IV. Final LULC Classification System

The land use and land cover classes developed for this project were initially derived from the Land Use and Natural Resources (LUNR) class definitions from 1969. Land use and land cover mapping was completed for Tompkins County by the LUNR program and it was determined at the early stages of this project that the Final LULC classes must allow for a future comparison to the 1969 LUNR data. A comparative chart relating the LUNR classes with the 1995 LULC classes has been provided in the Needs Assessment Report. Some modifications were made to include classes that were not accounted for in LUNR, as well as modifications to condense similar classes. A needs assessment was conducted which included participation from various organizations who would likely use the Tompkins County LULC data. A questionnaire was completed, summarized, and followed by a facilitated discussion. Recommendations were recorded and incorporated when feasible into the Final LULC Classification System. The final classification system was revised per the results of the needs assessment and the pilot project. *(Please refer to the Needs Assessment and Pilot Project Reports for further details).*

Land Use and Land Cover are not quite the same thing. Land Use refers to the built landscape that has been altered by humankind. Land cover refers to the natural landscapes, such as forest and water. In the Tompkins County LULC Mapping Project, as in the LUNR project, the primary cover, either built landscape or natural cover, will be mapped with the emphasis on built landscape. For example, a ball field may have a land cover of grass, but in this project the land use (Ot) will be mapped since the natural land cover has been altered. Natural land cover may be the dominant land use though other activities are occurring. For example, a deciduous forest may be used to harvest wood, maple syrup, or used for recreation (land uses). In this project, deciduous forest will be mapped as a land cover feature, since forest is the dominant feature. The classes have been developed based on the needs of the county to map both the represented land use and land cover classes.

The minimum mapping unit will be a half-acre as relative to the LUNR project. The LUNR project was mapped and displayed at a scale of 1:24,000 with a minimum-mapping unit of 1 acre. This LULC project is being mapped and displayed at a scale of 1:12,000, therefore the minimum-mapping unit can be as small as a half acre. A minimum mapping unit of a half-acre is also appropriate given the scope of this project in terms of the level of classification and the proposed time frame for completing the project.

Large land use areas such as university campuses and central business districts may also contain other land uses that are at least a half-acre in

area. These areas will be delineated and assigned their appropriate class. For example, a recreational area, such as tennis courts, which are at least a half-acre in size on the Cornell campus, will be delineated and assigned their appropriate *Ot* classification.

Lawns, or manicured grass areas, will predominantly be included in the land use with which they are associated. Some areas delineated as other land use classes may include lawns greater than a half acre in area. If these grass areas are directly related to a specific land use, they will be included within the area of the associated adjacent LULC class, such as residential, institutional and commercial. Excessive grassy areas that are not interpreted to be associated with adjacent LULC areas and are greater than one-half acre will be delineated separately and coded with the Grassland *(Fg)* classification.

Agriculture

All residential areas associated with any of the following Agriculture LULC classes will be delineated as the Residential Low Density (Rl) class if the combined areas of residential structure, residential outbuildings, and manicured/landscaped yards are at least one-half acre. Otherwise, residential uses will be incorporated into their associated Agriculture LULC class.

Ac **Cropland**

Tillable land used for growing cultivated field crops, forage crops, grain, beans, etc. Hedgerows separating defined Ac areas will be delineated as separate classes *(typically Fd, Fm, Fb or Fc)* if they are greater than 20 meters wide.

Ap **Pasture**

Areas used for grazing. Will be enclosed by fence and may have small trees and shrubs. Will be located adjacent to livestock farm.

At **Tree farm**

Areas used for cultivating trees, primarily Xmas trees.

Ai **Inactive**
Farmland and fields that appear to be no longer used for farming practices. Fields may appear to be growing over with tall grasses and small shrubs.

Av **Vineyards**
Grape growing farms and pastures which may include winery buildings.

Ao **Orchards**
Farmland dedicated to growing tree products including associated buildings.

Ah **High intensity cropland/horticulture**
Nurseries, including green-houses, vegetable production areas, and other gardens more than a half-acre in size.

Ad **Cattle**
Farmland used for the feeding and milking of dairy cattle as well as for beef cattle. Barn with silos and feedlots are included.

Af **Fishery**
Fishery ponds and associated buildings.

