Ordinance No. 2009-50

AN ORDINANCE REPEALING 2008 PARK DEVELOPMENT STANDARDS AND ADOPTING NEW PARK DEVELOPMENT STANDARDS FOR THE UNITED CITY OF YORKVILLE

WHEREAS, the United City of Yorkville (the "City") is a non home-rule municipality in accordance with the Constitution of the Sate of Illinois of 1970 and has the powers granted to it by law;

WHEREAS, the City Council of the United City of Yorkville has discussed and considered that it is in the best interests of the City to repeal the 2008 Park Development Standards in its' entirety and adopt new Park Development Standards;

NOW, THEREFORE, BE IT ORDAINED by the Mayor and City Council of the United City of Yorkville, Kendall County, Illinois, as follows:

Section 1. That the United City of Yorkville 2008 Park Development Standards, which was approved by the Corporate Authorities on February 26, 2008 is hereby repealed in its' entirety, and the United City of Yorkville Park Development Standards dated August 18, 2009, a copy of which is attached as Exhibit A, is hereby approved in its stead.

Section 2. This Ordinance shall be in full force and effect upon its passage, approval, and publication as provided by law.

Passed by the City Council of the United City of Yorkville, Kendall County, Illinois this 22 day of September 2009.

CITY CLERK

ROBYN SUTCLIFF	Yes	DIANE TEELING	Yes
GARY GOLINSKI	—	ARDEN JOSEPH PLOCHER	Yes
WALTER WERDERICH	Yes	MARTY MUNNS	Yes
ROSE ANN SPEARS	Yes	GEORGE GILSON, JR.	Yes

Approved by me, as Mayor of the United City of Yorkville, Kendall County, Illinois, this 28 day of SEPTEMBER 2009.

MAYOR

UNITED CITY OF YORKVILLE
PARK AND RECREATION DEPARTMENT

PARK DEVELOPMENT STANDARDS

August 18, 2009

TABLE OF CONTENTS

SECTION 1: DEFINITIONS

A. Standard Specifications: Whenever reference is made to the "Standard Specifications" it shall be understood to mean the latest issue of the "Standard Specifications for Road and Bridge Construction" (SSRBC) and subsequent revisions of the "Supplemental Specifications and Recurring Special Provisions" of the Illinois Department of Transportation, or the "United City of Yorkville Standard Specifications for Improvements" (SSI).

B. Developer: Refers to and means the individual, corporation, co-partnership or other person or organization who or which has desires to bring a new subdivision or planned unit development within the corporate limits of the United City of Yorkville.

C. Americans with Disabilities Act: (ADA) Refers to the federally mandated Act passed in 1990, and/or State Accessibility guidelines (Section 504), whichever may be more stringent.

D. Buffer yard: Areas designed to reduce the sound or visual impact on the neighboring community or houses. Buffer yards can be made by planting of shrubs or a mixture of vegetation. Buffer yards must comply with the Landscape Ordinance.

E. Conservation Area: Natural area identified as having rare plant or animal species, or areas identified within the Parks Open Space Master Plan. This area may include or be identified as a fen, watershed, or other area identified to have historic value needing preservation or protection.

F. Detention (Dry Ponds): Areas designed to hold storm water runoff for a period not to exceed 72 hours.

G. Flood Plain: That land adjacent to a body of water with ground surface elevations at or below the base flood or the 100 year frequency flood elevation. The floodplain is also known as the Special Flood Hazard Area (SFHA).

H. Private facilities and parks: Parks or facilities that are secluded from the general population; or owned and controlled by a person or group rather than the public or municipality.

I. Public Open Space: Any publicly owned open area, including but not limited to the following: parks, playgrounds, conservation, trails, greenways, etc.

J. Retention (Wet Ponds): Areas designed to hold storm water and natural groundwater on a permanent basis. Retention areas are designed with normal and high water levels, and an overflow point for large storms.

K. Public Sidewalk: That portion of street or crosswalk, paved or otherwise surfaced, intended for pedestrian use only.

L. Trail: A bituminous path a minimum of ten (10') feet wide that provides active recreation opportunities through shared-use trails that connect throughout the City.

M. Wetlands: As defined by the Illinois Department of Natural Resources (IDNR) as "land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions" (Interagency Wetlands Policy Act of 1989). Or as defined by the US Army Corp of Engineers (USACE).

N. AASHTO: Whenever reference is made to the AASHTO it shall be understood to mean the "Guide for the development of bicycle facilities" and subsequent documents referencing pedestrian or bicycle facilities published by the American Association of State Highway and Transportation Officials.

O. CMAP: Chicago Metropolitan Agency for Planning, formerly titled the Northeastern Illinois Planning Commission (NIPC).

SECTION 2: OPEN SPACE SYSTEM AND GUIDELINES

The Chicago Metropolitan Agency for Planning (CMAP) states that: "Open space provides more than recreational opportunities; it is land that society needs to conserve as natural, cultural, historic, and agricultural resources. One of the most common misconceptions regarding open space and recreation is that the two terms are synonymous. A strong relationship does exist between open space and outdoor recreation but, in most cases, recreation is something separate and distinct from open space."

Therefore, a park is open space, but open space is not necessarily a park.

A. CATEGORIES OF OPEN SPACE

The National Recreation and Park Association (NRPA) has developed six (6) categories of open space that the United City of Yorkville has simplified into three recognized categories of land capacity: environmental, shaping, and recreational. The United City of Yorkville has determined that acquisition and development of land meeting the recreational and environmental requirements of its residents is its role in the fabric of the community. These functions are subdivided into both local and regional classifications. The Parks Department's responsibilities pertain to the local classifications.

1. ENVIRONMENTAL CAPACITY - protects natural and or cultural resources from development.

    a. Natural Resource Park (Linear Greenway/Trail System) - is utilized as a buffer zone, watershed, or conservation area, and affords a passive appearance with managed natural habitats and plant ecosystems. These areas can be used to protect fragile or rare ecosystems. Often these areas require management to maintain sustainability and preserve healthy biodiversity of plant life.

    When utilized as a linear greenbelt and/or trail corridor, natural areas can serve as environmental bridges, supporting the movement of wildlife between other larger areas. When combined with public use areas, development can include open play areas, pedestrian and bicycle paths, park benches, picnic and rest areas, and water oriented facilities. Detention or retention ponds can be included in these areas. In instances where this classification of park is flood prone, construction of permanent structures is discouraged. The public use infrastructure should remain supplementary to the functional classification of lands described.

    b. Conservation of local resources, such as streams, wetland habitats, and forests.

    c. Preservation of environmental and/or historic resources in conjunction with local historic preservation agencies.

2. SHAPING CAPACITY - provides relief from extensive urbanization and promotes the integration of neighborhoods. City, county, state, and federal planning agencies commonly define this land as "land that shapes a community and is reflected in greenbelts, county forest preserves, state, and national parks." This category is also reflected in local ordinances stipulating density formulas and open space requirements for subdivisions.

3. RECREATIONAL CAPACITY - provides space for single or multiple, active and passive recreation activities.

   a. Mini-Parks – The mini-park is used to serve isolated or limited recreational needs. Mini-parks are often tot lots, created to serve a resident population too distant from a community park, or in an area with high density populations. The mini-park is larger than one (1) acre in size. Development is usually limited, requiring no parking or extensive site work.

   b. Neighborhood Parks – The neighborhood park is intended as a supplement to or substitute for a play lot where population density, geographic barriers or distance preclude easy access. Examples of such facilities include: play apparatus areas for pre-school and elementary children; hard surface areas for hopscotch, shuffleboard, tetherball, four-square; court games for basketball, volleyball, badminton, tennis, etc.; and open play areas for softball, football, soccer, and winter sports. The minimum park size for a neighborhood park is five (5) acres. The concept of development emphasizes spontaneous rather than higher organized play. The playground should be easily accessible to pedestrian use.

      Neighborhood parks can have additional special use classifications to include activities such as active play and specialized courts. These parks may be combined with school sites. Although any classification of park can be located next to a school, the age of users makes it preferable that neighborhood parks and elementary schools share a common boundary.

   c. Community Parks - The community park is larger than ten (10) acres, and development is intended for people of all ages. It is preferred that the park be centrally located and serve at least four neighborhoods. Amenities found in a neighborhood park shall be included, supplemented by large multipurpose open spaces. Internal walk patterns for pedestrians and bicycle paths are desired to connect the various functions. It should be accessible by motorized and non-motorized traffic. Adequate off-street parking shall be provided in accordance with amenities constructed. The classification may also serve as a neighborhood park facility for the area in which it is located.

