

ORDINANCE NO. 212

AN ORDINANCE REGULATING DEVELOPMENT OF PROPERTIES  
CONTAINING ENVIRONMENTALLY SENSITIVE AREAS

SECTION 1 - PURPOSE.

The purposes of this ordinance are as follows:

- A. To permit and define the reasonable use of properties that contain environmentally sensitive areas while recognizing the importance of environmental resources and protecting such resources from destruction.
- B. To protect the public from injury and property damage due to flooding, erosion, and other natural hazards which may be exacerbated by development of environmentally sensitive land.
- C. To provide for the mitigation of disturbances of environmentally sensitive areas and natural resources by requiring and implementing suitable mitigation plans.

SECTION 2 - APPLICABILITY.

- A. *Applications; Alternative Processes; Incorporated Maps.*
  - 1. Application Required: Prior to any clearing, grading or other development activity on tracts of land or portions of tracts of land containing any protected sensitive areas specified in section 2.B. of this ordinance, either (i) an application for sensitive areas review must be submitted and approved in accordance with the provisions of section 3 of this ordinance or (ii) an application for confirmation of exemption must be submitted and approved in accordance with the provisions of section 2.C. 1-C.4. of this ordinance. In circumstances encompassed by the exemption provided by section 2.C.5 of this ordinance, however, an application for confirmation of such exemption may be submitted no later than seven calendar days after the grading, clearing, or other development activity such exemption allows prior to the submission of such application.

2. Alternative Processes: In accordance with the provisions of section 6 of this ordinance, sensitive areas review and approval or confirmation of sensitive areas exemption also may be accomplished in accordance with the substantive provisions of this ordinance as part of either (i) the review and approval of a planned unit development under the provisions of Ordinance No. 79 or (ii) the review and approval of a subdivision plat under the provisions of Ordinance No. x199.
3. Maps Not Authoritative: The maps incorporated as Appendices to this ordinance are suggestive of the presence of potential environmentally sensitive areas, but property owners bear the initial responsibility to investigate and determine whether any potentially environmentally sensitive areas are protected sensitive areas subject to the regulations of this ordinance.

B. *Protected Sensitive Areas*. Properties containing any of the following environmentally sensitive areas are subject to the regulations of this ordinance.

1. Archaeological Sites: Sites containing prehistoric artifacts, historic objects, or significant archeological materials such as a prehistoric human settlement or human remains.
2. Regulated Slopes: Slopes of at least eighteen percent (18%) over a horizontal run of at least ten feet.
3. Municipally Regulated Stream Corridors:
  - a. A stream or drainage way with banks having slopes of eighteen percent (18%) or more which are indicated with dashed blue lines on the Stream Corridors & Stormwater Flowpaths Map incorporated as Appendix B of this ordinance.
  - b. If it is determined through field verification by a qualified professional, such as a geologist or hydrologist, that a dashed blue

line or a portion of a dashed blue on the Stream Corridors & Stormwater Flowpaths Map incorporated as Appendix B of this ordinance does not represent a watercourse with banks having a slope of 18 percent (18%) or more, then said watercourse or portion of a watercourse will not be considered a municipally regulated stream corridor for purposes of this ordinance. In such an event, a report prepared by said qualified professional must be submitted to the City Engineer that demonstrates to the satisfaction of the City Engineer that the subject watercourse does not have the aforementioned defining characteristics of a stream corridor.

c. As indicated in section 10.B. of this ordinance, streams shown with solid blue lines on such map are Federally Regulated Jurisdictional Streams subject to regulation by the U.S. Army Corps of Engineers Rock Island Branch.

4. Woodlands: A grove of contiguous native and non-invasive trees with touching canopies covering at least 0.25 acres where more than fifty percent of the grove's area is covered by the canopies of trees that are at least 8 inches in trunk diameter at breast height.

C. *Exemptions*. The uses, activities, and structures described in sections 2.C.1., 2.C.2., 2.C.3, and 2.C.4 of this ordinance are exempt from the requirements of this ordinance, but such exemptions are conditioned on an applicant's applying for and obtaining a confirmation of such exemption from the City Engineer prior to any clearing, grading or other development activity on a property. The uses, activities, and structures described in section 2.C.5. of this ordinance also are exempt from the requirements of this ordinance, but such exemption is conditioned on an applicant's applying for confirmation of such exemption from the City Engineer within seven calendar days after the clearing, grading, or other development activities encompassed by such exemption. In all instances, the City Engineer's confirmation of an exemption shall be granted or denied within seven calendar days of

the City Engineer's receipt of an application for such confirmation.

1. Maintenance/Expansion of Existing Single-Family or Two-Family Residences: Grading, clearing, or development activities on a tract of land for the purpose of construction, landscaping, or associated improvements for normal maintenance, expansion, exterior remodeling, reconstruction or replacement of a single-family or two-family use in existence as of the date of the enactment of this ordinance, provided any new construction or related activity will not increase the footprint of the structure and/or paving lying within the sensitive area by more than a cumulative total of one thousand (1,000) square feet.
2. Construction of New Single-Family or Two-Family Residences: Grading, clearing or development activities on a tract of land for the purpose of construction, landscaping or associated improvements for a one single-family use or one two-family use not in existence as of the date of the enactment of this ordinance, provided (i) the total footprint of the structure and/or paving does not exceed a maximum total of five thousand (5,000) square feet in area and (ii) there is no encroachment by said activities into a protected sensitive area.
3. Groundwater Monitoring Wells And Stormwater Facilities: Normal and routine maintenance of existing drainage and stormwater management facilities, including vegetative maintenance for access and stormwater/flood control purposes within and adjacent to drainage ways.
4. Woodland Management Activities. Practices consistent with forest management standards established by the Forest Stewardship Council (currently available at <https://us.fsc.org/preview.fsc-us-forest-management-standard-v1-0.a-235.pdf>).
5. Emergency/Public Safety: Grading, clearing, removal or other activities required for emergency situations involving immediate danger to life, health

and safety, or which create an immediate threat to person or property or which present a substantial fire hazard.

D. *Uses, Activities And Structures Allowed Within Protected Sensitive Areas.* The following uses, activities, and structures are allowed within protected sensitive areas and required buffers where it can be shown that such a use, activity, or structure will not be detrimental to the functioning of sensitive areas or associated buffers, or pose a public safety hazard, subject to approval by the City Engineer or the Zoning Commission during the applicable sensitive areas review process:

1. Parkland, private open space, and trails that provide opportunities for environmental interpretation and are designed to incorporate features that protect areas of wildlife habitat, water quality and the natural amenities in protected sensitive areas and buffers.

2. Stream crossings, such as bridges, roads and culverts, or stream bank stabilization measures, provided they are designed to minimize any reduction of the flood carrying capacity of the stream caused by such structures and are in compliance with all federal and state regulations.

3. Essential public utilities such as storm and sanitary sewers; water mains; gas, telephone and power lines, and storm water detention facilities so long as they have been designed and constructed to minimize their impact upon the protected sensitive areas and associated buffers. The design and construction of utilities should also include measures to protect against erosion, pollution and habitat disturbance, and result in minimal amounts of excavation and filling. Upon completion of the installation of the public facility or line, the sensitive protected areas and associated buffers shall be restored by those persons responsible for the disturbance.

### SECTION 3 - APPLICATIONS FOR SENSITIVE AREAS REVIEW

A. *Applications for Sensitive Areas Review.*

Applications for sensitive areas review must be submitted to the City Engineer.

