



Regular 11.

Planning Commission**Meeting Date:** 10/09/2025**Information****SUBJECT**

ZF #2025-009: Consider whether the Zipline Nest Z Drone Testing Facility qualifies as a “small experimental agricultural and seed research facility” to be processed as a Site Plan Review. The Project is located on the ranch of Yolo Land & Cattle Company at 24445 County Road 25, approximately 3.5 miles southwest of the unincorporated community of Esparto, on an Agricultural Extensive (A-X) zoned parcel (APN: 047-140-018). (Applicant: Zipline International, Inc. / Owner: Yolo Land & Cattle Company) (Planner: Jeff Anderson)

SUMMARY

FILE # 2025-009: Zipline International, Inc. Zoning Code Interpretation	
APPLICANT: Alyssa Pont, Deputy General Counsel, Compliance & Investigations Zipline International, Inc. 333 Corey Way South San Francisco, CA 94080	OWNER: Yolo Land & Cattle Co. Scott A. Stone and Kenneth C. Stone, Partners 37874 County Road 28 Woodland, CA 95695
LOCATION: 24445 County Road 25, Esparto, CA 95627 (APN: 047-140-018) GENERAL PLAN: Agriculture (AG) ZONING: Agricultural Extensive (A-X) SUPERVISORIAL DISTRICT: 5 (Supervisor Barajas) PUBLIC HEARING NOTICE: N/A	SOILS: Dibble clay loam, 30 to 50 percent slopes, eroded (Class VI); Tehama loam, 0 to 2 percent slopes (Class II); Sehorn-Blacon complex, 30 to 50 percent slopes, eroded (Class VI) FMMP: Grazing Land, Farmland of Local Potential, Farmland of Local Importance WILLIAMSON ACT: Agreement No. 92-273 FLOOD ZONE: X FIRE SEVERITY ZONE: High, Very High (State Responsibility Area)
ENVIRONMENTAL DETERMINATION: N/A - level of environmental review will be determined after determination of whether the project qualifies as a "small experimental agricultural and seed research facility" under the County Zoning Code.	

RECOMMENDED ACTION

That the Planning Commission:

1. Receive a staff presentation and accept public comment regarding the Zipline Nest Z Drone Testing Facility (“Project”); and

- 2.a. Determine that the Project qualifies as a “small experimental agricultural and seed research facility” in accordance with Section 8-2.306(q) of the Yolo County Code and direct staff to process a Site Plan Review for the Project;

or,

2.b. Determine that the Project does not qualify as a “small experimental agricultural and seed research facility” and require the Applicant to apply for (i) a zoning code amendment to Section 8-2.304 to include “drone testing facilities” as a use type in the A-X Zone, and (ii) zoning approval for the Project.

REASONS FOR RECOMMENDED ACTIONS/BACKGROUND

Zipline International, Inc. (“Zipline” or “Applicant”) has applied for zoning approval to authorize its existing drone testing facility that has operated on the property of Yolo Land & Cattle Company since 2017. Zipline has proposed that the facility be considered a “small experimental agricultural and seed research facility” that would be authorized in the A-X-zone through a non-discretionary Site Plan Review. The Zoning Code allows Planning staff to refer a Site Plan application to the Planning Commission “for interpretation and determination” as to whether the requested use is eligible for Site Plan Review. See YCCO § 8-2.215(d). Given the unique circumstances of the project, staff have elevated the matter to the Planning Commission to interpret the code and determine whether Zipline’s drone testing facilities fall within the “small experimental agricultural and seed research facility” use type.

BACKGROUND

Zipline’s drone testing facility is located on a five-acre site (Nest Z) on a 466-acre parcel owned by Yolo Land & Cattle Company (Attachment A). In addition to the five-acre Nest Z site, Zipline’s flight operations take advantage of the airspace over the larger 7,500-acre ranch (Attachment B). The property is zoned Agricultural Extensive (A-X). The drone testing facility includes two modular office buildings, two 1,600-sf tents, 21 Conex storage containers, 31 drone docking towers, several temporary mock delivery sites designed to simulate backyard environments, and several other ancillary structures to support its operations. Zipline also constructed a 12-foot-tall visual observation tower located approximately ¼-mile south of the main facility. In accordance with Federal Aviation Administration (FAA) regulations, the observation tower is staffed by one employee at all times when drones are aloft. Zipline employs approximately 18 employees at the project site between three daily shifts.