Ae **Horse farm**
Horse barns, feed lot, and animal recreation areas.

Ay **Other farms**
Poultry, sheep, swine, game, mixed animal farms, animal shelters, and farms that produce livestock feeds (granaries).

Forest/Brush/Grass

Fd **Deciduous**
Forested areas where broadleaf trees make up at least 80% of the tree cover.

Fc **Coniferous**
Forested areas where needle trees, such as pine, spruce, fir and hemlock make up at least 80% of the tree cover.

Fp **Forest Plantation**
Rows of mature trees, primarily conifers, planted by man

Fm **Mixed forest**
Forested areas with mixed coniferous and deciduous trees. The ratio of the predominant coniferous or deciduous tree stands must not exceed 80%.

Fb **Brush**
Areas that have considerable growth of shrubs and small trees, but can not be classified as forest. The brush land cover must occupy at least 80% of the delineated area. Forest and grassland may be incorporated into the remaining 20%.

Fg **Grassland**
Open grassy areas with no associated adjacent land uses. May include small amounts of shrubs, trees and brush. The grassland cover must occupy at least 80% of the delineated area. The remaining 20% may be trees, shrubs and brush. Grassland areas may be naturally occurring, or may be regularly mowed.

Water and Wetlands

Wn **Natural Lake/Pond**
Bodies of water that are not formed by damming creeks. Ponds may be man-made.

Wc **Reservoir**
Bodies of water that are formed from damming creeks.

Ww **Wooded Wetland**
Wooded areas that show considerable amounts of water beneath the trees.

Wb **Marsh, bog, shrub wetlands**
Areas of wetlands that contain grasses, scrub, brush, and are void of tall trees.

Residential

Rh **High density residential**
Residential land areas with approximately 5 or more dwellings on average per acre. Comprised mainly of urban areas of residential land use patterns including densities ranging from single family structures to multi-unit apartment buildings.

Rm **Medium density**
Residential land areas with more than 1, but less than 5 dwellings on average per acre.

Rl **Low density**
Residential land areas with a maximum average of 1 dwelling per acre.

Rp **Manufactured home park**
Residential land areas with a density of 4 or more manufactured homes on average per acre and a designation of the property as a manufactured home park or subdivision.

(Rs) **Shoreline development** (used only in Sec field)
Homes with parcel access to Cayuga Lake. This LU class will be coded in the Secondary field. Low Density Residential (Rl), or Medium Density Residential (Rm) will be coded as the primary land use in the LuLc field.

(Rf) **Farm house** (used only in Sec field)
Farm headquarters and residence of farm family. Farming activity may or may not be occurring. This LU class will be coded in the Secondary field. Low Density Residential (Rl) will be coded as the primary land use in the LuLc field

Commercial

Cbd **Central Business District**
Commercial/residential centers of city and villages where mixed land uses of Commercial, Public/Institutional, and high density Residential exist. There may be buildings that comprise more than one type of land use, such as a storefront on the first floor, offices on the second floor, and residences on the third floor. Land uses are mixed and are high in density. Any LULC classes that are not Commercial or Residential, and are at least one-half acre in area, will be delineated as per their interpreted class.

Cc **Shopping Centers/Malls**

Commercial areas that are predominately shopping centers and malls including significant surrounding parking facilities.

Cr **Retail**
Commercial areas along roadways not associated with distinct commercial centers or large shopping malls. Will include linear highway corridor development, as well as individual retail businesses and services that may exist within residential or industrial areas.

Co **Offices**
Buildings that contain administrative offices, as well as facilities that include business or technology services that are not predominantly retail orientated. Facilities may be part of a business/technology/industrial park. In some cases medical offices (Ph) may be included if they do not constitute the dominant land use.

Cs **Commercial Storage**
Indoor and outdoor commercial storage facilities for public rentals and warehouse/storage facilities not associated with adjacent commercial or industrial land uses.

Industrial

Tompkins County does not contain any heavy industry as defined by the LUNR classification system (processing of raw materials, such as oil refineries and mills), except for one lumber mill. The Industrial category has been altered from LUNR to meet the local needs of this project.

Il **Light Industry**
Facilities and grounds that include activities associated with the manufacturing, processing, fabricating, assembly, finishing, packaging, warehousing, and outdoor storage of products.