B. *Level I Sensitive Areas Review.*

1. Except for exempted activities as listed in section 2.C. of this ordinance, a Level I sensitive areas review is required prior to development activity on property that contains any protected sensitive area listed in section 2.B. of this ordinance, but for which a Level II sensitive areas review is not required.

2. A sensitive areas development plan submitted with the application for a Level I sensitive areas review must delineate any protected sensitive areas and associated buffers according to the specific regulations contained in sections 6-9 of this ordinance.

3. Within thirty calendar days of receiving an application for a Level I sensitive areas review, the City Engineer shall determine whether a submitted sensitive areas development plan complies with sections 6-9 of this ordinance. If the City Engineer identifies any deficiencies, the development plan may be revised and the City Engineer shall determine within fifteen days of receiving the revised plan whether it complies with section 6-9 of this ordinance.

C. *Level II Sensitive Areas Review.*

1. Except for exempted activities listed in section 2.C. of this ordinance, a Level II sensitive areas review is required prior to development on properties for which any of the following activities are proposed:

a. Any development that contains protected sensitive areas and for which any modifications to the underlying zoning or subdivision regulations are requested.

b. The disturbance of more than thirty five percent (35%) of the critical slopes or their required buffers on a property.

c. Disturbance of a protected slope, an altered protected slope, or their required buffers.

d. The removal of any portion of a woodland.

2. The submittal of a sensitive areas development plan is required for properties containing protected sensitive areas for which a Level II sensitive areas review is required. Such sensitive areas development plan must delineate protected sensitive areas and associated buffers according to the specific regulations contained in sections 6-9 of this ordinance.

3. Within thirty calendar days of receiving an application for a Level II sensitive areas review, the City Engineer shall transmit to the Zoning Commission a written report assessing the submitted sensitive areas development plan's compliance with sections 6-9 of this ordinance. Within thirty calendar days of the transmittal of such report, the Zoning Commission shall determine whether a submitted sensitive areas development plan complies with sections 6-9 of this ordinance. If the Zoning Commission identifies any deficiencies, the development plan may be revised and the Zoning Commission shall determine within fifteen

calendar days of receiving the revised plan whether it complies with section 6-9 of this ordinance.

4. If a Level II sensitive areas review is required and other protected sensitive areas exist on the property, any subdivision, rezoning, or planned unit development application must include all evidence and all required information for all protected sensitive areas on the property.

#### **SECTION 4 - MODIFICATIONS TO ZONING AND SUBDIVISION REQUIREMENTS.**

Through the planned unit development process, certain specified modifications to the underlying zoning or subdivision regulations may be made to provide for flexibility in the design of a site. On sites that contain protected sensitive areas the planned unit development process may be used in order to cluster development away from sensitive features. If modifications to any underlying subdivision or zoning regulations are requested, a Level II sensitive areas review is required, regardless of the nature of the protected sensitive areas on the site.

#### **SECTION 5 - COMPLIANCE MEASURES.**

- A. *Compliance With Approved Plans Required.* Approval of a sensitive areas development plan is authorization to proceed with development activity according to the provisions and restrictions set forth in such plan and associated papers, including, but not limited to, compliance with all construction area limits, conservation easements, and specified construction practices. Any development activity at variance with the approved plan and/or associated papers shall be deemed a violation of these regulations and subject to enforcement by means of the City Building Inspector's delivery of a written stop work order to the owner of the involved property. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions upon which the cited work will be permitted to resume. If such conditions are not satisfied with sixty calendar days, any previously

issued permits may be revoked.

- B. *Recording Requirement.* Approved sensitive areas development plans shall be recorded with the Johnson County Recorder's Office by the owner of the involved property prior to issuance of any certificate of occupancy for the property. Such recording will function to provide notice to subsequent property owners that environmental limitations apply to the subject property.
- C. *Performance Guarantee.* A performance guarantee may be required to ensure completion of conservation measures, including plantings and other mitigation or maintenance efforts required by this ordinance. Any required performance guarantee must be in the form of a cash deposit, certified check, or irrevocable standby letter of credit in the amount of the estimated cost of such conservation measures as determined by the applicant and verified by the City Engineer.

#### **SECTION 6 - ARCHEOLOGICAL SITES.**

If, during the course of grading or construction, prehistoric artifacts, historic objects, or significant archaeological materials such as a prehistoric human settlement or human remains, are encountered, the City Engineer must be notified. The City Engineer shall notify the state historic preservation officer and the state archeologist, who may take steps to excavate and preserve the objects, if practical, or in the case of human burial grounds, the state archeologist will determine whether or not the human remains can be disinterred. If it is determined that the human remains cannot be disinterred, the portion of the property containing the human burial ground shall be returned to its preconstruction condition by those persons responsible for the disturbance.

#### **SECTION 7 - REGULATED SLOPES.**

A. *Purpose.* The purpose of regulating development on and near regulated slopes is to:

1. Promote safety in the design and construction of

developments;

2. Minimize flooding, landslides and mudslides;

3. Minimize soil instability, erosion and downstream siltation; and

4. Preserve the scenic character of hillside areas, particularly wooded hillsides.

B. *Regulated Slope Categories.* The following categories of regulated slopes are subject to the provisions of this ordinance:

1. Steep Slope: A slope rising at least eighteen percent (18%), but less than twenty-five percent (25%) over a horizontal run of at least 10 feet. A steep slope where at least fifty percent (50%) of the slope's overall area is covered by the canopies of trees that are at least 8 inches in trunk diameter at breast height shall be regulated the same as a critical slope.
2. Critical Slope: A slope rising at least twenty-five percent (25%), but less than forty percent (40%) over a horizontal run of at least 10 feet. A critical slope where at least fifty percent (50%) of the slope's overall area is covered by the canopies of trees that are at least 8 inches in diameter at breast height shall be regulated the same as a protected slope.
3. Protected Slope: A slope rising at least forty percent (40%) or more over a horizontal run of at least 10 feet.
4. Altered Protected Slopes: Any slope rising at least forty percent (40%) or more over a horizontal run of at least 10 feet that was created by human activity such as cutting or filling occurring prior to the adoption of Ordinance No. 128 on February 11, 2003. An altered protected where at least fifty percent (50%) of the slope's overall area is covered by the canopies of trees that are at least 8 inches in diameter at breast height shall be regulated the same

as a protected slope.

C. *Environmental Review Required.* A sensitive areas development plan for property containing regulated slopes must include evidence demonstrating that all regulations of this section will be met. Such plan must include the following information:

1. A delineation of all steep, critical, and protected slopes, the canopies of all trees of at least 8 inches in diameter at breast height covering such slopes, and all required buffer areas.
2. A grading plan showing contours at two-foot (2') intervals..
3. A delineation of construction area limits.

D. *Buffer Requirements:*

1. A buffer will be required around all critical slopes and all steep slopes regulated the same as a critical slope because at least fifty percent (50%) of such slope's overall area is covered by the canopies of trees that are at least 8 inches in trunk diameter at breast height. One foot (1') of buffer must be provided for each foot of any such slope's vertical rise, but subject to a minimum buffer of four feet (4') and a maximum buffer of twenty-five feet (25'). The buffer area is to be measured from the top, toe and sides of any such slope. No development activity, including removal of trees and other vegetation, will be allowed within the buffer.

