Urban Edge Agricultural Parks Toolkit

Produced by:
SAGE: Sustainable Agriculture Education

In Partnership With:
The USDA Risk Management Agency
Community Outreach and Assistance Partnership Program

Additional Partners:
Agriculture and Land-Based Training Association
Bay Area Economics
Wallace, Roberts & Todd, LLC

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www.albafarmers.org

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Urban Edge Agricultural Parks Toolkit

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We live in a West that is far from wild. It’s been tamed by farms and contained by cities. The new frontier is within farms and cities and at their interface. On farms, expansion must take the form of stewardship of natural and human resources. For cities, growth must mean reinvestment. The urban–rural interface must become common ground, not battleground.

Small farmers have a difficult time finding affordable land, especially near metropolitan areas. They struggle to survive in an environment of competitive markets, depressed prices, rising input costs, increasing environmental degradation and regulation, and escalating land prices. Urbanization brings land–use conflicts, regulatory uncertainty, and the 'impermanence syndrome' of agriculture on the edge.

At the same time, urban areas are coping with a national crisis of diet–and exercise–related health problems. A dearth of fresh foods in low–income communities and insufficient access to parks and open space contribute to a host of social ills, from asthmatic school children to diabetic seniors. Clogged freeways, reduced air quality, and endangered eco–systems degrade quality of life. Daily, the environmental and economic costs of sprawl become less easy to hide.

These sets of rural and urban problems are inter–related. So are their potential solutions. Sustaining cities and sustaining their regional agriculture are part of a common effort. That’s a given. However, in this effort, the urban–rural interface is a contested zone where, increasingly, urban influence wins.

The solution posed in this Toolkit rethinks the common models and poses a new concept: the urban edge agricultural park. This concept stems from the simple idea that the most critical place to create common ground between urban and rural interests is in the interface between the two, on available land at the urban edge.

This region of interface is a place of creativity, ripe for new ideas. It is a place with the potential to be a rich intermixing of urban and rural activities. At an “AgPark,” nature trails, food production, and agricultural learning—a host of activities to address economic, health–related, educational and recreational needs—create multi–functional places that link urban residents and farmers for their mutual benefit.
1.2: Definition of an AgPark

Agricultural Parks (or AgParks) are designed for multiple uses that accommodate small farms, public areas, and natural habitat. They allow small farmers access to secure land and local markets; they provide fresh food, and are an educational, environmental, and aesthetic amenity for nearby communities.

AgParks are new in the Bay Area, but the idea draws from existing models here and abroad, including educational farms, collective farming, farmer-incubator projects, eco-villages, and urban-edge allotments and market gardens. These models exist on both public and private lands. Throughout this Toolkit, ‘Real World Examples’ of actual farms and other projects illustrate specific aspects of the AgParks model.

The naming of the concept as a “park” is intended to convey the role an AgPark plays in open space preservation. While the term suggests the permanent land conservation and recreational use exemplified by the public park, it also evokes the traditional model of a business park, where multiple tenants operate under a common management structure.

**Suitable Sites and Jurisdictions**

AgParks are for metropolitan regions that want

- activated and permanently protected edges to contain cities and provide ‘sense of place’
- viable agriculture as an integral part of community and regional health
- access to fresh food, parks and green spaces

They are suitable/adaptable for **public lands** that:

- have existing mandates for agriculture, agricultural education, passive recreation, natural resource protection, curation of cultural and historical artifacts, and community linkages
- can contract with partners to help fulfill this mandate

AgParks are suitable/adaptable for **private lands** that:

- are permanently preserved for agriculture or have the potential to be set aside permanently as farmland
- are viable for small scale agriculture
- have potential for homesites affordable by farm families
- are located within a place-based agricultural marketing initiative area
- have regulations that permit farmers to operate value-added types of enterprises
An AgPark has both agricultural and park components. The agricultural and park components combine differently depending whether the AgPark is on public or private land.

**Agricultural Components**

To be viable for agriculture, an AgPark needs a specific set of conditions:

- **General conditions for agriculture**
  - good soils and sufficient water, ideally with year-round growing conditions
  - a scale that allows for multiple small to medium parcels
  - conditions amenable for producing a variety of crops, orchards, farm products, livestock, or animal products
  - potential for direct and onsite marketing, such as farm stands or tours
  - potential for cooperation among tenants, such as collaborative marketing, technical assistance, and shared-use equipment and facilities
  - opportunities for public education

- **Agricultural conditions specific to public sites**
  - public agency jurisdiction, with its own land use policies governing agricultural production, processing, and marketing operations
  - management structure would likely be a standard concession/lease agreement extended to a nonprofit association that sub-leases to multiple farmers
  - potential for public participation in community and school gardens
  - potential for public education facilities, such as 4-H facilities and research and demonstration gardens
  - potential to assume some land management responsibilities for agency
  - potential for historical interpretation of farmscapes
  - potential for public access
  - potential for community partnerships

- **Conditions specific to private sites**
  - subject to general county or city land use policies and other regulations
  - potential for homesites and for farmer-tenant equity in land
  - management options include structures such as nonprofit management, home-owner associations, tenants-in-common, and ‘farm condominiums’
Park Components
To fulfill its role as a public amenity, an AgPark requires an adjunct set of conditions. These conditions help to maximize the integration of interpretive park components with the agricultural components for public education and enjoyment.

General conditions
- natural and landscaped areas for passive recreation and quiet areas for relaxation
- trails for walking, running, biking, and equestrian use
- connectivity with regional trail systems and wildlife corridors

Conditions specific to public sites
- primary land use is for public benefit, such as a park, open space, or conservation area
- opportunities for integration of the agricultural components with cultural and historical elements such as historic buildings and artifacts, to promote active public participation
- opportunities for the agricultural components to be integrated in a park setting, allowing passive public enjoyment of the “farmscape”

Conditions specific to private sites
- park is an environmental and economic asset
- linkages with public trails and accessible by public transportation

Sustainability Principles
AgParks aim to be diverse, multi-functional, and holistic systems that exemplify sustainability principles at the urban–rural interface. They should fulfill the “3 E’s” (environmental soundness, economic viability, and equity) by being:

Environmentally sound
- employ sustainable and organic practices appropriate for urban edge locations and promote bio-diversity and natural resource protection
- provide ‘environmental services’ such as habitat enhancement, small-scale composting, flood control and aquifer recharge
- aim to be a self-sufficient system, following practices of recycling and re-use
- can be a buffer between urban areas; or a transition zone between urban areas and larger, more industrialized agriculture or between urban areas and open space preserves
Economically viable
• promotes viable agriculture operations for small farmers
• fosters economic development opportunities within local food systems
• funding is available for start up and development phases
• some ongoing community and civic support is assumed to support operations and management, but AgParks aim to be self-sustaining
• add real estate value to the surrounding community

Equity for urban and rural interests
• provide fresh food and an educational, recreational, and aesthetic urban amenity
• serve small farmers, including new entry farmers, by providing access to land, community support, technical/marketing assistance and (possibly) opportunities for housing and equity

Management for AgParks on Public Lands
While AgParks are envisioned as having application for both private and public lands, the focus of this Toolkit is on AgParks on public lands.

There are two levels of management for an AgPark owned by a public agency. The first is the public agency itself, which has jurisdiction over the AgPark as a whole and which manages the park components. The second level is an AgPark Association which is contracted by the public agency to oversee the planning, initial implementation, and ongoing management of the AgPark. The specific roles and criteria for these two entities are described in more detail in the Management section (3.2).

Management of AgParks on private lands would require other capacities of the AgParks Association. These would likely include expertise in urban edge real estate development, land use policies and regulations, farmland preservation and enhancement tools, and forms of shared tenancy such as home-owner associations, tenants–in–common, condominiums, and co-housing.
1.3: About this Toolkit

**Audience**
This toolkit is intended for a primary audience of public agencies interested in the potential applicability of the AgParks models to lands within their jurisdiction. It was assumed that such readers would possess expertise in park functions and practices but would not be as familiar with agricultural operations. Therefore, the toolkit includes significant background information on agriculture, and includes information only on those aspects of parks which lend themselves to integration with agriculture.

Other audiences:
- organizations seeking solutions to land access and market needs for small farmers;
- private land owners and developers interested in assessing the AgParks model
- urban and rural community partners interested in fostering urban–rural linkages

**How to Use Toolkit**
This toolkit introduces the components of the AgPark model in six units: introduction, primer on small–scale agriculture, agriculture program, park program, design principles, and financial overview. Each unit builds upon the previous in a logical sequence, and is intended to guide agencies in assessing the applicability of the AgPark model and undertaking preliminary planning.

Each unit and chapter can also be approached as a stand–alone reference about a specific topic or as a ‘menu of options’ for a specific aspect of the AgPark model. Both the narrative and appendices provide detailed, nuts–and–bolts information on aspects of site, natural resources, facilities, governance, public interaction and finances—enough detail for the reader to envision how the AgPark model may apply in a given setting.

The AgParks model draws from established urban–rural enterprises as well as conceptual scenarios. A number of “Real World Examples” describe sites, farms, or programs that illustrate a particular strategy. (For more information on these Real World Examples, please see the Resources section in the Appendix, where all sites are listed alphabetically with contact information).

The toolkit also includes numerous references to organizations, agencies, and publications that have provided source information. Every reference within the text is listed with contact information in the Resources section of the Appendix. A list of regulatory agencies also appears in the first section of the Resources section.
UNIT 2: PRIMER ON SMALL–SCALE AGRICULTURE

Small-scale agriculture is the centerpiece of an AgPark. Our AgPark model is founded upon numerous existing aspects commonly found in the great diversity of small–scale agriculture in the United States. A basic purpose of AgParks is to assemble these elements ‘like a kit of parts’ into an entity than is greater than the sum of those parts. This unit begins at the center with an overview of the components, systems, and practices that typify small–scale family farming in California. In each section, the focus is on those terms and definitions that are most relevant to the AgParks model.

While the primary paradigm for agriculture continues to have a production commodity focus and an industrialized approach, at the same time there is growing sustainable agriculture movement. Sustainable agriculture, as a convenient catch–word for its many manifestations, takes a systems–based approach that assesses production in the context of the resources on which agriculture depends. This includes stewardship of natural resources – soil, water, energy, biodiversity, and ecosystems. Stewardship of cultural and social resources is also important, leading to an agriculture of place – one that values local cultural traditions – and an agriculture of people – one that values traditional agricultural knowledge.

The sustainable agriculture movement is increasingly defining itself in terms of an urban–rural compact, in which the consumer, or eater, has a complementary role to the farmer or producer. The prevalence of the term ‘regional (or local or community) food system’ demonstrates the re–positioning of agriculture from an activity of peripheral social interest to an activity of board interest to society. In this context, the concept of AgParks that showcase agriculture as a system that has broad environmental, economic, and social values, is timely.

Natural Resources for Sustainable Farms
Natural resources, such as soil, water, air, and biodiversity are of course a necessary foundation for agriculture in general. In sustainable farming systems, stewardship of these resources is as important as production. At the same time, conservation of the natural environment and programs to increase public awareness and enjoyment of the environment are fundamental to the missions of many parks, and certainly are central to the synergy of an urban edge AgPark. For detailed background information on regulatory agencies, and key considerations for water, soil, and biodiversity, please refer to Appendix A.
2.1: Farm Types

California Agriculture Defined
What is small-scale agriculture, exactly? This section offers a picture of types of growing, marketing, education and outreach practices that comprise California agriculture with a focus on those most relevant to the AgParks model. (There are many other practices and systems not mentioned here.)

Small Farms¹

Small farms have a small footprint
A small farm is defined as one containing 49 acres or less.

➢ In 2002, small farms comprised 62 percent of California farms, or 49,134 farms out of a total of 79,631 farms.

➢ Small-medium farms cover 50–179 acres; in 2002 these made up 18 percent of California farms, or 14,356 out of a total of 79,631 farms.

A medium-size farm is defined as containing 180–999 acres (14 percent of California farms in 2002). A large farm contains 1000 or more acres; these represented 6 percent of California farms in 2002.

Small farms have modest sales
A small farm has a sales volume of less than $250,000.

➢ In 2002, 84 percent of California farms were designated small farms, or 67,327 out of a total of 79,631 farms. These farms earned 8% of California’s total farm sales that year.

Within this classification are farms in which the proprietor’s primary income is earned by farming, as well as farms operated as a side business, pastime or retirement occupation.

➢ A limited-resource farm is one in which gross sales are less than $100,000, total farm assets are less than $150,000, and total operator household income is less than $20,000. Limited-resource farmers may report farming, a non-farm occupation, or retirement as their major occupation.

¹ As defined by the United States Department of Agriculture (USDA) Economic Research Service
➢ **Farming-occupation/low-sales** indicate small farms with sales less than $100,000 whose operators report farming as their major occupation (excludes limited-resource farms with operators reporting farming as their major occupation).

➢ **Farming-occupation/high-sales** indicates small farms with sales between $100,000 and $249,999 whose operators report farming as their major occupation.

**Small Farms may be family farms**

Family farms are closely held (legally controlled) by their operator and the operator's household. A family farm may be organized as a sole proprietorship, partnership, or family corporation. Family farms exclude farms organized as non-family corporations or cooperatives, as well as farms with hired managers.

➢ Family farms are not necessarily small. **Large family farms** boast sales between $250,000 and $499,999 (5 percent, or 4,145 farms in California). **Very large family farms** enjoy sales of $500,000 or more. In 2002, these made up ten percent of California farms (8,159 farms) and earned 86 percent of California’s total farm sales.

**Other Types of Farms**

In addition to the conventional small farm, several other types of agricultural practices make sense as the centerpiece of an AgPark. These include:

**Educational Farm**

An educational farm is a farm whose mission is primarily educational. Such farms cater to school and other organized groups, and are also open to the public. Educational farms usually are operated by non-profit organizations, allowing them to provide services and programs that farms on land zoned only for agriculture cannot offer. Their mission is often specifically focused on the education of urban residents and they often have a goal of increased food access at their heart.

Most educational farms are also productive, and sell their produce through direct marketing strategies such as farmers’ markets and community supported agriculture, but are not primarily commercial operations. In other words, the production is secondary to the
educational purpose of the farm. Often, they are located on a city's outskirts, in order to specifically target urban residents.

In addition to producing food, educational farms often offer in-depth curriculum programs, where school groups visit the farm regularly and teachers work with the farm to design unique programs for their class. These farms also frequently offer apprenticeships and internships.

**Farmer-Incubator Project**
Such programs provide intensive training often followed by an extended training, support, and/or apprentice programs. Incubation programs require an area of small farm plots and infrastructure including classroom and office space.

**Market Garden**
This small farming operation produces a mix of products and generally is located near an urban area which is its primary market. A related term is 'truck farm'. (“Truck” comes from the French “troque” which means to barter or trade.)

**Urban Agriculture**
This includes community gardens, school gardens, special needs gardens, horticultural training and therapy gardens, and more. Such agriculture is rarely commercial and is usually geared toward community building, education, and provision of shared gardening space. Because of its location within urban areas, urban agriculture often aims to help improve food access, especially in neighborhoods underserved by fresh food stores.

**Allotment Garden**
This term is commonly used in the United Kingdom and also in Europe to denote a type of leased garden space that is most often located at the edge of cities and/or along transportation corridors and rights-of-way.
REAL WORLD EXAMPLE

Fairview Gardens
Goleta, CA

In 1954, Fairview Gardens farm lay surrounded by row crops and orchards, at that time the typical landscape of the Goleta Valley, just north of Santa Barbara. An aerial view taken in 1998 shows the same 12 ¼-acre parcel squeezed by row upon row of houses and chain stores. “When tract homes sprang up on the farm’s borders, it became a collision of two worlds,” reads the Fairview Garden’s website. “The farm’s survival was threatened over the issues of crowing roosters and the smell of compost brewing as new urban neighbors moved in around the perimeters of the farm.”

Today, those neighbors, and many others, visit Fairview Gardens for a welcome glimpse of the past, and perhaps of the future as remaining farmlands become islands in urban areas. Visitors take a tour; taste a ripe peach (or some of the one hundred different fruits and vegetables grown on site) from the produce stand; and learn to cook or to garden organically at one of the workshops. This “grand experiment” saved what is believed to be the oldest organic farm in southern California and encourages city-dwellers to eat, grow and appreciate the organic bounty in their midst.

The farm was founded in 1895. When development threatened in 1994, farm owner Michael Ableman formed a non-profit organization to buy the farm and place it in a public trust. It is now preserved in perpetuity through an agricultural conservation easement based on active use, requiring that the land remain a working organic farm with an educational mission to “demonstrate the economic viability of sustainable agricultural methods for small farm operations; research and interpret the connections between food, land, and community well being; and nurture the human spirit through educational programs and public outreach both on and off the farm.” The educational work is conducted under the farm’s nonprofit Center for Urban Agriculture.

Donations and foundation support pay for the educational programs, which include apprenticeships, public workshops and “Farm Days,” a two-day interactive farm experience designed for elementary school children.

Information from www.fairviewgardens.org
There are many types of farmers involved in small scale agriculture. These types vary over years of experience, age, nationality, gender, primary source of income, and socioeconomic level.

According to the 2002 Census of Agriculture, the average age of farmers in the United States is 55. Thus, the vast majority of farmers fall into the “experienced” category below. There are numerous organizations and agencies offering experienced farmers services such as research, technical assistance, marketing, and regulatory compliance support.

Given the aging farming population, there is an important push to recruit newcomers to agricultural professions, and to help new and struggling farmers survive. Services for these types of farmers include farmer training and incubation programs, marketing support, as well as funding programs for startup costs. The following is a list of the types of farmers recognized by the USDA as official categories. For detailed definitions, please see Appendix A.

- Experienced Farmer
- Beginning Farmer
- Start-up Farmer
- Young Farmer
- Next–generation Farmer
- Prospective Farmer
- Underserved Farmer
- Socially Disadvantaged Farmer
- Limited Resource Farmer
- Immigrant/Refugee Farmer
- Hobby/Lifestyle Farmer

### REAL WORLD EXAMPLES

**Amparo Martínez**
**Domitila Martínez**
Salinas, CA

*Immigrant farmers*

**Amparo Martínez** is a native of Mexico and has been farming since 1999. Currently, Amparo farms 16 acres, cultivating strawberries, celery, romaine lettuce, zucchini, cilantro, and other cool season crops. He employs 8 of his 12 children in the family farming business. He sells most of his products to a local broker, but has begun to diversify his marketing outlets at the suggestion and encouragement of ALBA.

**Domitila Martínez** is a native of El Salvador. She is currently cultivating 6 acres. She specializes in strawberries. She has been successful in maintaining an unusual relationship directly with an individual Whole Foods Market (most purchasing for the company is centralized) by offering a diversity of high quality, in–season crops.

For more information about ALBA, see page 36 and their website, [www.albfarmers.org](http://www.albfarmers.org)
2.3: Types of Farming Practices

A multitude of terms define the many approaches to agriculture, some of which have evolved rapidly over the past two decades. The main types of farm practices are summarized here. Many of these terms are used throughout the rest of the Toolkit.

**Conventional Agriculture**

Conventional agriculture has come to refer primarily to agricultural operations that are not organic. On one hand, farms in this category may still practice environmental stewardship, but simply not conform to the specific organic standards (see below for definition). On the other hand, conventional agriculture also includes industrialized farms that are characterized by mechanization, monocultures, and the use of chemical inputs and that focus only on maximizing productivity and profitability, and not on sustainability.

**Diversified production**

Diversified production is a key strategy for small farm success. The term commonly refers to the production of a wide array of products by a single farm. It can also mean production of differentiated specialty crops and of value-added, or farm-processed products such as jellies, pastries or flower arrangements.

**Sustainable Agriculture**

Sustainable agriculture refers to an agricultural production and distribution system that integrates natural biological cycles and controls; protects and renews soil fertility and the natural resource base; and minimizes adverse impacts on health, safety, wildlife, water quality and the environment. Sustainable agriculture uses many means to reduce the use of chemical fertilizers and other production inputs and resources from non-renewable sources. Below are some approaches to sustainable agriculture.

**Organic**

The following definition of “organic” is from the National Organic Standards Board:

- "Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony.

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2 Adapted from Sustainable Agriculture Dictionary
‘Organic’ is a labeling term that denotes products produced under the authority of the Organic Foods Production Act. The principal guidelines for organic production are to use materials and practices that enhance the ecological balance of natural systems and that integrate the parts of the farming system into an ecological whole.

Organic agriculture practices cannot ensure that products are completely free of residues; however, methods are used to minimize pollution from air, soil and water. Organic food handlers, processors and retailers adhere to standards that maintain the integrity of organic agricultural products. The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants, animals and people.”

Some states also have organic certification programs, but the standards listed above represent the baseline across the country.

**Low-input**
Low input farming systems seek to optimize the management and use of internal production inputs, or resources readily available on the farm, such as manure or composted plant waste as opposed to chemical fertilizers. Whenever feasible and practicable, low-input practices are used to lower production costs, avoid pollution of surface and groundwater, reduce pesticide residues in food, and increase short- and long-term profitability.

**Biodynamic**
A basic ecological principle of biodynamics is to conceive of the farm as an organism, a self-contained entity. Certain requirements set biodynamic agriculture apart from organic agriculture. The farmer strives to maintain a healthy, diverse ecosystem and builds soil health through enlivened compost and other biodynamic preparations. Livestock are integrated into the farm system, with the requirement that at least 80 percent of livestock feed comes from the farm. Foods produced through biodynamic methods are certified for consumer markets by the Demeter Association.

**Permaculture**
One of the agriculture systems described as sustainable, permaculture is unique in its emphasis on design: that is, the location and interdependence of each element in a landscape, and the evolution of the landscape over time. The goal of permaculture is to produce an efficient, low-maintenance integration of plants, animals, people and structure applied to an area as small as a home garden or as large as a big farm.
REAL WORLD EXAMPLE  

Live Power Community Farm  
Covelo, CA

Live Power Community Farm is an organic, bio-dynamic farm located in Round Valley in Northern California. The mission of the farm owners, Gloria and Steve Decater, is to create a self-sufficient agricultural community where humans learn to feed the soil as much as the soil feeds them.

The Live Power Community Farm operates in balance with its natural surroundings. The farmers use no pesticides, herbicides, or fungicides and for soil fertility, only use compost made from farm materials. Instead of using farm equipment that operates on fossil fuel, they substitute the "live power" of draft horses, which have far less impact on the land and produce the beneficial by-product of manure.

