

Staff Report

**CONSERVATION SUBDIVISION ORDINANCE CHANGES AND STORMWATER
MODELING**

October 8, 2024

BACKGROUND:

On June 25, City Council reviewed input from development interests and the Friends of Ada Hayden on the City's Conservation Subdivision standards. The City Council then directed staff to retain a consultant to study the impacts of two potential changes to the Conservation Subdivision Ordinance on the Ada Hayden Watershed. **Consideration of these changes was prompted by the Ames Economic Development Commission (AEDC) Short-term Housing Taskforce, which made several requests for Council to consider development standard flexibility in order to facilitate housing construction.** These requests were originally addressed in a [March 26 staff report](#), along with the history and purpose of the Conservation Subdivision Ordinance (see Attachment A for an excerpt from the March 26 report outlining these changes).

The standards the City Council directed staff to have a consultant analyze through stormwater modeling were:

- The elimination of the mandatory 80% of lots abutting open space requirement.
- A reduction of the 25% open space set-aside to 10%.

These two standards were picked for further study because they are most directly related to the site design and potential development intensity of a subdivision, meaning they have the most direct impact on stormwater runoff in the Ada Hayden Watershed. The additional changes requested by the Taskforce can be incorporated into any ordinance amendments directed by Council related to the modeling results.

Changes to the standards would apply only to new residential developments in the Ada Hayden Watershed. In this area, the amendments would immediately impact two pending developments: the Hunziker Companies Auburn Trail project and Hayden's Preserve (formerly known as Rose Prairie) development. They would also impact a future site designated for development in Plan 2040 known as the Borgmeyer property, located south of AGCC along GW Carver Avenue (see Attachment B for a map).

STUDY RESULTS:

The consultant evaluated runoff volumes and rates anticipated from the Auburn Trail and Hayden's Preserve developments under three scenarios: 1) existing farm field conditions, 2) preliminary development plans previously prepared under the City's stormwater management standards and Conservation Subdivision Ordinance, and 3) the preliminary development plans subject to the two changes (see Attachment C for the full study). **In addition to the changes to the Conservation Subdivision Ordinance, the study also accounts for changes to the City's stormwater management**

standards mandated by Iowa's recently adopted SF 455. SF 455 limits topsoil requirements and restricted release rates for larger storm events to rates equivalent to the 5-year storm under existing conditions. It allows for continued water quality treatment and extended detention of flows from smaller storms that may lead to pollution and/or erosion issues.

The consultant found reducing the open space set aside percentage increased runoff volumes. Two primary issues could stem from increased volumes conveyed off-site through streams and waterways: channel stability and water quality related to the quantity of pollutants (sediment, nitrogen, and phosphorus). **However, the study concluded increased runoff volumes may be managed within the watershed if amendments are also made to require recommended stormwater Best Management Practices (BMPs) to protect Ada Hayden Lake's water quality both during and post-construction. Support for this conclusion relies on maintaining the City's existing stormwater management requirements in addition to the adoption of these recommended BMPs for overland runoff conveyance and runoff treatment, including fore-bays and wet ponds for sediment and phosphorus reduction. These requirements would be beyond those required for typical subdivisions but would include practices frequently used in subdivision design.**

Reduction of the 25% Open Space Set Aside to 10%

If the 25% open space requirement were eliminated, 10% of a subdivision's area would be required to be dedicated as common open space, which includes areas for stormwater treatment. **Staff estimates this change could correlate to an increased housing unit count of 5-15%, depending on site conditions and lot sizes.**

As more lots may be able to be developed, impervious coverage may increase. **Working from the assumption that 15% more of a site could be developed and that residential lots will have approximately 35% impervious coverage, the consultant found this change would result in a 5-6% increase in runoff volumes for a 1-year storm and a 2% increase for a 100-year storm (see Table 1 in the study).**

The consultant found that the increased volume could impact water quality through increased loading of pollutants.

However, the increase in volume may be managed through the use BMPs as recommended in the study. The consultant describes what specific stormwater BMPs and combinations of measures should be priorities related to the lake's water quality (see Page 9 of the study). Through the amendments, the stormwater management plans for developments would be required to demonstrate in-series BMPs that address nitrogen, phosphorous, E. Coli, and Total Suspended Solids (TSS). Efficacy of water quality BMPs under the City's current standards may achieve up to 80% removal of TSS.

In addition, staff believes appropriately designed development will provide water quality benefits in terms of reducing pollutant loads compared to current unmitigated farmland conditions.

Elimination of the Mandatory 80% of Lots Abutting Open Space Requirement

The original intent of the adjacency requirement was to direct stormwater flow through treatment measures and to create a certain character in Conservation Subdivisions. Through conversations with developers, staff believes eliminating this standard may allow for greater flexibility in site layout.

The consultant found that eliminating the requirement that 80% of lots abut open space did not

impact runoff volumes because there was no identifiable change to the impervious coverage or density.

The study does note that changing this standard may increase flow rates on a development site measured in time of concentration calculation (Tc) (see Table 2). However, the City's stormwater requirements require the peak rate leaving the site to approximate existing conditions regardless of on-site flow rates. **The study indicates downstream flow rates should not be impacted by this change even if on-site rates were higher due to the City's current requirements. The effect of the lower Tc does require the developer to create larger stormwater detention areas to hold back flows to meet City standards since water is reaching treatment areas faster.**

This change alone would not materially impact the watershed. Any impacts would be addressed by the same BMPs recommended with the open space reduction option.