Water supply is sourced from an on-site well and is used for toilets, handwashing, and dishwashing only. Bottled drinking water is supplied to employees and visitors for consumption. Grid electricity is utilized for essential operations, such as the server room and kitchen, and a hybrid power system consisting of battery energy storage powered by three generators (56-54kW each) provide power to the docking stations, offices, and other areas. The site also contains one 250-gallon gasoline storage tank to fuel ATVs used on-site and two 500-gallon diesel storage tanks for the generators.

Zipline conducts 500-600 test flights per day, usually 24 hours a day, seven days a week. Drone flights are confined within the airspace of the 7,500-acre ranch and adhere to programmed buffers to prevent drones from flying over parcels not owned by Yolo Land & Cattle Company. There are approximately 7-8 drones aloft at any given time. Each flight averages approximately 1.25 to 3.7 miles round trip and lasts five to 15 minutes. Drone flights leave the docking station, follow a programmed course, and return to the docking station at the completion of each flight.

The FAA requires drones to have navigational lights that are visible from at least three statute miles. The drones have red and green position indicator lights and white strobe lights on the wings, similar to standard aircraft. Zipline has informed the County that the brightness has been lowered to the minimum levels permitted by the FAA for visibility at three statute miles. According to Zipline, the average noise level is between 50-55 dB(A) per drone at 100 feet. Most flights occur at 300-400 feet above ground and a small number of flights occur at 700 feet above ground.

In the near future, Zipline proposes to expand operations within the existing five-acre footprint, including 12 additional Conex storage containers, three additional drone docking towers, and expansion of temporary mock delivery sites. At full build out, the number of approximate daily test flights is proposed to increase to 2,500. The five-acre footprint is not proposed to increase with the expanded operations and the number of employees is not expected to increase (will stay at approximately 18 employees per day over three shifts).

Zipline has operated its drone testing facility in Yolo County since 2017. When Zipline and Yolo Land & Cattle representatives reached out to the County's Agricultural Department in early 2018, the operations were modest and the facility was mostly temporary. In the years since, however, the operations have grown and are expected to continue growing, necessitating various local permits, including for buildings, mechanical, air quality, and water and wastewater. Zipline has been in discussion with the appropriate agencies to obtain these "ministerial" permits. Attachment C shows how Zipline's footprint has expanded since 2017.

ANALYSIS

Zoning Code Authorization

An unresolved issue for the Planning Commission's consideration is whether Zipline's drone testing facility is an authorized use in the A-X zone. The A-X zone is designated for lands that "require considerably larger parcel sizes to allow extensive agricultural activities such as livestock and ranching operations, and dry land farming." (See Yolo County Code of Ordinances ("YCCO") § 8-2.302(b).) In addition to agriculture, the A-X zone "may also be used for open space functions that are often connected with foothill and wetlands locations, such as grazing and pasture land, and wildlife habitat and recreational areas." (*Id.*)

Unsurprisingly, "drone testing facility" is not a use type specified in the A-X zone. It is not unusual for a proposed use to lack an exact match to a specific use type in the code, so staff often will look to analogous uses to determine whether a use is within the general category of use types the County has authorized in that zone, both as to the activity and its impact. Some recreational uses allowed in the A-X zone might have comparable impacts to farming and the environment, such as off-road vehicle courses (major use permit), sport shooting, hunting, gun and fishing clubs (minor use permit), health resorts, spas, and retreat centers (major use permit), and rural sports activities (minor use permit). The A-X zone also allows for some industrial uses that have a similar land use impacts and generally have an agricultural nexus, including biomass fuel production (minor use permit), agricultural and seed research facilities (minor use permit), and crop dusting facilities (minor use permit). See YCCO Table 8-2.304(d). Zipline's operations are not analogous to these activities, but the impacts are roughly similar in scale. Another possible analogue is "Airports and heliports, private," which are allowed in the A-X zone with a minor use permit. See YCCO Table 8-2.304(d). For reference, the Agricultural zoning regulations are included as Attachment E.