      1. Athletic Parks – Multiple athletic fields in one location, representing the functional needs of each agency, which can be located in close proximity to schools where the public and students can share facility use. The

location and design shall satisfy one or more of the following requirements: (1) avoid duplication of land and facilities unless existing facilities are over utilized: (2) coordination of services, and (3) diminish capital expenditures and satisfy the needs of each agency. Development should be similar to the neighborhood park.

2. Sports Complex - Developed to meet the needs of specific users groups and local athletic associations for practice, team, and tournament play. These sites have adequate parking and are located on good traffic routes. They may also be located to take advantage of bicycle and pedestrian trail systems. Fields should be as multipurpose as possible, so a wide variety of flexibility can be maintained. It is best to allow for additional space when acquiring sports complex space, as needs and trends are subject to constant change.

3. Special Use Parks - Intended for single interest activities and large enough to accommodate the demand. Examples include: tennis center, outdoor education center, museum, conservatory, golf course, children's farm, sports complex, skate park, splash / spray park, swimming pool / aquatic center, etc. Since users are going to come from a distance, the site should be near major vehicular access routes and regional bike trails.

d. Regional Parks – The regional park attracts people from outside the community. Regional parks shall be a large piece of property, greater than forty (40) acres in size with more than one major attraction or function. The regional park can encompass any neighborhood and community classifications.

B. LAND / CASH DEDICATION ORDINANCES

1. The United City of Yorkville Land Cash Ordinance requires ten (10) acres per 1,000 population be donated for parks as part of the subdivision or planned unit development approval process. The contribution of land cash is in accordance with the City Land Cash Ordinance. It is for these stipulated acres that the following standards have been developed. These standards will also act as guidelines for land donated to satisfy other functions of open space.

   The ultimate population density to be generated by a subdivision or planned unit development shall bear directly on the amount of land required to be dedicated for park and recreation sites. The acreage of land dedication requirement shall be determined by obtaining the total population of the development times ten (10) acres per 1,000 population. Total population is determined by applying the estimated ultimate population per dwelling unit table to the number of respective units in the development. Each single family home will be calculated to have four bedrooms; Duplex unit will be calculated as 50% two bedroom units and 50%

three bedroom units; Town home and apartments will be calculated with two bedrooms.

2. If the city determines that available land is inappropriate for park, or recreational use, the City shall require a cash contribution. This is based on the land cash calculation and the value per acre of the land based on the "Fair market value". The amount of land cash distribution shall be determined by Staff and Board analysis of the site and relationship to neighboring parks.

3. In cases approved by the Park and Recreation Board, the contribution of land cash can be a mixture of 50% land 50% cash, or other agreed upon contribution combination.

4. A developer may donate the land together with cash for park development upfront to have the construction of the park expedited. Front funding for park development is preferred. Otherwise, a 75% build-out standard for the subdivision shall be set in place for park development.

5. No land cash credit shall be given for the following:

    a. Exclusively private facilities & parks.
    b. Retention or detention areas, measured at the top of the bank.
    c. Lands located within the 100 year floodplain.

6. Full or partial credit will be given for the following:

    a. Active wet areas (lakes, rivers, creeks), historical areas, conservation areas, etc., that are identified to have recreational or conservation value. This will be considered on a case-by-case basis. Studies shall be required to verify historical and/or conservation areas.

    b. Paths or trails constructed and dedicated in an exclusive easement to the City, or paths identified as infrastructure or connecting trails to a regional trail system. Partial credit may be given for undeveloped exclusive easements dedicated to the City for future trail development.

    c. Land donations that are usable and/or classified as developable for use by the general public.

SECTION 3: PARK DEVELOPMENT TIMELINE AND PROCEDURES

A. The Park and Recreation Board and staff will plan the development of the park and/open land site with the following guidelines [whenever possible]. There may be occasions when a developer provides development support in advance to a subdivision being built which may require these procedures to be adjusted or altered.

1. Based on the established Land Cash Ordinance a developer donates park land to the United City of Yorkville Park and Recreation Department for future use and development.

2. The Park and Recreation Board and staff determines park utilization and design in conjunction with the Parks Open Space Master plans to establish needs and determine priority and fiscal needs.

3. The staff recommends annual budget projections for park development based on available fiscal resources.

4. A Concept plan by the Park Planner or United City of Yorkville Staff indicates park design and preliminary cost projections.

5. Whenever possible, a public meeting is held for residents of the surrounding subdivision and impacted area for input.

6. A finalized concept plan and cost projection is developed and submitted to the Park Board for approval and a recommendation is given to the City Council for development.

7. Timeline is established for project management.

8. Project / Park plan work begins.

9. Project completion.

SECTION 4: PARK IMPROVEMENT STANDARDS

A. Park Design: The following criteria are considered desirable traits for a park to be acceptable to the United City of Yorkville:

1. Size: Park size shall meet the requirements of the Park Department Master Plan, and the approval of the Park Board. Plan must also be approved per City Staff comment.

2. Location: Park location shall be close to the geographic center of the population served, or as approved by the Park Board.

3. School/Park Site: Park and school property located in the same development may be located and developed in the best interest of both parties.

4. Service Area: Shall serve residential areas within one-half (½) mile radius from pedestrian barriers. A pedestrian barrier is defined as:

   a. Any street presently classified or planned by the United City of Yorkville, Kendall County, or State of Illinois as major arterial street or highway.
   b. Any street with speed limits over 30 miles per hour.
   c. Collector streets with an average daily traffic count exceeding 3500 cars and stop signs or stop lights further than one-half mile (½) mile apart.
   d. Railroad tracks.
   e. Natural barriers.
   f. Land use barriers.

5. Dimensions: Parks shall have a minimum dimension of 450 feet on all sides if the acreage of the park allows.

6. Street Frontage: Street frontage shall be the full length of the park on a minimum of two of its sides. Said streets shall be local or collector streets within the neighborhood. Additional access lots provided shall be a minimum of forty (40') feet in width. Where a school site is adjacent to a park site the school site can be considered as one of the two required street frontages.

   Reasons for street frontage include:

   a. Enhanced security and visibility.
   b. On-street parking availability.
   c. Encourages users to access the park through trail or sidewalk connections.
   d. Encourages neighborhood to take ownership and responsibility for their park.

7. Adjoining Developments: Whenever possible, the dedicated parcel shall be combined with dedications from adjoining developments.

B. Timing of Dedication and Acceptance: All requirements stated herein for acceptance of the site shall be completed to the satisfaction of the City.

1. Final grading

    a. The City encourages, whenever possible, that at the time rough grading and placement of topsoil is completed on the first residential structure of a particular unit development, the park site(s) should also be completed and ready for grading and seeding or sodding.

    b. The City will verify that all requirements have been met and the site is ready for turf. Final acceptance of the site is determinate on the condition of the turf as stated herein these requirements.

    c. In cases of more than one park site, or linear parkways, the developer shall determine a schedule of completion with the approval of the City.

2. Boundaries: The developer shall be required to install permanent metal boundary markers at each corner of the park site. Markers shall be of typical federal style aluminum marker four (4") inches in diameter that can be placed on top of a rebar.

3. Natural State: The City has the option to require conveyance of areas designated to be maintained in a natural state prior to commencement of any site work. A separate site-specific plat of conveyance shall be prepared and submitted prior to issuance of any permits. The developer is responsible for securing all areas to be conveyed in a natural state with temporary fencing from the time the areas are platted to conveyance of the remainder of the site.

4. Environmental Assessment: For all lands to be dedicated to the City, the developer shall provide a minimum of a Phase I Environmental Assessment, produced by a recognized consultant. This assessment shall check for hidden, or unknown environmental factors including, but not limited to, buried or contaminated soils and aquifers, underground storage tanks, and dump sites.

C. Utilities: Unless otherwise authorized by the City, each park site shall be fully improved with water, sanitary sewer, storm sewer, and electric service to a location specified and approved by the City.

1. At the time of installation of public improvements in the subdivision or planned unit development. The location shall be approved by the City and shown on the approved engineering plans.

2. The site shall be free of all private gardens, woodpiles, swing sets, sump pump discharge pipes, and other items that give the impression that a portion of the site is part of the adjacent property. No sump pumps shall discharge directly onto the site, unless connected to a catch basin on the site if approved by local authorities and the

United City of Yorkville. No private utilities, water, sewer, or drainage lines shall be located on City property. Any overflow path must be approved by City Staff.

3. No blanket Public Utility Drainage Easement, including storm sewer and overland stormwater management, can be located through or across a future park site. The park site cannot function as a storm water control facility unless the site is a detention basin that is to be conveyed to the City or the developer is given City approval.

