



STORMWATER MEMORANDUM

To: City of Naperville

From: Taylor Eschbach, PE
Kimley-Horn and Associates, Inc.

Date: January 23, 2023

Re: ***Audrey Senior Residences – Proposed Development
2939 Audrey Avenue
Naperville, IL 60540***

Introduction

Kimley-Horn and Associates, Inc., serves as the engineering consultant for Ryan Companies. The developer is proposing to construct a senior living residential building with associated surface parking, amenity areas, and landscaping. In addition to the proposed building construction, the proposed sitework includes grading, paving, and utility installation to serve the proposed senior living community.

The proposed site is bound by Audrey Avenue to the south, an existing retail development to the west, an existing multi-family residential development to the north, and an existing stormwater basin to the east.

Existing Conditions

The site is currently undeveloped with mild slopes generally draining from southwest to northeast. The entire site currently sheetflows to the existing regional stormwater basin that wraps the east and northeast side of the property. There is existing storm sewer to the north and east of the property that drains to the same regional stormwater basin but there is no existing storm sewer on the subject parcel.

According to coordination with City staff and record drainage reports, stormwater detention has been provided for the proposed development by the adjacent regional stormwater basin. The previously approved drainage reports titled, "Drainage Report Home Depot" dated 4/25/97 and "Storm Water Management Report For Mayfair Phase 2" approved 12/3/2013, provide for a **maximum allowable Curve Number of 92 in the developed condition.**

Proposed Conditions

The proposed development includes the addition of a proposed building, sidewalks, and surface parking which all add to the impervious coverage on the property. The Stormwater Plan provided as sheet C5.0 of the Preliminary Engineering Plan set shows the proposed impervious coverage on-site. To be consistent with the previously approved drainage report, Curve Numbers of 74 and 98 were used for pervious and impervious ground cover respectively. **The weighted Curve Number for the proposed development was calculated to be 90.9** as shown on the Stormwater Plan. This

proposed CN is less than the CN assumed for the property in the original basin sizing calculations; therefore, it is assumed that **the existing basin has sufficient capacity for the detention requirements of the proposed development.** Upon review of the Mayfair Phase 2 Stormwater Report provided by the City, the existing storm sewer does not have sufficient capacity for the proposed storm sewer flows. Therefore, the proposed storm sewer will provide a new connection the existing basin.

Although detention has been provided for the site in the existing regional stormwater basin, the addition of more than 2,500 sf of net new impervious area requires the use of PCBMPs (Post-Construction Best Management Practices). **The PCBMP requirement for the site will be met through the construction of two natively vegetated wetland bottom bioretention areas** along the east property line and the west side of the proposed building. The east parking area will sheet flow through curb cuts and down riprapped side slopes into the eastern bioretention area. The west parking area will flow through proposed storm inlets and storm sewer to the western bioretention area. The building roof area will be split and routed to these two bioretention areas via underground storm sewer connections. Excess runoff from the bioretention areas will be routed via storm sewer to the existing regional stormwater basin to the east and northeast of the property.

The proposed storm sewer system will be designed to convey the 10-year storm in accordance with City code.