2. A buffer will be required around all protected slopes and all critical slopes or altered protected slopes being regulated the same as a protected slope because at least fifty percent (50%) of such slope's overall area is covered by the canopies of trees that are at least 8 inches in diameter at breast height. Two feet (2') of buffer must be provided for each foot of any such slope's vertical rise, but subject to a minimum buffer of eight feet (8') and a maximum buffer of fifty feet (50'). The buffer area is to be measured from the top, toe and sides of any such slope. No

development activity, including removal of trees and other vegetation, will be allowed within the buffer.

3. Buffer requirements for regulated slopes may be reduced or eliminated, but only pursuant to a Level II sensitive areas review. A reduction or elimination of any required slope buffer may only be approved if a geologist or professional engineer demonstrates that the proposed development activity is designed and will be constructed in ways that will not cause erosion or undermine the stability of the slope or any remaining buffer area and a landscape architect or a certified arborist demonstrates that the proposed development activity is designed and will be constructed in ways that will not cause harm to any trees of at least 8 inches in diameter at breast height that exist on the slope.

E. *Design Standards For Regulated Slopes.*

1. Any area that is a protected slope or a critical slope or an altered protected slope being regulated the same as a protected slope because at least fifty percent (50%) of such slope's overall area is covered by the canopies of trees that are at least 8 inches in diameter at breast height must not be graded and must remain in its existing state, except existing vegetation may be supplemented by other plant material approved by a landscape architect or certified arborist.

2. Development activities may be allowed within areas containing altered protected slopes, but in such cases a Level II sensitive areas review is required. Approval will be based on the following criteria:

a. A geologist or professional engineer must demonstrate that development activity will not cause erosion or undermine the stability of the slope or any required buffer, and will not harm any existing vegetation on the slope as verified by a landscape architect or certified arborist.

b. The proposed development activities

must be consistent with the purposes of section 7.A. of this ordinance.

3. Construction areas must be delineated on the sensitive areas development plan and must indicate the boundaries of all intended development activities, including grading, excavation, and storage of construction materials. Except for driveways and utilities installation, no grading or excavation is allowed outside the construction area.

4. Delineated construction areas must not extend into regulated slopes or required buffers unless expressly permitted according to the provisions of this section. Regulated slopes and required buffers shall be protected during construction with fencing installed according to standards approved by the City Engineer prior to the start of any construction.

5. Encroachment of construction areas into steep and critical slopes must be minimized. If such encroachment disturbs of more than thirty-five percent (35%) of a critical slope and its required buffer, or more than thirty-five percent of a steep slope regulated as a critical slope and its required buffer, a Level II sensitive areas review is required.

6. Cut slopes must be constructed to eliminate sharp angles of intersection with the existing terrain and must be rounded and contoured as necessary to blend with existing topography to the maximum extent possible.

7. The layout of street right-of-ways, utility easements, and public utility corridors must be located so as to minimize cutting, filling, or disturbance of existing vegetation.

8. To maintain the stability of ungraded areas, existing vegetation must be retained to the maximum extent possible, and additional plantings to stabilize the slope may be required.

## **SECTION 8 - MUNICIPALLY REGULATED STREAM CORRIDORS.**

A. *Purpose.* The purpose of regulating development in and around municipally regulated stream corridors is to:

1. Preserve the value of municipally regulated stream corridors in providing conveyance and storage of storm water runoff;
2. Promote infiltration of storm water runoff;
3. Reduce stream bank erosion; and
4. Protect and enhance wildlife habitat.

B. *Environmental Review Required.* A sensitive areas development plan for property containing a municipally regulated stream corridor must include evidence demonstrating that all regulations of this section will be met. Such plan must include the following information:

1. A delineation of the municipally regulated stream corridor and the required natural buffer.
2. A delineation of a construction area limit.
3. Information regarding the characteristics of the municipally regulated stream corridor necessary to determine the allowable buffer reduction as provided in section 8.C. of this ordinance if such a reduction is requested.

C. *Municipally Regulated Stream Corridor Buffer Requirements.*

1. Required buffers shall extend along both sides and any beginning or end of the stream corridor and shall be measured from top of the municipally regulated stream corridor's banks.
2. A thirty-foot (30') natural buffer must be maintained between municipally regulated stream corridors and any development activity unless a qualified professional such as a geologist or hydrologist determines that a buffer reduction of no more than fifteen feet (15') leaving a remaining buffer of no less than fifteen feet (15') would provide adequate protection of bank stability and

would prevent bank erosion and stream sedimentation.

3. When other regulated sensitive features are located within a municipally regulated stream corridor, a fifty foot (50') natural buffer is required, unless a qualified professional such as a geologist or hydrologist determines that a buffer reduction of no more than fifteen feet (15') leaving a remaining buffer of no less than thirty-five feet (35') would provide adequate protection of bank stability, would prevent bank erosion and stream sedimentation, and would adequately protect other regulated sensitive features.

3. Applicants requesting any reduction of the natural buffers ordinarily required by sections 8.C.2. or 8.C.3. of this ordinance must demonstrate the existence of the following circumstances:

a. The natural buffer otherwise required would preclude reasonable use of the property;

b. The portion of the buffer being reduced does not contain any other sensitive areas subject to the requirements of this ordinance;

c. The portion of the buffer being reduced does not contain significant existing vegetative cover, such as native or noninvasive trees and shrubbery; and

d. That sufficient vegetative cover appropriate for filtering stormwater runoff and prevention of erosion and siltation either exists in or will be added to the remaining buffer.

4. Reductions of the natural buffers ordinarily required by sections 8.C.2. or 8.C.3. of this ordinance require a Level II sensitive areas review, and in any such review the Zoning Commission shall consider:

a. The proposed land use of the property and its potential impact on the municipally regulated stream corridor;

b. The design and layout of the proposed development in relation to the municipally regulated stream corridor;

c. The characteristics of the site and the municipally regulated stream corridor; and

d. Any other factors related to the short or long term environmental stability and health of the municipally regulated stream corridor.

D. *Stream Corridor Regulation By Other Agencies.* The approval of a sensitive areas development plan shall be in addition to the applicant's need to obtain permits required by other local, state or federal agencies (such as the Federally Regulated Jurisdictional Streams referenced in section 10.B. of this ordinance), and does not alter the applicant's obligation to satisfy and obtain all other applicable local, state or federal regulations and permits.

SECTION 9 - WOODLANDS.

A. *Purpose.* The purpose of regulating development in and around woodlands is to:

1. Reduce damage to woodlands, regulated slopes, and municipally regulated stream corridors;
2. Reduce erosion and siltation;
3. Minimize destruction of wildlife habitat; and

4. Encourage subdivision and site plan design which incorporate woodlands as amenities within a development.

B. *Environmental Review Required.* A sensitive areas development plan for property containing a woodland must include evidence demonstrating that all regulations of this section will be met. Such plan must include the following information:

1. A delineation of all woodlands.

2. The total acreage of woodlands and their location must be indicated on the plan, along with the percentage of woodlands to be removed and the percentage that will be retained.

3. If the Zoning Commission determines that all or part of any woodlands cannot be retained due to site constraints or infrastructure requirements, replacement native trees must be planted. Replacement native trees may also be allowed in cases where the City Tree Board or its designee determines that woodlands are of such low quality that planting replacement trees would improve the health of an existing wooded area or create a new wooded area of higher quality. One tree must be planted for every two hundred (200) square feet of removed woodland. Existing healthy trees not located within the woodland that will be retained and protected during construction may be counted as replacement trees if the City Tree Board or its designee determines that such trees (i) are of appropriate species, maturity, and location, (ii) will be appropriately protected during construction, and (iii) are likely to survive after construction.