4. Perimeter easements area allowed by Staff approval.

D. Topsoil

1. Suitable material:

   a. Topsoil shall be a loamy mixture (USDA Loam, Sandy Loam, or Silty Loam soil) with an organic content between five (5%) percent and ten (10%) percent. At least 90% must pass the 2.00 mm (No. 10) sieve and the pH must be between 5.0 and 8.0, from the "A horizon" of local soil profiles. Topsoil shall be capable of supporting the germination of vegetation. It shall not contain toxic substances harmful to plant growth.

   b. Topsoil shall be typical of the locality of the work, tilled to the satisfaction of the city, free from large roots, sticks, weeds, brush, subsoil, clay lumps, or stones larger than one (1") inch in diameter or other litter and waste products.

   c. Subbase for paved surfaces (asphalt courts, paths, etc.) shall be clay that meets the requirements of Section 204 of the Standard Specifications. It shall be free from topsoil, organic matter (roots, tree stumps, etc.), rocks larger than three (3") inches in size, and building debris.

2. Unsuitable material:

   a. For paved areas, the soil cannot be highly organic soil; contain topsoil, roots, tree stumps, vegetable matter, trash, and debris.

   b. Any unsuitable material found on the site must be removed from the site and legally disposed of.

3. Topsoil respreading:

   a. Topsoil shall be spread to a minimum depth of six (6") inches across all lawns, clay and embankment filled areas, constructed berms, sledding hills, excavated areas, and over backfilled areas of all other construction.

b. All irregularities or depressions in the surface due to weathering or other causes shall be filled or leveled out before the topsoil is placed. All topsoil finish grades will provide positive drainage over all areas covered.

c. If the existing surface has become hardened or crusted, it shall be disked or raked (broken up) to provide a bond between the surface and the topsoil to be applied.

4. Soil stockpile: Contractor shall not stockpile any topsoil or other soil materials on the park site without written authorization from the City.

E. Grading / Filling

1. All park areas shall maintain a minimum slope of two (2%) percent, or two (2') feet in 100 feet, and a maximum slope of three (3%) percent, or three (3') feet in 100 feet. The developer shall submit grading plans to the City for review during the grading approval process.

2. Drainage swales may be located on private property, either in the yards of residential units that border the park or in homeowner's association property. The park site should have a uniform slope from one end of the property to another.

3. There shall be absolutely no burying permitted of site debris, construction debris or rubbish, or any other extraneous matter on the park site(s). Areas to receive approved fill shall receive clean fill, free of large boulders, concrete, or other debris. The park site may not be used as a borrow pit.

4. At all times during construction, the Developer shall take appropriate precautions and prevent the discharge and/or dumping of hazardous wastes, liquid or solid, from his or other's operations on any sites within the development, including those to be dedicated to the City. Local Police and Fire Departments shall be notified of any temporary storage of hazardous materials during construction.

5. Environmental Assessment - For all lands to be dedicated to the City, the Developer shall provide a minimum of Phase I Environmental Assessment, produced by a recognized consultant. This assessment shall check for hidden, or unknown environmental factors including, but not limited to, buried or contaminated soils and aquifers, underground storage tanks, and dump sites.

6. An as-built of the final grading of the site is required upon completion. This includes the submittal of an AutoCAD drawing in digital format with grades shown in one (1') foot intervals within 60 days of a written request by the City.

F. Turf Grass

1. Developers shall install turf grass in agreement with the City. This work shall occur after the placement of all topsoil, fine grading, and installation of sidewalks, pathways, and plant material.

2. All park access points of 100 ft. width or less shall be sodded, no greater than 50 ft in width of any entrance. Sodding procedures shall be in compliance with all City regulations regarding sodding and watering practices.

3. The seed shall be a premixed Bluegrass / Ryegrass mixture approved by the City. The mixture shall be by weight a 70% mixture of three (3) Kentucky Bluegrasses (equal percentages) and a 30% mixture of three (3) perennial Ryegrasses (equal percentages). The mixture shall be sown at the rate of 220 lbs. per acre. All seed shall be certified 98% purity and 80% germination.

4. Prior to seeding, all lawn areas shall be fertilized with an approved starter fertilizer at an approved rate. The fertilizer shall be cultivated into the top three inches of the topsoil.

5. The seeding season for turf grass shall be as follows and shall not be adjusted except as approved by the City in writing:

   Spring: April 1 to May 15
   Fall: August 15 to October 1

6. The developer shall reseed all areas that do not germinate and repair all eroded areas and reseed them until 90% germination has taken place. All other aspects of maintenance, such as mowing, watering, and application of herbicide, will be done by the City after the property is accepted.

G. Mulching

1. Erosion Control Blanket: All seeded areas flatter than a 3:1 slope shall be mulched within twenty four (24) hours of seeding.

   a. Seeding areas designated to receive erosion control blanket shall be covered with biodegradable seed blanket as specified.

   b. All seeded areas of slopes steeper than 4:1, the bottom of swales and around drainage structures, shall be covered with erosion control blanket the same day as seeded.

   c. The blanket shall be laid out flat, evenly and smoothly, without stretching the material. The blankets shall be placed so that the netting is on the top and the fibers are in contact with the soil.

   d. For placement in ditches, the blankets shall be applied in the direction of the flow of the water and require a two (2") inch overlap of blanket

e. All blankets shall be stapled in place, using four (4) staples across the upstream end at the start of each roll and placing staples on four (4') foot centers along each side. A common row of staples shall be used along seams of adjoining blankets. All seams shall overlay at least two (2") inches. On slopes, the blankets shall be applied either horizontally or vertically to the contour and stapled in place similar to ditch applications except that the staple space interval shall be six (6') feet.

2. Areas seeded with an annual temporary mix to prevent erosion until permanent seeding is completed, does not require mulching.

3. Turfgrass seeding areas shall be mulched in accordance with the 'Standard Specifications'. Contractor is responsible for obtaining all water for the work.

4. All seeded areas with a slope flatter than 4:1 shall be mulched within 24 hours of seeding using straw with tackifier.

   Straw – rate: two (2) tons (4000 lbs.) per acre
   Mulch binder for straw – 40 lbs. per acre

SECTION 5: DETENTION AND RETENTION BASINS

A. General: It is not the practice or desire of the City to accept retention/detention basins as part of a neighborhood park. Any variance from this practice must be approved by Staff and Park Board.

1. Special consideration may be given for acceptance of detention/retention ponds if they are adjacent to other park areas and meet usability criteria at the discretion of the Staff and Board. This may include, but not be limited to, safe access, fishing, incorporated trail systems, overlooks, or natural habitats. At no time shall the City accept said basins only for storm water management purposes.

2. Should detention or retention ponds be part of the local donation, they shall meet the following requirements:

   a. Construction shall be in accordance with engineering drawings approved by the City and shall meet all applicable City standards.

   b. All changes to the plans including, but not limited to, percent of slope, grading, depth of top soil, location of structures or other improvements shall not be implemented without written approval unless first approved in writing by the City.

   c. Basins shall comply with state statute 605 ILCS 5/9-115.1 regarding distance from right-of-ways.

   d. Best management practices are encouraged, which includes the addition of rain gardens, natural water infiltration systems, meandering drainage swales, and maintenance practices typical of naturalized basins.

B. Retention Basins (Wet Ponds)

1. Design: Retention ponds shall be designed to facilitate a low degree of maintenance through natural plantings and to reduce potential hazards for users and maintenance staff.

   a. No pond shall be less than two (2) acres in size. BMP Practices implemented to create naturalized drainage characteristics can allow for a reduction in basin size. The surface area of wet ponds on non-park property may be less than 2 acres if justified by topography, tributary area, and is approved by City Staff.

   b. Pond configuration

      1. Pond configuration shall be natural in appearance featuring varying slopes running down to the shoreline. Shoreline shall undulate at varying curves around the pond perimeter. Shoreline areas selected for the planting of aquatic

and emerging aquatic vegetation, slope requirements shall be appropriate to ensure healthy growth and development of the specified vegetation type.

2. An area six (6') feet wide measured from the shoreline around the entire perimeter of the pond shall slope towards the pond at the rate of two (2%) percent to five (5%) percent. No slope beyond the six-foot strip shall be steeper than a 5:1 slope (20%).

3. Pond configuration shall have provisions in the plans to allow access for dredging, grate maintenance, and accommodation of maintenance requirements or needs. The City and developer shall jointly determine final shoreline configuration.