Emphasis is placed on the integration of crops and livestock, recycling of nutrients, maintenance of soil, and the health and wellbeing of crops and animals; the farmer too is part of the whole. Their biodynamic farming practices are intended to achieve balance between the physical and higher, non-physical realms; and to enrich the farm, its products, and its inhabitants with life energy. The principles of the biodynamic agriculture practiced on Live Power Farm are:

• Managing the whole farm as a living organism.
• Maintenance of a healthy, diverse ecosystem.
• Nutrient self-sufficiency and soil husbandry; use of the biodynamic preparations to build soil health through enlivened compost, and to stimulate plant health.
• Integration of livestock with a requirement that at least 80% of livestock feed come from the farm.
• Refraining from the use of genetically engineered plant materials and organisms.

The farm is a popular destination for school groups who come for multi-day visits on the farm, learning how to participate in the farm operations and about the natural history of the area.

Equity Trust, Inc. holds a unique conservation easement and purchase option for Live Power Farm, which was purchased with donations raised by the Live Power owners and its CSA members. This easement is unique in that it requires that the land remain in agricultural production.

Information taken from http://www.covelo.net/agriculture/farm/pages/farms_lpf.shtml  
For more information, please see www.equitytrust.org
2.4: Farm Products

The centerpiece of an AgPark – active agriculture practiced by several different types of farmers – can produce a broad array of crops, animal products, and value-added products. The following is a list of various categories of farm products.

**Standard Product Categories**

**Berries**: Includes strawberries and bush (cane) berries such as raspberries and blackberries

**Bee-keeping**: Includes honey and beeswax products, and also pollination services

**Field crops**: Includes forage crops (e.g. alfalfa and grain hay; oats, pasture, range) grain crops (wheat, barley, rice, corn, etc.); other food crops (dry beans, potatoes, sweet potatoes); oil seed crops (e.g. safflower, rapeseed); sugar crops (sugar beets); fiber (cotton); and seed crops (e.g. crops grown for seed)

**Flowers**: Cut flowers, including value-added floral arrangements and specialized bouquets

**Forest Products**: Includes timber, firewood, mulch and soil amendments

**Herbs**: Includes cut and potted herbs, dried herbs and fragrant plant material

**Horses**: Includes breeding, training, work-horse, educational, and recreational operations

**Livestock and poultry**: Includes aquaculture, cattle and calves, chickens, hogs, sheep and lambs (and wool), turkeys, and specialty livestock (e.g. duck, geese, emus, goats, llamas, ostriches, squab, pheasant, rabbits, heirloom breeds of conventional livestock, pastured poultry and other livestock raised in specialized systems)

**Milk, dairy products, and eggs**: Includes cow, goat, and sheep dairy products; eggs from chickens and also from ducks, geese, quail etc.

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3 Adapted from California County Crop Reports
Nursery crops: Includes bedding plants; Christmas trees; ornamental trees, roses, and shrubs; herbaceous perennials, indoor decoratives, propagative materials, turf, plant starts

Tree fruits and nuts: Includes all stone fruit, nut crops, citrus, pomme fruits, and others (e.g. olives, figs, avocados, etc.)

Other fruits: Table grapes and raisins; melons

Wine grapes

Vegetable crops: Includes all vegetable row crops and also facility-cultivated products (e.g. mushrooms, Belgian endive, green-house peppers, cucumbers, tomatoes; hydro-culture grown greens; etc.)

Other Product Categories

Specialty Crops
Fruits, vegetables, and herbs that are either imported or grown on a limited scale in the United States. The USDA considers all crops that don’t have designations as commodities to be specialty crops. A specialty or minor crop in this country could be quite common in another part of the world. More specifically, specialty crops can be defined as the following:
• Unusual or exotic crops
• Unusual or heirloom varieties of common crops
• Unusual maturity at time of harvest (e.g. baby vegetables; tree-ripened fruit)
• Produce considered high-quality for flavor, freshness, appearance, handling, and packaging

Specialty Livestock
Dairy and animal products can also be differentiated as “specialty,” often by means of specific production methods and/or specific breeds that help impart distinctive quality to the products. There are dozens of animal husbandry terms that are used to refer to specialty livestock, some common-usage and some regulated. Below are a few key examples:

Free Range
An animal husbandry practice in which animals are allowed to roam freely at least part of the time. This practice is supported by the idea that such animals are happier and healthier in such an environment.
Grass-fed
Grass-fed products from ruminants, including cattle, bison, goats and sheep, are those food products from animals that have eaten nothing but their mother’s milk and fresh grass or grass-type hay from their birth until harvest.

Pastured poultry
Pastured poultry is a sustainable agriculture technique that calls for the raising of laying chickens, meat chickens (broilers), and/or turkeys on pasture, as opposed to indoor confinement.

Value-added
Producing value-added products is a time-honored strategy for farmers to retain and increase the value of their raw products. “Value-added” means any activity or process that allows farmers to retain ownership of the raw agricultural product and that alters it for the purpose of gaining a marketing advantage. Such products open another marketing niche and can serve to extend marketing season and reach. Examples include jams and jellies made from farm-raised fruit; wool carded from farm-raised sheep, or honey and beeswax candles made from the harvest of a farm’s beehives.

Product labeling is a relatively simple way for farmers to differentiate and add value to their products. By labeling products with information including crop cultivar name, geographical origin, and growing practices, farmers establish their identity in the marketplace. Brand labels also help educate consumers about where the foods come from, who grew them, and what production practices were used. An AgPark with a presence in local consumer consciousness, could create a collective identity for its farmer-tenants and a ‘brand’ for their raw products.

Wild-crafted Products
Such products are harvested from nature, usually under the jurisdiction of an agency, and may include wild mushrooms, wild berries, mistletoe, sea grass, or seaweed.

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4 As defined by the American Grassfed Association
5 As defined by wikipedia.org
2.5: Marketing Farm Products

Given its limits in size and market share, small-scale agriculture has become adept at developing creative strategies and a network of outlets to reach consumers. In a traditional marketing scheme, a farmer might sell to one or just a few wholesalers or brokers. An AgPark farm could take advantage of a variety of ways to earn income for the farmer while providing visitors with fresh food and a farm experience, in keeping with its mission as a park.

Two broad strategies common to small farms are:

**Diversified marketing** means selling products through a variety of marketing outlets including wholesale outlets, retailers, and brokers. However, implicit in a diversified marketing strategy is using a number of direct marketing outlets, which maximize return to the farmer.

**Direct marketing** is the sale of products directly from producer to consumer via farmers’ markets, farm-to-school programs, community supported agriculture, farm-to-restaurant programs, and a variety of agricultural tourism strategies. These are most appropriate to an AgPark setting, and are described in more detail below:

**Farmers’ Markets** are a common (there are more than 441 Certified Farmers’ Markets in California) and rapidly increasing form of direct marketing. For farmers, the markets allow frequent and regular contact with many consumers. For shoppers, the markets provide fresh food, the experience of seasonal eating, and an opportunity to learn from farmers.

**Community Supported Agriculture (CSA)** is a partnership between a farm and a community of supporters that provides a direct link between the production and consumption of food. Supporters help cover a farm’s yearly operating budget by purchasing a share of each year’s harvest. The farm delivers this ‘share’ in the form of a weekly box of in-season food to the supporters. There are now about 100 CSA programs in California, each serving an average of several hundred customers.
REAL WORLD EXAMPLE

Full Belly Farm
Guinda, CA

Full Belly Farm not only produces an impressive diversity of farm products, it employs diversified methods to sell them. The 200-acre organic farm grows over 50 types of products – almonds and walnuts, stone fruits, flowers, grapes, strawberries, wool and sheepskins, and “just about every type of vegetable that can be grown in a Mediterranean climate,” proclaims its website. With 35 year-round employees and a four-season growing climate, the farm sells directly to consumers as well as through retail and wholesale outlets for 12 months of the year.

Full Belly Farm’s direct sales include three farmers’ markets a week and a Community-Supported Agriculture project (CSA). By joining the CSA, approximately 600 member families receive boxes of fresh produce delivered to convenient neighborhood locations in six northern California regions; the members pick up their boxes at the neighborhood site. Each order costs members $15 per week. For an additional $6, the boxes can be delivered to members’ homes in some locations.

According to Full Belly Farm, a weekly order of vegetables feeds an average family of 2 to 4 people. The farm chooses the vegetables and fruits that go into the weekly boxes from its seasonal array, with the goal of offering old standbys as well as new varieties to sample, thus expanding consumers’ palates and underscoring the concept of seasonal eating.

At farmers’ markets in three urban centers, shoppers crowd around Full Belly Farm’s produce-laden tables. The farm also sells to restaurants, independent grocery stores, grocery chains, and wholesale distributors. The wool enterprise ships skeins of yarn, carded wool and sheepskins in the natural colors of the Rambouillet, Lincoln, Suffolk, and Merino sheep that produce it to customers around the country.

An annual harvest “Hoes Down” festival in October engages CSA customers and hundreds of other visitors in the small-farm concept. Tours, workshops, hayrides, a children’s area touted as “one of the best in the state,” and the draw of good food and great music demonstrate that a working farm can also function as a resource for public education and entertainment.

For more information please see www.fullbellyfarm.com
Agricultural Tourism (Agritourism) invites visitors to learn about farms while enjoying the experience of a working agriculture operation. Scenarios include u-pick operations, which allow visitors to harvest farm-grown produce for their own use; guided tours and tastings; seasonal activities such as corn field mazes and Christmas tree farms; and working farm stays. Agritourism also promotes the farm’s products to an interested market and generates additional income. Agritourism works well when operated as part of a regional marketing effort. A farm-trail organization can encourage tourism to multiple farms; an appellation can call attention to a region’s products.

Farm-to-School programs facilitate sales by local farmers to school food programs. Many of these programs are incorporated in a curriculum which may include school gardens, cooking classes, nutrition education, and visits to farms and farmers’ markets. Thirty school districts in California have Farm-to-School programs in place.

Farm-to-Restaurant programs support local farm products, sustainably produced. Restaurants buy top quality, fresh food directly from the farmer. The products may be custom grown or harvested to the restaurant’s specifications, for a menu that appeals to a socially and environmentally conscious customer base. A parallel trend is the emergence of Farm-to-Food-Service connections.

Regional Marketing is the practice of marketing an agricultural identity for a geographic region. By labeling agricultural products from regions that are associated with certain agricultural identities, these products gain the value associated with that place, in addition to their production value, thus becoming more profitable.

REAL WORLD EXAMPLE
Bon Appetit Management Co.
Palo Alto, CA

Farm-to-Food Service
Bon Appetit, one of the nation’s leading socially responsible food service company, is headquartered in Palo Alto. With its motto “food services for a sustainable future”, this $300 million per year company, serves educational institutions and businesses from coast to coast. Bon Appetit is currently bringing its signature “Farm to Fork” program to the cutting edge cafes of its progressive corporate clients such as Yahoo, eBay, Santa Clara University and the de Young Museum.

On September 29, 2005 Bon Appetit organized an ‘Eat Local Challenge’. The challenge offered 150,000 diners at 190 corporate, university, and museum restaurants from Seattle to Washington D.C. the opportunity to eat a 100 percent locally grown meal, made entirely of ingredients produced within 150 miles of the kitchen where they were served.
REAL WORLD EXAMPLE
Gizdich Ranch
Watsonville, CA

Gizdich Ranch is a third-generation, family-run farm business that has been in existence for more than 25 years. The down-home ranch offers U-pick fruits such as apples, strawberries, raspberries, ollalieberries and blackberries. They also offer fresh, home-style pies and fruit juices, guided tours for schools, and country antiques. The ranch, located in Watsonville between Monterey and Santa Cruz, offers a close-up look at the way fruit is grown and picked.

Gizdich Ranch is a popular destination for class field trips. These are offered 8 weeks of the year, 5 days a week, 4 hours per day, and 40 kids per hour. They are always fully booked, and charge $4 per student, making for a total of approximately $25,600 annual income from school tours. Nita Gizdich and other family members enjoy telling children how the fruit is sorted, packed and shipped or, for many apples, processed right there to make delicious juice, pies and sauces.

The Ranch is also open to the public. Families can take self-guided walks through the orchards, and, during fall Saturdays, watch how the apples are pressed. There are picnic grounds and a play area for children. In the gift shop, visitors buy fresh fruit, jams, and seasonal fruit pies. During Thanksgiving week, 2004, the shop sold over 4,000 pies!

For more information please see http://www.gizdich-ranch.com
REAL WORLD EXAMPLE
Marin Organic
Marin County, CA
Marin Organic is a non-profit with a bold new concept for preserving farmland and farming as a way of life. Marin Organic focuses on defining and marketing a regional agricultural identity for Marin County, with the goals of environmental soundness and economic profitability.

In order to enhance the regional agricultural identity of the region, and to encourage sustainable growing practices, Marin Organic offers certification to local farmers who believe in the importance of a local food system and whose growing practices are organic. Members receive labels and twist ties with the Marin Organic logo.

Marin Organic also offers training and workshops on crop diversification to farmers and ranchers of all sizes. Workshops take place on Marin’s organic farms and ranches and feature growers and scientists discussing best organic practices.

On the urban side of the urban-rural interface, Marin Organic offers a comprehensive education program for both natural food retailers and conventional retailers interested in increasing their organic food segment. Additional education and direct marketing programs, geared to the public, include farm tours, an all-organic farmers’ market, organic farm-stands, a Harvest Festival, bird walks and farming workshops.

2.6: Learning from the Farm

Public education is an increasingly important strategy for small-scale agriculture. The most effective way to build demand for their products is for small farms to increase public understanding of the amenities they provide. The experiential learning offered by an AgPark can underscore the crucial role of agriculture along the rural–urban interface, and can fulfill the AgPark’s mission as a recreational and educational amenity. These forms of agri-tainment are also often profit centers for the farm. Ways to bring the public to the farm include:

**Tours**
Tours offer visitors an informed, backstage view of a farm’s operations. They range from basic 30–minute walks around the grounds to more involved 90–120 minute guided tours built around a theme.

**Classes/ Workshops**
A farm is a rich setting for many types of exploration, from hands-on activities for school groups to workshops on farming practices for avid gardeners, and to farm field days for fellow farmers. Most often these classes range in size from 15–30 participants and in duration from 90–180 minutes, although some farms offer programs in which school or community groups return regularly to pursue an in-depth curriculum.

**Summer Camps**
Farm–based summer camps can run for a weekend or several weeks; campers can come for the day or for a stay in tents or cabins. Activities generally reflect the farm’s activities: animal husbandry, planting, harvesting, cooking, horseback riding join the usual camp sports, arts and crafts, and similar activities.

**Community Celebrations**
These can range from harvest festivals drawing 500 visitors to multi-day regional events with 5,000 attendees. Live music, farmers’ markets, regional foods, hayrides, and contests can entice visitors to take part in the celebration of agriculture.

**Apprenticeships/Internships**
Many farms offer 3–9 month farm apprenticeship/internship programs for people interested in learning about farm operations firsthand. Apprentices and interns participate in every aspect of the farm, both agricultural production and business tasks. They are given room and board, a small monthly stipend, and sometimes an additional wage during harvest season.
REAL WORLD EXAMPLE
Deer Hollow
Mountain View, CA

Deer Hollow Farm is a working homestead and educational center owned by the Midpeninsula Regional Open Space District and managed by the City of Mountain View Recreation Division. The primary purpose of the Farm is to serve as an educational center where school classes, community groups and families can observe, explore and participate in a family farm. The programs at Deer Hollow Farm are designed to help the participants experience farm and wilderness life and Native American history within today’s urban world:

- During the school year, over 4,000 students from schools in the area visit the farm.
- Classes are offered for elementary through high school age groups. Classes include: Farm and Garden, Sheep and Goats, Wilderness Adventure, Birds, Ohlone Habitat and Ohlone Village.
- 400 children participate in weeklong day camp sessions June through August. Campers enjoy the farm animals, garden, hikes in the preserve, crafts and games. Older campers have the privilege of an overnight at the farm.

Information taken from http://www.fodhf.org/
UNIT 3: AGRICULTURE PROGRAM

This unit explores how an agricultural component is synthesized into a park landscape to create an AgPark.

The first section describes a range of characteristics of prospective AgPark farmers. Next, we discuss the assumptions and responsibilities pertinent to the managing partners of our AgPark model—the public agency and an AgParks association operating under the jurisdiction of the public agency. Following are outlines of the range of services and resources that the AgPark Association could provide and examples of infrastructure and facilities that lend them themselves to shared use by both park and agricultural entities. Finally, a section on leases contains standard agriculture lease terms and lease terms specific to AgPark operations.
3.1: Prospective AgPark Tenants

Prospective AgPark farmers possess a range of characteristics, but the most viable tenants will share specific interest in operations run on principles of environmental and economic sustainability. They will also be dedicated to the public inter-action required by an AgPark. This chapter sketches those types of farmers and offers ideas for public activities they might operate on the site. Through this unit, and the toolkit in general, the term farmer is used to referred to both farmers and ranchers.

In general, the AgPark farmer

- Has the interest and desire to farm in an urban edge situation
- Needs land for a new operation or an expanded/satellite operation
- Has experience with organic and/or sustainable farming practices and/or willingness to commit to such practices
- Has experience with specialty crop and/or livestock production
- Has experience with and/or interest in direct marketing and/or collaborative marketing arrangements (e.g. space in a shared farm-stand, shared CSA, participation in institutional contracts)
- Has experience with and/or interest in educating the public about agriculture
- Has experience with and/or interest in the activities and goals of an educational farm

Agriculture and Land–Based Training Association (ALBA) has headed up research to identify specific prospective AgPark tenants. This process included administration of a general survey to assess demand, administration of a follow-up survey to assess interest in three specific sites and a focus group to assess interest in two potential AgPark sites.

The surveys found interest from a broad range of farmers in participating in an AgPark. They expressed strong interest in the prospect of entering into a ‘farm–ready’ situation. They were unanimous in their need for basic infrastructure such as security, irrigation and fencing. Of secondary importance, but still crucial, was demand for additional amenities such as facilities for packing, cooling and processing value-added products; and natural features such as landscaped edges and hedgerows. Farmers were willing to pay higher lease rates where infrastructure and marketing tools are already in place.

Respondents were interested in farming parcel sizes of from five to 100 acres. The majority was interested in affordable on-site housing for both the farmer and employees. They preferred ownership of the land, but many would also be interested in lease arrangements. Generally, respondents had very modest incomes from farming and lacked savings that could be applied to a land purchase. However, most had good credit and a business plan in place.
Organizations as Resources for Prospective AgParks Tenants

The following is a list of the types of institutions and organizations that can be valuable sources for locating potential AgPark farmers. For examples of these types, please see the Resources section.

**Agricultural support organizations and agencies**
Organic certification organizations, farmer advocacy organizations, agricultural institutions and others often have databases of local farmers.

**Small farmer training and placement**
These organizations often have compiled lists of beginning and underserved local farmers.

**Apprenticeship programs**
Many farms and gardens offer apprenticeships programs for people interested in learning about agriculture and horticulture. Graduates of such programs are often aspiring young farmers, and valuable potential AgPark farmers.

**University programs**
Universities that have departments of agriculture and horticulture are an excellent source of aspiring farmers. Such schools also often have affiliated research centers and/or student farms that are additional valuable sources of information.

**REAL WORLD EXAMPLES**

**Peter Rudnick**
San Francisco, CA

*Experienced farmer*

For 25 years, Peter Rudnick was the farm manager at Green Gulch Farm, an organic farm and garden in Muir Beach. Peter also managed the Garden Project farm in San Francisco for four years. Currently, he is a small farm consultant. He is interested in participating in an AgPark, both as a farmer and potentially as a farm manager.

**Julie Stultz**
Santa Cruz, CA

*Young farmer*

Julie has been farming full-time for three years. She is a graduate of the University of Santa Cruz Center for Agroecology and Sustainable Food Systems (CASFS) 6-month apprenticeship program. She is now the Field Production Manager at the 10-acre CASFS farm and is interested in the possibility of farming in an AgPark.
3.2: Management

The management concept for AgParks on public lands operates on two levels. The public agency would have jurisdiction over the AgPark as a whole and manage the park components. To oversee planning, initial implementation, and ongoing management, the public agency would contract with an AgPark Association. This chapter outlines assumptions behind these two management levels, their respective functions and their interactions.

Public Agency
The public agency would own the land and/or have jurisdiction over the AgPark site. Types of public agencies likely to have interest include:

- local, regional, state, and national parks agencies
- open space and agricultural preservation districts and authorities
- public utility commissions and water districts

Assumptions for Public Agency:

- The AgPark would operate in the context of the general plans, policies, and goals of the governing public agency.
- Quite possibly, the Public agency would have recently completed a participatory master planning process, in which the long-term uses of the land in question had been determined, and the AgPark concept, program items, and implementation plans were being or had been determined.
- The agency would consider the AgPark as a means to realize mandates for conservation/ecological oriented management, controlled public access, break-even operations, public education, and community linkages.
- AgPark would likely constitute an element or section of a larger parcel of agency land.
- The agency would be very involved in the initial development of a management and operations plan for the AgPark as a concept, as well as considering its land use and programs. The agency would closely monitor implementation, whether an agreement with a particular AgParks operator happened as a result of an RFP process or in response to an unsolicited proposal.
Functions of Public Agency:

AgPark planning: The public agency would complete planning and environmental review processes to detail the AgPark concept, program and implementation. Public agency representatives would serve on the AgParks governing board and have key involvement in developing strategic and long-range planning efforts.

Infrastructure installation: To the extent established in the planning phase, the public agency would oversee installation and/or upgrade of infrastructure such as fencing, roads, landscaping, utility systems, bathrooms, buildings, and public art.

Leasing: Based on the business plan, the public agency would develop and oversee the master lease for the AgParks development organization or operating association. Many factors would determine the complexity of the lease: scale, uses, infrastructure, sub-leases, duration, etc. (See Lease section for comparative analysis of various leases and lease terms.)

The lease might be issued directly as a partnership agreement with a nonprofit or might require a competitive RFP or application process. Conceivably, the agency would want different leases with various major tenants within the AgPark, such as an equestrian facility or culinary center operator.

Maintenance: Per the planning framework, the public agency would maintain basic infrastructure and upgrade as necessary.

Participation in liability: As part of the agency partnership, it is likely that the AgPark would allow and would welcome controlled public access around it or through it, given the mandates for limited and/or controlled public access around or through the AgPark. Some form of shared liability would be expected.

Collaborative programming: Based on the assumption that the agency has permitted an AgPark as a means to fulfill its own mandates for public education and access, it is likely that the agency would be interested in various kinds of collaborative programming. Programs could include staffed tours, interpretive exhibits and signage, and special events.