4. All retained woodlands and trees must be protected in accordance with the following requirements:

a. A woodland retained in its entirety must be protected by a thirty foot (30') buffer between the outer perimeter (edge of tree canopies) of the protected woodland and any

development activity.

b. If the Zoning Commission determines in accordance with section 9.B.3. of this ordinance that any part of a woodlands cannot be retained due to site constraints or infrastructure requirements, a site tree survey must be completed and construction limit lines must be established at least eight feet (8') beyond the designated critical root zone (CRZ) for all trees located within the parts of the woodlands to be retained. The CRZ identifies an area sufficiently large enough to protect all such trees and their roots from disturbance during construction, and is defined as a radius equal in feet to the number of inches of a tree's trunk diameter at breast height. The site tree survey must identify the species, size and location of all such trees and delineate their CRZs. The site tree survey and map of construction limit lines must be submitted to the City Engineer for verification by the City Tree Board or its designee. Additional spacing from the CRZ (beyond the minimum 8 feet) may be required if needed to protect the health of trees specified for protection, as determined by the City Tree Board or its designee.

5. Woodland and tree protection methods shall be shown on any plan or plat required to be submitted prior to commencement of development activity. Protective fencing shall comply with standards approved by the City Engineer and be installed prior to the start of any construction.

6. The plan must indicate the location, species, size at time of planting, and planting method for any replacement trees.

7. Where it is not feasible to replace trees on site, replacement trees may be planted to supplement reforestation of an off site woodland approved by the City Tree Board or its designee. Any designated off site woodland must be either publicly owned property or property subject to a conservation easement.

8. Replacement trees must be approved by the City Tree Board or its designee, and to the extent possible should be non-invasive and of the same or equivalent native species as the trees being removed, unless it is determined that the trees being removed are of a species that is considered low quality. In such a case, alternative tree species will be considered by the City Tree Board or its designee.

C. *Design Standards For Woodlands.*

1. Woodlands and other existing trees designated for protection according to the approved sensitive areas site development plan shall be protected from construction activity by fencing installed according to standards approved by the City Engineer prior to the start of any construction. If a woodlands retained in its entirety is are being protected pursuant to section 8.B.4.a. of this ordinance, the protective fencing must be placed thirty feet (30') beyond the outer perimeter (edge of tree canopies) of the protected woodland. If trees in retained portions of a woodlands are being protected pursuant to section 8.B.4.b. of this ordinance, the protective fencing shall be placed a minimum of eight feet (8') beyond the designated critical root zone (CRZ) of all such trees. If any existing healthy trees not located within the woodland are being counted as replacement trees pursuant to section 8.B.3. of this ordinance, all such trees must be protected by fencing which must encompass an area sufficiently large enough to protect the tree and roots from disturbance during construction (normally determined by the canopy drip line of such trees). Additional spacing of protective fencing may be required if needed to protect the health of trees specified for protection, as determined by the City Tree Board or its designee.

2. Measures must be taken to retain and protect woodlands to the greatest extent practicable. Whenever all or part of any woodlands are not being retained, to the greatest extent practicable measures must be taken to retain and protect linkages between retained woodlands to maximize their effectiveness as

habitable space for wildlife.

3. When other environmentally regulated sensitive features are present in combination with a woodland, the regulations related to all the sensitive areas contained on the property will be considered, with the most stringent regulations applying.

4. To the extent possible, woodlands located on regulated slopes must be given the highest retention priority.

5. Street right of way, public utility corridors, and building sites should be located so as to minimize their impact on woodlands.

6. Where possible, woodlands to be protected should be located within designated public or private open space, either through dedication, a conservation easement, or control by a homeowners' association.

#### **SECTION 10 - SENSITIVE AREAS NOT REGULATED BY THIS ORDINANCE.**

##### *A. Sensitive Areas Not Found in the City of University Heights.*

1. Federally Protected Wetlands: No federally protected wetlands Type 3, Type 4 and Type 5 of two or more acres have been found within the City of University Heights.

2. Floodways: No floodways have been found within the City of University Heights.

3. Prairie Relicts and Savannah Remnants: No prairie relicts or savannah remnants have been found within the City of University Heights.

##### *B. Federally Regulated Jurisdictional Streams.*

Streams shown with solid blue lines in the Stream Corridors & Stormwater Flowpaths Map incorporated as Appendix B of this ordinance are jurisdictional streams subject to regulation by the U.S. Army Corps of Engineers Rock Island Branch, and buffers for such streams will need to comply

with regulations administered by it.

C. *Potential Wetlands.*

The Potential Wetlands Map incorporated as Appendix D of this ordinance identifies areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. To determine if a potential wetland is a bona fide wetland, the wetland diagnostic characteristics of vegetation, hydric soils and hydrology would need to be determined by a certified wetland expert.

1. Regulated Wetlands: Wetlands of less than two acres but one-tenth of an acre or larger are regulated in Iowa if they are connected by water flow to a jurisdiction stream as identified by the US Army Corps of Engineers Rock Island Branch. Potential wetlands in the vicinity of potential jurisdictional streams indicated as solid blue lines on the Stream Corridors & Stormwater Flowpaths Map incorporated as Appendix B of this ordinance may require review by the U.S. Army Corps of Engineers Rock Island Branch to determine if the stream is a jurisdictional stream and whether a potential wetland of one-tenth of an acre or larger has a water connection to such stream. If those circumstances exist, buffers for any such bona fide wetland will be required in accordance with regulations administered by the U.S. Army Corps of Engineers Rock Island Branch.

2. Other Wetlands: The City of University Heights does not separately regulate either potential wetlands that are not bona fide wetlands or bona fide wetlands of less than one-tenth of an acre. Because such areas may provide wildlife habitat and reduce stormwater runoff, however, property owners are encouraged to retain such natural or depression areas and to avoid any development activity in a surrounding buffer of at least 15 feet.

D. *Mapping of Areas by Sensitivity Index.*

The Sensitivity Index Map incorporated as Appendix E of this ordinance identifies areas that are sensitive to the impacts of development based on a combination of weighted factors such as erosive soils, overland water flow, slopes, etc. These areas are not regulated by the City of University Heights, but their identification is intended to alert property owners to the existence of areas that may require special mitigation to reduce erosion or runoff of sediment and to maintain land stability during development.

**SECTION 11 - SAVINGS CLAUSE.**

In the event any word, phrase, sentence, paragraph or section contained in this ordinance shall be held to be

invalid, unlawful, or unconstitutional for any reason, then it is hereby declared that the remaining such portions and provisions of this ordinance would have been enacted and remain in full force and effect.

**SECTION 12 - EFFECTIVE DATE.**

This ordinance shall become effective upon its passage and publication as provided by law.

**SECTION 13 - REPEALER.**

All ordinances and parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

**MAPS**

APPENDIX A - PERCENT SLOPE (POTENTIAL REGULATED SLOPES)

APPENDIX B - STREAM CORRIDORS & STORMWATER FLOWPATHS

APPENDIX C - PERCENT PARCEL COVERED BY CANOPY (POTENTIAL WOODLANDS)

APPENDIX D - POTENTIAL WETLANDS

APPENDIX E - SENSITIVITY INDEX

APPENDIX F - PERCENT PERVIOUS

APPENDIX G - PERCENT IMPERVIOUS

Adopted by the University Heights City Council this 14<sup>th</sup> day of November, 2017, and approved this 14<sup>th</sup> day of November, 2017.