4. Wet ponds shall be designed to a minimum depth of six (6') feet below normal water level. If fish are to be maintained, 25% of the pond shall be a minimum depth of twelve (12') feet. Wet ponds must have a safety shelf that is five (5') feet to ten (10') feet in width at a depth of two (2') feet below the normal water elevation. The slope to the bottom of the pond beyond this safety shelf shall be 2:1 and the slope up from the safety shelf to the normal water level shall not be steeper than 3:1.

c. Inlets/ Sedimentation

1. All storm water inlet points must have calculated sediment basins below the required six (6') foot depth.

2. Sediment basin volume shall be 4000 CF per acre of tributary area (with a minimum volume of 4000 CF)..

3. The developer shall provide engineering plans, estimating probable quantities of sediment from the watershed at five-year intervals for a 25 year period.

4. Developer will then install sediment traps to handle the aforementioned sediment. A cleaning/dredging plan shall be included with the plans.

5. The City shall approve all engineering and installation. Existing Public Ordinances and annexation agreements shall regulate all additional storm water design considerations and management.

d. Buffer yards/Trails

1. In areas where a trail occurs between the property line and a pond, there shall be a minimum fifty (50') foot wide buffer between the property line and the high-water elevation. The fifty (50') foot wide buffer will be broken down into a minimum twenty (20') foot wide area between

property line and outside edge of the path, and a minimum twelve (12') foot wide area between the inside edge of path and the high-water elevation.

2. In areas where there are no paths between the property line and a pond, there shall be a minimum thirty (30') foot wide buffer between the property line and the high-water elevation.

e. Aeration:

1. Developers shall incorporate aeration systems into all retention basins that do not have sufficient water flow as determined by the city. The city shall approve all engineering and installation.

2. Aeration may be required by the city even if aeration was not called for in the plans approved before construction if the water flow is deemed insufficient by the city.

f. Erosion Control:

1. Protection against erosion and water level fluctuations is required. The use of rip-rap and retaining walls as a sole means of shoreline protection will not be permitted for the entire basin perimeter, but can be used in severly affected areas. Stabilization of affected areas shall be provided through one of the following means:

a. Complete establishment of perennial ground cover, water tolerant grasses, or natural vegetation to the approval of the City standards.
b. Construction of retaining walls.
c. Use of rip-rap underlain by gravel and filter fabric.

2. Wetland Basin Planting Specifications:

a. Soils:

1. Hydric soils as classified by the U.S. Department of Agriculture, Soil Conservation, or the National Technical Committee for Hydric Soils.

b. Plant material:

1. Seedlings, Tubers, Rhizomes and Other Propagule Materials: Shall have at least one viable shoot or growing point capable of initiating above ground growth.

2. Plugs: Cubes or cylinders of soil containing crowns, stems, roots and rhizomes with one-half (½") inch or more diameter and depth sufficient to

contain rhizomes and the majority of the fibrous root systems. All plants shall be well established and have a minimum shoot height of twelve (12") inches at the time of installation (minimum one year old plants.) Plants larger than specified may be used if approved by the City.

3. All plugs shall be free of Purple Loosestrife (*Lythrum salicaria*) and Cattail (*Typha angustifolia*) seeds, seedlings, and propagules.

4. Plants shall be of local orgin (within 200 mile radius of project site), hardy under the climatic conditions at the project site, free from insects and diseases, and having the appearance of health, vigor, and habit normal for the species.

5. Substitutions of plants will not be permitted unless authorized in writing by the City.

c. Planting timeline

1. Planting shall occur where water is present and when the soil is completely saturated.

2. Plants shall be hand-planted carefully and firmly in place on the spacing specified to the minimum depth necessary to anchor them in wetland soil.

3. If submersion of plants is required, plants shall be placed in meshed bags with non-lead weights attached to each plant and then dropped into the water.

4. The beginning and termination dates for planting shall be as follows and shall not be adjusted except as approved by the City in writing:

Spring: May 1 to June 15
Fall: August 15 to September 15

d. Herbivore Protection:

1. Herbivore management shall be provided to protect the plantings. Steel posts, wood posts, box protection, or overhead protection are all acceptable methods of herbivore management that shall be provided to protect the plantings. Herbivore management is defined as, but not limited to protection from geese, ducks, muskrats, carp, and rusty crayfish.

C. Detention Basins (Dry Ponds)

1. Design: Requirements for detention basins shall satisfy design criteria as set forth in the Grading Section of these Standards. Consideration will be given only to basins

for the dual use of detention and recreation. In order to facilitate the review of park areas, the proposed outline of the detention basin at the two-year, 25-year, and 100-year high water line shall be illustrated on the preliminary plan or the P.U.D. plat.

a. Basin configuration:

1. The basin shall be natural in appearance featuring varying slopes running down to the basin bottom. Plantings shall reflect the soil and moisture content, which includes, but is not limited to: wet-mesic, mesic prairie, etc. Slope requirements shall be appropriate to ensure healthy growth and development of the specified vegetation type.

2. The bottom slope shall be a minimum of two (2%) percent except that a zero (0%) percent slope will be allowed directly over the underdrain pipes.

b. Inlets:

1. Dry ponds shall be designed with an underdrain, subject to the approval of the City, so that ponding during dry periods does not occur and that a good stand of grass can be maintained.

2. All incoming and outgoing conduit shall have concrete flared end sections or poured in place headwalls with grates.

3. Two (2') foot inlets can be placed over the underdrain.

4. The maximum water depth below the HWL shall be four (4') feet.

c. Buffer yards/Trails

1. Buffer yards shall include natural plantings of trees, evergreens and shrubs.

2. In areas where a pedestrian/bicycle trail occurs between the property line and basin, there shall be a minimum fifty (50') foot wide buffer between the property line and the high-water elevation. The fifty (50') foot wide buffer will be broken down into a minimum twenty (20') foot wide area between property line and outside edge of the path, and a minimum twelve (12') wide area between the inside edge of path and the high-water elevation.

3. In areas where there are no paths between the property line and a basin, there shall be a minimum thirty (30') foot wide buffer between the property line and the high-water elevation.

2. Planting Specifications

a. Soils:

1. Topsoil shall be a loamy mixture (USDA Loam, Sandy Loam, or Silty Loam soil) with an organic content between five (5%) percent and ten (10%) percent. At least 90% must pass the 2.00 mm (No. 10) sieve and the pH must be between 5.0 and 8.0, from A horizon of local soil profiles. Topsoil shall be capable of supporting the germination of vegetation. It shall not contain toxic substances harmful to plant growth.

2. Topsoil shall be typical of the locality of the work, tilled to the satisfaction of the city, free from large roots, sticks, weeds, brush, subsoil, clay lumps, or stones larger than one (1") inch in diameter or other litter and waste products.

3. Topsoil for paved surfaces (asphalt courts, paths, etc.) shall be clay soil that meets the requirements of Section 211 of the Standard Specifications. It shall be free from topsoil, organic matter (roots, tree stumps, etc.), rocks larger than three (3") inches in size, and building debris.

b. Plant Material:

1. Seed quantities indicated shall be the amounts of pure, live seed per acre for each species listed. Pure, live seed shall be defined as the sproutable seed of a specified variety and calculated as the product of the viable germination times the purity. The seed (pounds per acre) are designed to yield specific amounts of pure, live seed per acre based on the pure, live seed percent values listed in Table II of Article 1081.04 of the "Standard Specifications." Seed which, according to tests, has actual pure live seed yield less than the intended yield; will have the specified quantity adjusted to meet the intended pure, live seed yields.

2. All seed shall be guaranteed by the vendor to be true to name and variety. Whenever a particular orgin is specified, all seed furnished shall be guaranteed to be from that orgin. The contractor shall provide the prairie/wetland/forb seed mix showing the percentage by mass (weight) of each of the kinds of seed.

3. All prairie/wetland/forb seed shall have the proper stratification and/or scarification to break dormancy for the appropriate planting season.

4. Legumes: Inoculate all legumes with the proper rhizobia and rate at the appropriate time prior to planting.

5. Seed Mix: The seed mix for the prairie/wetland seed and forbs shall be as shown on the plans or as attached to these specifications.

c. Seeding Time:

1. Prior to seeding, the ground surface shall be smooth, dry, friable and of uniformly fine textures.

2. No seed shall be sown during high winds or wet conditions.

3. All prairie grass seeding shall be done with a drill-type seeder. The optimum depth for seeding shall be one-quarter (¼") inch.

4. All forb seed shall be mechanically or hand broadcast. Forb seed shall not be incorporated into the soil, or otherwise buried, but shall be rolled to ensure good soil/seed contact.

5. Broadcasting seed, mechanically or by hand, will only be allowed in inaccessible areas. The seed shall be covered with a thin layer of topsoil and rolled to place seed in contact with the soil. The optimum depth is one-quarter (¼") inch.