Contracting services: The agency might be interested in contracting with the AgPark management or with specific AgPark tenants for various kinds of services. These could include common area maintenance, landscaping, green waste recycling, nursery production, and management of educational and public programs.
AgPark Association

Assumptions for Association

• The AgParks Association would have as its core mission the conceptualization, planning, initial implementation, and operations of the AgPark. (Conceivably, a separate AgParks Development Organization would be created to manage conceptualization, planning, and initial implementation of first-time AgParks.)
• This organization would likely be a nonprofit which would enable it to obtain grant funding and philanthropic support.
• The Association would be governed by a board which would include representative members from the public agency, from the pool of AgPark farmers, from local agricultural institutions and organizations (4H, organic certification, etc.), and from other relevant urban and rural community partners.

Criteria for Association

The organization should:

• Have expertise in (or ready access to) many aspects of sustainable agriculture including policy, production, marketing, resource issues, economics, and key trends
• Be adept at creating linkages between a wide range of urban and rural groups, identifying their common goals and seeding strategies to build on these shared interests
• Have strong project development and project management resources
• Be conversant with issues of regional food and agriculture systems, regional planning, “smart growth,” and sustainable cities movements at the national level
• Have additional expertise in public planning processes and the development of public–private partnerships

Functions of Association

Planning and Development Phase Functions

In close collaboration with the public agency (and possibly in conjunction with a broader planning process), an AgParks development company would create a business plan that would:

• Participate in the master planning and environmental review processes initiated by the public agency to engage public outreach and participation, and to develop a vision, goals, program policies for the AgPark.
• Specify the mission, goals, key collaborations, and target audience of the AgPark and the ways it fits into the context of relevant local or regional policies, programs, and initiatives; and outline key challenges and opportunities for the project
- Confirm, quantify, and qualify the interest and needs of prospective farmer tenants and develop a recruitment plan and application process to pursue their tenancy
- Outline a phased management framework that delineates roles and responsibilities of the agency, development organization, key partners, the eventual AgPark association or operating organization, and farmer tenants.
- Detail the operations framework including basic leases and Covenants, Conditions and Restrictions (CC&Rs) and core programs
- Specify infrastructure needs and development plan
- Produce a pro forma document identifying sources for and an approach to capital costs, and projects revenues and expenses during the development and early operations phases

Initial Implementation Phase Functions
- Develop an interim operating agreement with the public agency
- Form an advisory group to be the core of the future AgParks Association governing board.
- With the agency and advisory group, help identify and procure start-up funding
- Initiate and oversee implementation of business plan including hiring of staff, development of infrastructure, recruitment of farmers and community partners, fundraising, establishing a ‘friends of’ group, etc.
- In a phased plan, turn over operational control and then all aspects of management to the AgParks Association.

Fully Functional Phase Functions
- Promotion of overall AgPark
- Public outreach and relations
- Marketing support (e.g. CSA coordination, management of farm-stand, etc.)
- Technical assistance
- Coordination of key partners
- Operation of a food concession, catering, gift store
- Coordination of educational tours and special events
- Coordination of tool lending, common supply purchases, etc.
- Management of common areas
- Management of volunteers, docents, and a ‘friends of’ organization
- Financial management (e.g. fundraising, lease collection, etc.)
- Interaction with public agency
**Scale Considerations**

A small-scale AgPark would be fairly easy to plan and implement as a pilot project. It would involve fewer partners, less bureaucracy, would be less complicated and perhaps more flexible.

A large-scale AgPark would, of course, require a more involved planning process that likely would be part of a strategic plan or master plan. Equity issues likely would be more complicated as the AgPark Association and individual farmer-tenants establish or buy infrastructure for operations. For a project of this scope it is critical to plan the AgPark around a mission and core principles, but with some flexibility around implementation.
REAL WORLD EXAMPLE

Intervale
Burlington, VT

Its name means the "land between," and it’s an example of the thinking that propels the concept of an agricultural park at the urban edge. Much of the Intervale’s more than 700 acres lie within the city limits of Burlington, Vermont. The land was first cultivated more than a thousand years ago by the Abenaki Indians and later was the site of the homestead for Vermont’s founding father, Ethan Allen. In the 1970s, as a result of urban pressure combined with the consolidation of small farms nationwide, the lands fell into disuse.

In 1986, citizens began cleaning up the site. By 1990, a non-profit organization was in place, and The Intervale Community Farm was thriving as the first community-supported agriculture (CSA) effort in the state.

Since 1988, the Intervale has reclaimed over 325 acres for agricultural use. The Farms Program, founded in 1990, is a business incubator to teach, nurture and launch farm enterprises on Intervale land and elsewhere. “Incubator Farmers” join a three-year program in which they receive technical and mechanical support, learn marketing and business planning, and are able to lease land, equipment, greenhouses, irrigation and storage facilities to allow them to farm organically on Intervale land. Graduates become Enterprise Farmers entitled to extended leases on the land; they have the option of continuing to farm in the Intervale or reestablishing businesses elsewhere. Today, twelve organic farms produce 500,000 pounds of food for the community economy.

Intervale Conservation Nursery grows native tree and shrub seedlings and plants used for riparian restoration throughout Vermont, and serves as a statewide development and education organization to promote such restoration. “What we are discovering is that reconnecting people, food and nature is an astounding way to preserve natural resources, strengthen community, and create a roadmap to sustainable future,” the organization notes.

Information taken from www.intervale.org
3.3: Services and Resources

An AgPark Association could provide a range of services and resources to its farmer tenants. Some, such as farmer training and business planning, could be provided in partnership with an organization that already has such expertise. Other services and resources, such as marketing and public education, would likely best be done directly by the Association.

Training and Technical Assistance
An AgPark with a mix of beginning and experienced farmers can offer opportunities for mentorship as well as apprenticeships and internships. Supporting services may take the form of:

Farmer Incubator programs
Typically, such programs provide intensive instruction often followed by extended training, support, and/or apprentice programs. Incubation programs require an area of small farm plots and some infrastructure, including classrooms and office space.

Continuing Farmer Training and Technical Support
A huge range of resources provide experienced farmers with training and technical support in all facets of production, resource management, marketing, and business planning. A centrally located AgPark with a sufficient scale and mix of farmers, could be a site for farmer training, farm field days, and on-farm research, conducted with agencies and organizations.

Key governmental agencies are University of California’s Cooperative Extension program, California Department of Food and Agriculture (CDFA), and USDA. Service organizations range from the Farm Bureau to commodity-specific research, production, and marketing programs such as the Strawberry Commission and the Milk Advisory board. The annual California Agricultural Directory offers the most comprehensive listing of resources.

Business Planning and Capitalization
A basic purpose of an AgPark is to minimize capitalization for individual farmer tenants, particularly in regard to how capital costs impact entry into farming or transition from one farm owner to another. However well established, AgPark farmers are still likely to need access to business planning, capitalization, and credit services. For beginning farmers, these services are likely to be provided as part of their farmer training. For all farmers, a track record developed by farming in the AgPark would help them secure favorable lending conditions.
REAL WORLD EXAMPLE

Farmer incubation program

Agriculture and Land Based Training Association (ALBA)
Salinas, CA

Small Farmer Education Program (PEPA – Programa Educativo para Pequeños Agricultores)
ALBA’s 6-month, Spanish-language, intensive practical training program offers aspiring farmers the opportunity to learn sustainable and production methods and establish a small farm business. Classroom instruction, workshops, and field trips are offered to 20–30 farmer-apprentices each year covering soil fertility, bookkeeping, equipment maintenance, irrigation management, integrated pest management, marketing, business planning and small business management, organic certification procedures as well as English as a Second Language.

The PEPA program for established farmers aims to offer educational and training opportunities that help farmers improve their economic viability through better production and land management, and business planning and marketing.

Small Farm Incubation Program

The Small Farm Incubator Program is designed to allow participants to put into practice what they have learned from the formal PEPA course. After successful completion of the six-month intensive course, which includes over 100 class hours, participants have the option of farming at the Rural Development Center for up to three years in an extended apprenticeship program. First-year apprentices begin with half an acre and can farm up to five acres in the third year. Land, water and equipment costs are subsided during this period; they gradually increase with the successful completion of each year, ultimately reaching near-market value for these services upon completion of the third year. Throughout the program, apprentices have access to technical assistance.

Information taken from www.albafarmers.org
REAL WORLD EXAMPLES

California FarmLink
Sebastopol, CA

California FarmLink is a non-profit organization established to build family farming and conserve farmland in California by linking aspiring and retiring farmers; and promoting techniques and disseminating information that facilitate intergenerational farm transitions.

California farmers aged 65 and over outnumber farmers under the age of 25 by approximately 60 to one. Aspiring farmers face numerous obstacles to achieving their dreams, including a lack of information about financing options and other resources crucial to their success. Retiring farmers lack information about proven, innovative ways to keep land in agricultural production while simultaneously meeting financial goals related to retirement and estate planning.

Through workshops and one-on-one technical assistance, California FarmLink helps farmers find solutions to farm transfer challenges. The California FarmLink office serves as a clearinghouse of information and contracts regarding intergenerational farm transfers. Services are provided free or at minimal cost to farmers. In addition to workshops and publications, California FarmLink provides one-on-one technical assistance, referrals to other professionals serving the agricultural community, and connections or “links” through their database of retiring and aspiring farmers.

California FarmLink also helps low-income and limited-resource farmers finance their farming operations through two equity building programs. The Individual Development Account (IDA) program is a matched savings plan that matches every $1 saved by the participant with $3 from outside funds contributed through California FarmLink. Participants are asked to commit to saving $100/month for two years, so that by the end of the program, together with the FarmLink matching funds, they will have $9,600 to put towards a down payment on a farm or to purchasing farm equipment.

California FarmLink’s Farm Opportunities Loan Program, on the other hand, is designed to make equipment, capital infrastructure, and operating loans more accessible to small farmers who have limited access to credit through traditional lending sources. As a non-profit organization, FarmLink has borrowed money which, through its partner SAFE-BIDCO, is lent to farmer clients at affordable interest rates. This loan fund program is accessible to small farmers at various stages of expanding, launching, and improving their farm businesses.

Information taken from www.californiafarmlink.org
Marketing
An AgPark Association can offer significant value for its farmer tenants in the marketing arena. Below are possible direct marketing and value-added strategies an AgPark Association could make available to its farmer tenants. Each strategy includes a short general description, specific AgParks considerations, and relevant resources.

Farmers’ Markets
An AgPark Association could reserve one or multiple spaces at local farmers’ markets where the AgParks farmers could sell their goods.

Agritourism
An AgPark could offer “you-pick” activities, opening portions of the farm parcel to the public for harvest. Farm products could be purchased at the farm stand.
➢ Resource: Agritourism and Nature Tourism Manual produced by the UC Small Farm Center

Community Supported Agriculture (CSA)
An AgPark Association could offer a CSA program with produce from all or any of its tenants. The Association would market the program and manage subscriptions, deliveries, pick-ups, and other operational details.
➢ Resource: Local Harvest

Farm-to-School
There is great potential for an AgPark to partner with local school districts, by providing agricultural products, plant starts for school gardens, and a location for educational field trips and gardening and cooking classes.

Farm-to-Restaurant:
An AgPark Association could do outreach to local restaurants and secure commitments from them to purchase foods from the AgPark. A special label, provided by the Association, could designate vendors of these locally-grown products.

Value-Added Products
AgParks present a unique opportunity for farmer-tenants to add value to their products by turning their harvest into prepared foods or consumer-ready goods. They are also an ideal setting for a park concession to feature food as a meaningful element of the rural...
experience. In fact, food is one of the key elements that could serve to integrate an AgParks’ agricultural and park functions.

The two main ways that AgParks could provide a value-added food component would be through an AgPark Café and an AgPark ‘community kitchen’. Both uses could share the same facility (described in more detail in Chapter 3.4, Shared Infrastructure.)

- In an AgPark, the onsite café or food concession would feature ingredients grown and processed on-site. Ideally, the Café would contract with the farmers to grow selected foods that would be featured in seasonal menus.

- Community kitchens are facilities, managed on a shared lease basis, that allow multiple small businesses to produce value-added food products without having to invest in their own health-department certified kitchen. With a community kitchen in an AgPark, farmers could add value to their farm products, which then could be sold directly at the onsite farm-stand and food concession.

➤ Resource: Establishing a Shared-Use Commercial Kitchen

Education and Outreach
An AgPark Association can coordinate and streamline outreach and education efforts for its tenants. Since agricultural operations involving the public must comply with public safety and accessibility regulations, local ordinances and codes for fire prevention, safety and the like, the Association would have the capacity to ensure compliance, obtain liability insurance and other details that otherwise would distract the farmer from the agricultural enterprise. Activities that could be managed by the Association include:

Tours
Farm tours can be lead by the farmers themselves, or by volunteer or paid staff.
Site considerations: Public tours do not require any specific site amenities, tour attendees must have access to restroom and parking facilities. It is also nice to have a meeting space either indoors or out with a bulletin board and an area where a group can convene and a tour guide can begin his or her presentation.
Classes/Workshops
A number of educational, horticultural, nutritional, environmental, agricultural, cultural, and other institutions, organizations and local groups that could have interest in offering classes and workshops at an AgPark.

Site considerations: The farm should have a central meeting place—either an enclosed room or a circular outdoor pavilion—with tables and chairs.

Summer Camps
A summer camp could be operated on site by a community partner.

Site considerations: In order to host a summer camp, a farm should have ample space for active kids to move around. If it is a sleepover camp, the farm also needs space for kids to pitch tents or indoor accommodations for sleeping, and a space for indoor or outdoor cooking and dining.

Community Celebrations
A community festival can be a great way to kickoff a new park and inform local residents about AgPark programs.

Site considerations: The farm should have ample space and sufficient parking accommodations for the number of visitors expected. A mowed field can suffice for overflow parking in the case of a special event.

Apprenticeships/Internships
Programs in which participants gain knowledge and experience by working on a farm could be a built-in part of the farmer training and technical assistance program.
REAL WORLD EXAMPLE
The Philo Apple Farm
Philo, CA

Friends were skeptical when writer Lynell George of the Los Angeles Times announced she planned to spend a three-day vacation sweltering in a kitchen in 95-degree summer heat. If they’d known the kitchen was part of The Philo Apple Farm, they would have understood.

The Philo Apple Farm is a family affair operated by Don and Sally Schmitt, retired after 16 years as owners of French Laundry, the famous Yountville restaurant. Today, using biodynamic practices, they tend an orchard of 1800 heirloom trees, some planted 90 years ago. The apples are picked by hand in the fall and shipped directly to market, without the waxing and storage often used by conventional producers. Some of the harvest is sold by their own farm stand, along with chutney, jams and jellies made from their own apples.

In 1995, the Schmitts opened their expansive kitchen to offer weekend cooking classes. “It was such a pleasure to welcome old friends from our former lives and to make new ones who found their way to our spot of heaven in Anderson Valley,” they note on their website. That kitchen first lured Lynell George, with its “vast, sun–flooded kitchen: its large chopping-block work islands; huge old Montague stove; well–stocked pantry; row upon row of gleaming baking pans; stacks of gorgeous, hand–made crockery,” she wrote. “Looking around this well–appointed, obviously professional kitchen in the middle of a fairy–tale–in–the–woods setting, I took it all in.”

The student cooks tour the farm, visit the goats and forage the raspberry patch to understand the nature of regional, seasonal eating. George describes the challenges of preparing poblano chile soup, bacon–wrapped scallops and peach gelato with seven strangers, all eager to prove themselves in the kitchen. The real discovery, however, is the realization that good food comes from good sources. When she sets out to gather ingredients for a French potato salad, she find the Apple Farm’s garden “an elegant tangle of herbs, greens, berries, flowers and vegetables that looked as though it had grown from the pages of an English children's storybook.”

Fulfilling foodie fantasies is also good business for the farm. Cost of the weekend classes (taught from February into November, to groups of eight) is $350 per person and includes the meals, wines, recipes, and instruction. Many participants stay on–site in the four cottages the Schmitts rent for $200 a night. A fair price, according to George, for the satisfaction of hard work, the collective accomplishment, a new ease and confidence.

Information taken from www.philoapplefarm.com
3.4: Shared Infrastructure

An AgPark presents numerous opportunities to combine construction and functions of various facilities. This chapter covers the following types of infrastructure and facilities that lend them themselves to shared use: irrigation, water, and drainage systems; electrical, gas, and fuel utilities; alternative fuel systems; compost system; corporation yard; equipment and storage facility; processing and packing facility; product storage facilities; greenhouse; office; farm-stand; and community kitchen.

In order for shared-use facilities to function efficiently, economically, and harmoniously, minimum requirements would include:

- Design and construction to flexibly accommodate both individual and common spaces, and/or both separate and shared uses
- Detailed rules and protocol, covering issues such as liability, fees, required training for use, security, etc.
- Management by some one with skills and experience in the functions and technology of the particular facility

Irrigation

Preliminary tests would be conducted to determine the quality and quantity of water available. Consultation with an irrigation company would help determine pipeline sizing and consultation with a water pump company would help determine well controls. Types of fees for water use include ground water pumping fee and fees for a water system ditch, canal, or pipeline. (See Appendix A for detail on overall water needs and issues for agriculture.)

Macro infrastructure

- pump, electric or gas–powered via generator
- optional auxiliary water holding tank or pond
- main lines, permanently located, usually buried, with fixed surface hydrants

Micro infrastructure

- moveable secondary lines, surface irrigation pipe; metal or PVC
- sprinkler systems
- drip systems
- hosing for furrow irrigation (off a ditch or secondary line)
Optimal practices
• use of conservation practices such as mulching
• minimization of erosion and run-off by use of contour plowing and catchment ponds
• use of treated water as permitted
• irrigation system that has the flexibility to accommodate widely varying demand, ranging from minimal to multiple, simultaneous irrigation needs at varying pressures

Potential system
Characteristics of a ‘water-on-demand’ system with sufficient flexibility and accountability to accommodate multiple farmers with multiple crops and water needs would include:
• sufficient water source capacity
• significant water storage capacity
• pumps with the capability to utilize the full capacity of the wells
• a water management system to schedule irrigation among the various users
• pump control systems to regulate the amount of water pumped and the pressure
• pipelines large enough to accommodate the maximum flow available or required
• booster pumps
• water meters

AgParks Considerations and Sustainability Opportunities
There are potential compatible uses between agricultural and park water uses and potential opportunities for the AgPark to provide environmental services.
• An AgPark pond could serve as a recreational and habitat amenity, aquifer recharge site, local flood control system, and a reservoir for irrigation water.
• For irrigation, an AgPark could use treated municipal water and also filtered, park-generated grey water

Electrical Utilities
The major electrical needs of agriculture are for the buildings including the storage barn, repair shop, greenhouse, farm stand, and office space, and also for electric-powered vehicles. The primary power source for most agricultural operations, especially those near urban areas, is the local utility company. A secondary power source is often gas-powered generators. These are used in areas of the farm where there were no power lines, such as next to wells in order to power pumps or as back-up power for cold storage or heated greenhouses.
AgParks Considerations and Sustainability Opportunities

• Generators need to be located with consideration for noise pollution and public safety. They need to be housed in structures to protect against vandalism and weather. Regulations govern emissions and containment of the fuel supply (see below).

• Efficient use of power. Costs of gas and electricity are continuing to rise, like other farm expenses, at a higher rate than returns from farming. Construction of new farm buildings as well as retrofits need to be as energy efficient as possible.

• Farm-generated power. Farms have unique attributes that can provide options onsite for renewable energy generation. Roofs on buildings can accommodate solar panels; open areas might support wind power systems; and onsite creeks might support mini hydro-electric systems. Conceivably, the farm could sell any excess power to the utility.

Fuel Types

• Natural gas. Used primarily for heating. Stored in above-ground tanks or delivered through a utility company line.

• Diesel. Used for most farm machinery. Stored in below-ground tanks. Small to medium farms would have fuel needs requiring storage tanks with 500-1000 gallon capacity.

• Gasoline. Used for some kinds of farm machinery and for on-road vehicles. Capacity requirements would likely be less than for diesel. Storage tanks are usually underground.

There are stringent regulations for onsite fuel storage. As a potential hazard, fuel storage tanks should be located in a ‘no public access’ area.

AgParks Considerations and Sustainability Opportunities

• Emerging renewable energy generation technologies. These include methane-digesters, production and use of bio-diesel and other bio-fuels.

• Maximized use of on-farm inputs. Management of soil fertility, plant health, weeds, and pests, can all be significantly addressed with on-farm systems such as compost generation and application, hedgerows, crop rotation, inter-planting, companion planting, mulching, etc. The options offered by AgParks of having animals as part of the overall system, increases the potential for on-farm fertility management.

• Reduced food miles. Local food systems which shorten the distance between producer and consumer are an obvious advantage of urban-edge AgParks.

• Incentives. Increasingly, there are incentives and marketing programs that are supportive of the basic goals and principles underlying AgParks.
Policies and Regulations. The advent of local Food Policy Councils and city’s Sustainability Plans, demonstrate that sustainability goals are beginning to be adopted as public policy. Such policies are requiring for example that a certain percentage of land be dedicated to growing food, and that a certain percentage of food purchased by city departments must be “locally” grown.

Composting
Composting is an important process for transforming potentially problematic waste products into valuable resources. Well-made compost is a cornerstone of ecological farming and gardening systems. It enhances the physical, chemical and biological properties of the soil and is a source of essential plant nutrients, organic matter and beneficial soil microbes.

Compost systems
- Anaerobic compost is made by organisms that do not like air. The composting function takes place in an enclosed space or container and requires minimal tending except for monitoring for moisture.
- Aerobic compost is made by organisms that require oxygen. The aerobic process, the most common in nature, is open air and has no accompanying bad smell as long as there is adequate oxygen present. The most common kind of aerobic compost systems on farms are called ‘windrows’, which are long piles of compost.
- Vermicomposting is the process of using earthworms and microorganisms to convert organic waste into humus. This type of composting system usually operates at a relatively small scale. As a general rule of thumb – 1 lb. of worms eats approx. 1/2 lb. of food scraps per day.

AgPark Considerations
Requirements:
- Availability of feed stocks in the right quantities, of the right quality, at the right time, and at the right price. The two main categories are carbon sources (e.g. such as straw, ground tree-trimmings) and nitrogen sources (e.g. manures, food wastes).
- A compost yard large enough to accommodate ‘feedstock’ ingredients, active compost piles, room to turn these piles, and equipment. Size of yard could be ½ acre to 4 acres to accommodate a compost system sufficient for a farm ranging from 20 to 250 acres.
- Equipment. Basic equipment includes compost covers and compost testing equipment; tractor with plow, loader, and spreader. More sophisticated equipment includes a pull-turner that straddles and blends the windrows in place.
REAL WORLD EXAMPLE  

**Compost operation**

**Foster Ranch**
**San Juan Bautista, CA**

Foster Ranch, certified organic for 14 years, has 250 acres of row crops (mixed vegetables, melons, and berries) and orchard crops. Outlets include farmers’ markets, wholesale, retail, and a local CSA.