Ia **Agriculture Industry**
Buildings and facilities associated with agri-business.

Iu **Utilities**
Power plants and substations.

Ie **Extractive**
Salt mining operations, gravel pits, rock quarries.

It **Communication Towers**
Communication tower sites at ground level including areas occupied by guide wires.

Outdoor Recreation

Og **Golf Course**
Includes driving ranges, club house and greens.

Om **Marina/Yacht club**
Public and private boat clubs and launching areas including clubhouse and associated buildings and boat yard.

Oc **Campgrounds**
Public and private camping areas, including areas designated for camping in state and town parks as well as private RV parks.

Ot **Stadiums/track/ball fields**

Sporting fields that may or may not be associated with schools and parks. Baseball diamonds, tennis courts, running track, soccer and football fields with goal posts, swimming facilities. Motor tracks included.

Oh **Hunt clubs**
Land areas used specifically for the sport of hunting. May include shooting range and fields for practice of this sport.

Op **Parks**
Public parks as well as Cornell Plantations including picnic areas, walking/hiking/running trails, playgrounds, manicured lawns, and landscaped areas within park boundaries.

Oe **Recreation corridors**
Areas characterized as linear recreation ways for uses such as trails and paths associated with outdoor recreation activities and pedestrian connections.

Or **Youth & religious camps**
Cabins and other buildings associated with summer camps and or religious retreats.

Os **Recreational shoreline**
Shoreline where land use is recreational lake access. Docks and boat moorings may exist. Consists of rocky shoreline land cover. Boundaries vary with lake levels.

Public/Private/Institutional

Pr **Church/synagogue/monastery**
Houses of worship. Will be delineated only if the parcel on which the facility(s) is located is at least one-half acre in area.

Pc **Cemetery**
Cemeteries at least one-half acre in area will be delineated.

Pe **Educational**
All schools, university and college academic buildings, research facilities, and associated parking facilities and quads. College campuses include other land uses that, if at least one-half acre in area, will be designated as distinct LULC classes. *Pe* will be used only for the academic and research related buildings and the surrounding parking lots and grounds. This class also includes other learning centers such as the Sciencenter, Cayuga Nature Center and the Fingerlakes School of Massage.

Ph **Health facilities**
Hospital, health clinics, medical offices, and nursing homes.

Pj **Correctional facilities**
County jail, secure work camps, and other correctional centers.

Pd **Solid waste disposal**
Waste disposal sites such as recycling centers, landfills, exposed dumps and private junk yards.

Ps **Sewage treatment facilities**
Facilities whose primary function is the treatment of waste water.

Pw **Water management facilities**
Facilities whose primary function is management of drinking water.

Pt **Water Tank**

Tank used as reserve of water, either for drinking water or for filling of fire department trucks.

Pp **Public works**
Areas that include facilities for highway departments, fire departments, public safety, maintenance buildings, and related storage areas. Public works facilities present on the educational campuses that are at least one-half acre in area will be classified as Pp.

Pf **Community center, social hall, fraternal lodge**
American Legions, Veterans associations, and community centers where social events, Bingo, pancake breakfasts and chicken bbq fund raisers occur.

Po **Governmental office facilities**
Includes all local, state, and federal governmental office facilities that are interpreted to be the dominant land use. This class includes courthouses, town halls, and other public service and administrative facilities.

Transportation

Th **Highway**
The limited access sections of Route 13 that include at least 4 total traffic lanes. Associated interchanges and ramps will also be delineated within this class.

Tr **Railroads**
Active railroad right of ways including switchyards.

Ta **Airport or active airstrip**
Includes all public and private airport facilities, hangars, parking facilities, and runways.

Tc **Bus depot, fleet storage, garage for public vehicles**
Places that store large number of cars, vans, trucks or buses for purposes of public use and transportation. Examples include Cornell's fleet storage, T-CAT, ISCD school bus depot.

Other

Dl **Disturbed Land**
Land that has been cleared of vegetation and the interpretation of any identifiable or defined land use class is not possible.

Db **Barren Land**
Land that is composed of either rock, gravel or sand, which cannot be cultivated or associated with any other defined land use class.

Da **Abandoned**
Areas that include buildings and facilities that are interpreted as abandoned or vacant.