6. No hydraulic seeding (hydro-seeding) is allowed.

7. The beginning and termination dates for prairie or wetland seeding shall be as follows and shall not be adjusted except as approved by the City in writing:

Spring: May 1 to July 1
Fall: September 15 to October 1

8. All seeding requires erosion control blanket. See Section 4.G for specifications.

D. Maintenance: After all initial work has been completed satisfactorily according to the specifications, the following establishment and maintenance work shall be performed by the Contractor for a period of three (3) years or until 90% of the plant material is established as outlined in the contract. The three year establishment and maintenance period shall start the following growing season after all the initial seeding/maintenance work is completed as specified and approved by the City. For initial spring seeding completed by July 1st, the maintenance period shall start September 1st. For fall seeding completed by October 1st, the maintenance period shall start May 1st.

1. Maintenance, including watering, mowing, herbicide application, and burning will be required to assist the native vegetation in growth and reduce the competition of weeds until all plant material has established and matured and been accepted by the owner.

a. First Year

1. Inspection
    a. Contractor shall inspect planting and/or seeding areas June 1, June 15, June 30, and not more than every 30 days thereafter during the first growing season following completion of the seeding and report findings to the City.
2. Evaluation:
    a. Planting and/or seeding areas will meet or exceed the following performance criteria by the end of the first growing season following seed installation: 95% overall aerial vegetative cover with no areas larger than 100 square feet with less than 75% cover, seedlings of a minimum of two planted grass species found, and seedlings of a minimum of three planted wildflower species found through annual naturalized basin reports submitted to the city that have been reviewed and approved.

3. Weed Control
    a. Review the site and treat all noxious weeds with a herbicide by a "wicking application" and hand weeding as appropriate once per month from May through September. (Herbicide by spray application will not be allowed because of overspray and the drifting down of herbicide killing the plant material below the weeds.)
    b. When the vegetation reaches the height of twelve (12") inches, the Contractor shall mow it to a height of six (6") inches. No more than two mowing per season is necessary. (Mowing the site helps to control weeds and allows prairie/wetland plants to compete.)

4. Species Enrichment
    a. Overseed or re-plant thin, bare, or weedy areas with the appropriate seed mix or plant materials per dates as specified.
    b. Plant herbaceous plugs for greater impact (optional).

b. Second Year

1. Inspection
    a. Contractor shall inspect planting and/or seeding areas once a month from May through October during the second growing season and report findings to City.

2. Evaluation
    a. Planting and/or seeding areas will meet or exceed the following performance criteria by June 30 of the second growing season following seed installation: 95% overall aerial vegetative cover with no areas larger than 100 square feet with less than 75% cover, seedlings of at least 25% of all seed species found. These performance criteria will be maintained throughout the second growing season.

3. Controlled Burn
    a. Prepare and obtain a controlled burn permit from the IEPA in January.
    b. Conduct controlled burn in early spring. (Burning is necessary to reduce the non-native weeds while promoting the desired mesic/wet-mesic species.) Weather conditions may necessitate schedule changes and shall require City approval.
    c. Review site and mow areas that did not burn.
    d. If there is not enough "fuel" to have a successful controlled burn, mowing as specified in Section 3.08,D.,1.,b. shall be performed in lieu of burning.

4. Species Enrichment
    a. Overseed thin, bare, or weedy areas per seeding dates as specified.
    b. Plant herbaceous plugs for greater impact (optional).

3. Weed Control
    a. Review the site and treat all noxious weeds with a herbicide by a "wicking application" and hand weeding as appropriate once per month from May through September. (Herbicide by spray application will not be allowed.)
    b. When the mesic/wet-mesic vegetation reaches the height of twenty-four (24") inches, the Contractor shall mow it to a height of twelve (12") inches. Only one mowing per year is necessary.

c. Third Year

1. Inspection
    a. Contractor shall inspect planting and/or seeding areas once a month from May through October during the third growing season and report findings to City.

2. Evaluation
    a. Planting and/or seeding areas will meet or exceed the following performance criteria by June 30 of the third growing season following seed installation: 99% overall aerial vegetative cover with no areas larger than 100 square feet with less than 90% cover, seedlings of at least 50% of all seed species found. These performance criteria will be maintained throughout the third growing season.

3. Controlled Burn
    a. Prepare and obtain a controlled burn permit from the IEPA in January.
    b. Conduct controlled burn in early spring. Weather conditions may necessitate schedule changes. Such changes shall require City approval.
    c. Review site and mow areas that did not burn.

4. Species Enrichment
    a. Overseed thin, bare or weedy areas per seeding dates as specified.
    b. Plant herbaceous plugs for greater impact (optional).

5. Weed Control
    a. Review the site and treat all noxious weeds with a herbicide by a "wicking application" and hand weeding as appropriate once per month from May through September. (Herbicide by spray application will not be allowed.)
    b. When the mesic/wet-mesic vegetation reaches the height of twenty-four (24") inches, the Contractor shall mow it to a height of twelve (12") inches. Only one mowing per year is necessary.

2. Final Inspection and Acceptance

    a. Acceptance of the work will be determined through a naturalized basin report submission to the City that has been reviewed and approved. The percentage of species planted with area present and apparent as live plants must meet IDNR and USACE standards.

    b. If the performance standards are not met, the contractor shall reseed, replant, and remulch as specified herein all unacceptable areas to the satisfaction of the City.

E. Inlet and grate design

1. All grates for drainage inlets shall be bicycle safe and accessible per the ADA when placed in walkways or drives.

2. All trash covers for storm inlets shall have a maximum opening of three and one-half (3.5") inch square to prevent a child's head entrapment. All grates on drain culverts and pipe inlets and outlets shall be bolted in place.

SECTION 6: NATURAL AREAS

A. General: It is not the practice or desire of the City to accept any natural area, including, but not limited to woodlands, greenways, or conservation areas, as part of a park. Any variance from this practice must be approved by Staff and Park Board.

1. Special consideration may be given for acceptance of natural areas if they are adjacent to other park areas, include threatened or endangered plants, specimen trees species, wildlife habitat, create a vital link in the parks master plans, and meet usability criteria at the discretion of the Staff and Board.

2. This may include, but not be limited to, safe access, incorporated trail systems, overlooks, or natural habitats.

3. Woodlands: should woodlands be part of the local donation, they shall meet the following requirements:

   a. A tree survey, as outlined in the Landscape Ordinance, shall be completed and submitted. This shall include the site topography and future development plans.

   b. Stormwater shall be conveyed through wooded areas via open swales to improve stormwater quality.

   c. Outflow is not allowed to be directly piped into riparian forests. Backyards shall slope to the side of the lot and drain into an inlet, or follow a swale to the street. Turfgrass runoff shall not directly infiltrate the woodland.

   d. It can be expected that the developer will assume responsibility to bring the woodland to park standards. In cases where existing trees and shrubbery are present on the site, deadwood, undesirable trees, and thinning of dense growth, which may include branches or entire trees and shrubs, shall be removed. All stumps shall be ground to twelve (12") inches below grade, backfilled and restored in accordance with grading and seeding requirements. Improvements standards includes, but are not limited to, the following items:

      1. Clear understory trees
      2. Remove dead or decaying material
      3. Remove hanging tree limbs
      4. Clear vines from trees
      5. Clear underbrush
      6. Clear invasive species and noxious weeds
      7. Perform a prescribed burn (by certified contractor)
      8. Clear fence or repair damaged fence

B. Management Practices: If the natural area is to be conveyed to the City or Homeowner's Association. Details and specifications must be included with the landscape plan submittal. The following methods/practices must be followed to manage the natural area:

1. Best Management Practice (BMP) this shall include, but is not limited to minimizing site disturbance, providing tree protection, installing silt fence, etc. Changes to the plans including, but not limited to, percent of slope, grading, depth of top soil, location of structures or any other improvements shall not be implemented unless first approved in writing by the City.

2. Integrated Pest Management (IPM) use a combination of manual, mechanical, biological, chemical and preventative techniques to minimize the impact of insects, diseases, and unwanted vegetation. Common chemicals used in forest land management are generally pesticides (insecticides, herbicides, and fungicides) and fertilizer. These chemicals are used to control pests - including insects, diseases, and unwanted vegetation - and to enhance tree growth.

3. Streamside management zones (SMZs) includes land and vegetation areas next to lakes and streams where management practices are modified to protect water quality, fish, and other aquatic resources. These areas are complex ecosystems that provide food, habitat and movement corridors for both water and land communities. Also, because these areas are next to water, SMZs help minimize nonpoint source pollution to surface waters.

C. Development Standards: City staff will evaluate the condition of the natural area to be dedicated. A report submitted by the developer will outline the items the developer is responsible for completing prior to conveyance. The report shall include, but is not limited to, the following items:

1. Environmental Assessment
2. Species survey/habitat
3. Historical survey/Archaeological study
4. Wetland survey

D. Greenways/Wetlands/Floodplain Areas: For areas of natural habitat re-establishment or enhancement such as floodplains, wetlands, or greenways, the Developer shall submit complete installation and maintenance plans to the City prior to acceptance of the development plat.

