Legislation Text

File #: 21-1925, **Version:** 1

TO: **Mayor and Members of City Council**

THRU: **Adam Lindsay, Assistant City Manager**

FROM: **Sheila Thomas-Ambat, PE, Public Services Director**
Jason Miles, PE, Assistant Public Services Director-Engineering
Byron Reeves, PE, Stormwater Manager

DATE: **June 7, 2021**

RE:
Lock's Creek Flood Study and LOMR Guidance

COUNCIL DISTRICT(S):
2

Relationship To Strategic Plan:
Goal 1: Safe and Secure Community
Goal 3: High Quality Built Environment

Executive Summary:
The City has developed preliminary floodplain and floodway mapping for the Locks Creek drainage basin that identify the 100-year floodplain and floodway. Structures and vacant parcels located within these boundaries have also been identified. From a regulatory standpoint, the 100-year floodplain and floodway are known as the Special Flood Hazard Area (SFHA).

Inclusion in a regulated SFHA has significant impacts to property owners. This includes more stringent development standards be adhered to, mandatory purchase of flood insurance for government back mortgages on all new home purchases and refinances, and the potential for lender required purchase of flood insurance for existing homeowners. Inclusion in the SFHA also provides property owners the opportunity to qualify for Hazard Mitigation Assistance funding to elevate existing structures or participate in a buyout program.

Staff seeks concurrence from City Council to move forward with submitting the technical data and mapping of the study to the North Carolina Flood Mapping Program (NCFPM) as a request for a Letter of Map Revision (LOMR) or Physical Map Revision (PMR). A LOMR or PMR is FEMA's modification to an effective Flood Insurance Rate Map (FIRM). A revision to the effective FIRM panel would bring the structures and parcels identified in the flood study into the regulated SFHA.

Background:

Property owners who abut Lock's Creek experience intermittent flooding and repetitive damage to their homes and properties due to floodwater. The Locks Creek drainage basin experiences extensive backwater effects from the Cape Fear River and as such is currently identified as being located within the 500-yr floodplain due to these tailwater conditions. The area is not FEMA regulated as it is not identified in the SFHA, identified more commonly as the 100-yr floodplain. Exclusion from the SFHA severely limits the ability for the area to receive hazard mitigation or disaster assistance after flooding events.

Being the area falls outside of FEMA's regulated SFHA, it also falls outside the regulations of the City's Floodplain Development Ordinance as outlined in the City's Code of Ordinances Charter 12. As a mitigation effort, City staff have been including a cautionary statement on all building permits that calls the permittee's attention to the flooding history of the property as follows:
This property has experienced severe flooding in the past two years even though it is not within special flood hazard area. Several homes in the area have had over four feet of water inside the home twice in less than two years. The City cannot require the structure to be elevated due to the fact that the homes are not within a special flood hazard area. The homeowner and/or contractor should take the flooding issue into consideration before any renovation begins.

More recent efforts to assist community involve conducting a Flood Questionnaire in the fall of 2020, targeting the Cedar Fall subdivision. The results of this community survey were used as part of a grant application submitted through the North Carolina Office of Recovery & Resiliency seeking CDBG-MIT funding to mitigate disaster risks and reduce future property loss. Unfortunately, based on the data obtained from the citizen survey, the area did not meet the Low- and Moderate-Income (LMI) threshold required to receive CDBG consideration.

The City then began engaging with North Carolina Emergency Management officials about evaluating options for mapping the floodplain near the Locks Creek subdivision. The goal of these discussions was to seek guidance on establishing a SPFA in the Locks Creek area that would provide a regulatory framework for administering flood damage prevention for future development as well as opening the door for differing types of hazard mitigation assistance. The City then contracted with the local consulting firm Gradient, whose team is currently modeling the Cape Fear 2 watershed in support of the Watershed Masterplan effort, to complete the Locks Creek flood study.

It was determined that the flood study would be broken out into two distinct phases. Phase I includes the Preliminary Floodplain Mapping presented herein, and upon Council concurrence, Phase II would include the submittal of the flood study to NCFPM in pursuit of a LOMR or PMR.

Issues/Analysis:

As part of first phase, the City's existing Cape Fear 2 HEC-MHS model was extended downstream until it joined with the Cape Fear River and was used to model the appropriate hydrology for the Locks Creek basin. The 10-, 50-, 100- and 500- year events were then evaluated.