  
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Louise From, Mayor

(SEAL)

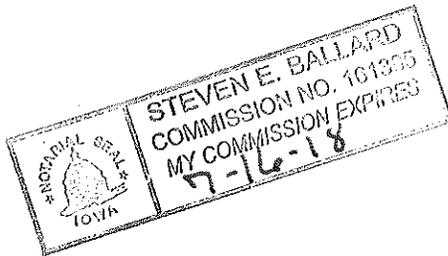
ATTEST:

Christine M. Anderson  
Christine M. Anderson, City Clerk

STATE OF IOWA            )  
                                  )    SS:  
COUNTY OF JOHNSON    )

On this 12<sup>th</sup> day of December, 2017, before me, a notary public in and for the state of Iowa, personally appeared Louise From and Christine M. Anderson, to me personally known, and who, being by me duly sworn, did say that they are the Mayor and City Clerk of the City of University Heights, Iowa; that the seal affixed to this instrument is the corporate seal of the city; and that said instrument was signed and sealed on behalf of the city, and that Louise From and Christine M. Anderson acknowledged the execution of said instrument to be their voluntary act and deed and the voluntary act and deed of the city, by it and by them voluntarily executed.

[Signature]  
Notary Public in and for the  
State of Iowa



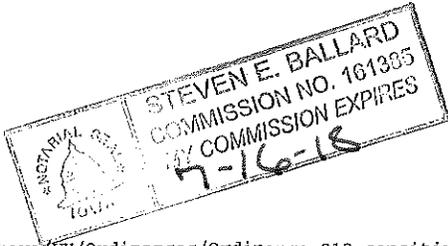
STATE OF IOWA            )  
                                  )        SS:  
COUNTY OF JOHNSON    )

I, Christine M. Anderson, being first duly sworn, certify that the above ordinance was published in the Iowa City Press-Citizen the 16<sup>th</sup> day of DECEMBER, 2017.

Christine M. Anderson  
Christine M. Anderson, City Clerk

8 Signed and sworn to before me on the 9<sup>th</sup> day of January, 2017, by Christine M. Anderson, Clerk of the City of University Heights.

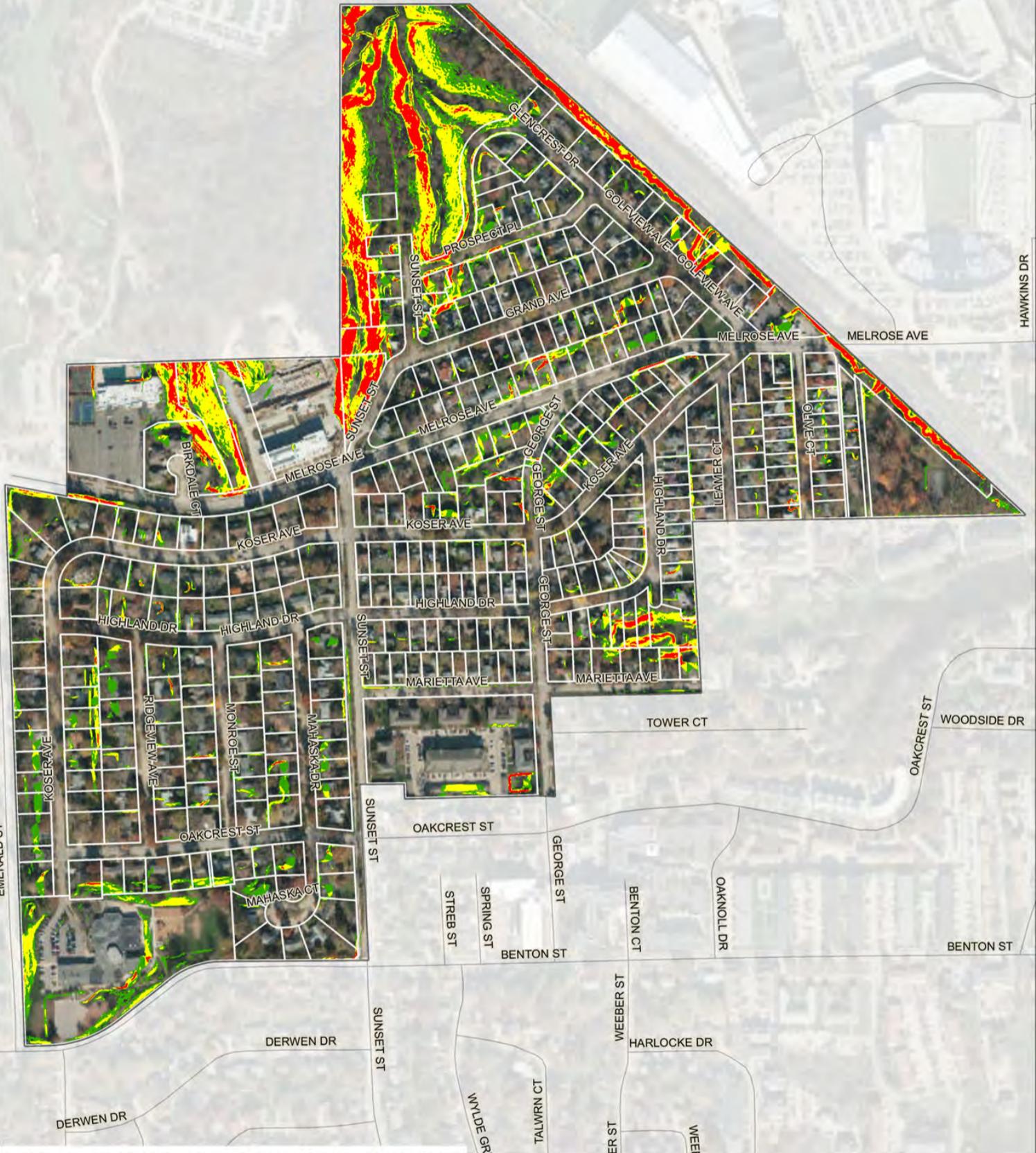
[Signature]  
Notary Public in and for the  
State of Iowa



Steve/UH/Ordinances/Ordinance 212 sensitive areas regulation 09 12 17

**Note:**

- 1) Steep slopes with a grove of trees are considered a critical slope
- 2) Critical slopes with a grove of trees are considered a protected slope



Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010; Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016

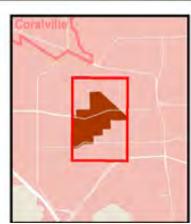
\* Percent Slope calculated using Spatial Analyst Extension and analysis of high resolution (1 square meter) LiDAR data

\*Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3). Refer to ordinance text for specific technical definitions applicable.

Date: 7/5/2017 Time: 11:20:29 AM Author: Document Path: \\EOR007\Server\Clients\Municipal\01299\_University\_Heights\0001\_Mapping\09\_GIMS\_ProjectName\GISMap\_4\_Slope.mxd



Legend	
Regulated Slopes	
<span style="color: green;">■</span>	Steep Slopes (18-25%)
<span style="color: yellow;">■</span>	Critical Slops (25-40%)
<span style="color: red;">■</span>	Protected (>40%)



**City of University Heights Sensitive Site Mapping Percent Slope (Potentially Regulated Slopes)**  
7/5/2017



Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010, Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016

\* Overland flowpaths delineated using NRCS Engineering toolbox and analysis of high resolution (1 square meter) LiDAR data

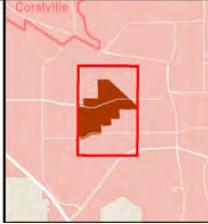
\* Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3). Refer to ordinance text for specific technical definitions applicable.