H. Conservation and Protected Areas: For areas to be dedicated, as a conservation or protected area, an environmental study including a topographic map shall be completed by the developer identifying the endangered and protected areas, summary of floristic quality, wetland, and floodplain maps and inventory of wildlife, vegetation, and habitats. Watershed areas shall be identified with recommendations for management. All studies shall be completed prior to the land dedication. Developer shall comply with all City wetland standards.

I. Lakes: Any body of water considered a lake, or large body of water, will be considered on a case-by-case basis. Preliminary submissions should include a condition report, and future maintenance requirements.

SECTION 7: PLANTING SPECIFICATIONS

A. Existing vegetation includes, but is not limited to, trees, shrubs, grasses, perennials, groundcovers and wildflowers shall be protected during the construction process if determined by the City to be preserved. Development plans shall include methods of protecting such vegetation during the developer's construction process.

B. New Landscaping

1. Planting Standards

a. All landscape material shall meet the standards of the "American Standard for Nursery Stock" (ANSI Z60.1-2004) of the American Standard of Nurserymen.

b. All plant material must be grown in Northern or Central Illinois.

c. The limits for the source of plant material shall be zones 5a and 5b in Northern Illinois only. Plant hardiness zones shall be as designated in the current Miscellaneous Publication No. 1475, Agricultural Research Service USDA. All Illinois counties located in sub-zone 5a shall be considered a part of sub-zone 5b.

c. The plants and material shall be inspected by the City at the nursery and project site if they so desire. The City reserves the right to tag material prior to digging.

d. Trees planted in parks shall be a minimum size of:

SHADE.....2 ½" caliper BB
ORNAMENTAL .....2 ½" caliper BB (single stem)
.....6' BB (multi-stem)
EVERGREEN .....6' BB

Plants marked "BB" are to be balled and burlapped, and shall be dug with a sufficient quantity of earth taken equally on all sides and bottom of the plants to include the depth of the roots according to species. The balls shall be prepared in a workmanlike manner and firmly bound.

2. Backfill mixtures

a. Backfill may be excavated topsoil. The backfill shall, at the time of planting, be in a loose, friable condition.

b. Mixture for backfilling plant holes of all deciduous trees, shrubs, and evergreen plant material shall consist of approved topsoil as needed to match the level of existing grade.

c. Mixture for broadleaved evergreens shall consist of one-half (½) volume topsoil mixed with one-half (½) volume uncompressed sphagnum peat moss or one-third (⅓) volume topsoil, one-third (⅓) volume sphagnum peat moss and one-third (⅓) volume coarse sand pH 6.5 or lower.

d. The beds for groundcovers, perennials, annuals, etc., shall consist of one-half (½) volume topsoil, one-fourth (¼) volume peat moss and one-fourth (¼) volume mushroom compost (composted manure). Beds shall be cultivated to a depth of six (6") inches and be raked smooth during the process of plant installation.

3. Planting

a. Regardless of calendar date, trees must be dormant at the time they arrive at the site of the work or storage site. If trees are dug in-season, they must be properly watered and sheltered until the time of planting.

1. Spring Planting: This work shall be performed from the time the soil can be worked until the plant, under field conditions, is not dormant. Evergreen planting shall terminate on May 15, perennial planting shall terminate on May 15.

4. Fall Planting: This work shall be performed from the time the plant becomes dormant until the ground cannot be satisfactorily worked except that evergreen planting shall be performed between September 1 and October 31 and perennial planting shall be between August 15 and September 15.

b. Excavation of Plant Holes

1. The sides of all plant holes shall be angled at approximately 45 degrees. All plant holes shall be dug in such a manner that the inside surfaces of the hole shall be in a loose friable condition prior to planting. Glazed or compacted sides will not be permitted.

2. The equipment used to dig the plant holes must be approved by the City Staff.

3. Plant holes shall be twice the diameter of the root ball. The root ball shall set on compacted, undisturbed earth.

4. On slopes, the depth of excavation will be measured at the center of the hole.

c. Planting Procedures

1. All plants shall be placed in a plumb position and set at the same depth as they grew in the nursery field. Backfill shall be placed around the root system.

2. Tamping or watering shall accompany the backfilling operation to eliminate air pockets. Set the base of the tree trunk two inches above the surrounding soil.

4. Planting Operation

   a. Plants shall be set in the center of the holes, plumb and straight at such a level that after settlement, the crown of the ball will be slightly above finished grade.

      1. All balled and burlapped plants shall have the twine or ropes removed that secures the burlap to the trunk of the plant.

      2. All wire baskets around the ball of the tree shall be cut away from the top one half of the ball.

      3. The top one-third (⅓) of burlap shall be removed from the balls after setting the plant in the hole.

      4. Container grown plants shall have the container removed with care as to not break the ball of soil that contains the root system. If the root system is "pot bound", scarify before placing in the hole.

      5. A circular water saucer with the soil shall be constructed around each individual plant.

5. Watering

   a. A thorough watering of trees, with a method approved by the City shall follow the backfilling operation. This watering shall completely saturate the backfill and be performed during the same day of planting. After the ground settles as a result of the watering, additional backfill shall be placed to match the level of the finished grade.

   b. Approved watering equipment shall be at the site of the work and in operational condition prior to starting the planting operation.

   c. All water must be provided by developer or contractor.

6. Mulching/Wrapping

   a. Immediately after watering, plants shall be mulched. A layer of wood chips shall be used to cover the circular water saucer to a depth of four (4") inches when settled.

   b. All mulching shall be kept in a minimum of six (6") inches from the trunk of all trees and shrubs.

c. Immediately after planting, trunks of all deciduous trees shall be wrapped spirally from the ground to the lowest major branch (after pruning) overlapping the wrap at least one-third (⅓) of its width. Trees shall not remain wrapped during the summer months.

7. Pruning Procedures

a. Qualified personnel, experienced in horticultural practices and operations, shall perform all pruning. The method and location of pruning and the percentage of growth to be removed shall meet the approval of the City. All pruning shall be done with sharp tools in accordance with the best horticultural practices.

b. Pruning shall consist of thinning the twigs or branches as dictated by the habit of growth and the various types of the trees to be pruned, and as directed by the City. The leader and terminal buds shall not be cut unless directed by the owner.

c. The ends of all broken and damaged roots one-quarter (¼) inch or larger shall be pruned with a clean cut, removing only the injured portion. All broken branches, stubs, and improper cuts of former pruning shall be removed.

d. Evergreens shall not be pruned except to remove broken branches.

SECTION 8: PATHWAYS AND TRAILS

A. Trail Standards

1. The following standards shall be used in design and development of both local and regional trails:

   a. The design and development of the trail system shall be in accordance with Chapter 17 of the IDOT – Bureau of Design and Environment Manual (BDE), Chapter 42 of the IDOT Bureau of Local Roads and Streets Manual (BLRS) and the Capital Development Board's Illinois Accessibility Code (IAC) in addition to the most recent Guide for the Development of Bicycle Facilities, as published by the American Association of State Highway and Transportation Officials (AASHTO).

      i. When developing trails adjacent to city streets, the BLRS manual should be the design guide used.
      ii. Trails adjacent to U.S. or State marked routes should be designed according to the BDE manual.
      iii. The AASHTO manual should be used as a reference when the BDE or BLRS manuals do not address the presented design.
      iv. All questions regarding accessibility should reference the IAC.

   b. A minimum design speed of 20 mph shall be used for bicycles on the trail. When the grade exceeds four (4%) percent, a design speed of 30 mph is advisable.

   c. The minimum horizontal inside radius of curvature at 20 mph shall be at 30 feet, and at 30 mph, 90 feet.

   d. For most trail applications, the super-elevation rate shall vary from a minimum of two (2%) percent to a maximum of approximately five and one-quarter (5.25%) percent. The minimum super-elevation rate of two (2%) percent will be adequate for most conditions.

   e. Grades

      i. Vertical grade on the trail shall be kept to a minimum, although it may not be possible in some areas. A grade of five (5%) percent should not be longer than 800 feet. A grade of eight (8%) percent (12:1) will be the maximum to allow for handicapped accessibility.
      ii. The surface of the trail shall typically have a maximum cross-slope of two (2%) percent, running from one edge of the trail to the other..
      iii. The grade for trails adjacent to and part of an existing roadway shall be the same as the roadway.
      iv. A ten (10') foot wide area with a maximum slope of 20:1 shall be graded adjacent to both sides of the trail. If the shoulder is less than ten (10') feet in

width, shoulder width cannot have less than two (2') of clearance on each side.

f. Drainage

i. Crossing scuppers and culverts for drainage at ravines, ditches, swales, and small creeks may be required.
ii. Minimum pipe diameters must be met where required by engineering in accordance with the City Subdivision Ordinance.