The Gradient team then used the HEC-RAS model it was developing for the Cape Fear 2 basin, extending the limits downstream to the confluence with the Cape Fear River, to define the 10-, 50-, 100- and 500- year floodplains.

Additionally, a floodway model was developed for Locks Creek from the confluence with the Cape Fear River upstream to the headwaters of Locks Creek and along the unnamed tributary to Locks Creek. FEMA and the NCFMP have multiple criteria that must be met when developing a floodway analysis and typically, floodways are created such that the increase in water surface elevations for the 100-year flood at any cross-section approach, but do not exceed, a one-foot rise.

Preliminary mapping of the floodplain and floodway were developed using the HEC-RAS model and parcel data from the City to illustrate the 100-year floodplain boundaries, floodway limits, and impacted parcel data. A list of impacted properties both within the City and County were compiled and are attached herein.

From the preliminary mapping, there is a total of 42 parcels containing structures in which the floodway encroaches onto the parcel and 273 parcels containing structures in which the 100-yr floodplain encroaches onto the parcel. Of the 42 parcels with floodway encroachments, 27 are located in the City and 15 are located in the county. Of the 273 parcels with 100-yr floodplain encroachments, 170 are located in the City and 103 are located in the County.

There are also 80 vacant parcels with floodway encroachments (34/26 City/County) and 268 vacant parcels with 100-yr floodplain encroachments (102/166 City/County).

Phase II of the project, pending City Council approval, will be to submit the technical data and mapping to NCFPM as a request for a LOMR or PMR. The initial submittal package would include the following supporting data:

1. MT2 Forms (application)
2. Hydrologic and Hydraulic (H&H) Model
3. Work Map
4. Profiles of stream bottom and water surface elevations for the 10-, 50-, 100-, and 500-yr flood events
5. Proof of property owner notification

Follow up items for the initial submittal would require response to NCFMP comments regarding modeling, mapping, or supporting documentation. The schedule for a typical LOMR takes 6-9 month to review, but can extend longer based of the volume of submittals currently being reviewed by NCFMP. After approval of a LOMR it takes 120 days (4 months) to become the effective model and the identified areas to be included in a regulatory Special Flood Hazard Area on a FIRM panel.

The submittal and subsequent approval of LOMR will have significant impacts on property owners brought into the SPFA. Any new development, whether residential or commercial, would be held to a higher development standard and be required to meet the provisions of the City’s Flood Damage Prevention Ordinance to include provisions such as constructing finished floor elevations 2 feet above the newly established base flood elevation. If a home is purchased, refinanced, or built with a federally back mortgage, mandatory flood insurance will be required. If an existing homeowner has a federally backed mortgage, the lender can now require the mandatory purchase of flood insurance. If an existing homeowner currently has flood insurance, their insurance premiums could potentially increase as they would now be shown in the SFHA.

A LOMR also opens up the ability for property owners to qualify for Hazard Mitigation Assistance

funding. This can be achieved through Flood Mitigation Assistance (FMA) or after a declared disaster (i.e. hurricane) through HMGP. Such assistance can include elevation of existing structures or enrollment into a buyout program.

Budget Impact:
There is no impact to the current budget. Funding for moving forward with Phase II and the LOMR submittal has been budget for.

Options:
1. Direct staff to finalize and submit a formal Letter of Map Revision (LOMR) or Physical Map Revision (PMR) application to the North Carolina Flood Mapping Program (NCFPM) with the intent to revise the current FEMA FIRM panel for the study area within Locks Creek.

2. Do not provide consensus on submittal for a formal Letter of Map Revision (LOMR) or Physical Map Revision (PMR) application to the North Carolina Flood Mapping Program (NCFPM) and provide further direction to staff.

Recommended Action:
Staff recommends option 1: To finalize and submit a formal Letter of Map Revision (LOMR) or Physical Map Revision (PMR) application to the North Carolina Flood Mapping Program (NCFPM) with the intent to revise the current FEMA FIRM panel for the study area within Locks Creek.

Attachments:
2021.06.07 Locks Creek Flood Study Presentation
Locks Creek Flood Study Impacted Parcels
Cedar Falls Subdivision proposed SFHA exhibit