cover maps, soil characteristics and wetland data were used to check the accuracy of the data set. Recent land sat images are being collected and analyzed and will soon provide a 2000 MRLC land cover image for the United States and enable time series analysis of land cover change.

Temporal data problems-

The data sets used to create the MRLC land cover for Ohio were taken from land sat satellites over a period of several years. Land sat thematic mapper (TM) scenes were shot between 1987 and 1994, with the majority of scenes taken between 1990 and 1992. As a result, the temporal range of land sat images used to create the coverage may not have captured some changes that may have occurred during this time period. This may prove problematic for some land covers which may change rapidly, for example land converted quickly to an urban use or agricultural land changing from pasture or grasses to row crops between seasons.

Aggregation of land covers-

The expansive 21 categories of land cover were too detailed to use for this report. Eight land cover categories were created from the original 21 land cover categories for this analysis. The following describes what land cover components were aggregated into each of the seven land cover categories used in this report. [1]

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[1] The original land cover definitions listed here are taken from the Documentation file for the early 1990's MRLC data set version 03-16-2000

Land Cover: Water

Components: (11) Open Water and (12) Perennial Ice and Snow

- Open Water - All areas of open water; typically 25 percent or greater cover of water (per pixel).
- Perennial Ice/Snow - All areas characterized by year-long cover of ice and/or snow.

Land Cover: Urban

Components: (21) Low Intensity Residential, (22) High Intensity Residential, (23) Commercial/Industrial/Transportation and (85) Urban/ Recreational Grasses

- Developed Land - Areas characterized by a high percentage (30 percent or greater) of constructed materials (e.g. asphalt, concrete, buildings, etc).
  - Low Intensity Residential - Includes areas with a mixture of constructed materials and vegetation. Constructed materials account for 30-80 percent of the cover. Vegetation may account for 20 to 70 percent of the cover. These areas most commonly include single-family housing units. Population densities will be lower than in high intensity residential areas.
  - High Intensity Residential - Includes highly developed areas where people reside in high numbers. Examples include apartment complexes and row houses. Vegetation accounts for less than 20 percent of the cover. Constructed materials account for 80 to100 percent of the cover.
- Urban/Recreational Grasses - Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Examples include parks, lawns, golf courses, airport grasses, and industrial site grasses.

Land Cover: Barren

Components: (31) Bare Rock/Sand/Clay, (32) Quarries/Strip Mines/Gravel Pits and (33) Transitional

- Barren - Areas characterized by bare rock, gravel, sand, silt, clay, or other earthen material, with little or no "green" vegetation present regardless of its inherent ability to support life. Vegetation, if present, is more widely spaced and scrubby than that in the "green" vegetated categories; lichen cover may be extensive.
  - Bare Rock/Sand/Clay - Perennially barren areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, beaches, and other accumulations of earthen material.

- Quarries/Strip Mines/Gravel Pits - Areas of extractive mining activities with significant surface expression.
- Transitional - Areas of sparse vegetative cover (less than 25 percent of cover) that are dynamically changing from one land cover to another, often because of land use activities. Examples include forest clear cuts, a transition phase between forest and agricultural land, the temporary clearing of vegetation, and changes due to natural causes (e.g. fire, flood, etc.).

Land Cover: Forest

Components: (41) Deciduous Forest, (42) Evergreen Forest and (43) Mixed Forest

- Forested Upland - Areas characterized by tree cover (natural or semi natural woody vegetation, generally greater than 6 meters tall); tree canopy accounts for 25-100 percent of the cover.
  - Deciduous Forest - Areas dominated by trees where 75 percent or more of the tree species shed foliage simultaneously in response to seasonal change.
  - Evergreen Forest - Areas dominated by trees where 75 percent or more of the tree species maintain their leaves all year. Canopy is never without green foliage.
  - Mixed Forest - Areas dominated by trees where neither deciduous nor evergreen species represent more than 75 percent of the cover present.

Land Cover: Pasture

Components: (71) Grasslands/Herbaceous and (81) Pasture Hay

- Grasslands/Herbaceous - Areas dominated by upland grasses and forbs. In rare cases, herbaceous cover is less than 25 percent, but exceeds the combined cover of the woody species present. These areas are not subject to intensive management, but they are often utilized for grazing.
- Pasture/Hay - Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops.

Land Cover: Row Crops

Components: (82) Row Crops

- Planted/Cultivated - Areas characterized by herbaceous vegetation that has been planted or is intensively managed for the production of food, feed, or fiber; or is maintained in developed settings for specific purposes. Herbaceous vegetation accounts for 75-100 percent of the cover.
  - Row Crops - Areas used for the production of crops, such as corn, soybeans, vegetables, tobacco, and cotton.

Land Cover: Total Agricultural Land

Components: Sum of all pasture land cover and all row crop land cover

Land Cover: Wetland

Components: (91) Woody Wetlands and (92) Emergent Herbaceous Wetlands

- Wetlands - Areas where the soil or substrate is periodically saturated with or covered with water as defined by Cowardin et al.[2]
  - Woody Wetlands - Areas where forest or shrubland vegetation accounts for 25-100 percent of the cover and the soil or substrate is periodically saturated with or covered with water.
- Emergent Herbaceous Wetlands - Areas where perennial herbaceous vegetation accounts for 75-100 percent of the cover and the soil or substrate is periodically saturated with or covered with water.

Land Use Data (County Level) (from the National Resource Inventory)-
The U.S. Department of Agriculture's National Resources Conservation Service conducts the National Resource Inventory (NRI) every five years. The inventory is a land use inventory of all non-federal land in the United States. Data is collected every five years from 800,000 sample sites in fifty states. This unique statistically based survey allows analysis of land use change from 1982 to 1997. Due to the statistical design of the national resource inventory land use analysis is generally conducted at the state or multi-county level of geography to avoid statistical error. Because of the large number of sample sites in Ohio, national resource inventory data is considered valid at the smaller county level of geography. For more information related to the National Resource Inventory please visit the NRI web site at: http://www.nhq.nrcs.usda.gov/NRI

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[2] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, (1979). *Classification of Wetlands and Deepwater Habitats of the United States, Fish and Wildlife Service*, U.S. Department of the Interior, Washington, D.C.

Additional Notes on Township level Geography-

♦ Township data is derived from extracting "place remainder" data from the census bureau. Place remainder data is a very detailed level of geography and includes only populations residing in township areas, thus excluding all city and village populations. In summary, it represents all unincorporated land in the state that does not reside in a village or city. Place remainder data is also more detailed than the traditional MCD (minor civil divisions) level of geography often used by the Census Bureau. Often MCD level geography does not separate village and some city populations from township data, thus MCD level data for townships may be naturally inflated by this discrepancy and will not match the township totals presented in this report.

♦ Census Designated Places or CDP's are concentrations of population or economic activity that is not within a city or village. The Census Bureau separates these place from township population counts. Because Census Designated Places do represent township population and are not affiliated with any city or village these population counts were recalculated back into the township population totals.

♦ Population totals presented in the report represent 100% count data from the U.S. Census Bureau. The 100% count totals are derived directly from questionnaire responses from the decennial census and are not adjusted for any sampling error. Thus, the data presented in this report may not match sample population counts (population counts with sampling error adjustments) released by the Census Bureau.