2. City and regional trail plans shall be referenced for approximate potential trail locations.

B. Inventory of Existing Facilities

1. An inventory and site analysis of the existing conditions and facilities along the proposed trail shall be conducted to determine their effect and relationship on the design, development, and usage of the trail. The site analysis includes, but is not limited to the following:

a. Review of the proposed trail locations to determine their impact on all adjacent property owners and land uses.

b. A review of the proposed trail locations, structures, and adjacent facilities for all historical, unique, or local significance.

c. Analysis of all bridges and drainage structures to determine their compliance with the local and state minimum loading requirements, if applicable.

d. Identification of significant or unique ecosystems.

e. It is the developer's responsibility to obtain environmental clearances from other jurisdictional governmental agencies for analysis of the trail.

C. Trail Access

1. Appropriate ingress and egress to the trail system shall be designed for all authorized users, emergency and maintenance vehicles. Entry points shall be designed to control and prevent access by unauthorized vehicles.

a. Major entry points are located at or near the beginning and termination of the trail, at major or special points of interest along the trail, and at locations to provide maintenance of the trail.

b. Minor entry points are locations along the trail for the purpose of allowing users to enter the trail.

c. Road crossings shall be considered entry points and access will be provided.

d. Parking facilities, information for users (park signs, trail I.D. signs, information signs, traffic signs, display cases, etc.), site amenities (bike racks, benches, picnic tables, drinking fountains, etc.), access for maintenance, emergency and security vehicles, items to prevent unauthorized use and assist with security (bollards, drop gates, fencing, lighting, etc.), landscaping for aesthetics and function (shade, screening, delineation and beautification) shall be considered at appropriate ingress and egress locations.

e. Trail heads shall be required at locations outlined in the Interated Transportation Plan, or other locations specified by the city.

D. Roadway and Crossing Signage

1. Approved standard precautions and signage shall be used in the design of the trail at intersections with the roadway.

   a. Warning signs identifying an intersection with a roadway shall be posted a minimum of 200 feet before the intersections.

   b. Stop signs shall be posted for the trail user at the intersection of the roadway. A sign with the cross street name shall be located below the stop sign.

   c. Striped crosswalks shall be the same width as the trail and shall consist of two parallel six (6") inch white thermoplastic lines.

   d. All roadway crossings must be ADA compliant regarding detectable warnings.

2. A uniform signage system incorporating the Park and Recreation Department and the United City of Yorkville sign standards shall be designed for the trail. All signage it shall conform to the guidelines of the Manual on Uniform Traffic Control Devices (MUTCD) the Illinois Supplement to the Manual of Uniform Traffic Control Devices (ILMUTCD) and any signs or pavement markings that the City wishes to develop.Signage shall be placed on posts or on the pavement, or on both where necessary. Sign posts shall be as required by the Public Works Department. All signage shall be approved by the Parks Department prior to installation. Custom signs will be considered on a case-by-case basis. The signage shall include the following:

   a. Rules and regulations for usage of the trail (posted at all major access points).

   b. Information, interpretative, points of interest, directional, and warning signs (posted as applicable).

   c. Park identification signs.

d. A four (4") inch wide painted yellow centerline stripe shall be used to separate opposite directions of travel on primary trails, as determined by Staff.

E. Sight and Stopping Distance

1. Sight and stopping distance is the distance required to see an obstruction, react to it, and brake to stop. The formulas and charts in the Guide for the Development of Bicycle Facilities shall be used for each special location to insure minimum safe sight and stopping distances. For example: A five (5%) percent grade would require approximately 260 feet of stopping distance. Reference BLRS or BDE manuals for stopping and sight distance charts.

F. Widths and Clearances

1. The paved width and the operating width required for a shared use path are primary design considerations. The current width for all primary trails shall be ten (10') feet, not including the width needed for shoulders. For high traffic volumes, determined by figure 42-3A of the BLRS manual, a twelve foot (12') trail width may be required. Reduced widths of eight (8') feet will be considered on a case-by-case basis, based on use, site constraints, or topographic features.

   a. There will be good horizontal and vertical alignment providing safe and frequent passing opportunities.

   b. During normal maintenance activities the path will not be subjected to maintenance vehicle loading conditions that would cause pavement damage.

   c. Vertical clearance shall be a minimum of eight (8') feet above the trail.

   d. If the trail is to be located parallel to a roadway, the BLRS manual recommends a minimum separation of five feet (5') from the face of curb of the roadway to the edge of shoulder of the trail. If the distance is less than five feet (5'), the BLRS manual recommends a three and a half foot (3.5') high barrier be installed between the path and the road. In a rural session, the BLRS manual recommends that the path be located at the top of the back slope of the roadway ditch but a minum of ten feet (10') from the edge of the traffic lane.

   e. Railings shall be considered on a case-by-case basis. Steep slopes or a fixed hazard that cannot be removed or relocated could dictate railing locations.

G. Trail and Roadway Bridges

1. Bridges shall be installed to connect trails across valleys, streams, creeks, ravines, etc. All bridge design plans are to be sealed and prepared under the direction of an Illinois licensed structural engineer.

a. New bridges shall be constructed with a minimum trail width of ten (10') feet. On existing bridges, an eight (8') foot width is acceptable.

b. Bridges designed for bicycles shall be designed for pedestrian live loads and snow loads. The design shall also accommodate maintenance and emergency vehicles. A barrier shall be provided to prevent use by unauthorized vehicles.

c. A minimum clearance width for trails shall be the same as the approaching paved trail. The desirable clearance width shall be the minimum two (2') feet on each side towards the handrail side.

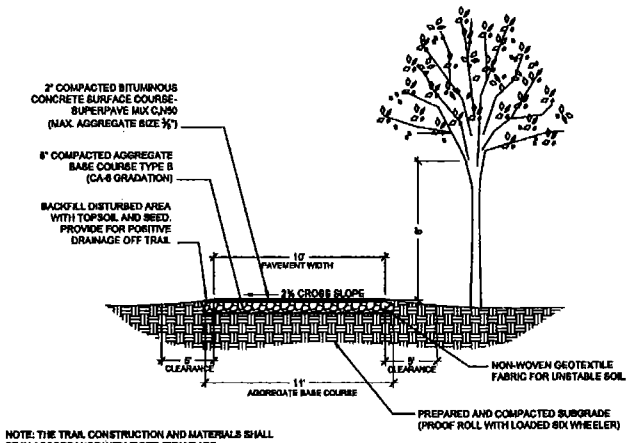
d. Handrails, barriers, or fences shall be a minimum of forty-two (42") inches high and located on both sides of the trail where appropriate. Taller barriers or fence sections may be desired at locations such as a highway or ravine.

e. On all bridge decks, bicycle safe expansion joints shall be used at all joints and transition points.

f. Drainage requirements for floodway crossings and freeboard and overtopping requirements as well as design period for the 50 and 100 year storm elevations shall be in accordancde with the Flood Control Ordinance and the Subdivsion Control Ordinance.

H. Cross Sections

1. The trail surface shall be suitable for bicyclists, joggers, roller bladers, walkers, etc. and it shall be handicap accessible. The trail shall be designed to accommodate the wheel loads of occasional emergency, patrol, construction and routine maintenance vehicles. The following cross sections as shown in the detail below are typical for the majority of the applications.



TRAIL DETAIL
10' PAVEMENT WIDTH

I. Subgrade and Base Course

1. The area shall be excavated to the depth required, graded, and compacted. Geo-textile fabric Amoco 4551 or approved equal shall be used for subgrade stabilization in areas of non-granular soils, unsuitable soils, or for limestone screening surfacing.

2. Aggregate base course (Type B): eight (8") inch compacted thickness of aggregate base course of crushed limestone (CA-6 gradation) shall be placed and compacted on the prepared subgrade.

3. A subgrade proof-roll for trails will be required. The proof-roll vehicle shall be a tandem-axle dump truck carrying at least 14 tons of aggregate. A delivery ticket confirming the weight of aggregate is required. Any subgrade deflections in excess of one-half (1/2") inch will require over-excavation of the subgrade and a follow-up proof-roll after the aggregate base is placed. If the subgrade passes the proof-roll test with no deflections in excess of one (1") inch, then no additional proof-rolls will be required. Any deflections in excess of one (1") inch during follow-up proof-rolls will require thickening of the asphalt section by an amount to be determined by the city.