- The 4 acre compost yard is graded, packed earth. It includes areas for feed stock storage, 6–8 windrows (each 10’ wide, 4 ½’ high, and 400’ long), and equipment moving.
- Feed stocks include culled vegetables (from the farm and local food bank), wheat straw, dairy and turkey manures, ‘clean–green’ processed municipal green waste, and processed tree–service trimmings.
- In addition to basic equipment (compost covers and compost testing equipment; tractor with plow, loader, and spreader), operation has a tractor–drawn ‘pull–turner’ that straddles and blends the windrows in place.
- Windrows take 14–16 weeks to produce finished compost in the summer, and about 50% longer in winter. About 10 weeks into the composting process, 2 windrows are combined into 1. Piles are covered in the winter to prevent saturation. Compost making operations cease in wet weather.
- A combined windrow when finished will be around 200 tons of compost. The operation produces ~2,000 tons of compost per year, enough for the farm’s compost needs.
- Advantages of making compost rather than buying it: cheaper, more control over finished product.
- Challenges: sourcing municipal green–waste that is consistent in quality.

Infrastructure. Water is needed to reach all parts of the compost yard. Yards are usually on packed dirt. Yards on hard surfaces such as concrete or asphalt can be worked even during rainy periods.

- Location of the compost yard away from urban neighbors to minimize any odors.
- Grading and siting of the yard so that any run-off in winter does not enter a waterway.

**Corporation Yard**

Farms have a great deal of equipment that does not require weather protection, such as large farm vehicles and their fittings/rigs, irrigation pipe, fencing materials, ladders, garden carts, picking and storage, bins, etc. However, the yard in which these are stored have some infrastructure needs itself: secure fencing, light, water, a graded surface with appropriate drainage (e.g. French drain, curtain drain). Some items, such as irrigation pipe, need to be stored off the ground. Other items, such as amendment piles, need to be covered and to have their own mini–drainage system. The corporation yard is also the likely place for fuel storage, above or below ground, as regulated by scale and fuel type.

**Equipment and Storage Barn**

Farm equipment preferably protected from the weather and elements includes:

- Tractors and small equipment such as rototillers, mules, seeders, sprayers, etc.
- Hand tools: shovels, forks, hoes, weeders, saws, pruners, etc.
- Irrigation system components, propagation supplies, row covers, etc.

Supplies that require weather protection include:

- Boxes. Even stored flat, these can be a bulky item.
- Minerals and amendments, concentrated fertilizers, etc.
- Seeds, bulbs, nursery stock, etc. Some of these might require specific temperature and/or humidity controlled storage conditions.

The size and type of building could vary widely. It could be a reused or refurbished building. It could be combined with other building needs such as repair shop, packing facility, bathroom, and office. Minimum infrastructure requirements include: solid floor, electricity, insulation, good ventilation, and preferably plumbing and gas. Likely it would have large doors and a high ceiling.

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6 Based on UC Davis Illustrated Lists of Plans for Storages, Construction Details and Miscellaneous Structures
Repair Shop
A repair shop is an essential facility for a farm. It is used for repairing large and small equipment and storing parts, and as a machine shop and a wood shop.
- 800–1,000 SF is suitable for a small farm; 3,000 SF is suitable for a larger farm (200 acres)
- Specifications include concrete floor, high ceilings, good ventilation, fire protection, plumbing and drainage, electricity and gas, appropriate storage for any toxic materials, and for materials requiring special disposal

Preliminary Processing and Packing Facility
This is the space where harvested crops are sorted, graded, cleaned or washed as necessary, packed, labeled, stored, and prepared for shipment. Orders for customers are also assembled here, including the boxes for individual customers for farms operating CSAs. Some big farming operations have the mechanized equipment to sort and pack certain crops in the field, but this is not the case with small farms.

For a small farm or beginning farm
This is the type of modest, low-tech facility that might serve individual farm-tenants in a larger-scale AgPark
- Processing and packing area can be informal, with little more structure than overhead protection against sun and rain; floor can be packed dirt or gravel; drainage from produce washing directed via French drain system to a settling pond
- Minimal equipment such as informally-plumbed sinks, sorting and packing tables, container for compostables, and places to store picking containers and packed boxes
- Upgrade to an enclosed structure with a solid floor and electricity is obviously preferable, and can be accomplished as a temporary and/or portable structure on skids

For a larger and more established farm
- Processing and packing facility is a solid, well-planned structure. At minimum it has all utilities, good light and ventilation, and is a flexible, open space. The organization of the space and the equipment differs considerably according to the crops being handled.
- Some of the processing is liable to be at least partially mechanized with equipment such as: washing devices; waxing and coloring devices; gassing machines; icing, forced air, and hydro cooling machines; and grading, sizing, sorting, and packing lines.
- Ample, convenient, and appropriate storage for processed and packed products is essential.
It is important to note that as soon as processing entails any type of cutting into the edible part of the product (e.g. making ‘cut salad mixes’), a whole set of health department regulations come into play.

**Product Storage Facilities**

Product storage needs depend on types and volumes of products being produced, as well as on other factors such as ambient climate and shelf-life requirements (conditions, time, and distance to end market). Two general categories are dry storage and cold storage.

**For a small farm or beginning farm**

- Cold storage can be as simple as a refrigerated truck, either mobile or immobile. An 8’ x 30’ refrigerated truck can hold approximately 400 boxes.
- Dry storage can be as simple as an area protected from the elements where products can be kept for a relatively short period of time.

**For a larger and more established farm**

- Cold storage facilities control for factors including temperature, humidity, gas, air circulation, and access. Some of these factors can be partially controlled by installing curtain walls to make separate compartments within one cold storage room.
- Sophisticated cold storage facilities control for every factor to a fine degree. To give year-long marketability to seasonal products (e.g. apples and pears), some cold rooms are set at exact conditions to maximize product shelf life, and then sealed for months at a time. For shipment, products are transferred to trucks or containers that also have strict environmental controls.
- Dry storage facilities control for similar factors. Even a few degrees difference in temperature or humidity can have significant affect on product shelf life, so specific storage conditions are established for different types of products.
- Warm storage or ripening rooms. Warm storage rooms hasten and control ripening of certain products, such as tomatoes, avocados, and bananas, in preparation for shipment to market.
**Greenhouse**

The term greenhouse is used to cover numerous types of spaces and facilities for growing plants in modified-climate environments. Main uses of greenhouses are for propagation and for the full life cycle of ‘green-house grown’ plants.

**Simple approaches**

- Cold frames are low, plastic or glass-covered structures at ground level, used to germinate seeds and nurture seedlings.
- Low covers (sometime called row covers) are lightweight, specialized plastic sheets laid directly over the plants in the ground (‘floating covers’) or laid over low wire or PVC hoops and so held above the plants.
- Walk in tunnels are (usually) unheated structures placed over plants growing in the ground and consisting of plastic supported by spaced arches or hoops tall enough to walk under.
- Shade houses are simple, usually open-sided structures covered with plastic or other material that shades plants growing in the ground.

**Greenhouse structures**

- A typical greenhouse that a small farm would use to start seedlings is about 15 to 35 feet wide and 40 to 100 feet long, constructed of bowed pipe and covered with single or double air-inflated plastic sheeting. Seedlings trays are on the ground, on top of ground cloth to keep out weeds, or on tables. The structure is on grade, unheated, and fairly portable. Typically, there are areas next to the greenhouse for mixing potting soil, seeding, and hardening off plants before they are planted into the ground.
- More complicated greenhouses are engineered structures, with every aspect of the climate – heat, humidity, light, air circulation – fully controlled for needs of the plants being grown there.
- A water source and system and drainage system are developed according to the greenhouse scale.

**AgPark Considerations**

- Greenhouses can be eyesores. Temporary row coverings can result in plastic strewn about the fields; industrial-scale greenhouses can mar a landscape aesthetic. Basic design guidelines, including construction, landscaping, maintenance rules, and siting could ameliorate many of these issues.

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7 Based on Illustrated List of Plans for Cabins, Greenhouses, Horse and Pet Facilities, and Recreational Equipment
• Greenhouses that use heat might be able to use waste heat generated by the farm.

Office
The office is the hub for farm management and for marketing. Farmers who have very small operations and who do most of the management and marketing themselves can get by with a quite modest office.

Farmers who manage multiple employees, many crops, and diverse market outlets – and often various outside organizational commitments as well – have more extensive needs for office infrastructure, equipment, and dedicated office staff.

AgPark Considerations
Sharing office infrastructure, equipment, and services makes sense in an AgPark setting. Small individual office spaces or cubicles would likely be necessary as well.

Farm-stand
A farm-stand, also called a roadside stand, is a place, located on or adjacent to the farm, where a farmer can sell farm products directly to consumers. Types of farm-stands permitted and types of products sold are governed by various state and local agencies.

Simple approaches
• No building; just weather protection (e.g. awning, shade roof, etc.)
• The simplest, un-staffed stands can be honor-system tables where customers take bagged products and put money in a lock box. A related version, used in Japan, uses a customized vending machine to dispense fruits and vegetables.
• Portable: open trailer-type on skids
• Small building below cut-off size required for a building permit (e.g. less than 120 SF) with covered outdoor selling space

Farm-stand structures
• Finished, enclosed building on slab with full utilities
• Could be new or a refurbished building
Rules of thumb:

• Interior of a farm-stand should have space for storage, displays, and aisle space (ideally, at least 5 feet wide). The dimensions for these components should determine the stand’s exterior dimensions.
• Strategic location of plumbing and cold storage will permit expansion at a minimal cost.
• Size of storage and preparation area should equal sales area.
• 1,500 SF is considered average/sufficient; 3500 SF is large.
• Number of parking spaces for a farm-stand is not regulated. Best practices include: one place for 100 customers; parking area 4 times as big as sales area; one place per 200–300 SF of sales area.
• Signage is usually regulated. Best practices include: primary sign should be placed one-half mile from the farm stand; follow-up signs should be used if a stand is in a secluded location.

Regulatory Agencies

• California Department of Food and Agriculture (CDFA) exempts growers who sell to consumers from roadside stands adjacent to the point of production or to U-Pick fields from sizing, standard pack and certain container and labeling requirements.

• CDFA Marketing Branch contains orders and commissions that facilitate marketing of a particular commodity, establish standards for size, grade, and/or maturity, and determine other marketing conditions, such as place of sale. If a farmer plans on selling regulated crops\(^8\) at their farm-stand, they should first contact the CDFA Marketing Branch for the manager of the appropriate order or commission at (916) 445–5141.

• CDFA Market Enforcement Branch: Where permissible under local ordinances, many farmers purchase produce from other farmers for resale at their farm-stand. The Market Enforcement Branch of CDFA is responsible for issuing resale licenses. (916) 654–1237.

• California Uniform Retail Food Facilities Law (CURFFL) exempts direct marketing farmers from most structural and operational requirements provided that the market is located on land controlled by the farmer and that the only items sold at the market are eggs.

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\(^8\) Crops covered by a marketing order or commission: almonds, figs (dried), apricots, Grapes (table), Artichokes, Grapes (tokay), Avocados, Grapes (wine), Beans (dried), Honey, Beef Kiwi Fruit, Cantaloupes, Lemons, Celery, Lettuce, Citrus, Melons, Dates, Milk, Nectarines*, Raisins, Olives, Rice, Oranges, Strawberries, Peaches, Tomatoes, Pears, Turkeys, Pistachios, Walnuts, Plums, Wheat, Potatoes, Wine, and Prunes
fruits, nuts, and/or vegetables. Some CURFFL regulations that do apply to roadside stands are:

* All food must be stored at least 18 inches off the floor. Food stored in a walk-in refrigeration unit must be at least five inches off the floor (food stored on a pallet should also meet this requirement).

* Food preparation is prohibited. Article 2 Section 27522 of CURFFL defines food preparation as a "packaging, processing, assembling, portioning, or any operation which changes the form, flavor, or consistency of food." Some county environmental health offices interpret Section 27522 as prohibiting the cutting of samples.Trimming of outer leaves, stems, stalks, tops and roots is permissible. If a farmer is interested in setting up a pie shop, cider press, or other food preparation facility, they should contact their county environmental health office for further direction.

- Local county planning offices have different zoning laws and requirements for building permits, signage, and types of products farmers can sell at farm-stands. They should be contacted directly.

- **Resources**
  - How to Establish and Operate a Roadside Stand
  - Critique Checklist for a Roadside Market
  - Direct Marketing of Farm Produce and Home Goods

**AgPark Considerations**
AgParks located on public lands may be exempt from certain local regulations (e.g. kinds of products that can be sold, signage ordinances) but may be subject to additional regulations of public landowner.

**AgPark Café and Community Kitchen**
An AgParks presents a unique opportunity for farmer-tenants to add value to their products by developing processed products and prepared foods. It is also an ideal setting for a park to feature food as a meaningful element of the AgPark experience. In fact, food is one of the key elements that could serve to integrate an AgParks' agricultural and park functions. In this approach, food service is more than an adjunct amenity (like a bench or a restroom); it is a reflection of the AgParks' broader sustainability goals and creation of sense of place.
Reasons to make food an integrative element in AgParks:

- Much of the food served onsite could be grown onsite; thereby providing park visitors with an educational experience as well as offering them a unique food concession.
- Processed food products created from food grown onsite could add depth to the AgParks’ CSA offerings, could add a new dimension to the traditional offerings at the park gift store (which could potentially be combined with the farm stand), and could also be sold at local retail outlets as another way of marketing the AgPark.
- Parks are not subject to the zoning regulations that usually restrict farm stand sales to raw products grown onsite.

The two ways that AgParks could provide a value-added food component would be through an AgPark Café and an AgPark ‘community kitchen.’ Both uses could share the same facility.

**Café and Catering**

Food service in parks varies widely, but it is probably safe to say that the standard fare is rarely a motivation for a park visit. However, an AgPark has the potential to make food a more central part of a visitor’s park experience.

In an AgPark, the onsite Café or food concession would feature food grown and processed on site. Conceivably, the growing, processing, and preparation stages could all become interpretative programs of the AgPark. Simple modifications, such as providing field signage, viewing windows into processing areas, and open kitchens, can bring visitors into the food production process. A more involved approach would be to offer staffed tours, tastings, and hands-on demonstrations, perhaps under the auspices of the educational partnerships.

There is also a growing market for custom special events, such as team-building cooking classes, wine-and-food pairings, and “agri-tainment” parties at which farm experience and food are focal points for entertainment. Assuming the park has inviting outdoor spaces, the Café could offer catering (perhaps in partnership with established catering companies) for special events such as weddings and corporate parties. The appeal of food grown on site could help provide a unique and attractive marketing niche. Ideally, the Café would contract with the farmers to grow selected foods that would be featured in seasonal menus.
REAL WORLD EXAMPLE

Earthbound Farm Organic Kitchen
Carmel Valley, CA

Earthbound Farm’s grows over 100 varieties of certified organic salads, fruits and vegetables on more than 24,000 acres, and sells these products in 74% of America’s supermarkets.

The farm stand is located alongside Earthbound Farm’s 13-acre research and development farm. Open year round, it offers all the company’s products including salads, vegetables, fruits, snacks, flowers, and gifts. The farm stand also hosts a full schedule of tours, hands-on workshops, children’s program, special events, and benefits.

Opened next to the farm stand in July 2003, the farm’s ‘organic kitchen’ is one of only a handful of certified organic kitchens in the country. It provides “quick, convenient, healthy and delicious” organic foods including organic coffees, teas, smoothies, juices, baked goods, sandwiches, soups, salads, and ready-to-eat meals. Prepared entirely with certified organic ingredients (with the exception items such as baking soda and salt, which are not available organically), the food is labeled ‘certified organic’ in accordance with the USDA organic standards.

Mathew Millea, formerly the executive chef at the Ventana Inn, and his staff serve 60–80 meals every day. The focus is on prepared food to go. However, customers also enjoy eating food on site at a small indoor dining room and an outdoor patio overlooking the garden.

Community Kitchens
Community kitchens are facilities, managed on a shared use basis, that allow multiple small businesses to produce value-added food products without having to invest in their own health-department certified kitchen. Such facilities, which have been successfully developed both for micro-food entrepreneurs and for farmers, would be an ideal amenity in an AgPark. The farmers could add value to their food products which then could be sold directly at the onsite farm-stand and food concession. Likely, the AgPark would also have a website store.

Experts in the development of community kitchens caution that there a number of ‘rules of thumb’ that need to be heeded in order to avoid pitfalls.

• Multiple uses. The most successful projects usually involve multiple uses such as: incubation program for micro-food entrepreneurs to research and develop new products; a facility for small food businesses to start producing their products; and a co-packing facility for farmers creating value-added products.

• Management. Organization of multiple users requires experienced management with skills such as financial management, facility management, food product development, health and safety expertise, and marketing.

• Well-planned, flexible design. Planning for multiple and likely evolving kinds of uses is challenging. Used restaurant equipment and processing line equipment is often readily available. Adequate storage for ingredients, products, supplies, and equipment is essential.

• Developed with grant funding. Most community kitchens are established with grant funding, which in turn requires clear demonstration of purpose, business plan, and management capability. Some kitchens are developed in partnership with or by educational institutions.

AgPark Café and Community Kitchen Start Up

• The core facility would consist of a kitchen with a generous storage area. It could also include a room that could be used both as a classroom and for cafeteria-style seating.

• The over-arching business plan would allow both the community kitchen and café functions to start modestly. For example, the community kitchen might be used only to make fresh salsas and jams. The café might serve only a small menu of to-go items, such as sandwiches, salads, pastries, and drinks; along with the farmers’ processed foods. This could keep overhead low for both the café the kitchen during start-up.

➢ Resources. Establishing a Shared-Use Commercial Kitchen, Cameron Wold
Restrooms

AgPark Considerations
- In a small-scale AgPark (~under 30 acres), there would be one restroom area located in a building with utilities (e.g. storage, processing, office, farm-stand) for use by farmers and visitors.
- In a larger AgPark, there would need to be several restroom areas. Ideally, these would be maintained by the park agency and be conveniently located both for the farmers and for the public (e.g. next to public trails). Depending on the utility infrastructure, ground water situation, and other issues, it might be possible to use chemical toilets or composting toilets in these areas. The Department of Environmental Health regulations should be consulted for determining use of these types of toilets at an AgPark.
- The infrastructure for the overall waste-water disposal system (e.g. septic system, urban sewage service, other technology) would depend on many factors including location, funding, and various regulations.

Infrastructure for Individual Agricultural Operations
In relatively small AgParks (e.g. 20 acres or less), the farmer-tenants would be served by centrally-located infrastructure, designed primarily for shared use, but also with some individual modules. However, on larger AgParks, multiple farmer-tenants would need their own individual infrastructure in addition to the shared infrastructure. This individual infrastructure, perhaps located as satellites to serve several farm plots, might include the following elements:
- Small shed (~200 SF) for tools, boxes, supplies, weather protection, mini-office space. This could be portable or on skids to maximize flexibility.
- Small covered area (~200 SF) for packing, farm equipment storage
- Small yard space for a mini-greenhouse, storage of farm gear, irrigation elements, etc.
- Utilities: electricity (solar); potable water, bathrooms (likely shared public facilities)
REAL WORLD EXAMPLE

Appalachian Center for Econ Networks (ACEnet)
Athens, OH

ACEnet is a nonprofit community development corporation working to transform the economy of Appalachian Ohio. ACEnet’s Food Ventures Project works with many community partners to open opportunities for new specialty food jobs and businesses in Southeast Ohio. The Community Kitchen Incubator (CKI), a networking hub for the Food Ventures Project, serves as a physical site of food production, as well a source of education and information about the specialty food industry.

The Community Kitchen Incubator is a licensed processing facility where entrepreneurs can rent the use of equipment to produce their products and thus start their business for low-cost. The primary goals of the ACEnet Community Kitchen Incubator are to enable new businesses to start-up with low-cost; to create jobs and grow the local economy; to build a vibrant food sector; and to train community and businesses to be more cooperative and better networked.

The 2,500 square foot multi-use commercial kitchen includes: a commercial processing area with licenses for baking, canning, catering, and freezing foods; and dry, refrigerated, and frozen food/commodities storage. It is part of an overall facility (8,000 SF) that also includes: a retail space featuring locally and regionally produced specialty food products; commercial office space for food-related businesses; a computer technology center; a specialty foods resource library; a conference room; and an area for reception and office-related support services.

CKI users fall into one of four categories: anchor tenant; production tenant, prototype/product development user; and one-time/occasional users. Rates are determined by factors including frequency of use (in general, the more a business uses the CKI’s facility and services, the lower the per/hour rate); type of equipment used; amount of space needed; number of workers; and hours of use.

In Phase 1 of the kitchen’s development, ACEnet spent $665,400 and in Phase 2, $398,000. In 1998 the kitchen’s rental income was approximately $78,000, and the kitchen spent $250,000 on technical assistance.

Information taken from http://www.acenetworks.org/frames/framesfoodventures.htm
Customized Individual Agricultural Operations

One strong appeal of an AgPark for farmers and the public alike stems from its providing an orderly framework which facilitates a diversity of agricultural operations and activities. Production of a variety of annual row crops is expected to be an operational template and a mainstay for many of the AgPark farmers. Row crops can be produced with fairly modest infrastructure, in a range of plot sizes, and with relatively short lease terms of 1–3 years.

However, there are other kinds of production, both plant and livestock, which require more than basic infrastructure. Like a public market, an AgPark that proactively solicits and accommodates a mix of agricultural operations can be greater than a sum of its parts; in effect it can be a ‘public market on the hoof’. The examples below illustrate individual types of operations that fit into an integrated system approach for AgParks of various scales.

Examples of plant production systems requiring specialized infrastructure

- Hot-house production of tomatoes, cucumbers, peppers, melons, etc.
- Hot house production of cut flowers, decorative plants, seedlings, and nursery stock
- Mushrooms produced in climate-modified structures
- Hydroponic production of watercress, mache, and other greens
- Endive ‘forced’ in climate-modified structures
- ‘Hot beds’ for sprouting sweet potatoes for later field planting

Examples of livestock systems and infrastructure

- Small to medium scale poultry. 400 chickens can be housed on one acre, in two 400 SF houses (10’ x 40’). Extended pasture area, set up as a rotation, could allow for a ‘pastured poultry’ operation. Or a ‘chicken tractor’ (a small, mobile enclosure, open to the ground) could be moved to other farmers’ plots at key points in their crops’ production cycles.
- Small scale goat dairy. Ten acres is sufficient to accommodate a herd of over 200 goats and their kids on rotating pasture, a barn, milking parlor, and cheese making facility (which might be located adjacent to the community kitchen).
- Small to medium scale equestrian center, ideally located in proximity to regional trails
REAL WORLD EXAMPLES

**Harley Goat Dairy**

*Pescadero, CA*

On a restored cow dairy farm, Dee Harley has built a small goat dairy farm that produces award-winning cheeses. The intensively managed 9 acres includes pasture for 220 American Alpine goats (and their annual brood of 500 kids), a milking parlor, cheese-making room, cheese shop, edible flower garden, the Harley family home, and a farm labor unit mobile home for a family of seven employees.

