City of Irvine
Best Management Practices

The City of Irvine has developed a set of Best Management Practices (BMPs) for safe residential beekeeping. The BMPs are also designed to safeguard neighbors and the public who are in close proximity to a residential beehive(s). Failure to adhere to the BMPs may result in the revocation of a Residential Beekeeping Permit and the removal of bees from the subject property.

Those wishing to take up beekeeping should review the BMPs to see if they can conform to these required practices.

Below are key summary points that all residential beekeepers should follow:

- Keep bees with docile genetics (Apis mellifera).
- Maintain a maximum of two beehives.
- Keep apiary area clear of flammable material to prevent fires.
- Locate apiary away from lights at night.
- Paint bee hives with light colors to keep the hive cool and reduce swarming tendencies.
- Provide a constant water source for hydrating and cooling the hive.
- Manage hives by splitting, frame manipulation, and/or re-queening to significantly reduce or eliminate swarming.
- Perform Varroa mite inspection regularly and treat when necessary to prevent the spread of this insidious pest to other hives in the area.
- If bees are required to be removed or relocated from the subject, it shall be done in a humane manner.

Humane Treatment of Bees

Residential Beekeepers are required to use humane beekeeping practices at all times. If the presence of Africanized or overly defensive honey bees are found in a residential beehive and become a public nuisance, or if Africanized or overly defensive honey bees from a residential hive are entering land other than the land upon which the hive is located so as to endanger the public health, safety, or welfare or so as to create an unreasonable interference with the use of the property of others, the Residential Beekeeper shall take immediate action necessary to abate the public nuisance, including, but not limited to, moving, selling, or lawfully euthanizing (I.e. the use of pesticides registered with the California Department of Pesticide Regulation), the infested hive and/or bees.

Education

A basic understanding of honeybee biology, foraging habits, and hive management is essential for any beekeeper. Any resident considering beekeeping **is required** to complete a beekeeping course, such as the University of California Davis' California Master Beekeepers Program (Apprentice Assistant Level Course) or classes from the

Orange County Beekeepers Association, prior to obtaining a Residential Beekeeping Permit.

Course Link: Apprentice Assistant | California Master Beekeeper Program (ucdavis.edu)

The City also strongly recommends participating in a local beekeeping organization such as the Orange County Beekeepers Association.

Owners Maintenance

Beekeeping requires time and dedication to maintain a hive properly, including routine inspection and management. Depending on the extent of the inspection, the size of the hive, and necessary management tasks, one should expect to take anywhere from five minutes to one hour per hive per week.

A residential beekeeper should inspect a hive about once a week to determine if the hive has each of the following:

- Enough food
- Is queenright
- Adequate space for growth or if it needs to be condensed
- Disease and/or pests
- An adequate water source

Keeping a written record of colony manipulation and observations is also helpful for those just starting out. A colony management log could include a catalog of the equipment used, a record of inspections and findings, a history of actions (e.g., adding / removing honey supers), and any other relevant beehive observations.

Beekeeping Inspections:

The best time to inspect a hive is during the day and when no one else is around, if possible. When it is warm and sunny, a good portion of the colony will be out foraging for food and water versus being crowded in the hive. There will be fewer bees in the hive to disturb and less chance for the colony to get agitated during inspection. Do not open up a hive if your neighbors are in their backyard.

When approximately 80% of the bee box is full, the hive should be expanded to allow for brood and honey growth. If the hive is packed with bees or if the hive is “bearding out” (large clusters of bees on the front of the hive), the frames should be inspected for “swarm cells” (a cell used to raise a queen when the hive wants to swarm) which is an indication that the bees are getting ready to swarm. See “Swarm Prevention” for more information.

Bees can be sensitive to vibrations, noise, and exhaust fumes. Beekeepers should avoid opening a hive when machinery is being operated nearby such as lawn mowers, leaf blowers, and more. When opening and manipulating frames, use smoke to keep the bees as calm as possible. To ensure that the hive is open for the least amount of time, work as quickly and safely as possible. Opening hives can entice robbing and can stir up the hive. Be a thoughtful, conscientious, and respectful neighbor.

Maximum Number of Hives

A maximum of two hives shall be allowed on any property provided there is adequate buffer space between the hives and surrounding neighbors. Refer to Chapter 3-41 of the Zoning Standards for additional development standards.

Hive Management

Location

Beehives must be kept in the rear yard of the owner's property at all times and meet the building setback requirements of the respective zoning district of the subject site. Beehives are best placed in the full sun and pointing east to south, if possible. However, if other constraints require the hive to be pointed in another direction or in the shade, that is permissible, but not optimal.

Removable Frames

All residential beekeepers shall maintain their hives with removable frame hives. Bees should only be kept in removable frame hives to allow inspection for size, brood, food, disease, and queen health. The hive shall be in a dark location when the sun goes down. Avoid placing a hive where a light will attract the bees, as it will create a nuisance and will lead to dead bees.

Avoid locating hives where people will walk into the bees' flight path. Hives should not be placed where the bees will cross sidewalks, roads, or other public right-of-ways. Hives should also not be kept in trees, walls, attics, rooftops, or meter boxes where they cannot be managed.