\*\* Note: No floodways are found within City Limits

Date: 7/5/2017 Time: 8:28:16 AM Author: University Heights\GIS\GIS\Elevation2.mxd Document Path: X:\Clients\Municipal\01299



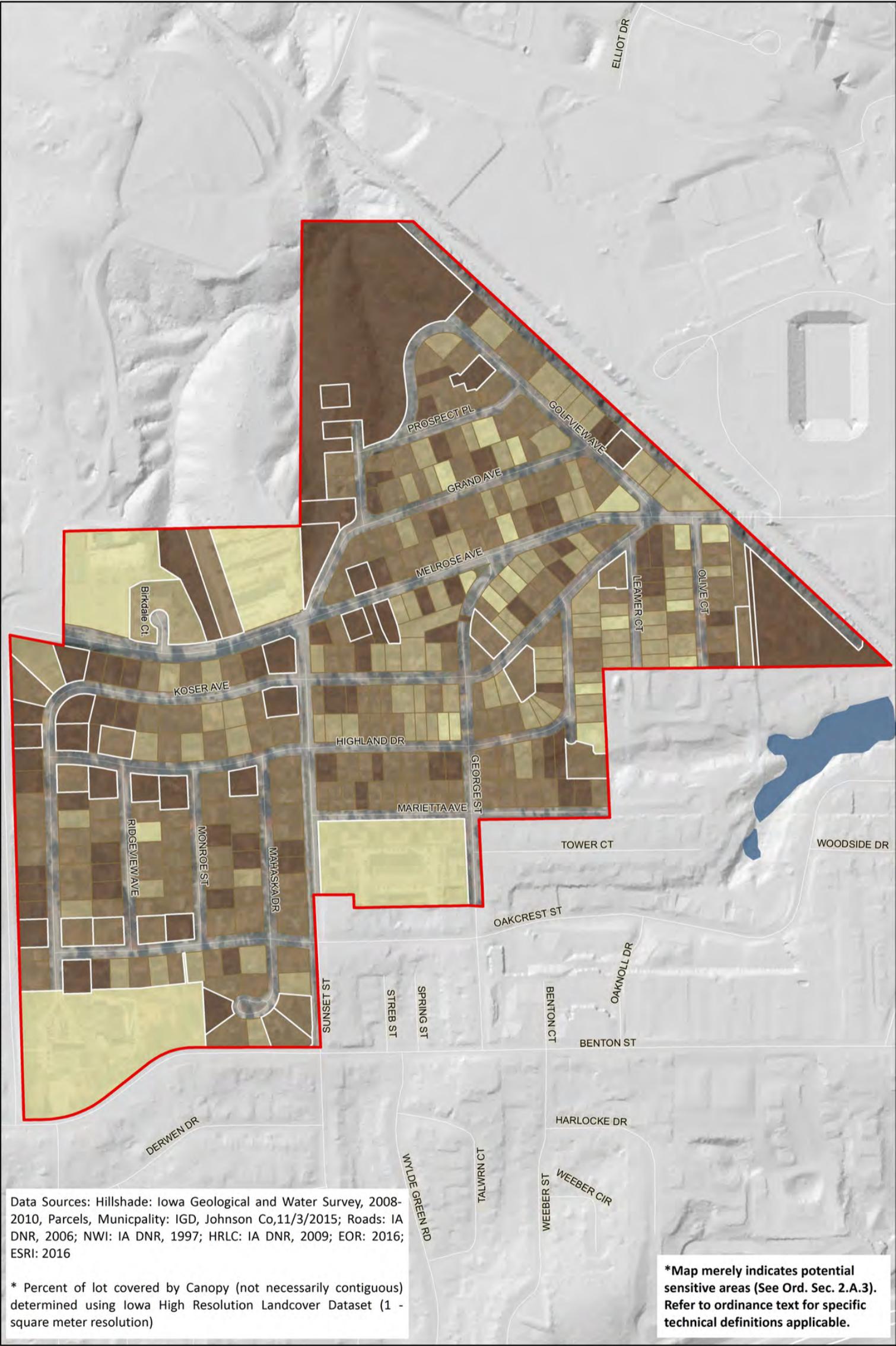
- Legend**
- Regulated stream corridors may require buffers (see Ord. Secs. 8.C. & 10.B.)
  - Federally Regulated Jurisdictional Streams
  - Municipally Regulated Stream Corridor
  - Stormwater Overland Flowpaths



**City of University Heights Sensitive Site Mapping Stream Corridors & Stormwater Flowpaths**

07/5/2017

Date: 7/5/2017 Time: 11:37:15 AM Author: ejensen  
 Document Path: \\EOR007\Server\Clients Municipal\01289 University Heights\0001 Mapping\09\_GIMS\_ProjectName\GIS\RM\_Canopy.mxd



Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010; Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016

\* Percent of lot covered by Canopy (not necessarily contiguous) determined using Iowa High Resolution Landcover Dataset (1 - square meter resolution)

\*Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3). Refer to ordinance text for specific technical definitions applicable.



Legend		Percent of Lot covered by Canopy (not necessarily contiguous)	
	University Heights		0% - 25%
	Parcel		26% - 50%
	> .25ac Potentially Contiguous Woodland		51% - 75%
			76% - 100%



**City of University Heights Sensitive Site Mapping**

Percent of Parcel Covered by Canopy (Potential Woodlands)

7/5/2017

**Not found within city limits:**  
 ~ Public Prairies  
 ~ Prairie Relicts  
 ~ Savannah Remnants  
 ~ Federally Protected Wetlands (Types 3, 4 & 5)



Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010, Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016

\* Potential wetland areas identified using Iowa High Resolution Landcover Dataset (1 - square meter resolution)

\*\* No wetlands of 1/10 of an acre or greater were found

**\*Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3). Refer to ordinance text for specific technical definitions applicable.**

**\*\* Potential wetlands may be subject to federal regulation or may be wet areas property owners may wish to maintain for wildlife habitat (see Ord. Sec. 10.C.)**

Date: 7/19/2017 Time: 8:08:51 AM Author: ejensen Document Path: \\EOR007\Server\Clients\_Municipal\01289\_University\_Heights\0001\_Mapping\08\_GIMS\_ProjectName\GIS\RM\01\_WetPrairieSava\_letter.mxd