OTHER CONSERVATION SUBDIVISION ORDINANCE CHANGES:

The March 26 staff report (see Attachment A) provided staff's assessment of other potential changes to the Conservation Subdivision Ordinance as suggested by the AEDC Taskforce. At that time, City Council did not provide direction regarding these issues as they awaited public input and modeling results. Staff's comments are unchanged from the March report.

Of the five other Taskforce's requests, staff believes the following standards could be modified in addition to Council's direction on the modeling findings:

- Apply wetland protections to jurisdictional wetlands of the Army Corps, rather than all wetlands
- Allow for different street lengths and more cul-de-sacs/dead ends to minimize impacts to natural resources and reduce impervious area
- Clarify the expectations and purpose of the mass grading limitations
- Clarify usable open space and trail requirements

PUBLIC OUTREACH:

Staff reached out to Auburn Trail and Hayden's Preserve representatives to alert them to the findings of the study and that the item would be on the October 8 agenda. No additional consultation occurred as the analysis was consistent with the requests of development interests and prior comments.

Staff was able to meet with Friends of Ada Hayden on October 3 to review the findings of the study in advance of the October 8 meeting. They were receptive to the changes if accompanied by other amendments to enhance water quality treatment standards. They did raise questions about the impacts on the City's constructed wetlands that filter sediment from the development sites prior to entering Ada Hayden Lake and the stream the City recently stabilized from Auburn Trail to Ada Hayden Lake. Staff indicated they did not anticipate impacts on the wetlands or waterway due to the changes in the Ordinance with additional BMPs provided.

OPTIONS:

Option 1—Eliminate both the 80% of lots abutting open space requirement and reduce the open space set-aside to 10% from 25%, along with other amendments consistent with Attachment A staff comments

Amendments studied by the consultant:

- **Elimination of the mandatory 80% of lots abutting open space requirement.** The consultant found that there would be no downstream impacts from this change. Staff believes that if the ordinance is amended to remove this requirement, it should also maintain and re-emphasize requirements for greenways connecting natural areas and the use of natural stormwater conveyance, thereby minimizing impacts on on-site flow rates.
- **Reduction of the 25% open space set aside to 10% for providing enhanced water quality practices.** While this change increases volumes and thus possibly pollutant loads, the consultant offered an alternative to offset these impacts through enhanced water quality BMPs. Multiple best management practices could be used in a series to address various pollutants of concern.

Other Changes Outlined in Attachment A:

- Apply wetland protections to jurisdictional wetlands of the Army Corps, rather than all wetland conditions
- Allow for different street lengths and more cul-de-sacs/dead ends to minimize impacts to natural resources and reduce impervious area
- Clarify the expectations and purpose of the mass grading limitations
- Clarify usable open space and trail requirements

Option 2—Only eliminate the 80% lots abutting open space requirement and other changes of Attachment A

This option would create development layout flexibility and efficiency but have minor effects on the total developable area and unit counts because of the continued requirement for a 25% open space set-aside. This option would result in less increases in the total volume of runoff compared to Option 1.

Option 3—Only reduce the open space set-aside to 10% from 25% and other changes of Attachment A

This option would maintain interconnection of residential lots with open spaces and the aesthetic of a conservation subdivision gained through the relationship of lots to natural areas but may reduce overall open space. It would still result in the increases in total volume of runoff as anticipated with Option 1.

Option 4—Do not proceed with an amendment to the Conservation Subdivision Ordinance at this time.

Given the recent changes in state law limiting city regulation of stormwater management, City Council may determine that they do not wish to proceed with a zoning text amendment at this time and instead wait until more developments have occurred under the new standards.

STAFF COMMENTS:

The Conservation Subdivision standards were adopted in 2010 to protect Ada Hayden's water quality

prior to the City's adoption of the current stormwater management requirements. In 2014, the City introduced specific numeric water quality standards for developments meeting certain thresholds. Recent state legislation does not affect these water quality requirements.

Reducing numeric requirements may mean that the ordinance no longer reflects as many conservation design principles, but the proposed amendments can still require extensive use of stormwater management BMPs to offset the impacts of eliminating mandatory lot frontage and open space set-asides.

If City Council directs staff to move forward with amendments outlined in either Options 1,2, or-3, staff would craft changes to the Conservation Subdivision Ordinance that would allow for increased development flexibility as well as address stormwater quality management through use of interconnected open spaces and BMPs that emphasize water quality treatment to the benefit of Ada Hayden Lake. Additional outreach with the Friends of Ada Hayden would occur during the preparation of the Ordinance. The Ordinance would then be reviewed by the Planning and Zoning Commission and returned to City Council for approval.

Staff believes that Option 1 can accomplish City Council's dual interests of promoting needed housing development for the City, where we have previously invested in infrastructure and, at the same time, mitigate potential impacts to water quality related to Ada Hayden Lake.

ATTACHMENT(S):

[Attachment A March 26th Excerpt.pdf](#)

[Attachment B Map.pdf](#)

[Attachment C Ames Conservation Ordinance Stormwater Study](#)