Beehive Barrier

Bees need just a short distance in front of their hive to go in and out. Having a barrier such as a hedge, a tree, or wall that is approximately 6 feet tall will force the bees to fly over and up and into the sky almost unnoticed.

Splitting Hives

Beekeepers are required to split hives to prevent swarming and combine hives when the hives naturally shrink over the course of a year.

Hive Color
Hives can be painted a light color. Lighter colors will absorb less heat and the bees will be able to keep the hive cool in the summer months thus reducing the tendency to swarm.

Bee Species

There are two types of bees commonly kept: commercial bees which have been bred for decades by commercial queen breeders and feral or wild bees. Only commercial queen breeders (Apis mellifera) are allowed because of their gentleness.

Queens

Queens should only be obtained from reliable sources. Queen breeders are preferred to reduce the chances of introducing Africanized honeybees and to ensure the queen is well-suited to the climate. Beekeepers should ensure their queens are young (less than two years). Each beekeeper must evaluate their queens on a regular basis for performance and hive gentleness. Desirable genetic characteristics for a queen include:

- Gentle Disposition
- Quick Colony Build Up
- Good Honey and Pollen Collectors
- Low Swarming Instinct

Any colony exhibiting unusually defensive behavior or an excessive swarming tendency should be re-queened as soon as possible.

Re-queening

Hives should be re-queened at least once every two years to prevent swarming or in any instance in which a colony exhibits aggressive characteristics. Aggressive characteristics may include stinging or attempting to sting without provocation and unusual disposition towards swarming.

Queens should be selected from stock bred for gentleness and non-swarming characteristics.

Robbing Behavior

When nectar is scarce, honeybees may rob from other hives. When they do, they tend to appear more defensive. Under such conditions, beekeepers should work hives for

only short periods of time and only when necessary. Open hives with exposed honey can entice robbing thus stirring up the hive.

All honey and sugar water spills should be cleaned up immediately. Areas used for honey extraction should be bee-proofed to prevent robbing.

Swarm Prevention

Swarming may occur when a hive is either overcrowded or overheated. To prevent overcrowding and overheating, beekeepers should implement the following practices:

- Re-queening. As queen bees age, their queen pheromone fades triggering the hive to swarm.
- Appropriately timed addition of supers for brood rearing and honey storage
- Colony division (splitting a hive)
- Brood chamber manipulation
- Use of screened bottom board

When a queen is old and/or failing, their queen pheromone (i.e. queen scent) weakens at which time they can start laying fewer eggs. This can create a tendency for bees to swarm. As such, beekeepers should change queens with a fresh new queen every one to two years. This has the added benefit of keeping up brood production, which means more bees and more honey.

If swarm cells are found, beekeepers should either split the hive or cut off the swarm cells and create additional space with frame manipulation to prevent it from swarming. If swam cells are found and removed, the hive should be re-inspected every week to confirm that the swarming urge is no longer present.

When a swarm occurs, beekeepers should collect the swarm or call a bee removal company. Beekeepers should frequently monitor the area where the swarm was captured for abnormal defensiveness.

Disease Control

Any hive found to be diseased should be dealt with in the appropriate manner. There are several honeybee diseases and pests. Therefore, it is critical that beekeepers are educated to recognize and respond to diseases.

For example, a disease like American Foulbrood disease is extremely contagious. The only recourse with this disease is burning the equipment or placing it in a sealed bag and disposing of it in a landfill. When evidence of this disease is found, the hive should be treated and the equipment should be promptly removed to avoid spreading the disease to neighboring hives. For this reason, beekeepers should be extremely cautious

about mixing hive equipment and purchasing used equipment. It is incumbent on beekeepers to manage all disease and pests to ensure colony health and honey quality.

Beekeepers should perform a Varroa mite inspection monthly and treat the hives when necessary to prevent spreading the mite to other hives in the area. Colonies that are left to die become Varroa bombs (a colony that has been overwhelmed by mites). The neighboring hives will rob the honey left after the colony dies and thereby spread this pest to other hives.

Fire

Smokers can be used by beekeepers to calm bees before and during a hive inspection. Caution should be used as the smoker will occasionally spark (particularly if there is not enough fuel in the smoker).

Beekeepers should clear the apiary area of flammable material such as weeds, leaves or pine needles to prevent the possibility of starting a fire. Beekeepers are required to have a minimum of one fire extinguisher on the subject property.

Water

Beekeepers should place a water source on the property and close to the hive so the bees can easily navigate and access it. The water source can be as simple as a bucket, or wash tub with corks spread across the top to allow for bee to land and drink, or a small fountain.

Beekeepers should also replace the water daily to avoid other insects such as mosquitoes.

Note: If the water source is not be changed out daily at a minimum, Mosquito fish should be placed in the water source to prevent mosquito breeding. These fish can be obtained from Orange County Vector Control. Mosquito tablets can also be used to prevent mosquito larvae.

Revision

The Director of Community Development, or his or her designee, may periodically revise the City's Best Management Practices Manual when it is determined: (1) such amendments are necessitated by changes/improvements in beekeeping practices; (2) such revisions are consistent with the requirements, goals, and objectives of the City as declared by the City Council; and (3) such revisions are essentially technical and/or administrative and conforming in their nature and, thus, do not require processing through normal amendatory proceedings of the City. All other revisions shall be approved by Resolution of the City Council.