4. If the trail is along a utility corridor, the path's subgrade and subbase thickness should be analyzed/designed to carry the utility's maintenance vehicles.

5. Permeable pavement will require additional information on the subgrade soil for verification that the water can percolate. If poor subdrainage conditions exist, an underdrain storm sewer or drainage system shall be recommended and designed.

J. Surface Course

1. Limestone screening surfaces shall consist of limestone screenings (FA-5) with a minimum compacted thickness of two (2") inches to be placed and compacted on the prepared aggregate base course. The finished surface shall meet all minimum slope requirements, and be free of ruts, depressions, or humps.

2. Bituminous concrete surface course shall be two (2") inch compacted thickness of bituminous asphalt surface course and shall be placed on the prepared aggregate base course. The finished surface shall meet all minimum slope requirements and compaction tests and be free of ruts, depressions, or humps.

3. The concrete surface should be a minimum thickness of five (5") inches of concrete on an aggregate base course, and six (6") inches thick where it crosses driveways, farm lanes, or other areas where vehicular traffic is anticipated. The concrete shall have a minimum breaking point of 3500 p.s.i. at 28 days and the finished surface should have a cross slope of one-quarter (¼") inches per foot. Broom finish tooled joints every six (6') feet. Expansion joints every 100 feet.

4. Stamped concrete must follow IDOT policies and guidelines.

5. Porous pavement can be used for trails and must follow the most current industry standards and installed by a contractor knowledgeable in the trade. All designs are subject to City approval.

6. Concrete pavers are not desired for bike trails unless they are incorporated into a trail head and will meet the industry standards for concrete pavers.

K. Additional Site Improvements

1. Sitting areas: Areas specifically designated where trail users may safely stop and sit and/or rest adjacent to or away from the trail. Sitting areas will be located in conjunction with existing or proposed parks, historic, scenic, or unique points of interest.

   a. Each location will be individually designed and take into consideration the existing features of the site and trail alignment.

   b. The design of a sitting area will be an integral part of the final approved site plan for the park.

   c. The design of a sitting area along the trail itself will not interfere with user traffic.

   d. The site design will be approved by staff and park board.

2. Landscaping: Additional landscaping may be required to buffer residential, commercial, or industrial land uses as recommended by Staff.

   a. The landscape plan approved must be compliant with the City's Landscape Ordinance.

   b. Fencing may be considered (where necessary) because of right-of-way space limitations. The fencing shall be appropriately designed to be consistent with the character of the location and trail system. Fencing must meet the ordinance requirements and be approved by the City.

L. Trail Conversions

1. Converting existing trails shall be done to conform to the requirements of these standards. After existing conditions are reviewed, the City can grant design variances on a case by case basis.

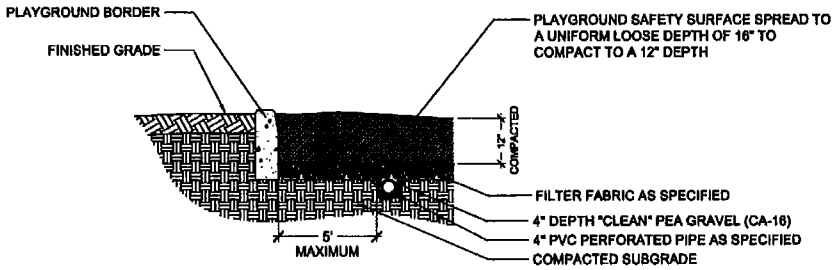
SECTION 9: PLAYGROUND IMPROVEMENTS:

A. Playground or other park improvements desired by the developer must submit all construction methods, including, but not limited to, equipment, materials, grading, and drainage.

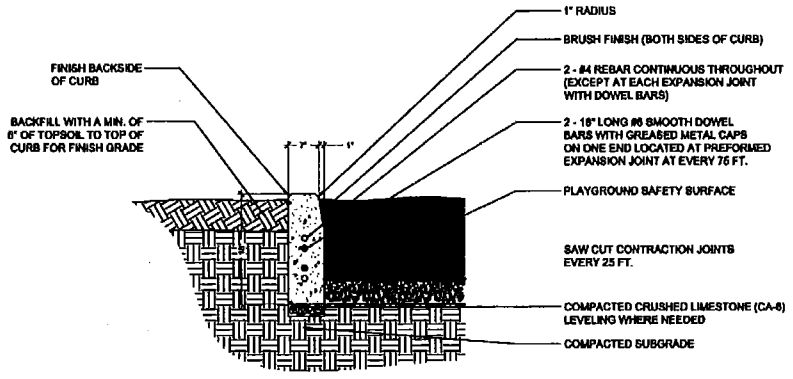
B. Playgrounds shall be designed with accessible curbing, concrete retaining curb, and surfacing as shown on the following details.

PLAYGROUND SAFETY SURFACE

1. The playground safety surface shall be an engineered wood fiber made from virgin hardwoods, with no chemicals or recycled or used materials.
2. It shall meet or exceed all required playground surfacing guidelines and comply with A.D.A. requirements for wheelchair accessibility and shock absorbency.
3. The City shall receive a sample of the wood fiber surface and the name of the supplier for approval.



SAFETY SURFACE AND DRAINAGE DETAIL
NOT TO SCALE



PLAYGROUND CONCRETE CURB DETAIL
NOT TO SCALE

C. Until acceptance by the Park Board, the developer shall maintain any park improvements in a safe and clean condition, including inspections for dangerous objects, vandalism, trash pick-up, and wear and tear. Turf must be fully established and all improvements and requirements specified in this document must be completed prior to City acceptance.

SECTION 10: DEVELOPER OBLIGATIONS

The following items are regulations and requirements of all developer improved park land until accepted by the City.

A. General

1. All rubbish and debris including, but not limited to, old tires, construction material, fencing, tree houses, trash, and other material not desired by the City, shall be removed from the site.

2. The City shall not be held liable for any injuries or damages that may occur on such a park site, and shall be held free and harmless from any and all claims that may be submitted.

3. All storm water structures shall include proper grates and covers to protect the public and shall be maintained free of debris to ensure unrestricted flow of storm water runoff.

B. Turf

1. Turf shall be mowed at regular intervals and shall not exceed four and one-half (4.5") inches in height.

2. Areas of erosion, including but not limited to swales, slopes and around storm structures shall be repaired/restored in accordance with grading and seeding requirements. All areas within ten (10') feet of on-site structures shall be sodded rather than seeded for erosion control purposes. Full establishment of turf is required before acceptance.

3. In cases where existing trees and shrubbery are present on the site, deadwood and undesirable trees or thinning of dense growth shall be removed. This may include branches or entire trees and shrubs. All stumps shall be ground to twelve (12") inches below grade, backfilled and restored in accordance with grading and seeding requirements.

4. Fully established turf is defined as 90% free of weeds and bare spots, vigorously growing, and containing a well established root system with multiple blades per plant.

C. Planting

1. Maintenance shall begin immediately after the planting is completed and shall continue until final inspection and acceptance. This shall consist of weeding, watering, mulching, spraying, resetting plants to proper grades or upright position,

repair of water saucers or other work that is necessary to maintain the health and satisfactory appearance of the plantings.

2. Watering: Additional watering, up to 50 gallons per tree, shall be performed at least once within every 30 days during the months of May through October. The schedule for watering within the 30 day increment will be determined by the City. Should excessive moisture conditions prevail, the owner may delete any or all of the additional watering cycles or any part of said cycles. The contractor shall not be relieved in any way from the responsibility for unsatisfactory plants due to the amount of supplemental watering.

3. Weeding: Weeds and grass growth shall be removed from within the earthen saucer of individual trees and from the area within the periphery of the mulched plant beds. This weeding shall be performed at least once during the months of May through October. The City will determine the weeding schedule. The contractor shall not be relieved in any way from the responsibility for unsatisfactory plants due to the extent of weeding.

4. The contractor shall guarantee all plant material for a period of one (1) year from the date the plants are accepted by the City.

REFERENCES

Guide for the Development of Bicycle Facilities, AASHTO, 1999
Illinois Department of Transportation Standard Specifications, 2002
Kendall County Trails and Greenways Plan, 2004
United City of Yorkville Land Cash Ordinance
United City of Yorkville Park Development Standards, 2004
United City of Yorkville Standard Specifications for Improvements
Yorkville Parks and Recreation Department, Bicycle/Pedestrian Trail System, Standards and Design, 2002
IDOT-Bureau of Design Manual, Chapter 17, Bicycle and Pedestrian Accommodations
IDOT-Bureau of Local Roads Manual, Chapter 42, Bicycle Facilities
Capital Development Board-Illinois Accessibility Code
Federal Highway Administration-Implementing Bicycle Improvements at the Local Level