Zipline has submitted an application for a Site Plan Review as a "small experimental agricultural and seed research facility" under Section 8-2.306(q) of the County Code of Ordinances. The facility is considered "small" because the developed area does not occupy more than five acres. (See YCCO § 8-2.306(q).) The Zoning Code defines "agricultural and seed research" as "industrial or scientific uses subordinate to, and in support of agriculture, and include product processing plants and agriculturally based laboratories or facilities for the production or research of food, fiber, seeds, animal husbandry or medicine, and may include administrative office space in support of the operation." (YCCO § 8-2.307.) Zipline's facility conducts industrial or scientific research related to the viability and reliability of drone delivery systems that are generally for commercial uses that deliver small orders to customers (like the services provided by DoorDash or Postmates), but Zipline's drones can also support animal husbandry or medicine. Thus, the key question for the Planning Commission to consider is whether the drone testing facility is "subordinate to, and in support of agriculture."

It is fairly clear that Zipline's use is "subordinate" to the larger agricultural operations occurring on Yolo Land & Cattle's ranch. The zoning code uses "subordinate" synonymously with "ancillary" or "secondary" (as opposed to a "principal use"). (See, e.g., YCCO § 8-2.507.) The operations occupy a relatively insignificant portion of the ranch (five acres is less than .1% of the 7,500 acre ranch). The flight operations do not interfere with the farming and ranching operations. There has been no indication that the site construction, employee presence, and drone testing have interfered with agriculture in the area. The drone operations are therefore not the principal use of the property and are subordinate, ancillary, and secondary to the agricultural operations.

The more challenging question is whether the project is "in support of agriculture." Zipline has provided documentation regarding the nexus between its drones and agriculture, included as Attachment D. Zipline calls itself a "public health and agricultural logistics company." It states that its technology "has primarily been used in rural and agricultural areas," claiming it has made over 1 million deliveries in those communities. Among those deliveries, Zipline points to "101,000+ animal vaccines delivered to farmers, 35,000+ animal insemination straws delivered to farmers; and dozens of agricultural- and gardening-related consumer products for homeowners and farmers in Arkansas and Texas." While staff does not minimize the potential for agricultural application of Zipline's technology, staff is also mindful that Zipline's business is driven in large part by retail delivery applications, such as through its partnership with Walmart to provide on-demand home delivery. It is therefore a close call as to whether the Project is "in support of agriculture" the same was as other research facilities approved in agricultural zones.

Zipline's drone testing facility is dissimilar to the operations the County has approved as "small experimental agricultural and seed research facilities" in the past. Examples of projects the County has approved as small experimental agricultural and seed research facilities include the renovation and addition to a residence on a five-acre A-N zoned parcel for use as a laboratory for testing plant and seed diseases and pathogens; a vegetable seed research station on a three-acre portion of a greater 79-acre A-N zoned parcel; and a seed research and breeding facility on a 3.5-acre portion of a greater 76-acre A-N zoned parcel. The above examples clearly meet the intent of "small experimental agricultural and seed research facility" under Section 8-2.306(q) of the County Code of Ordinances by demonstrating that the uses are incidental to the main agricultural use in the area and supported agriculture. Given that Zipline's use would expand the scope of uses that have historically qualified as "small experimental agricultural and seed research facilities" under the code, staff felt it appropriate to refer this issue to the Planning Commission.

Biological Resources Report

The County requested that Zipline consult with a biologist on the Yolo Habitat Conservancy's qualified biologist list to prepare a report to assess the biological resources that may be affected by the operation of the Nest Z facility and associated drone flight areas. Dustin Brown, senior biologist with Madrone Ecological Consulting (Madrone), who is on the YHC's qualified biologist list, conducted a literature review and field survey to assess the suitability of habitats on-site to support special-status species as well as in inventory of general habitat types and sensitive biological resources where birds and bats may congregate. The biological resources report is included as Attachment F.