Tours are a significant part of the farm income. Tours for school groups take place about twice a week over 5 months, book about a year ahead, and cost $250 for a group of up to 24 children. Tours for adults take place most weekends from March to October and cost $20 per person with a maximum of 20 people. Tour guests receive a 2-hour “behind the scenes” look at the workings of a goat dairy farm. Following the flow of the milk – from the goats to the cheese making – they meet friendly goats, milk a goat, (sometimes see a kid being born), learn how to make goat cheese, taste cheeses, and more likely than not, buy some of the farm’s 12 types of goat cheese.

“The shop and the tours have allowed us to stay small”, says Dee Harley, owner.

Information taken from **www.harleyfarms.com**
3.5: Leases

The purpose of this chapter is to itemize lease terms and additional Covenants, Conditions, and Restrictions (CC&Rs) that would likely be found in a lease agreement between an AgParks Association and its farmer tenants. The chapter starts by briefly describing four programs that have elements and lease terms applicable to the AgParks model. These are: The Intervale, the Hawaii Department of Agriculture Agricultural Parks Program, the Agriculture and Land-Based Training Association, and the Sonoma County Agricultural Preservation and Open Space District’s Small Farm Program. The chapter then outlines standard lease terms; describes lease terms specific to AgPark operations, and lists additional CC&Rs that could be included in an AgPark lease agreement.

Assumptions
- The Association will have a master lease with the public agency that allows for subleases and CC&Rs with subtenants.
- The subleases will be approved by the public agency.
- The Association will also contract with other non-farmer tenants such as farm incubator programs, community kitchen operators, etc.
- The public agency may need to make changes to its current ordinances for parks to permit longer hours of operation and/or alternate hours to access the site (e.g. late evenings, early mornings, etc.).

Four Illustrative Examples

The Intervale: leases land to new farmers in its farmer incubation program at low rates, and also to experienced farmers, or farmers who have completed the three year incubation period, at higher rates. The Intervale is 700 acres in Burlington, Vermont, owned by the Winooski Valley Park District. (For more information see page 34)

Hawaii Department of Agriculture Agricultural Parks: owns and manages 3,600 acres of land set aside specifically for agricultural activities; leases 20 acre or smaller parcels to 230 farmers. (For more information see page 68)

Agriculture and Land Based Training Association (ALBA): leases privately owned land to the immigrant farmer graduates of its training programs in its farmer incubation program. A third of ALBA’s agricultural land is protected under an easement held by the Elkhorn Slough Foundation. The remaining agricultural land is protected for agricultural use under a
covenant with the Economic Development Administration (part of the U.S. Department of Commerce) (For more information see page 36)

Sonoma County Agricultural Preservation and Open Space District (SCAPOSĐ): The SCAPOSĐ Small Farm Initiative leases land to small row crop farmers for affordable rates. (For more information see page 67)

**Standard lease terms**

These terms are common to most agricultural leases, both on private and public land.

- **Term**: length of time lease is to be in effect (1–5 years)

- **Lease payment system**: cash lease, crop-share lease, or livestock share lease

  - **Crop-share rent**: An arrangement in which a farm operator or operators provides the labor and equipment, along with all or a portion of the production expenses and receives a portion of the production. The landowner receives the balance of the production and may or may not share in the payment of production expenses, depending upon the division of production. Share rent arrangements vary widely, depending upon the types of enterprises and inputs provided by the tenant and ownership. The primary advantage of a share arrangement is that production and marketing risks are shared by the operator and by ownership, and each has an excellent incentive to maximize economic production. The objectives of the landowner and the operator are typically well aligned and the potential for conflict is minimized. The landowner's risk may be considerably less with a share arrangement than with a direct or custom operation, and the landowner’s capital requirement is limited to land, livestock, capital development and operating expenses.

  - **Livestock-share lease**: Livestock is owned jointly. Production costs are shared equally. Livestock and crop sales are divided according to the terms of the agreement.

  - **Cash lease**: The tenant pays the landowner a cash sum per acre or a lump sum for his or her investment in farm resources. Provisions in the lease generally state the terms of the agreement.

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*These terms were compiled from the following sources and documents: EBRPD Lease Agreement, SCAPOSĐ lease agreement, Hawaii Dept. of Ag lease agreement, Intervale Incubator Farm Agreement, Intervale Farm Program Policies and Procedures, the Small Farm Center*
Fees:
  Rate: amount of money owed by tenant to landowner per acre or per entire property per year, and types and terms of payment.

Utilities: amount paid for gas, electricity, water, per time period, per unit

Property taxes: surcharge as percentage of property tax paid by tenant

Security Deposit: amount of security deposit from tenant to landowner and terms of its return

Use: types of systems and practices required, allowed and disallowed:

Agricultural practices (conventional agriculture, organic agriculture, sustainable agriculture)

Use of fertilizers and vitamin supplements

Productivity level to be maintained

Minimum number of acres to be kept in production

Crop rotation requirements and cover crop practices, including stipulation about keeping a certain percentage of land in cover crops vs. cash crops

Land preservation: requirements for protecting forests, watershed areas, and other protected areas; reservation of rights-of-way and access to other public lands; and prevention of nuisance and waste

Infrastructure: types provided by landowner for tenant such as irrigation, tools, equipment, buildings, roads, fencing

Improvements: allowances and requirements for farmer; commitments by AgPark association; terms of ownership of and rights to improvements

Animals: rules regarding inclusion of and practices for animals in agricultural operations

Maintenance: types of maintenance landowner will provide for and require of tenant

Recordkeeping: requirements of landowner for tenant agricultural operations
**Insurance:** types of insurance required of tenant, terms of that insurance, e.g., tenant may need to hold landowner harmless from claims or lawsuits

**Legal compliance:** requirements that tenant comply with applicable federal, state, local laws and regulations.

**AgPark Model Lease Terms**

The following terms cover topics relevant to an AgPark that are not included in most standard agricultural leases, but that are included in lease agreements of AgPark models.

**Application process:** Describes screening process of new farmer applicants; role of Association, role of farmer tenants in process; application materials including business plan and personal farming history; difference of application process for beginning as opposed to experienced farmers; criteria for selecting beginning and experienced farmers; guidelines for accepting agricultural operations that might compete with existing agricultural operations

**Decision making:** requirements about farmers attending monthly/bimonthly meetings with all tenants to discuss issues, concerns, plans

**Conflict-resolution:** standard processes for resolving conflicts between AgPark tenants

**Common-area maintenance:** requirements for farmers to donate monthly volunteer time to the upkeep and maintenance of the areas of the AgPark common to all tenants

**Hours of Operation:** restrictions on hours that AgPark is open to public, and hours that AgPark is open for farmers to operate farms

**Special fees and terms:** special agreements and fees negotiated between specific farmer tenants and AgPark in their leases to account for uniqueness of their operations; can include plans for infrastructure improvements to land

**Re-application:** terms of reapplying for renewed lease agreement after term is up; can include requirements such as submission of an annual report describing success of initial business plan or documentation of soil enhancement

**Enforcement:** terms of enforcement of lease terms by the Association

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10 These terms were compiled from the following sources and documents: EBRPD Lease Agreement, SCAPSO D lease agreement, Hawaii Dept. of Ag lease agreement, Intervale Incubator Farm Agreement, Intervale Farm Program Policies and Procedures, the Small Farm Center
**Additional CC&Rs (Covenants, Conditions, and Restrictions)**

CC&Rs can cover terms of additional services and resources provided for AgPark tenants by the Association. Participation in these services may be optional or required. Farmers who choose to take advantage of a given program may in turn be required to make a specific contribution. Examples of common services and resources are outlined below and covered in more detail in the Services and Resources section (3.4).

**Farmer Training and Incubation**

The Association may provide training and incubation program opportunities for their farmers.

*Types of programs:* individual classes, single topic workshops, multi-course intensive programs, business incubation programs; ranging in duration from a single day to a year or more

*Differential lease rates:* Some programs offer farmers lower lease rates while they are in incubation programs. Such rates usually rise after the farmers graduate.

*Terms of participation:* potential opportunity for experienced farmers to mentor beginning farmers

**Marketing**

The Association may provide built-in marketing opportunities for the farmer tenants.

*Range of marketing tools:* roadside stand, agritourism programs, CSA, farm-to-school programs, special events (e.g. seasonal, cultural), ApParks 'branding', regional marketing initiatives.

*Requirements for participation:* rules concerning the required participation in marketing tools for farmers and/or required conditions for using AgPark marketing materials and identity

*Terms of participation:* commitments from farmers in terms of time, product donations for marketing purposes, and/or involvement in cooperative decision making
Education

The Association will provide a range of educational activities to the public. AgPark farmer tenants may wish to participate in these services, or in some cases may be required to participate in them.

*Range of activities:* tours, classes, workshops, community celebrations, summer camps, apprenticeships/internships.

*Requirements for participation:* requirements for farmer tenants to participate in public education programs; requirements for orientation

*Terms of participation:* amount of time pro bono; amount of time compensated; opportunities for extended participation; involvement in cooperative decision making
REAL WORLD EXAMPLE

Sonoma County Agricultural Preservation and Open Space District (SCAPOSD)
Sonoma, CA

The formation of the Sonoma County Agricultural Preservation and Open Space District (‘the District’) was the result of the public’s concern over the urbanization and the displacement of agricultural land and open space in Sonoma County. In November 1990, Sonoma County voters approved Measures A and C. The purpose of Measure A was to establish the District while Measure C called for a ¼ percent sales tax over a 20–year period to fund agricultural preservation and open space acquisition. The sales tax provides an annual allocation of approximately $13 million to the District’s land conservation program.

The Small Farms Initiative was developed by District staff and agricultural experts who were concerned about agricultural diversity, and specifically the future of local vegetable farms. Land values for Sonoma’s quality wine grapes are so high that vegetable farmers are unable to compete. Through the Small Farms Initiative, the District leases land to farmers who grow vegetables, flowers, herbs, and berries. These diversified farms benefit the community, contribute to the local economy, and help experienced farmers find affordable land.

The District leases the Haroutunian North property, an 18–acre greenbelt parcel between Windsor and Santa Rosa, to Tierra Vegetables, run by siblings, Wayne and Lee James. The James’ have been farming vegetables in Sonoma County since 1980. Their specialty is chilies which they grow for fresh market and also sell dried, powdered, and in spicy preserves. They sell their chilies and grow a wide variety of vegetables at their on–site farm–stand and at local farmers’ markets.

REAL WORLD EXAMPLE
Hawaii Department of Agriculture
Hawaii
The Hawaii Department of Agriculture has set aside land for Agricultural Parks specifically for agricultural activities to encourage the continuation or initiation of such operations. The Agricultural Parks Program makes land available to small farmers at reasonable cost with long-term tenure.

Currently the Hawaii Department of Agriculture operates ten agricultural parks; four on Hawaii, four on Oahu, and one on Kauai and Molokai. In addition, there is one agricultural park on Maui in Kula, but it is not under the Department’s jurisdiction. All of the State’s lots are presently under lease. The lessees are all small farming operations (under 20 acres) engaged in diversified crops or aquaculture.

In this case, the word Park denotes only that the land is publicly owned. The sites are used primarily for agricultural production, and not for recreational or educational activities that the word park suggests. The park in Kula, Maui which is not under the Department’s jurisdiction does include a research garden where university students research growing practices. However, this type of function is not standard in the program.

The following is a list of the Agricultural Parks that are operated by the Department:
Waimanalo Agriculture Park, Oahu, is composed of 126 acres subdivided into 14 lots.
Waianae Agriculture Park, Oahu, is composed of 150 acres subdivided into 17 lots.
Kahuku Agriculture Park, Oahu, is composed of 686 acres subdivided into 25 lots.
Kalaeloa Agriculture Park, Oahu, is composed of 10 acres subdivided into two lots.
Pahoa Agriculture Park, Hawaii, is composed of 599 acres subdivided into 60 lots.
Panaewa Agriculture Park, Hawaii, is composed of 460 acres subdivided into 28 lots.
Keahole Agriculture Park, Hawaii, is composed of 179 acres subdivided into 34 lots.
Hamakua Agriculture Park, Hawaii, is composed of 509 acres subdivided into 11 lots.
Kekaha Agriculture Park, Kauai, is composed of 158 acres subdivided into 19 lots.
Molokai Agriculture Park, Molokai, is composed of 753 acres subdivided into 22 lots.

Information taken from http://www.hawaiiag.org/hdoa/arm_aaparks.htm
UNIT 4: PARK PROGRAM

The AgParks concept integrates agriculture and park functions. The previous units provided a snapshot of agricultural components and how they can be synthesized into an AgPark. This unit describes specific kinds of park components that lend themselves to integration, in various ways, with agriculture.

Sections on passive recreation and interpretive programs list familiar components of public parks with emphasis on their potential relationships to agriculture. A section on gardens describes a range of gardens commonly found on public land. Supporting material on regulations and operations for the various garden may be found in Appendix C. Finally, a discussion of community partnerships provides an overview of the agencies, organizations, and community groups likely to have an interest in presenting programs, or even establishing facilities, in an AgPark.
4.1: Passive Recreation

In addition to its focus on working agriculture, an AgPark may contain a number of activities and amenities familiar to urban park visitors. Types of passive recreation include:

**Trails:** An AgPark can include many kinds of paths for visitors’ recreation around and through the farm and park areas, such as walking/hiking, biking, and horseback riding. Trails are typically well-marked with informative and helpful signage. (See Interpretive Programs section 4.2).

**Design guidelines:** Trails are typically 6–8’ wide for one-way traffic and 8–14’ wide for two-way traffic and have 8–12’ of cleared overhead height. Trails and paths designed as loops are most enjoyable for visitors. Typical ground surfaces include gravel, dirt and woodchips.

**Compatible uses:** Buffers; connections to existing trail systems; connections to local neighborhoods.

**Picnic Areas**

Sheltered, scenic locations provide AgPark visitors such as neighbors, families, and school groups, a place to relax and enjoy the outdoors, and to snack on foods from the farm and café. These spaces are also adaptable for special events.

**Design guidelines:**
Shade typically plays a major role in determining picnic area sites. The layout and infrastructure, such as number of picnic tables, depends on the number of visitors and their needs. Ideally, picnic areas would be located close to where food is available for sale.

**Compatible uses:** meeting place for tours

**Seating and rest areas**

Benches and other seating and simple shelters allow visitors pause, congregate, contemplate the landscape or escape from wind, sun or rain.

**Design guidelines**
General practice is to have one bench per every half mile of walking/hiking trail. Benches must be maintained and should be made from a substance that will resist vandalism.

**Pond**

A creek, a pool or a pond can be an aesthetic element and a practical component of a working farm.

**Compatible uses:** recharge basin for agricultural water; buffer; wildlife habitat
4.2: Interpretive Programs

Interpretive programs promote understanding of scenic, natural, scientific, cultural and historic features for park visitors. Such programs might include talks and lectures by AgPark staff or invited speakers; the presence of docent-lead tours and demonstrations; or field trips for student visitors. Many of these programs can enhance the educational value of an AgPark. On a field trip, for example, students might enjoy a docent-guided tour of the AgParks farms and gardens; visit a historical farm house to view exhibits and displays; listen to a talk on different cultures' agricultural practices; participate in a demonstration of historical farming techniques; and take a self-guided tour of the AgParks grounds guided by informative signs and markers.
REAL WORLD EXAMPLE
Ardenwood Historic Farm
Fremont, CA

Nestled between freeways, shopping centers, and residential neighborhoods, Ardenwood Historic Farm, a 205-acre farm and visitor center located in Fremont, California, is the final remnant of the extensive agriculture that once flourished in the fertile soils and benign climate of Southern Alameda County. The site was historically a family farm, and continues to be farmed, as well as host educational programs, today.

A green oasis within urban Fremont, Ardenwood is a low-lying farm with areas of landmark eucalyptus woods that can be seen from miles away. The “Core” historical area, encompassing approximately 75 acres, is centered around the grand Victorian Patterson House, and also includes barns, a granary/demonstration area, café, and gazebo/function areas. The central visitor area is also home to educational displays, historic farming equipment, a horse-drawn railway, livestock, and an heirloom garden.

The outlying agricultural areas are planted with grain and forage crops for the animals and for educational programs, as well as with seasonal crops of corn, pumpkins, and vegetable row crops. A produce stand is located near the main entrance, selling produce from on-site as well as from elsewhere. Windbreaks frame the fields, walnut trees line the main entrance driveway, and the central area is also well planted with trees.

Ardenwood’s programming includes interpretive programs for organized groups (schools, camps, etc.) and public educational activities and festivals. Concessionaires including a blacksmith, beekeeper, horse-drawn train, farmer, and wedding/event hosts play a significant role in Ardenwood’s operations. Outside of the “Core” historical area, the land has been leased to a farmer who grows a variety of crops for market and for the Farm’s interpretive programs. The farm is certified organic. Tours of the historic house are operated by the Fremont Park and Recreation Department. Ardenwood is open to the public, for a small fee.

For more information please see http://www.ebparks.org/parks/arden.htm
4.3: Gardens

Community Gardens
Community gardens can be on land owned by a city or county agency or by a private landowner. Many cities have Parks and Recreation Departments that set guidelines and requirements for establishing and supporting community gardens. Some community gardens are independent entities operated by neighborhood associations or independent nonprofit organizations that lease small plots to community members for a nominal fee. For details about governance, design and membership, please see Appendix C.

- Resources: American Community Gardening Association

Demonstration Gardens
A demonstration garden is used by a public agency, a university, or a private company to illustrate sustainable growing practices, plant materials, design qualities or growing methods. Most have a specific area of focus, such as permaculture techniques, organic growing, composting, or xeriscape concepts. For details of governance, design and membership, please see Appendix C.

School Gardens
Many schools have small gardens on-site where students can learn about soil, botany, biology, natural cycles, and basic gardening principles. These gardens are most often correlated with science curriculum, but also are used to teach math, history, social studies, and language arts. Some schools further integrate the garden into school life by establishing a program where food from the garden is used to prepare the students’ school lunch. Sometimes schools also establish cooking programs, so that the students learn to cook the produce they have planted and harvested. For details of governance, design and membership, please see Appendix C.

Job Training Gardens
Also known as Economic Development Gardens, these offer job training and employment opportunities. Participants gain practical skills for future employment and also often gain personal satisfaction if they have not had prior exposure to gardening. Job training gardens often operate in partnership with local schools or jails. For details of governance, design and membership, please see Appendix C.
Research Gardens
Agricultural institutions, universities, and private companies plant these gardens in order to research strains and varieties of plant material, to experiment with growing conditions and to learn about plant responses to interventions or growing methods. Often these gardens offer tours to school and other groups, usually by appointment only. For details of governance, design and membership, please see Appendix C.

Botanical Gardens
Botanical gardens fulfill many of the functions of research and demonstration gardens, but are distinguished by their documented collections of living plants for the purposes of scientific research, conservation, display and education. Usually operated by a university or major cultural institution, they often offer school group and individual tours, classes and workshops.
REAL WORLD EXAMPLE

Edible Schoolyard
Berkeley, CA

The Edible Schoolyard is a one-acre garden located at Martin Luther King Jr. Middle School in Berkeley, CA. The garden is planted with seasonal produce, herbs, vines, berries and flowers and surrounded by fruit trees. Pathways wind through the beds to the Ramada, seed propagation table, tool shed, chicken coop, and pizza oven. Students and teachers work together to prepare the beds, sow the seeds, transplant, compost, water, weed, and harvest.

In the spring of 1995, the school hosted a design symposium, inviting landscape architects, chefs, gardeners, teachers, and other design professionals to share their visions of a future garden. An abandoned lot adjacent to the school was selected as the site of the garden. In December 1995, students, teachers, and community members began to restore the land – removing asphalt, weeds, and debris and planting a cover crop. The one-acre garden took off in the summer of 1997 – its design was ultimately determined on-site by the students in collaboration with the garden manager. The structure of the garden continues to evolve as crops are rotated and beds are reconfigured.

Students participate in all aspects of the ‘Seed to Table’ experience, as they prepare beds, plant seeds and seedlings, tend crops, and harvest produce. Through these activities, students begin to understand the cycle of food production. Vegetables, grains, and fruits, grown in soil rich with the compost of last year’s harvest, are elements of seasonal recipes prepared by students in the Edible Schoolyard kitchen. Students and teachers sit together to eat at tables set with flowers from the garden, adults facilitate conversation, and cleanup is a collective responsibility. They complete the ‘Seed to Table’ cycle by taking vegetable scraps back to the garden at the end of each kitchen class. The overall experience exposes children to food production, ecology, and nutrition, and fosters an appreciation of meaningful work, and of fresh and natural food.

Information taken from www.edibleschoolyard.org
4.4: Community Partnerships

Institutions and organizations involved in educational, horticultural, nutritional, environmental, agricultural and cultural programs, are likely to be interested in participating in an AgPark. Such community partners might offer classes or outreach events on the park site; participate as an AgPark tenant or coordinate an entire component of an AgPark, such as a café, learning center or community garden. A few examples of potential AgPark community partners are listed below.

Community Colleges
Many community colleges have horticulture and culinary arts programs that are receptive to holding practicums at offsite locations. Such programs may be valuable partners in the garden and community kitchen components of an AgPark.

University of California Cooperative Extension
University of California Cooperative Extension (UCCE) has farm, 4–H, and nutrition, family and consumer sciences advisors based in more than 50 county offices. Major UCCE programs are:

- **County farm advisors** work with farmers, pest control advisors, and industry representatives, they identify current and emerging agricultural opportunities and problems.
- **The 4–H youth development program** provides meaningful, learn–by–doing educational activities to children in 4–H clubs and to children participating in school enrichment and after–school programs. The 4–H program includes traditional offerings – such as cooking, animal husbandry, and sewing – and new updated programs – including rocketry, computer science, and leadership.
- **The nutrition, family and consumer sciences advisors** focus on nutrition, food safety, food preparation, food preservation, and finance management. Collaborative partnerships with government and private agencies extend the reach of UC advisors. Workshops, public meetings, newsletters, the mass media, and other communications tools bring information to the community.
- **The UC Master Gardeners program**'s trained volunteers provide practical scientific horticulture and gardening information to the citizens of California. Gardening questions are answered via phone hotlines and in person at plant clinics and at information booths at various locations in the community such as farmers' markets, Home & Garden shows, and other events.
Natural Resource Conservation District Local Offices

Resource Conservation Districts (RCDs) are independent, non-regulatory, special districts of California, that operate under the jurisdiction of the USDA. They are empowered to conserve and to enhance agricultural and natural resources within their districts on public and private lands, to educate constituents and to collaborate with other organizations. Each county in California has a local RCD office that programs educational activities about conservation.

