STAFF REPORT 09/15/2025 **PERMIT NO. 731**

ITEM: This Floodplain Permit Application is for proposed burn pit locations in the Bishop Creek floodplain near Eagle Cliff West subdivision.

BACKGROUND:
APPLICANT: Home Creations
Builder: ESO Excavation, LLC
ENGINEER: SMC Consulting Engineers, P.C.

On March 13, 2025, a floodplain notice of violation was sent to the applicant in regards to illegal fill in the Bishop Creek floodplain near Eagle Cliff West Subdivision. Trees that had been cleared for the development had been discarded into the adjacent floodplain. Two different groups of inspectors that had noted and reported the possible violation during routine inspections. Home Creations staff met with City staff to discuss a remedy. Staff recommended removal of the fill and disposal of the material offsite outside of the floodplain. The applicant indicated that removal of the material from the floodplain was not possible and proposed to burn the fill on site using an air curtain incinerator (ACI) in a 10' wide by 30' long and 10' deep burn pit. The applicant's initial floodplain permit application, Floodplain Permit Application 716, was considered by the Floodplain Permit Committee (FPC) on June 2, 2025 and denied. Reasons for the denial were related to insufficient information provided by the applicant to address concerns with potential impacts to the floodplain, and concerns that the plans submitted in the application were incomplete based on information provided by the applicant to the committee during the FPC meeting on that date. The applicant has since met with City staff to discuss the concerns related to the first application and submitted this new floodplain permit application.

STAFF ANALYSIS:
Site located in Lake Thunderbird Watershed? Yes __ No ✓

In this permit, the applicant is proposing up to 12 total burn pits. The location of those burn pits are indicated on the site grading plan provided with the application. As indicated on the plans, 5 of the 12 purposed pits are located outside of the regulatory floodplain. Burn pits will be 10' deep by 10' wide and 30' feet long. The applicant has indicated that all locations of the proposed burn pits are approximate and generally located near the stockpiled material. Several of the burn pits are located in areas, that appear from aerial imagery and verified by site inspection, to hold water. The applicant has indicated that pit locations in these areas may be shifted to avoid the ponded water. In addition, staff expressed concerns that ground water levels in these areas may prevent the applicant's contractor from being able to dig the proposed 10-foot deep holes as indicated in their application. The applicant has indicated that in this scenario, shallower pits may be constructed and a berm constructed around the areas to provide the conditions necessary to effectively burn the material using an ACI. The applicant has indicated that the burning operation will take approximately 4 months dependent on weather. When burning is complete, any pits will be restored to original grade and disturbed areas will be seeded to re-establish vegetative cover and stabilize the soil. The applicant has also indicated that any excess material left after burning operations are complete will be removed from the floodplain. The applicant has already begun preliminary discussions with the City Fire Marshall and has his conditional approval to move forward with burning as indicated in their application.

The applicant's engineers and their contractor have provided the following information about air curtain incinerators:

How an air curtain incinerator works
- An ACI consists of a fan, engine, and an air manifold with nozzles.
- When the fan is activated, it forces a high-velocity curtain of air across the top of an open chamber or pit.
- The air stream traps smoke and airborne particulate matter (PM) under the curtain, forcing it back into the combustion zone for a secondary, more complete burn.

- The rush of fresh oxygen also agitates and supercharges the fire, increasing burning temperatures to between 1,800°F and 2,500°F.
- The result is a fast, clean, and contained burn that minimizes environmental impact.

Advantages over traditional burn pits

Feature	Burn pits with an air curtain incinerator	Traditional open burn pits
Air Pollution	Drastically reduces harmful smoke and particulate matter (PM2.5) by up to 90%. Opacity is kept to less than 10% under normal operation.	Release significant amounts of uncontrolled, harmful smoke and fine particulate matter. Opacity can reach up to 80–100%.
Combustion Efficiency	Highly efficient due to a continuous supply of oxygen to the fire. Temperatures are higher, leading to faster, more complete combustion.	Inefficient, lower-temperature burn that is dependent on natural air supply.
Safety	Contains embers and sparks within the pit, significantly reducing the risk of a wildfire escaping the burn area.	Present a much greater risk of fire spreading due to the uncontrolled nature of the open flame and flying embers.
Burning Flexibility	Can burn a wider variety of materials, including "green," high-moisture vegetation, with fewer weather-related restrictions.	More restricted by weather conditions, especially wind, and is less effective at burning high-moisture fuels.
Debris Reduction	Can reduce debris volume by over 95%, leaving a small pile of ash. This reduces the need for expensive hauling and landfill disposal.	Does not reduce debris volume as quickly or completely, often leaving behind larger debris and unburned material.

According to the latest FIRM, the site of the proposed work is located in the Bishop Creek Floodplain (Zone AE). At the proposed site, the BFE is 1088.0'. Aerial images from multiple years indicate that the area is regularly inundated with water where a significant amount of the debris is currently located.

Applicable Ordinance Sections:		Subject Area:
36-533	(e)2(a)……	Fill restrictions
	(e)2(e)…..……	Compensatory storage
	(f)(3)(8) …….....	No rise considerations

(e)2(a) and (e)2(e) Fill Restrictions in the Floodplain and Compensatory Storage – Fill is restricted because storage capacity is removed from floodplains, natural drainage patterns are adversely altered, and erosion problems can develop. Compensatory storage must be provided within the general location of any storage that is displaced by fill or other development activity and must serve the equivalent hydrologic function as the portion which is displaced with respect to the area and elevation of the floodplain.

> The applicant has indicated that an air curtain incinerator will leave little to no material once the process is complete. Any remaining material will be removed from the floodplain. This would correct the existing violation and satisfy the requirement once the work is complete.

(f)3(a)(8) No Rise Considerations – For proposed development within any flood hazard area (except for

those designated as regulatory floodways), certification that a rise of no more than 0.05 ft. will occur in the BFE on any adjacent property as a result of the proposed work is required. For proposed development within a designated regulatory floodway, certification that no increase in the BFE on any adjacent property as a result of the proposed work is required.

The project engineer has submitted a No Rise statement indicating that this project will not cause a rise in the BFE at this location, meeting the ordinance requirements.

Conclusion: Staff forwards this application for Floodplain Permit #731 to Floodplain Permit Committee for their consideration.

ACTION TAKEN: _____