The biological resources report determined that there is a low potential that drones flying within the flight area may cause bird nest abandonment due to the continued and ongoing operations, where drone activity has become the current baseline. There is little documented evidence that drones significantly impact flying birds, and no known bird strikes have occurred during the seven years Zipline has been operational at the project site. The report states that it is possible that nest abandonment could occur if drone flights were conducted too close to an active nest. It is also possible that flying birds may also be impacted by colliding with drones, but the likelihood of this is

low given the robust operational history of the site without known strike issues. Madrone also conducted an analysis to determine if noise from drone flights conducted close to a bat day roost may cause the bats to abandon the roost, or if flying bats may be directly impacted by colliding with drones. Madrone concluded that there is little evidence to suggest that flying bats are adversely affected by drones, and no collisions or other issue have been documented.

Madrone recommends several measures to minimize potential impacts to birds and bats as a result of operations in the flight area and the Nest Z facility. Recommendations include establishing a permanent 100-foot no-fly buffers around on-site ponds, a 100-foot no-fly buffer around active bat roosts (when identified), and a 100-foot no-fly buffer from sunset until sunrise around any ponded body of water. Additionally, Madrone recommends establishing a 500-foot no-disturbance buffer around the golden eagle nest, which is located approximately 1,000 feet east of the Nest Z footprint, from January 1 through June 30 each year. Madrone also recommends that all Zipline staff responsible for flying the test drones attend a Worker Environmental Awareness Training prior to starting work at the project site.

CONCLUSION

Zipline's technology has an exciting future, and there are benefits to having its testing operations in Yolo County. Additionally, due to the nature of the operations, a drone testing facility could likely only occur on, and over, large contiguous parcels in remote areas, such as those found in the A-X zone. However, it is unclear whether the existing zoning code accommodates such a unique use.

The Zoning Code entrusts the Planning Commission with such difficult interpretative questions. Resolution of this interpretative question will affect how Zipline's application is processed. If the Planning Commission interprets the code to determine that Zipline's operations constitute a "small experimental agricultural and seed research facility," then staff will process the Site Plan Review accordingly. A Site Plan Review is a ministerial permit that ensures compliance with objective code requirements and is therefore does not require a full CEQA review. (YCCO § 8-2.215; CEQA Guidelines § 15268(a) ("Ministerial projects are exempt from the requirements of CEQA.")) However, if the Planning Commission determines the project does not constitute a "small experimental agricultural and seed research facility," then Zipline would need to apply for a zoning code amendment to ask the Board to add "drone testing facility" to the list of allowable use types in the A-X zone and obtain zoning approval at whatever level designated in the Code amendment. The latter process is more involved and would be a discretionary act that would require preparation of a CEQA document (either negative declaration, mitigated negative declaration, or environmental impact report).

APPEALS

Any person who is dissatisfied with the decisions of this Planning Commission may appeal to the Board of Supervisors by filing a notice of appeal with the Clerk of the Board within fifteen (15) days from the date of the action. A Planning Commission Appeal Form and appeal fee immediately payable to "County of Yolo" must be submitted at the time of filing. The Board of Supervisors may sustain, modify or overrule this decision. The Planning Commission Appeal Form can be accessed at the following link: <https://www.yolocounty.org/government/board-of-supervisors/clerk-of-the-board/planning-commission-appeal>

Attachments

- Att. A. Location and Zoning
- Att. B. Site Plan and Flight Area
- Att. C. Zipline Nest Z Site Changes 2017-2025
- Att. D. Project Description

Att. E. Yolo County Zoning Code Sec. 8-2.215 & Article 3 (Agricultural Zones)
Att. F. Biological Resources Report

Form Review

Inbox

Eric May

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Form Started By: Jeff Anderson

Final Approval Date: 10/01/2025

Reviewed By

Eric May

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Date

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