Farmers’ Market organizations

Some farmers market organizations run a single market; others operate multiple farmers’ markets throughout a region. These larger market organizations often consult about the establishment of new markets and are good overall resources for market information.

K–12 Schools

Many school and school districts have dedicated programs to teach elementary, middle, and high school students about nutrition, the natural environmental, and regional historical land use, and their inter-connection. Field trips to destinations related to class subjects are a regular part of the school year, especially for elementary school students.

Agriculture in the Classroom

The California Foundation for Agriculture in the Classroom works with K–12 teachers, students, and community leaders, to enhance education using agricultural examples. The foundation publishes an annual teacher resource guide that lists the vast array of agriculture education materials that are available to teachers. The foundation also organizes the annual ‘Imagine This!’ story writing contest for California 3–8 grade students to submit stories about agriculture.

Community Gardens

Many cities and communities have either an organization or a department that helps develop and manage community gardens.

Waste Management Authorities

All counties have an agency that oversees waste management, source reduction and recycling. In many counties, such agencies offer or provide support for education programs, demonstration sites, and technical assistance in keeping with their waste reduction mandate.
Arts organizations
All kinds of arts and cultural organizations could partner with AgParks as sites to inspire the arts and as places to showcase visual and performing arts. The Agricultural Roots Fair (produced by SAGE) – *a celebration of the connection of cultures to the land* – is a prime example of the synergy between art and agriculture.
REAL WORLD EXAMPLE

4H Santa Clara County
Santa Clara, CA

The 4-H Youth Development Program (4-H) in Santa Clara County offers research-based experiential programs for 600 diverse youth ages 5–19. The program supports youth in developing citizenship, leadership and life skills while learning about subjects such as raising farm animals, photography, sewing, cultural foods, website development and community service. These are some of the 60 projects taught by a cadre of 250 volunteers.

A multifunctional AgPark, combining agriculture, animal husbandry, education, and recreation is well aligned with the missions and goals of the 4H program. In fact, the Santa Clara County 4-H program currently does not have a headquarters; and is looking for one. An ideal site would have facilities and open space that could accommodate barns and exercise areas for animals, youth gardens, composting, beekeeping, exercising animals, and enough space for parking and that included multiple barns and storage facilities.

If 4H became a tenant on the Santa Clara County AgPark, it would be able to collaborate with the AgParks Association to offer educational programs and community celebrations.

For more information please see [http://clubs.ca4h.org/santaclara/](http://clubs.ca4h.org/santaclara/)
UNIT 5. DESIGN PRINCIPLES: BUFFERS AND CIRCULATION

An AgPark represents the synthesis of a farm and a park, entities that usually have quite different forms and functions. Unit 4 addressed opportunities for integrated programmatic components of agriculture and parks. This Unit addresses some of the key design issues that need to be considered in integrating—and separating—agricultural operations and park activities and functions.

A key design issue is that of buffers between the AgPark and surrounding land uses; and between the agricultural and public park components within the AgPark. Circulation is a related design issue. Both are discussed and illustrated in some detail in the following pages. Below are some general design considerations that help set the context for these more detailed discussions.

General Design Considerations
Design features, such as landscape elements, structures, signage, as well as buffers and circulation systems, can help clarify the relationship of the agricultural and park components. Such design features should:

- Establish a hierarchy of components ranging from those inviting high public interaction (such as a farm-stand) to those needing controlled public access (such as animal operations or potentially dangerous farm equipment).
- Use an environmental/ecological design ethos to provide an overarching integration between natural park elements and ‘farming with nature’ agricultural elements
- Maximize opportunities for interactivity, education, and passive recreation
- Accommodate some flexibility and cost-effective adaptation for inevitable for the inevitable evolution of programming and infrastructure needs
- Reflect and augment the aesthetic values of the surrounding community.
5.1: Buffers and Circulation

A buffer is something that protects by intercepting or moderating adverse pressures or influences; something that separates potentially conflicting entities, for example, conflicting land uses.

This concept of a buffer is relevant to the AgParks model in four ways: the AgPark is itself a buffer; it needs a peripheral buffer; it needs internal buffers; and temporary buffers are needed for flexible land uses. Also relevant to the discussion of buffers, and critical in the planning process for an AgPark, is the issue of circulation. An AgPark needs farm roads, service roads, walking paths and trails. Throughout the chapter there are illustrative designs for buffer and circulation elements in an AgPark.

**AgPark as Buffer**

Depending on its scale and on adjacent land uses, an AgPark itself can function as a buffer. For example, it can provide a separator between large-scale, conventional agriculture and urban land uses, or between two urban areas. Conflicts often arise when urban and agricultural land uses adjoin, and buffers in between are a useful remedy. In this context, the AgPark is less a buffer line separating conflicting or abutting land uses, and more a buffer zone that mediates uses by strategically integrating them into a new type of holistic and multifunctional system.

Implementation of greenbelts around urban communities is a common practice for this type of buffering. As cities have grown out to the farms, agricultural greenbelts become a way to establish a vital connection between city and country; grower and consumer. These urban–rural buffers, sometimes referred to as urban buffers, non–urban buffers, or rural separators, provide a more gradual transition between the city and the country, thus mitigating some potential conflicts of direct contact. AgParks are conceived as specific entities within such agricultural greenbelts or agricultural preserves, or, where no such macro separator exists, as the entirety of the buffer zone.

**Peripheral Buffers**

Peripheral buffers delineate the AgPark and provide separation between the AgPark’s agricultural operations and the surrounding urban areas. Below is a list of the common concerns of farmers about impacts from surrounding urban and suburban areas, and the common concerns of urban and suburban residents about living in close proximity to farmland:
Table: Urban/Rural edge concerns

<table>
<thead>
<tr>
<th>FARMER CONCERNS</th>
<th>URBAN/SUBURBAN CONCERNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theft</td>
<td>Pesticides</td>
</tr>
<tr>
<td>Litter</td>
<td>Pollen</td>
</tr>
<tr>
<td>Food Safety</td>
<td>Dust</td>
</tr>
<tr>
<td>Restrictions</td>
<td>Smoke</td>
</tr>
<tr>
<td>Water/Erosion</td>
<td>Noise</td>
</tr>
<tr>
<td>Trespassing</td>
<td>Odors</td>
</tr>
<tr>
<td>Vandalism</td>
<td>Bees, Flies</td>
</tr>
<tr>
<td>Legal Liability</td>
<td>Trucks</td>
</tr>
<tr>
<td>Pests</td>
<td>Lights</td>
</tr>
<tr>
<td>Work Interference</td>
<td>Rodents</td>
</tr>
<tr>
<td></td>
<td>Visibility of agricultural uses and working farm animals</td>
</tr>
</tbody>
</table>

Agricultural buffers are a valuable tool for mitigating these concerns. There are three major categories of agricultural buffers: natural or pre-existing, regulatory, and installed. These terms are defined below. In this Toolkit, we are most concerned with installed buffers. These are further divided into two types: adjoining and geographical.

**Peripheral Buffer Categories**

**Natural or pre-existing**

Buffers already existing on or around the site, such as roads or topographical features.

- Hills, valleys, cliffs, natural berms or rises
- Water barriers: canals, lakes, ponds, streams, rivers, or flood plains
- Designated greenbelt area in either natural state or “enhanced”
- Cemeteries
- Roadways and power line rights-of-way
- Airport runway or clear area
- Parking lots

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11 From “Can City and Farm Coexist? The Agricultural Buffer Experience in California”
Regulatory
On occasion, land use ordinances or setback zoning regulations are used to create buffering effects between agriculture and residential land. In some communities this is accomplished by including minimum yard sizes for single dwellings in agricultural or rural residential zones.

Installed
These are man–made buffers designed and installed with the express purpose of buffering two uses. They are divided into two categories: adjoining and geographical.

Adjoining
Adjoining buffers occurs where a development or a house is located (or planned for construction) immediately adjoining agriculture. Common types of adjoining buffers are fences and walls.

Fences
Fences protect farms against trespassing, vandalism, and other forms of urban interference, as well as from larger animals, but they do little to buffer the concerns of urban and suburban residents. Fences are best utilized in combination with other buffer types (i.e., a fence on the outside of a vegetated buffer). Two common types of fences are hog wire and deer fencing.

Walls
Walls are a more effective solution than fences, in that they address some of the concerns of urban and suburban residents such as noise, lights, dust, and rodents fairly effectively. However, as with fences, this effectiveness is greatly improved by combining strategies. Concrete walls are the most common type used in agricultural settings.

Geographical
Geographical buffers occur when there is more space available than with adjoining buffers. These buffers utilize wide natural or planted areas or large permanent geographical barriers that are used to demarcate a formal or informal urban growth line.

For many of the urban/suburban concerns, such as chemical spray, odors, dust, and smoke, the only option for mitigation is to leave space between the uses. This open space can be left open and used as a path, a road, or a trail (among other uses), and/or it
can be planted as a vegetated buffer. These geographic buffers are multi-functional, providing the benefits listed below in addition to mitigating urban/suburban concerns about farmland. This multi-functionality is maximized when several needs are addressed (i.e. part left open for access, part planted, part habitat corridor).

Additional Benefits:
- Create habitat for various species, restoration opportunities, and wildlife corridors
- Increase the biological diversity of an area, thus assisting in pest control for farmers (e.g. owl habitat for rodent control; beneficial insect habitat for control of insect pests)
- Favorably influence the microclimate (e.g. provide wind breaks)
- Are aesthetically pleasing
- Provide opportunities for recreational uses
- Provide opportunities for circulation through the farm-roads and paths.

Best practices\textsuperscript{12}
For farms that use chemical sprays, and that produce a good deal of noise and odor, the buffer between this farmland and a neighboring urban or suburban area should be at least 1000 ft. wide, if left un-vegetated. A vegetated buffer (vegetated throughout) should be at least 130 ft. wide. A buffer containing some open ground and some vegetated ground should be somewhere in the middle of these widths, determined by the amount of vegetated area, and the density of the trees. (NRM)

Common types of geographical buffers are vegetated areas, wooded areas, habitat corridors, paths and trails, and parking areas:

**Vegetated buffers**
Sometimes known as vegetated screens, research and field trials have shown vegetated buffers are effective in capturing up to 80% of pesticide spray drift from an application upwind of a single row of trees. (Note: On farms where organic growing practices are utilized, the issue of pesticide spray is mostly irrelevant.) Some areas require vegetated buffers as a condition of development approval at the interface between agricultural and residential land use. The following attributes, as listed in a report by the Queensland Planning Department, should be present in a vegetated buffer in order to ensure capturing as much spray, noise, dust, etc. from the farm:

\textsuperscript{12} From Planning Guidelines: Separating Agricultural and Residential Land uses
• Minimum total width of 40 m (130 feet)
• Contain random plantings of a variety of tree and shrub species of differing growth habits, at spacings of 4–5 m (12–15 feet)
• Include species with long, thin and rough foliage which facilitates the more efficient capture of spray droplets and dust particles
• Provide a permeable barrier which allows air to pass through the buffer. A porosity of 0.5 is acceptable (approximately 50% of the screen should be air space)
• Foliage is from the base to the crown
• Include species which are fast growing and hardy
• Be planted with native species, as possible
• Have mature height and width dimensions which do not detrimentally impact upon adjacent cropped land
• Include an area of at least 10 m (33 feet) clear of vegetation or other flammable material to either side of the vegetated area

Habitat corridor
The best vegetative corridor design for most situations is edge-feathered and includes zones of grasses, shrubs, and trees all in the same corridor. The center of such a corridor is planted to trees, with zones or strips of shrubs on each side, and bordered on each outer side by zones of grasses. This would provide habitat for wildlife that may use all three types, as well as those requiring only one of them. Habitat corridors most often range from 50’–200’.

Roads, Paths, Trails
Portions of peripheral buffers should be left un-vegetated to serve as walking paths, horse trails, and/or farm roads. Walking paths are generally at least 5’ wide for single use and 10’–12’ wide for shared-use trails (pedestrian/bicycle); horse trails are to be at least 5’ wide on a separate trail and have vertical 12’ clearance overhead; and farm equipment access roads are at least 20’ wide.

Parking
Another potential use of a peripheral border is as a parking lot. The number of parking spots should be determined by the number of expected visitors.
Illustrative examples of Peripheral buffers¹³

¹³ All drawings courtesy of WRT Design
Illustrative examples of Peripheral buffers (con’t)

3. Plot Buffer with Windbreak (Permanent)

![Diagram of Plot Buffer with Windbreak (Permanent)]

Note:
Permanent buffer zone may provide farm equipment access route or combined farm equipment and public access for guided tours.

4. Minor Plot Separation Buffer

![Diagram of Minor Plot Separation Buffer]

Notes:
Minor plot separation buffer may be considered short-term or temporary; planting for habitat and beneficial insect value should be fast-growing shrubs.
Dirt path may be primarily for farmer access, with occasional guided tour use.
Illustrative examples of Peripheral buffers (con’t)

5. Riparian Area with Habitat Corridor + Agricultural Area

- Picnic Area

Notes:
- Path may be incorporated into riparian buffer zone, but intensive activity should be kept outside of buffer zone.
- Actual width of buffer zone should meet or exceed local regulations.
Internal Buffers\(^{14}\)

Buffers are also needed within the AgPark, as internal separators between park and agricultural elements and to demarcate the boundaries between different farmers’ plots. The primary types of internal buffers are perennial hedgerows, annual floral and herbaceous borders, cleared circulation paths (see above), and temporary buffers.

Hedgerows

Hedgerows are lines or groups of trees, shrubs, perennial forbs, or grasses that are planted along field edges or other unused areas. For agricultural areas in California, it is recommended to use a variety of native grasses, perennial forbs, shrubs, and trees that attract different types of beneficial insects, mammals, reptiles, and birds. Native plants work extremely well in hedgerows because they require very little care after an establishment period of about three years. Many native plants have deep roots that hold soil and increase water permeability. Hedgerow areas suppress weeds by providing competition, and are less susceptible to wind and water erosion than bare soil. They can also filter surface runoff water, preventing silt, nutrients, and pesticides from entering waterways.

Hedgerows can also be specifically designed as wind breaks. Windbreak hedgerows are designed with many tall-growing shrubs and trees. Recommended species include cottonwoods, willows, native oaks, redbuds, and elderberry. As these trees grow, their under-story will be less vegetated, and so it may be advisable to include shrubs in between trees to provide habitat and erosion control closer to the ground. By including shrubs, the insect value of the hedgerow increases as well.

By planting hedgerows of noninvasive native plants, farmers create wildlife habitat areas that attract beneficial insects and provide competition against invasive weeds. With careful establishment and management techniques, hedgerows can provide a useful and attractive alternative to continuously scraping, spraying, and cultivating field edges and other “unfarmed” areas that would otherwise become sources of weed seeds.

Annual floral and herbaceous borders

These are planted alongside annual crops or bi-annual crops as habitat for beneficial insects.

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\(^{14}\) From Yolo County Hedgerow book
Illustrative examples of Internal buffers

1. Recreation Area and Farm

- Picnic Area
- Planted Separation Area
- Windbreak Hedgerow

<table>
<thead>
<tr>
<th>Recreation Area</th>
<th>Pedestrian or Multi-use Trail</th>
<th>Horse Trail</th>
<th>Swale/Buffer</th>
<th>Plot Border</th>
<th>Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies</td>
<td>8'-10'</td>
<td>10'-15'</td>
<td>10'-20'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- Pedestrian/Multi-use trail is separated from horse trail.
- Windbreak hedgerow should not restrict views.

2. Auto Access

- Rural Section Road (No Curb)
- Ornamental (flowering) shrubs
- Decorative Fence (i.e. split rail)

<table>
<thead>
<tr>
<th>Crops</th>
<th>Plot Border</th>
<th>Auto Access with Buffer</th>
<th>Plot Border</th>
<th>Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10'-20'</td>
<td>70'</td>
<td>10'-20'</td>
</tr>
</tbody>
</table>
**Temporary buffers**
There are various stages and processes in the implementation of an AgPark that may require temporary buffers. The most common types of temporary buffers are light fences, lightly vegetated swales, and walking paths or farm roads, as described above. The practice of mobile pastured animals also requires temporary buffer fencing. One common type is ‘electrified poultry netting’: polyethylene webbing with stainless steel threads woven through it which can carry a micro-second long, high voltage electric pulse.

**Circulation**
Also relevant to the discussion of buffers, and central as a framework element in the overall design of an AgPark, is the issue of circulation. Farms and parks have separate and specific types of circulation requirements. However, as demonstrated by the illustrations above, some of these requirements can likely be accommodated within a single circulation element or tandem circulation elements.

The types of circulation elements needed on an AgPark are:

- **Farm program:** heavy farm equipment roads; light farm equipment roads; animal paths (e.g. to and from pasture); walking paths for farmers; utilities rights-of-way. These systems need to be all-weather.
- **Park program:** bike and pedestrian trails (including ADA trails); horse trails; service, maintenance, and fire-lane roads; vehicle roads for accessing public program areas

The following guidelines can serve for the planning of various types of circulation in and around an AgPark:

**Path, 8’-10’ (Pedestrian or multi-use)**
An all season path that can accommodate pedestrians, both visitors and farmers, and light recreation. These paths would be paved or decomposed granite. Paths connect areas with high pedestrian traffic.

**Horse Trail, 8’-10’**
A low-maintenance, cleared trail with a minimum clearing of 10’-12’ overhead. This recreational trail supports pedestrian, bicycle, and equestrian use. A horse trail can be incorporated into the habitat corridor since it has low traffic flows that generally do not disrupt wildlife.
Plot Border, 10’–20’
A plot border is the unpaved area between the crop fields and the perimeter bio-swale that is used by tractors and farm equipment.

Combined Path/Farm Equipment Routs, 15’–18’
A gravel or paved path that supports heavy farm equipment use occasionally, and pedestrians and recreation use year round.
Illustrative examples of circulation paths

1. Public Access
   - Concrete, Asphalt, or Decomposed Granite
   - Bike & Pedestrian Trail

2. Agricultural Use
   2-1. Minimum Access/Temporary
   - Crop Path
   - Plot Border
   - Swale/Roller
   - Crop Path

2-2. Farm Equipment with Windbreak
   - Crop Path
   - Plot Border
   - Swale/Roller
   - Crop Path
   - Farm Equipment Route
   - Occasional Farm Group Use

3. Combined Agricultural Use and Public Access
   3-1. Combined Access
   - Crop Path
   - Plot Border
   - Swale/Roller
   - Farm Equipment & Public Access

3-2. High-traffic farm Equipment/Horse trail/Multi-use Trail
   - Crop Path
   - Plot Border
   - Swale/Roller
   - Farm Equipment & Horse Trail
   - Multi Use Trail (Pedestrian & Bike)
UNIT 6: FINANCIAL OVERVIEW

The financial overview primarily addresses the scenario of an AgPark model being developed on public lands. It includes two sections:

- Stakeholder Assumptions for Development and Operations of AgParks on Public Land
- An Illustrative Development Plan for an AgPark on Public Land

Two expanded Funding Mechanism sections, with information applicable to AgParks on private and public lands, are included in the Appendix.

- Funding Sources for AgPark Components, taken the Urban Edge Agricultural Parks Feasibility Study, produced by SAGE in 2004 and available as a PDF file on the SAGE website. (Appendix D)
- Tools for Agricultural Mitigation, A Beginning Toolbox (Appendix E)
6.1 Stakeholder Assumptions

The stakeholder assumptions are derived from information presented in previous units, in particular the Management section (3.2).

Assumptions are for four sets of stakeholders: the public agency that has site jurisdiction; the AgParks Association; the farmer-tenants; and community partners.

Public Agency Financial Assumptions

Development
- All development would take place in the context of a planning process that would include public input and requisite impact studies.
- Agency would have funds for a master planning process that would be a pre-requisite for the development of a large-scale AgPark.
- Agency would contribute staff time for planning of a small-scale AgPark.
- Agency would provide support from general funds for development of infrastructure for the park component.
- For a large-scale AgPark, Agency could potentially levy an assessment or raise bond funds for development of the shared use infrastructure of agriculture component.

Operations
- Agency would have limited funds for basic operations (e.g. security, basic maintenance, etc.) and for core programming.
- Expanded operations and programming would likely require additional revenue as an offset.
- Agency would have a mandate for pricing services and programs at rates affordable for a range of visitors and users and at rates comparable with similar services and programs.
- Agency would likely have a range of pricing for its own services and programs, including no-fee areas, entrance-fee areas, program fees, special event fees, etc.
- Agency would have a range of lease fees for various concessions and tenants.
- Agency would develop in-kind and cooperative agreements with partner agencies for management of specific areas and for provision of specific services and programs.
**AgParks Association Financial Assumptions**

**Development**
- An AgParks Development Company would have funds to seed the AgPark idea with the public agency and to work with the agency to develop the conceptual framework for the AgPark prior to the formation of a dedicated AgParks Association.
- As a nonprofit, the Association would have the ability to raise grant funds for planning and development, and to garner in-kind development support from the business community.
- The agreement or master lease with the public agency would allow for the Association to recapture the value of any initial investment.
- The Association could potentially offer an IDA (individual development account) program to help AgPark tenants get established or partner with an organization that has such a capability.

**Operations**
- Revenue sources would include fees from sub-leases, public programs and services, contract services (e.g. for services performed for the agency), special events, and possibly direct operation of a profit-center.
- Gap funding would be covered with general program grant funds, special project grant funds, business donations, and contributions from individuals, possibly organized as a ‘friends of’ organization.

**AgPark Tenants Financial Assumptions**

**Development**
- Some prospective tenants would have resources for establishment of infrastructure.
- Other prospective tenants might have IDA accounts from which to draw.
- Yet other prospective tenants would have limited financial resources to start, and would need leases for ‘farm-ready’ plots and/or would need some form of subsidy.
- Regardless of scale of initial investment and scope of ongoing investment (e.g. in soil enhancement), all tenants would like a provision to recapture/sell their equity interest.

**Operations**
- Tenants would have self-sufficient and profitable enterprises.
- Marketing, services, and program support from the AgParks Association will contribute to and help ensure the viability of these enterprises.
Community Partner Financial Assumptions

Development
- Community partners would either have master leases with the agency (similar to that of the AgParks Association) or would have sub-leases with the Association.
- Partners could provide infrastructure or means to raise support for infrastructure.