**Legend**

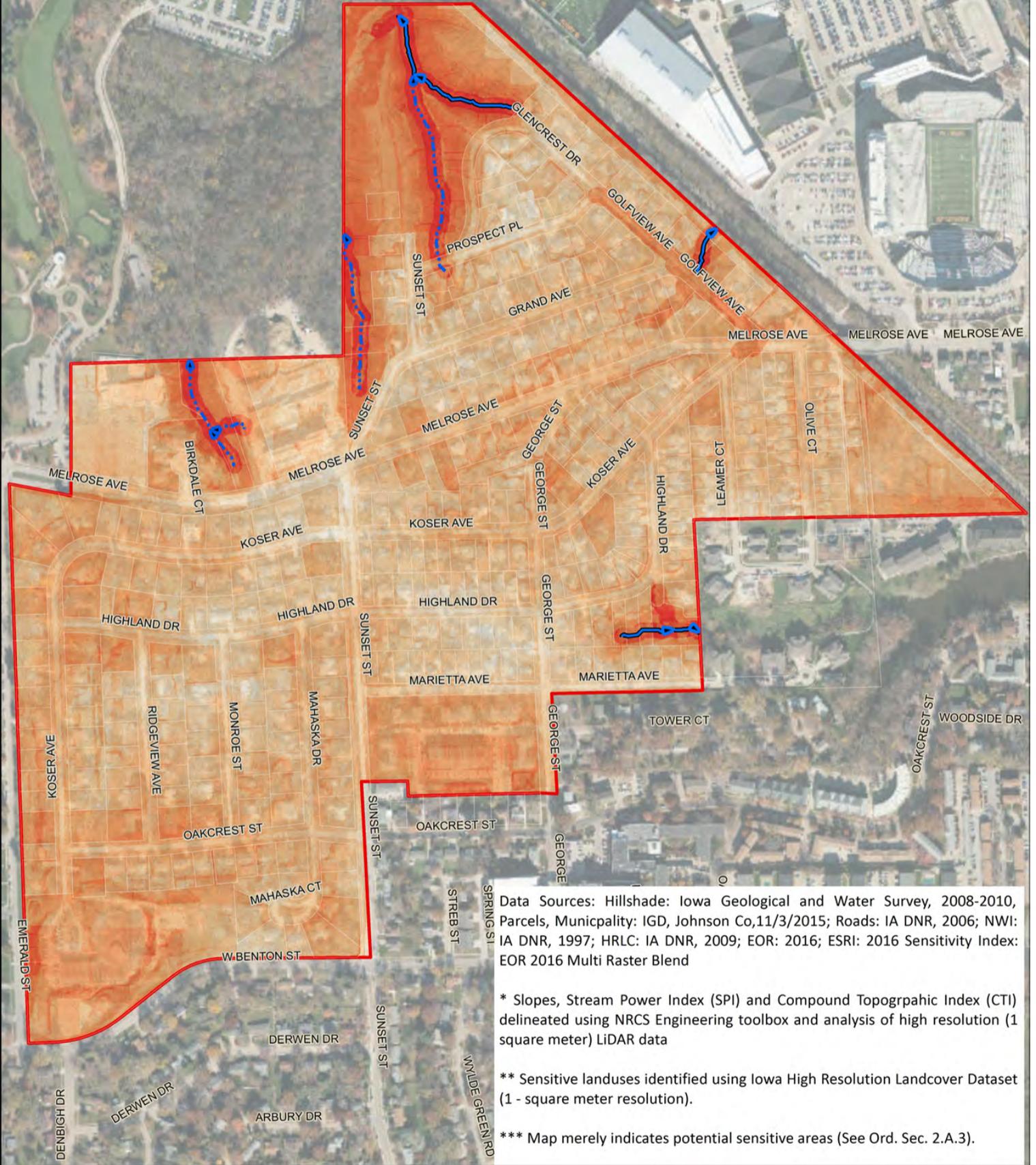
- University Heights
- Potential Wetland
- ▶ Stream flow direction



**City of University Heights Sensitive Site Mapping**  
 Potential Wetlands  
 7/5/2017



GIS Input Layer	Weight Range	Most Sensitive Score	Example of Most Sensitive Score
Distance to Jurisdictional Stream	1-10	10	Areas adjacent to perennial waterbody
Distance to Overland Flow path	1-10	10	Areas adjacent to perennial waterbody
Percent Slope	1-10	10	Protected slopes (over 40%) = 10 Critical slopes (25-40%) = 9 Steep slopes (18-25%) = 7 Non-critical slopes (15-18%) = 4 Non-critical slopes (10-15%) = 3
Woodland Lots	0-5	5	Parcel with at least 0.25 acres of forested land cover
SPI Signature	0-5	5	High SPI score, 0 equals no signature
CTI Signature	0-5	5	High CTI score, 0 equals no signature
Hydrologic Soil Group	1-5	5	Areas with type A or B soils that have a lower runoff potential.
Percent Impervious	1-5	5	Areas that are less than 20 percent impervious
High Resolution Land Cover	0-5	5	Land cover is water or wetland
NLCD 2001-2011 Change	0-5	5	No change or change to forest, grassland, water, or wetland
<b>Sensitivity Analysis</b>	<b>0-65</b>	<b>65</b>	<b>Undeveloped or lightly developed, steeply-sloped areas adjacent to surface water.</b>



Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010; Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016 Sensitivity Index: EOR 2016 Multi Raster Blend

\* Slopes, Stream Power Index (SPI) and Compound Topographic Index (CTI) delineated using NRCS Engineering toolbox and analysis of high resolution (1 square meter) LiDAR data

\*\* Sensitive landuses identified using Iowa High Resolution Landcover Dataset (1 - square meter resolution).

\*\*\* Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3).

Date: 7/5/2017 Time: 1:41:00 PM Author: Document Path: \\EOR007\Server\Clients\_Municipal\01299\_University\_Heights\0001\_Mapping\09\_GIMS\_ProjectName\GIS\Raster\Math.mxd



**Legend**

**Sensitivity Index Value**  
 High : 56  
 Low : 9

Parcel  
 Federally Regulated Jurisdictional Streams  
 Municipally Regulated Stream Corridor



**City of University Heights Sensitive Site Mapping Sensitivity Index**  
 7/5/2017

Feet  
 0 500

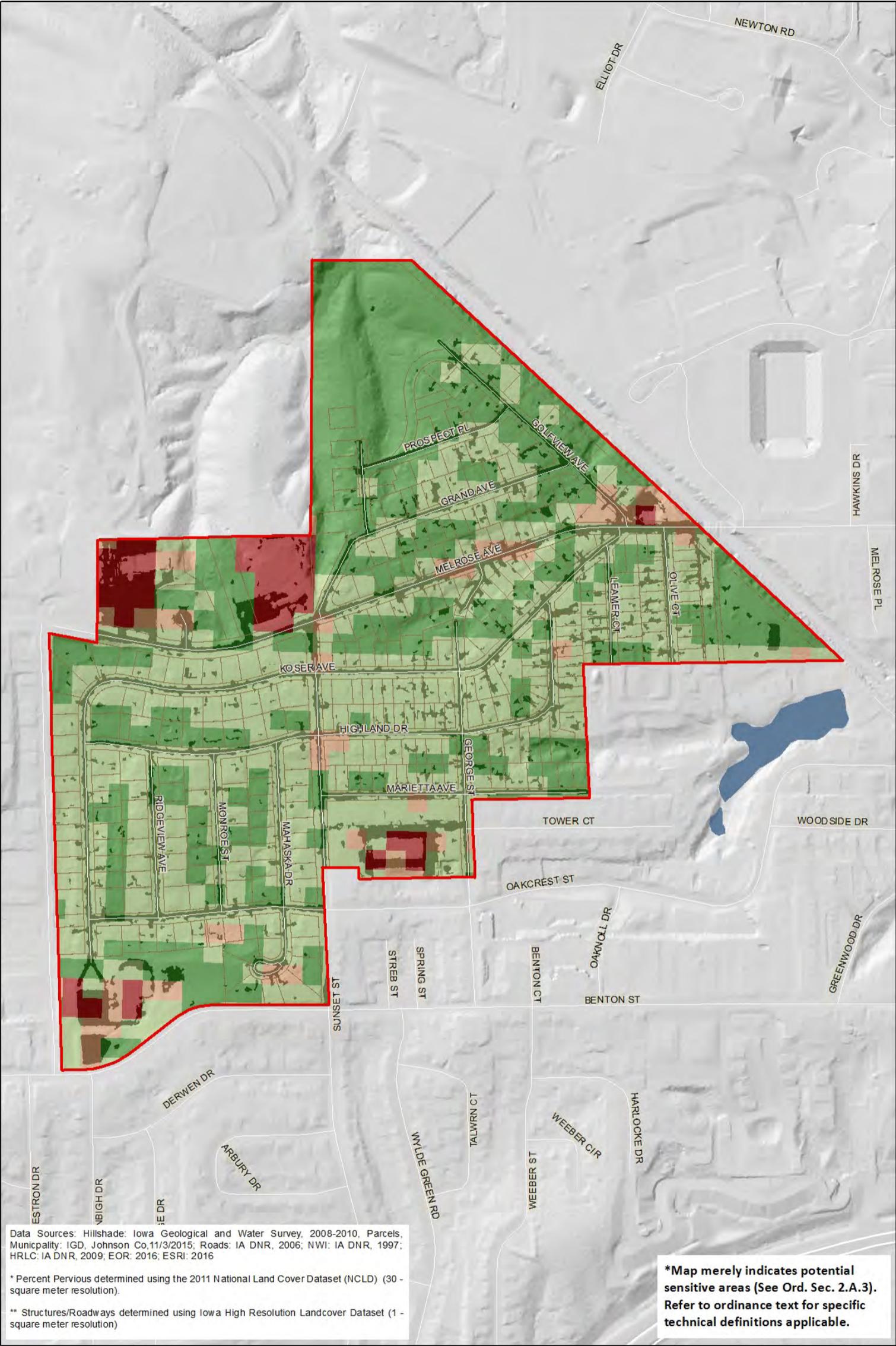
Date: 7/10/2017 Time: 10:15:47 AM Author: eljensen  
 Document Path: X:\Clients\University Heights\0001 - MAPPING\09\_GIMS\_ProjectName\GIS\RM\_LU\_Pervious.mxd

Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010; Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016

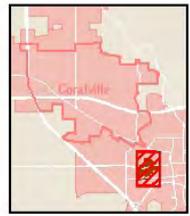
\* Percent Pervious determined using the 2011 National Land Cover Dataset (NCLD) (30-square meter resolution).

\*\* Structures/Roadways determined using Iowa High Resolution Landcover Dataset (1-square meter resolution)

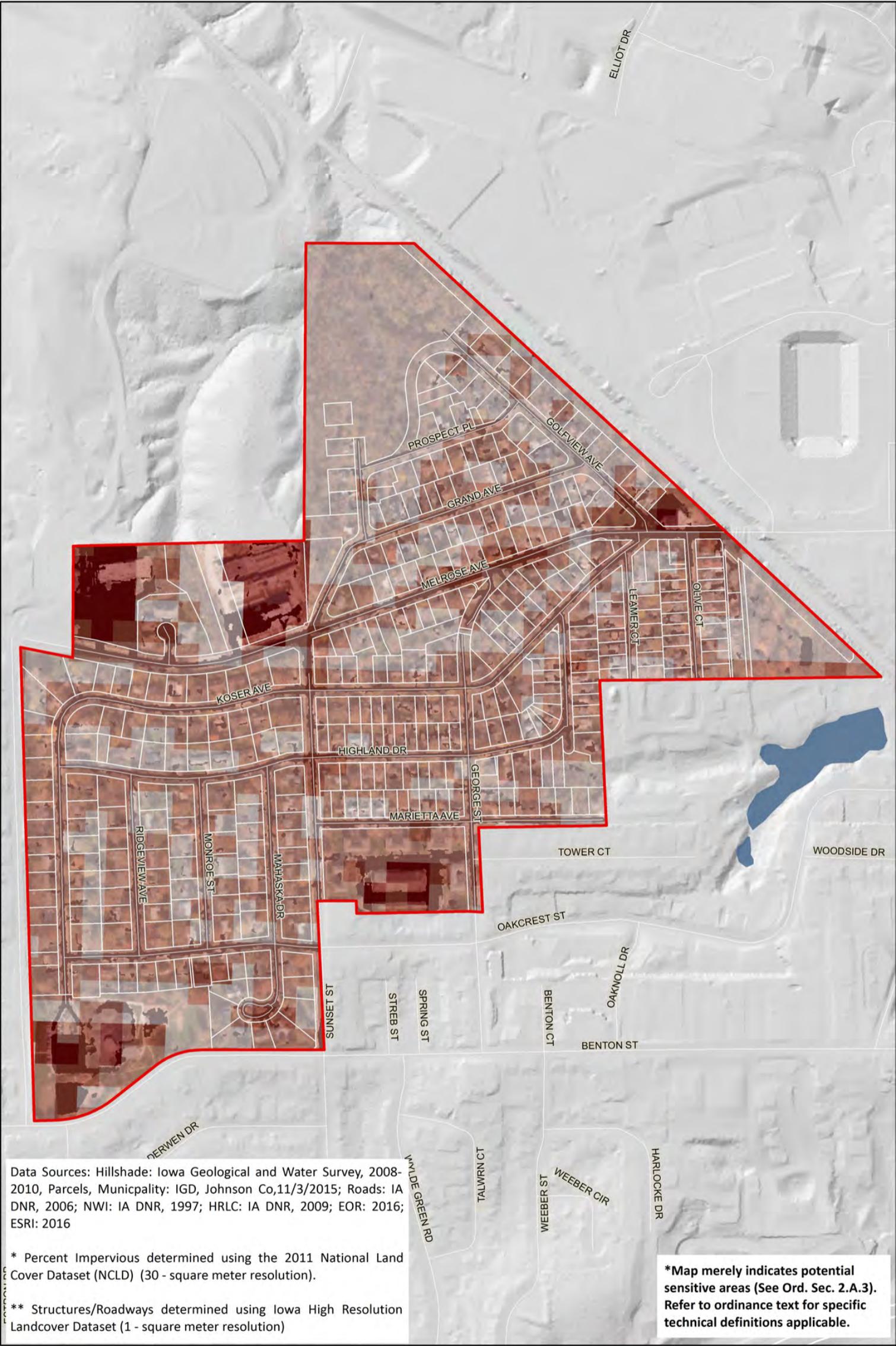
\*Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3). Refer to ordinance text for specific technical definitions applicable.



Legend		Percent Pervious	
	University Heights		4% - 25%
	Parcel		25% - 50%
	Structure or Roadway		50% - 75%
			75% - 100%



**City of University Heights Sensitive Site Mapping Percent Pervious**  
 7/5/2017



Data Sources: Hillshade: Iowa Geological and Water Survey, 2008-2010, Parcels, Municipality: IGD, Johnson Co, 11/3/2015; Roads: IA DNR, 2006; NWI: IA DNR, 1997; HRLC: IA DNR, 2009; EOR: 2016; ESRI: 2016

\* Percent Impervious determined using the 2011 National Land Cover Dataset (NCLD) (30 - square meter resolution).

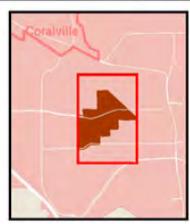
\*\* Structures/Roadways determined using Iowa High Resolution Landcover Dataset (1 - square meter resolution)

\*Map merely indicates potential sensitive areas (See Ord. Sec. 2.A.3). Refer to ordinance text for specific technical definitions applicable.

Date: 7/5/2017 Time: 10:07:07 AM Author: ejenssen Document Path: X:\Clients\Municipal\01299\_University\_Heights\0001\_Mapping\09\_GIMS\_ProjectName\GIS\RM\_LU\_imperv.mxd



Legend		Percent Impervious	
	University Heights		0% - 25%
	Parcel		26% - 50%
	Structure or Roadway		51% - 75%
			76% - 97%



**City of University Heights Sensitive Site Mapping**  
Percent Impervious  
7/5/2017