Operations
- Community partners would be self-sufficient entities within the AgPark.
- Community partners would participate in the AgParks whole system of exchange of a range of services (e.g. 4-H providing manure to a farmer and getting discarded produce for the animals in return).
6.2 Illustrative Development Plan for AgPark on Public Land

The following outlines a management and development plan for a hypothetical 250-acre AgPark on public land, and describes the various tasks and costs associated with the Development Phase of such an AgPark. The section concludes with a sample pro forma with cost and revenue assumptions for the hypothetical AgPark.

Development Phase
There would be several major aspects to the development of the AgPark.

Research AgPark Physical Conditions
- Contract with researcher to conduct soil tests, make cover crop recommendations, monitor various physical conditions, and map and document these conditions. (Some of these activities may be conducted as part of the master plan’s environmental impact report.)

Soil Remediation, Transition to Organic Certification, and Layout
- Due to its likely proximity to residential areas, the plan assumes that the entire operation would be certified organic. Engaging an individual familiar with the organic farming of multiple crops on a larger scale, in an urban setting, could facilitate the initial phase of development of the property.
- There would be some trial and error determining the capabilities of the different soil types, applications of initial soil amendments would be required, and the reduction of the weed seed reservoir by cultivation would help maintain and enhance the lease value of the fields.
- Other physical development activities would include surveying, grading, and field division.

Establishment of Basic Infrastructure
- It may be possible to farm the property as the design and infrastructure are being developed.
- Development of an irrigation system. Irrigation water would be provided to individual farmers through a common pipeline system from one or more central well
- Development of pathways, roads, fencing, security elements, and landscaping.
- Establishment of a small AgPark office.
Development of Amenities

- Construction of an on-site restaurant and farm sales outlet would be an important aspect of the AgPark as a ready market for the farmers. This facility could include cold storage and utilities for basic processing. It could also include an office with cubicles for tenants.
- Rehabilitating historic buildings to generate revenue through event rentals could be a key component of supporting the overall financial operations of the AgPark.
- Construction of a commercial kitchen could provide opportunities for farmers to create value-added products.
- Inclusion of an agritourism component, such as accommodations and rooms for classes and meetings, could further enhance lease revenues.

The portions of the park that are dedicated to public displays, picnic areas, paths, playgrounds and parking, would be the responsibility of the Agency. All of the usual staffing, operations and maintenance of the public facilities and portions of the park not leased to tenants would be handled by the Agency.

Capital Costs

Total capital costs to establish the infrastructure of the agricultural component of the park would depend on the initial survey of the land, the desired configuration, access, and drainage of the fields, irrigation system and roads. Assuming an agronomic model of initial development, suitable quantity and quality of irrigation water, acceptance of the ‘best fit’ option for grading and drainage, no tile drain system and minimal seasonal field roadways, an estimate of the basic initial infrastructure costs would be $200,000–$300,000.

Beyond the capital costs for the initial infrastructure, there would be a need for capital expenditures for any buildings or structures that would be leased to tenants, some office space and equipment for management, grounds and maintenance equipment and storage structures.

Operating Costs

Initial operation costs in development phase would be comprised of salary for management/maintenance, electricity for irrigation wells, office expenses, soil testing, and agricultural and business consultants. It is estimated that operational expenses in the development phase would total $500,000.
Revenue

Initial revenue would be expected to be minimal. There should be revenue to offset the cost of electricity for irrigation water; however initial lease income may be zero. Lease revenues would be expected to increase annually as the capabilities of the land are determined and enhanced. Ultimate lease revenues would be dependant on the capability of the soil, irrigation costs to the lessees, any restrictions or constraints on normal agricultural operations, and any value that might be conferred by location or on site improvements that enhance the profitability of the fields leased. Based on agricultural leases near metropolitan areas, one might expect revenues of $200–$600 per acre per year on good soils for vegetable crops. The availability to the farmer of onsite facilities and infrastructure could increase this basic lease term by up to three-fold.
## Pro Forma for Hypothetical 250-acre AgPark on public land

### AgPark Assumptions

<table>
<thead>
<tr>
<th>Site Data:</th>
<th>Development Costs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land in Ag Production 175 acres</td>
<td>Total Hard Costs $1,707,500</td>
</tr>
<tr>
<td>Number of Ag Production Parcels 15 parcels</td>
<td>Soft Costs:</td>
</tr>
<tr>
<td>Average Acreage of Ag Park Parcel 12 acres</td>
<td>Design/Architectural 6% $102,450</td>
</tr>
<tr>
<td>Land in Pasture 35 acres</td>
<td>Fees/Permits 2% $34,150</td>
</tr>
<tr>
<td>Central Activity Zone (house, visitor center, garden, lawn, gazebo) 9 acres</td>
<td>Acct/Legal 3% $51,225</td>
</tr>
<tr>
<td>Paths/Trails, Unpaved Roads 15 acres</td>
<td>Development Mgt 10% $170,750</td>
</tr>
<tr>
<td>Linear Feet - Paths, Unpaved Roads 580,000 linear ft.</td>
<td>Annual Revenues:</td>
</tr>
<tr>
<td>Park &amp; Picnic Areas 9 acres</td>
<td>Event Rentals ($ per event) (a) $3,000 $60,000</td>
</tr>
<tr>
<td>Paved Roads &amp; Parking 7 acres</td>
<td>Revenue - Restaurant Lease/Mkt Stand $35,000</td>
</tr>
<tr>
<td>Total Size 250 acres</td>
<td>Other Revenue (c) $2.50 $25,000</td>
</tr>
<tr>
<td></td>
<td>Subtotal Revenue $215,375</td>
</tr>
<tr>
<td>Building Development:</td>
<td>Operating Expenses:</td>
</tr>
<tr>
<td>Rehab Existing House - Event Rentals 7,500 sq. ft.</td>
<td>Management Staff $70,000</td>
</tr>
<tr>
<td>Shared Barn 3,000 sq. ft.</td>
<td>Utilities ($ per month) $750 $9,000</td>
</tr>
<tr>
<td>Shared Equipment Storage 1,000 sq. ft.</td>
<td>Maintenance ($ per month) $2,000 $24,000</td>
</tr>
<tr>
<td>Cooperative Market Stand &amp; Restaurant 2,500 sq. ft.</td>
<td>Irrigation System $100,000 $12,000</td>
</tr>
<tr>
<td></td>
<td>Paths/Trails, Unpaved Roads ($ per linear ft) $0.50 $290,000</td>
</tr>
<tr>
<td></td>
<td>Paved Roads &amp; Parking ($ per acre) $65,000 $455,000</td>
</tr>
<tr>
<td></td>
<td>Park &amp; Picnic Areas ($ per acre) $10,000 $90,000</td>
</tr>
<tr>
<td></td>
<td>Rehab Existing House ($ per sf) $35 $262,500</td>
</tr>
<tr>
<td></td>
<td>Shared Barn ($ per sf) $40 $120,000</td>
</tr>
<tr>
<td></td>
<td>Shared Equipment Storage ($ per sf) $40 $40,000</td>
</tr>
<tr>
<td></td>
<td>Cooperative Market Stand &amp; Restaurant ($ per sf) $120 $300,000</td>
</tr>
<tr>
<td>Total Hard Costs</td>
<td>Gap Requiring Grant Funding/Other Support $750,193</td>
</tr>
</tbody>
</table>

### Notes:

- Visitor Fees (per visitor) $2.50
- Number of Visitors per year 10,000
- Interest Payment on Debt 5% per year 

(assumes simple annual interest, 30 years)
UNIT 7. REFERENCES

The following publications are cited throughout text. For more information on relevant publications, please see the Resources section in Appendix E.

Bring Farm Edges Back to Life, Yolo County Resource Conservation District
http://www.yolorcd.org/education/Farm%20Edges%20v5.pdf

CA County Ag Reports
http://www.cdfa.ca.gov/

Can City and Farm Coexist? The Agricultural Buffer Experience in California, Great Valley Center
http://www.greatvalley.org/pub_documents/2004_5_29_0_1_40_buffer_study.pdf

Coyote Valley Specific Plan Greenbelt Research Report

East Bay Regional Parks District lease

Growing New Farmers
www.growingnewfarmers.org

Hawaii Agricultural Parks lease

Illustrated Lists of Plans
  For Cabins, Greenhouses, Horse and Pet Facilities, and Recreational Equipment
  For Storages, Construction Details and Miscellaneous Structures
  For Swine, Sheep, Poultry and Other Small-Animal Facilities
  For Beef and Dairy Cattle Facilities

Cooperative Farm Building Plan Exchange, Extension Service, USDA, University of Maryland
Cooperating Agricultural Engineering Department, 1984

Intervale lease and operational documents

Planning Guidelines: Separating Ag and Res Land Uses– Queensland Dept of Planning

Small Farm Handbook
Small Farm Center, UC Davis, 1987
Sonoma County Agricultural Preservation and Open Space District Small Farms Program draft lease

Sustainable Agriculture Dictionary
http://www.nal.usda.gov/afsic/AFSIC_pubs/srb9902.htm

UC Davis Cost Studies
http://coststudies.ucdavis.edu/

United States Department of Agriculture–Economic Research and Statistics
http://www.ers.usda.gov/Briefing/FarmStructure/Questions/smallfar.htm

USDA Agricultural Census
http://www.nass.usda.gov/census/
APPENDICES
A: Natural Resources Primer
B: USDA Farmer Definitions
C: Garden Types and Specifications
D: Tools for Agricultural Mitigation
E: Funding Sources for AgParks Components
F: Resources
Appendix A. Natural Resources Primer

Natural resources, including soil, water, air, and biodiversity are of course a necessary foundation for agriculture in general. In sustainable farming systems, stewardship of natural resources is as important as production. At the same time, conservation of the natural environment and programs to increase public awareness and enjoyment are fundamental to the mission of many parks. Common interest in natural resource stewardship is central to the synergy of the agricultural program and park program in urban edge AgParks. The following sections outline background information, regulatory agencies, and key considerations for water, soil, and biodiversity.

WATER

Background

Water Units

Water volume is usually measured in acre-feet or acre-inches. Flow is measured in gallons-per-minute for well pumping, and in gallons-per-day for drip-irrigation (see irrigation section for more information).

Water Needs

Agricultural water needs vary greatly between crops, and also with season, climate, and soil type. The numbers in the table below give averages for annual water use in Yolo County, CA per acre for six different crops. (from UC Davis Department of Agricultural and Resource Economics crop cost studies: http://coststudies.ucdavis.edu/)

Table 2.1: Average Annual Water Use by Crop\textsuperscript{15}

<table>
<thead>
<tr>
<th>Crop</th>
<th>Annual Water Use (acre-ft./year)</th>
<th>Annual Water Use (gallons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh Tomatoes</td>
<td>2.49</td>
<td>108,464.4</td>
</tr>
<tr>
<td>Corn</td>
<td>3.09</td>
<td>134,600.4</td>
</tr>
<tr>
<td>Potatoes</td>
<td>2.71</td>
<td>118,047.6</td>
</tr>
<tr>
<td>Strawberries</td>
<td>3.00</td>
<td>130,680.0</td>
</tr>
<tr>
<td>Beans</td>
<td>2.47</td>
<td>107,593.2</td>
</tr>
<tr>
<td>Peach Orchard</td>
<td>3.67</td>
<td>159,865.2</td>
</tr>
</tbody>
</table>

Water Availability

Water costs vary greatly in different location, depending on where the water is coming from, what the local climate is, and how in demand water is in the region. The two major sources of

\textsuperscript{15} Information extrapolated from UC Davis Cost Studies
water for agricultural use are surface water and ground water. For both kinds of water sources, a water district (empowered to transfer water between water systems including to aquifers for recharge) may have jurisdiction. In the case of a well, a public or private water supply company may also have jurisdiction.

Common sources of irrigation water for agriculture include:
- ground water
- municipal ditch or canal
- creek
- on-farm spring
- on-farm pond as a reservoir
- water company pipeline (delivering potable water, non-potable water, as well as tertiary treated water suitable for agriculture)

**Water Quality**

Water quality describes the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose. Salts are the greatest concern in water quality, because high salt levels can harm plant performance. Salinity is measured in parts per million (ppm), mg per liter, and by the electrical conductivity of the water (EC). Major saline concerns are chlorine, sodium, calcium, and nitrates. Other sources of concern are boron, sand, algae, and industrial wastes.

Sensitivity to salinity varies greatly between crops. With drip irrigation, the maximum salinity level is 1000–1500 ppm of total salt, and with sprinkler irrigation, the maximum is 800–1000 ppm. Electrical conductivity should be below 1.0.

**State Regulatory Agencies and Organizations**

State Water Resources Control Board: [http://www.waterboards.ca.gov/](http://www.waterboards.ca.gov/)
California Department of Water Resources: [http://www.dwr.water.ca.gov/](http://www.dwr.water.ca.gov/)
Regional water districts: [http://www.water.ca.gov/agencies.cfm](http://www.water.ca.gov/agencies.cfm) (List of districts)
California Resources Agency: [http://resources.ca.gov/](http://resources.ca.gov/)
The Reclamation Board: [http://recbd.ca.gov/](http://recbd.ca.gov/)
Colorado River Board: [http://crb.ca.gov/](http://crb.ca.gov/)
Key Considerations
The most important water–related steps in the processes of considering, planning, and implementing an AgPark are:

- Gain a basic understanding of historical water use on the property and determine if any water rights are attached.
- Identify water availability and cost in region and on specific site
  - California Department of Water Resources
  - Local Water district
- Get water tested at a laboratory that specializes in agriculture (ask your local UC Cooperative Extension Farm Advisor)
- Identify crops to be grown on and production levels of AgPark and confirm that water availability and quality are sufficient.
- Determine specific type of irrigation system to be used (flood, sprinkler, drip, etc.)

SOIL
Background
Soil is the most critical natural resource for agriculture. In organic and sustainable farming systems in particular, soil health and programs that increase soil fertility are of fundamental importance.

Soil attributes
- Topsoil depth: Topsoil is the uppermost layer of soil. It has the highest concentration of organic matter and microorganisms, and is where most of the Earth's biological soil activity occurs. Plants generally concentrate their roots in, and obtain most of their nutrients from this layer. Topsoil can be measured as the depth from the surface to the first densely packed soil layer known as hardpan. The deeper the layer of topsoil, the better the farming conditions. Topsoil depth should be at least 1 foot.
- Texture: Soils can be coarse (sand), medium (silt), or fine (clay). Most soils are loams—mixtures of sand, silt, and clay. Soils that are too far at either end of this spectrum (too much sand or too much clay) are generally harder to work with and not as appropriate for production agriculture.
- Water retention: The finer the texture, the higher the water retention
- Drainage rate: Deep, well–drained soils prevent root rot and make plants more productive.
• **Composition:** Soil should contain 25% air, 25% water, and 50% minerals and organic materials. The minerals and organic matter should include large quantities of nitrogen, phosphorous, and potassium, and trace elements of other nutrients. However, soil with too high a concentration of chemical nutrients is not healthy for growing.

• **pH:** Soil pH should be as close to neutral as possible, where pH=7. Different plants have different ranges of tolerance. Generally speaking, the pH should not be lower than 5.5 (acidic) or higher than 7.5 (basic). Consult your Farm Advisor for more precise information.

• **Erosion factors:** Topsoil erosion is when the topsoil layer is blown or washed away. Without topsoil, little plant life is possible. Erosion is caused by water and wind factors.

• **Contaminants:** Soil should not contain heavy metals such as lead or dioxin, which can render soils unusable for agriculture. Other soil problems can include soil–borne plant diseases, heavy loads of noxious weed seed, and presence of residual chemicals such as pesticides, herbicides, or fungicides.

**Soil practices**
Non–ideal conditions in the attributes above can be remedied using the following practices:

• **Texture:** Soils that have too much clay can be amended by adding sand, and soils that have too much sand can be amended by adding clay.

• **Water retention:** Water retention can be increased by adding more clay to the loam.

• **Drainage rate:** Soils that don’t drain well can be formed (i.e. amended) for better drainage.

• **Composition:** Soil that does not have sufficient nutrients and organic matter can be amended by adding compost, manure, kelp, rock phosphate, worm castings, and by plowing under cover crops or crop residues.

• **pH:** Soil with pH higher than 8 (basic) can be amended by the addition of sulfur or organic matter. Soil with pH lower than 6 (acidic) can be amended by the addition of lime or gypsum.

• **Erosion:** Basic regimes to combat erosion include not leaving ground bare, contour plowing, not planting in steep areas, and the whole realm of permaculture practices.

• **Contaminants:** Soil compromised by the presence of diseases, agricultural chemicals, and noxious weeds, can often be ameliorated over several years through soil restoration regimes such as crop rotation and cover cropping.
Regulatory Agencies

Key Considerations
The most important soil-related steps in the processes of considering, planning, and implementing an AgPark are:

- Visually assess soil on site for attributes listed above: topsoil depth, texture, water retention, composition, historic or potential erosion issues.
- Take a soil sample to an agricultural lab to obtain information on the precise chemical, biological and physical attributes of the soil where you are considering cultivation.
- Based on the above information, identify suitable crops for existing soil conditions. Amend the soil as necessary to grow other types of crops, as possible in given conditions of climate and other factors.

Biodiversity
Background
Biodiversity is another foundation of sustainable and organic farming systems. Such biodiversity can be reflected at various levels: through biological activity in the soil; through stewardship and restoration of native species and habitats surrounding cultivated areas; through cultivation of diverse crops and animals including heirloom varieties and breeds; and through optimizing the farm’s contribution to broader ecosystems, such as watersheds and migratory routes.

Key Considerations
A small sampling of strategies that could be used to enhance biodiversity in an AgPark setting:

- Increasing the life in the soil would follow naturally from a farming operation that integrated plant cycles and animal cycles and that emphasized compost and cover cropping as primary nutrient management regimes.
- At the edge of the AgPark, buffers could include trees, shrubs, and plants (including or limited to native species) that would provide habitats for birds, small animals, pollinators, and other insects (including those beneficial for farming).
CLIMATE
Background
Major climatic features vary considerably from place to place as determined by elevation, marine or fog influence, wind patterns, rainfall, slope or exposure, frost-free days, average temperatures, and temperate extremes.

Plants vary greatly in terms of their climate requirements. Many plants have specific temperature, day length, and developmental limitations that cannot be exceeded. Some plants cannot tolerate freezing temperatures and others will not set or retain a crop if temperatures get too high. Pollination, required for many orchard and other plants crops, is a process that is also climate sensitive.

Regulatory Agencies
National Weather Service: http://www.nws.noaa.gov/
California Irrigation Management Information System (CIMIS) http://wwwcimis.water.ca.gov/cimis/welcome.jsp

AIR
Background
Air quality can adversely affect crop growth. For instance, ozone in the atmosphere can severely harm plants’ lifecycles. Air quality is an especially important factor in urban edge agriculture, because of pollution from adjacent metropolitan and residential areas. Agricultural operations also emit substances into the air that can be detrimental to plant growth, as well as human health.

Regulatory Agencies
California Air Resources Board: http://www.arb.ca.gov/homepage.htm
Appendix B. USDA Farmer Definitions

Farmers are broadly divided into two main groups: beginning farmers and experienced farmers. These categories can be defined and further divided into smaller categories, as shown below.

**Experienced Farmer:** has operated a farm for more than ten years. This category makes up the great majority of California farmers.

**Beginning Farmer:** has operated a farm for ten years or less.

**Small Farmer**
Operates a farm defined as a small farm (see above definition).

**New Farmer**
There is a wide range of farmer types that are referred to collectively as new farmers:

*Start-ups* have been farming for three years or less.

*Re-strategizing* farmers, typically in their fourth to seventh years, are making adjustments to their farming enterprises. These include changes in farm size, crops, enterprise type, market outlet, and land tenure.

*Establishing farmers* are stabilizing their farm enterprise in years, eight to ten, of the beginning farmer phase.

*Young farmer:* under the age of 35.

*Next-generation farmer:* a young person who will be in the next generation of farmers. Sometimes – but not always -- the term specifically refers to the next generation of the family to take over an existing farm.

*Prospective farmer:* has not yet begun to farm. These fall into three phases:

**Other Classifications:**

*Underserved Farmer*
Women, limited resource, socially disadvantaged, other farmers and ranchers traditionally without access to the benefits of government agriculture programs.
**Socially Disadvantaged Farmer**
A farmer who is part of a group whose members have been subjected to racial or ethnic prejudices because of their identity as members of the group without regard to their individual qualities. Socially disadvantaged groups include, but are not limited to, African Americans, Native Americans, Alaskan Natives, Hispanics, Asians, and Pacific Islanders.

**Limited Resource Farmer**
A person with: (1) Direct or indirect gross farm sales of not more than $100,000 in each of the previous two years; and (2) a total household income at or below the national poverty level for a family of four, or less than 50% of the county median household income in each of the previous two years.

**Immigrant/Refugee Farmer**
An immigrant or refugee from another country who has become or who aspires to become a farmer

**Hobby/Lifestyle Farmer**
A farmer earning less than half their income from their farm, and who have that farm for recreation or investment purposes
Appendix C. Garden Types and Specifications

COMMUNITY GARDENS

Definition
A community garden is a garden owned usually by a city or county agency or by a private landowner, and operated by a neighborhood collective or non-profit that leases small parcels of the garden to community members, for them to plant and harvest.

Regulatory Agencies

Landowner: The regulatory agencies involved in community gardens vary according to the entity that owns the garden.

Local water agency: This agency will need to be contacted to find out whether the parcel has an already existing water source, and whether it needs a meter or a line installed.

Local Natural Resource Conservation District: This agency will be able to direct new community gardens to labs where they can get their soil tested.

Municipal Parks and Recreation Department. Many cities have programs in their Parks and Recreation Departments specifically focused on community gardens. These can be useful resources and may set guidelines and requirements for establishing and supporting a garden.

Standard Operations

Governance
Some community gardens are independent entities, such as neighborhood associations or independent nonprofit organizations. In other cases, a city or region may have a community garden program that oversees all community gardens in the area and may provide start-up funding and support services.

Land
As stated above, community garden sites are usually owned by a public agency or a private landowner, or occasionally are owned by a nonprofit entity. In cases where an organization or association uses a privately owned vacant lot, they usually work out 3 year leases with the landowner for approximately nominal rent (e.g. $1/year). Since community gardens are a
neighborhood amenity, landowners are often willing to let their sites be used essentially for free, as long as they are not subject to liability.

**Annual fees**
For most community gardens in California, annual fees for plot holders range between $10–$175 per year, with variations depending on plot sizes, neighborhoods of differing income levels, and discounted rates for specific groups, such as seniors. In addition to this annual fee, garden members often are required to donate a minimum number of volunteer hours to the garden each year.

**Member commitment**
Gardens usually have rules for its members. These might include commitments to:
- Plant something in their plot by a certain date
- Keep weeds to a minimum
- Maintain cleanliness of plot – no litter
- Refrain from using certain chemicals or pesticides
- Refrain from bringing pets to their plot
- Refrain from planting high plants that will shade other plots

**Design**
Community gardens typically include a central area with a rain-protected bulletin board for garden members to communicate, a storage area for tools and equipment, a picnic table where gardeners can relax, and a compost area. They generally have fences around them, at least 8' high and a drive through gate. In addition to the normal community member plots, some gardens also have children’s areas where kids can play and grow things, art installations, and small community gathering places.

**Plot size**
Community gardens can include ground plots and raised-bed plots. Raised bed parcels are generally no wider than 4' and range in length from 8–12'. Most often, ground parcel sizes range from 100–400 SF. Walkways between parcels range between 3–4'.

**Irrigation**
A simple irrigation system is necessary for a community garden. A system with one hose bib or faucet for every four plots is a good option. Hand watering with a hose is the most practical and affordable for individual plots. Drip and soaker-hose irrigation can be used in
all areas of the garden for transplanted and established plants, but especially for deep-rooted fruit trees and ornamentals.

**Insurance**
Most community gardens include a hold harmless clause in their lease so as not to hold the landowner responsible for any injuries that might occur onsite. Similarly, a hold harmless clause is usually included in the agreements signed by garden members upon joining. Some landowners also require that gardens obtain liability insurance.

- **Resources:** American Community Gardening Association

### DEMONSTRATION GARDENS

**Definition**
A demonstration garden is a garden used by a public agency, a university, or a private company to demonstrate different methods of gardening, sustainable growing practices, different plant materials, and different varieties of plants.

**Regulatory Agencies**
- **Landowner:** The regulatory agencies involved in community gardens vary according to the entity that owns the garden.

- **Local water agency:** This agency will need to be contacted to find out whether the parcel has an already existing water source, and whether it needs a meter or a line installed.

- **Local Natural Resource Conservation District:** This agency will be able to direct new community gardens to labs where they can get their soil tested.

**Standard Operations**

- **Focus**
 Most demonstration gardens have one specific area of focus. This can be growing practices such as permaculture techniques, organic growing, composting, and drought-resistant irrigation; plants that grow well under specific climatic conditions; plants with a variety of form, shape and color;

- **Irrigation**
 Depending on the specific garden focus, most demonstration gardens have at least a simple irrigation system
Signage
Self-guided tours are the most common form of education at demonstration gardens. Therefore, it is important that the plants and growing practices being showcased at the garden are well-labeled with informative and durable signs.

Tours
Many demonstration gardens also offer guided tours, often for a small fee ($3–6)

Fee
Most demonstration gardens are open to the public for no admission fee.

SCHOOL GARDENS
Definition
Gardens located at or near a school and utilized by its teachers as an outdoor classroom to teach students about horticulture, nutrition, and agriculture.

Regulatory Agencies
Board of Education, School Board, Department of Public Health

Standard Operations
Scope
There is a wide range of levels of involvement between schools and school gardens. Many schools have small, simple gardens on-site where students can learn about soil, botany, biology, natural cycles, and basic gardening principles. Gardens are most often correlated with science curriculum, but also are used to teach math, history, social studies, and language arts. Some schools further integrate the garden into school life by establishing a school lunch program where food from the garden is used to prepare lunchtime cafeteria food. Sometimes schools also establish cooking programs, so that the students cook the food, in addition to planting and harvesting the garden.

Location
Most often school gardens are located on the school campus. However, occasionally schools do travel short distances off-site to work in nearby gardens.
Size
School gardens range in size from 1/8 acre–2 acres.

Design
School gardens should include a central meeting area where classes can gather to receive instructions or discuss what they’ve discovered and learned. This area ideally has a bulletin board, benches, tables, and shade.

Signage
School gardens should label all plants so that students can identify them. This enables the garden to be an educational place for community members in addition to students.

➢ Resources: California Department of Education, School Garden Program

JOB TRAINING GARDENS
Definition
Also known as Economic Development Gardens, these gardens offer job training and employment opportunities to underserved groups. Participants gain practical skills for future employment and also often gain personal satisfaction if they have not had prior exposure to gardening.

Agencies
There are no regulatory agencies. However, the following agencies offer funding for such projects:
US Department of Education
US Department of Minority Health
California Adolescent Nutrition and Fitness (CALFit)

Standard Operations
Focus
Usually focus on one specific group, such as: youth from low-income families, at-risk youth, specific minority groups, and former prisoners.

Marketing
Often these programs have marketing programs. These could be a CSA program to which nearby community members subscribe, a weekly or biweekly farm-stand on-site, or a booth
at a local farmers’ market. These marketing programs raise money for the garden programs as well as adding business skills to the training for participants.

**Outreach**
Job training gardens often have partnerships with local schools or jails. The garden programs make periodic visits to the institutions to make presentations about their program, and the institution keeps the program in mind as a possibility for its students or inmates.

**RESEARCH GARDENS**
**Definition**
A garden used by agricultural institutions, universities, and private companies to conduct research.

**Standard Operations**
**Location**
Research gardens are often located offsite

**Tours**
Often these gardens offer tours to school and other groups, usually by appointment only

**BOTANICAL GARDENS**
**Definition**
Gardens holding documented collections of living plants for the purposes of scientific research, conservation, display and education.

**Standard Operations**
**Governance**
Usually operated by a university or major cultural institution. Establishment of a botanical garden is an involved process, and requires significantly more time and resources than other garden types discussed.

**Size** – Range from 25 acres to thousands of acres.

**Tours** – Usually offer school group tours as well as individual drop-in tours. Often there are tours with different themes offered.

**Classes**
Often offer classes and workshops for youth and adults on gardening, nutrition, botany, and other subjects.
Appendix D. Tools for Agricultural Mitigation

Tools for Agricultural Mitigation

A Beginning Toolbox

Kathryn Lyddan, Brentwood Agricultural Land Trust (BALT)

November 2005

The following tools are being used by local governments (cities, counties, LAFCO) to mitigate the conversion of agricultural land to urban uses:

**Agricultural conservation easements provided by applicant.** An effective approach is to require that development applicants mitigate the conversion of agricultural land to urban uses by providing agricultural conservation easements to a qualified land trust or public entity. This tool has been been used very successfully in Livermore and other California jurisdictions.

- **Location of easements.** This tool is most effective if the public entity establishes a strategic zone that creates a boundary between urban and agricultural uses, and requires that the mitigation easements be acquired in that zone. The South Livermore Specific Plan established certain zones in which the developer must acquire agricultural easements prior to receiving development approvals. Many programs also specify that the easements be recorded on farmland that is of comparable quality to the land that is being converted.

- **Amount of easements.** Studies show that programs that require one acre preserved for one acre converted do not adequately mitigate for the loss of agricultural land. Local governments can more completely mitigate for the loss of prime farmland by requiring two acres of easements for each acre of agricultural land converted. This approach is used by the City of Davis. All jurisdictions require that the applicant provide stewardship funds to the acquiring entity to cover the cost of monitoring and defending the easement (against legal challenge) in perpetuity.

- **Planting requirement.** Some jurisdictions, like Livermore, require that development applicants provide agricultural easements on cultivated land. In the South Livermore Specific Plan, developers are required to (i) plant mitigation easement land with grapes, olives or almonds, and (ii) provide a bond or letter of credit to secure that the property remain in cultivation for eight years. Livermore has substantially rebuilt its wine industry through this program,
resulting in the Tri-Valley Conservancy acquiring easements on 3150 acres of mitigation wine grape vines.

- Procedure for acquiring easements. Mitigation easements should contain language and be processed pursuant to procedures agreed upon by the acquiring land trust and/or public entity.

**Developer fees.** Local governments can levy a developer fee (AB 1600) on applicants to mitigation for the loss of agricultural land. The fees are deposited with either a qualified land trust or a public entity, and are used to acquire easements or fee simple interests in comparable agricultural land. Any fees imposed should be based on a calculation of what easements will cost that is updated annually, plus transaction costs and stewardship funds. As stated above, studies show that fees based on one acre preserved for one acre converted do not provide adequate mitigation.

The City of Brentwood currently levies a fee of $5,500 for each acre converted to urban uses. The fee was calculated in 2001 (based on a one-to-one mitigation ratio), and does not accurately reflect the cost of acquiring conservation easements in East Contra Costa County where agricultural land costs have been rising at a rate of 25% a year. The experience of the Brentwood Agricultural Land Trust over the past two years indicates that, in the current political and economic climate in East Contra Costa County, farmers are unwilling to sell conservation easements. Consequently, to date, fees have not provided adequate, achievable mitigation for the conversion of agricultural land in Contra Costa County to urban uses.

**Establishment of a “greenbelt” or agricultural buffer** separating urban uses from agricultural uses. Public entities can create a green belt or agricultural buffer that permanently separates urban uses from prime farmland. The green belt is an area of land separating city boundaries from adjacent farmland. No development or public services (i.e. water, sewer, and utilities) can be located in the green belt, which is dedicated in fee to a qualified land trust or public entity. To create an effective permanent boundary, the local government should prohibit the construction of public services through the green belt to avoid “leap frog” development into agricultural areas. In addition to creating permanent boundaries that protect the future of valuable agricultural land, green belts can serve as agricultural buffers to mitigate the conflicts that can occur between residential uses and agricultural operations.

**Assessment district for ongoing conservation and stewardship.** Local governments could require that the applicant create an assessment district on the land to be converted to urban use. The assessment district would levy an annual assessment on future homeowners and
businesses to fund stewardship and the acquisition of easements. The use of assessments for easement acquisitions has the same drawbacks as set forth in the section on developer fees.

**Conveyance Fees.** Some California jurisdictions (i.e. Placer County) have established conveyance fee programs to fund conservation. In Placer County, .05% conveyance fee is added to the sales price of homes in the development for each resale of the homes during the next twenty years. The conveyance fee proceeds are paid directly to the Placer Land Trust, which uses the funds to acquire and steward conservation easements.

**Use of TAC for new development.** The City of Brentwood has created a transferable agricultural credit program that allows developers to obtain significant development benefits in exchange for conserving agricultural land in a zone to the south of the City. The developer can purchase “TAC credits” from agricultural property owners who permanent preserve their property through conservation easements. Under the current program, developers can use the TAC credits to obtain additional points in the City’s Residential Growth Management Program or received approval for higher than mid-range density in their projects within the City. The City could require that applicants provide the City with TAC credits as a condition for obtaining development approvals, even for projects that do not seek higher density.
Appendix E. Funding Sources for AgParks Components

(Adapted from the Urban Edge Agricultural Parks Feasibility Study, produced by SAGE in 2004 and available as a PDF file on the SAGE website.)

In addition to the examples of funding identified in the case studies, there are a host of mechanisms that may be tapped to support one or more aspects of the AgPark concept. These are all summarized below, including innovative private sector real estate development, public support for farm worker housing, farmland preservation, and farmer training and assistance, and finally non-profit and philanthropic support for program development in a variety of areas intersecting in the AgPark concept presented in this study.

Private Sector Sources

One innovative approach to financing and preserving small farms, pioneered by the QROE example, involves a private entrepreneur with real estate development goals collaborating with existing farmers to preserve farming activities and open space. This concept is built on the premise that homebuyers will purchase homes or lots with the nearby amenity of active farming, much like the proven amenity of open space. The developer purchases existing farms, but provides for permanent farming activity through a Right to Farm agreement with the existing farmer. Then, the developer permits and constructs single family homes and/or townhouses surrounding the farm, and markets the lots or units to affluent buyers interested in the farm or open space amenity and willing to pay a premium for the property. In addition, in the QROE example, the developer has created an ongoing operating subsidy source for the farmer, to ensure that normal business cycles do not threaten this important development amenity. This operating subsidy is provided by the homebuyers, who agree to fund an emergency operating fund in the event the farmer has a low-revenue year.

This type of funding source demonstrates creative use of the combined value of farming, open space, and homesite development in semi-rural, urban edge settings. Demographic trends and real estate research indicate that this approach may have wide applicability to AgPark concepts, because a segment of homebuyers seek this type of amenity and value its scarcity. As baby boomers continue to age, it is likely that this approach, combining an interest in the environment with a lifestyle choice, could experience strong market demand in select locations near urban areas.
Another variation of this approach, which has been used in parts of the suburban Bay Area with grape production opportunities, is illustrated by the Ruby Hills subdivision in Livermore, as well as in the planned Vineyard Avenue Specific Plan area in Pleasanton. In these cases, the housing is developed on relatively large individual lots, and includes small vineyards with each homesite. This concept is less production-oriented, but instead based on the appeal of private property owners to live as small vineyard owners.

In another variation, Wente Vineyards grows the grapes on 2,000 acres in the Livermore Valley spread across 11 parcels of 5 to 166 acres each, under conservation easements held by the Tri-Valley Conservancy.

In summary, the concept of transferring the value achieved by offering agricultural proximity as a homesite amenity, may have substantial potential to fund AgPark concepts. This approach would likely require attractive, appealing locations near urban areas, with scenery or the appeal of a specific popular crop such as grapes or specialty crops to attract buyers and obtain a sufficient land value premium for the arrangement. It is likely that this approach could also be combined with second home developments, and/or the tourist villa concept exemplified by the La Foce example in Tuscany. Land uses, site design, environmental preservation, and the logistics of operating a farm adjacent to homesites would all need to be carefully planned and managed.

Another variation of the concept of supporting farming through private funding of ancillary activities is to manage land resources like the National Trust in the UK, where estates are donated to the organization and managed to maximize revenue through vacation rentals, while offering leases to farmers at below-market rents. However, it should be noted that this model presents several challenges, including struggles to maintain financial viability within the organization (addressed through major public donations), and the ongoing challenge of tenant farmers to maintain viable agricultural operations even with below-market lease payments.

However, as demonstrated by La Foce in Italy and the Purple Orchid in Livermore, agricultural tourism may be a viable income source in regional networks. Other examples include eco-villages such as Findhorn in Scotland, where cooperative ownership relies on tourism to support organic farming.
Public Support for Farmland Preservation

Public support for farmland preservation has typically relied on conservation easements to preserve privately held properties in perpetuity rather than public purchases of farmlands for active management. Bonds have been used to fund easement acquisition locally and at the State level. Further, local development fees have been used to acquire easements and the transfer of development rights, allowing easements to be placed on properties at fair market value paid by willing developers. These easements typically allow for passive land management with little requirement for public access or environmentally sensitive stewardship.

However, should incentives, program funding and/or negotiated public access be able to be linked with funding for easements, sources supporting easements may present a well-established pool of funds to realize the AgPark vision. For example, easements might be appropriate on sites adjacent to farmworker housing or an incubator separately funded but supported by proximity and access to permanently protected farmlands.

Example sources of federal, state and local level sources of such funding are summarized below.

The federal Farm & Ranch Lands Protection Program provides funds to help purchase development rights to keep productive farmland in agricultural uses. Working through existing programs, USDA joins with state, tribal, or local governments to acquire conservation easements or other interests from landowners, providing up to 50 percent of the fair market easement value. To qualify, farmland must: be part of a pending offer from a State, tribe, or local farmland protection program; be privately owned; have a conservation plan; be large enough to sustain agricultural production; be accessible to markets for what the land produces; have adequate infrastructure and agricultural support services; and have surrounding parcels of land that can support long-term agricultural production.

Providing a source for matching dollars to USDA, the California Farmland Conservancy Program (CFCP) is a voluntary program that seeks to encourage the long-term, private stewardship of agricultural lands through the use of agricultural conservation easements. The CFCP provides grant funding for projects which use and support agricultural conservation easements for protection of agricultural lands.
In California, the passage of Proposition 40 made $75 million available for farmland, rangeland, and oak woodland conservation. CFCP will directly administer a portion of these funds. Additional funding may come from donations, gifts, federal grants or loans, or other sources. CFCP currently administers bond funds remaining from Proposition 12 (which passed in 2000). The state budget allocates $10 million to CFCP for the current (2003–04) fiscal year.

Further, a variety of local measures have been used throughout the Bay Area to protect open space, inclusive of farmland (rarely exclusively of other open space) including:

- Measure AA (Alameda and Contra Costa)
- Property tax increment (Marin)
- Open space district with taxation (San Mateo, Santa Clara)
- Open space bond (San Mateo)
- Sales tax (Sonoma)
- Landfill tipping fee (Alameda)

While a number of these, such as Measure AA and San Mateo’s bond measure have or will shortly have spent all funds, new sources are being explored in jurisdictions throughout the Bay Area, with Solano and Contra Costa counties specifically developing new funding streams.

The City of Brentwood in Contra Costa County provides an example of strategies for extending conservation easements on to existing farmlands:

- **Brentwood Agricultural Mitigation Fee** – An existing development fee on all new construction in Brentwood has generated $7 million to date and anticipated to generate $10 million with fee potentially to be reviewed for an increase. A local non-profit land trust has been initiated to utilize the funds for acquisition of easement rights. Additionally, under a local Transfer of Agricultural Credits (TAC) program, developers may purchase development rights on farmlands at a negotiated price, for the local Trust to the hold in perpetuity in order to secure additional development rights on an eligible development site.

- **Proposed County Open Space Protection and Enhancement Funding Measure** – of $130 million in acquisition funds for variety of open space priorities this prospective bond measure for Contra Costa County earmarks $5 million for Brentwood agricultural land
preservation. Another $65 million for maintenance and operations is scheduled for all land types. (failed)

Further, non-profit intermediaries fund easements as well as provide technical support for implementing the strategy. The Great Valley Center’s Agricultural Transaction Program (ATP) provides assistance to permanently protect farmland in the Central Valley, with a specific focus on Yolo, Stanislaus and Merced counties. The three counties are able to access the ATP funds for conservation-related transactions. Transaction types will include, but not be limited to, easements, fee title purchase and resale, purchase options on land and purchase of subdivision map entitlements. The ATP will grant up to 50 percent of the cash portion of transactions. Successes of these three counties will create new models for agricultural land conservation, and will encourage creative efforts elsewhere. Great Valley Center provided funding from its “LEGACI” (Land Use, Environment, Growth, Agriculture, Conservation and Investment) grant program to partially fund a project that will produce a guidebook and series of seminars on farmland protection.

Other examples of this approach include the California Coastal Conservancy, which works in California’s coastal zone; the Wildlife Conservation Board’s land acquisition program, which includes funding for conservation easements; and the Packard Foundation’s funding in certain parts of the state for agricultural conservation easements, through its Conserving California Landscapes Initiative.

In general, when land is donated or purchased outright, rather than controlled through easement, resulting site control increases the ability to generate substantive public education and access as well as direct environmental stewardship. For example, while the American Farmland Trust typically purchases easements, an outright purchase of a 40-acre parcel outside of Fresno allowed for a partnership with a local non-profit and the UC Extension to offer farm training and access to low cost land to limited-resource farmers.

Other Sources of Public Funding for Farmland Conservation

- **Conservation of Private Grazing Land Assistance:** USDA provides technical, educational and related assistance to owners of private grazing lands. The technical assistance helps to offer opportunities for better grazing land management, protecting soil and water quality, and improving wildlife habitat.

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16 Taken from Conservation Incentives Available in California, from Wild Farm Alliance
- Environmental Protection Agency – Agriculture Initiative: provides funding to support the implementation of environmentally sound, economically viable, and socially responsible sustainable agriculture systems. The Agricultural Initiative in California focuses on the Central Valley. It provides grants targeted at pollution prevention systems such as biologically Integrated Farming Systems (BIFS) the development of sustainable and organic cotton farming. It also provides educational information concerning regulatory issues, human health concerns and policy innovations. In 2002, the Agricultural Initiative provided $200,000 in competitive grants for projects that demonstrate innovative pest management strategies.

- California Department of Conservation – Williamson Act: enables landowners to receive a lower property tax assessment for agricultural lands. Landowners can enroll agricultural land in the program by entering a ten–year contract in which they agree not to develop the land. In exchange, the land is assessed at its agricultural use value rather than its potential development value. This can save landowners 20–75 percent in property tax liability each year. The Farmland Security Zone (FSZ) Act, also known as the "Super Williamson Act," is a twenty–year contract in which landowners can receive an additional 35 percent reduction in the land's value for tax purposes. Counties are partially reimbursed by the state for lost property tax revenues through the Williamson Act Subvention Fund.

- California Department of Water Resources – Flood Protection Corridor Program: provides funds for public agencies and non–profits to acquire easements or land for flood control, preservation of agricultural land and wildlife habitat protection. Private landowners could access this funding for watershed projects through participation in their RCD or other local organizations. This funding comes through the 2000 Water Bond (Proposition 13) passed by California’s voters.

- Wildlife Conservation Board – Natural Heritage Preservation Tax Credit Program: Through the recently enacted Natural Heritage Preservation Tax Credit Act, landowners are entitled to tax credits of an amount equal to 55 percent of the fair market value for any property rights donated to government agencies or qualified non–profit organizations. The program provides an incentive for landowners to donate their land (or easements on their property) for the benefit of natural resources. To qualify, properties must help meet the goals of an existing conservation plan, provide habitat that will improve the recovery potential for threatened or endangered species, permanently protect agricultural land, be a water right, or be used for a park or open space for the general public.
- Conservation Security Program: this program offers three tiers of “green payments” that financially reward farmers and ranchers for good environmental stewardship. Payments are based on the number and type of conservation practices that are implemented on a farm or ranch. The maximum payment for Tier I practices is $20,000 annually, Tier II is $35,000 and Tier III is $45,000.

- Environmental Quality Incentives Program (EQIP): provides technical, educational, and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. Participants prepare conservation plans and enter 5-10 year contracts to implement the plans. The 2002 farm bill increased annual funding for EQIP to $200 million in 2002, $700 million in 2003 and over $1 billion thereafter.

- Resource Conservation and Development Program (RC&D): part of the USDA’s Rural Development branch. The RC&D program is designed to improve the capability of state and local government to plan, develop, and carry out resource conservation programs. Through the program, USDA provides grants for land conservation, community development and environmental protection.

Affordable Rural Housing Grant and Loan Programs

Farmworker housing has typically been unbuildable on land under easements, making the linkage of farmworker housing to permanent farmland protection practically non-existent nationally. However, the need for such housing – at subsidized rents or purchase prices – to support continued agricultural production was the most important finding of the survey of farmers identified by ALBA. Further, advocates for farm worker housing face continual opposition to their projects – either on the grounds that local housing will eliminate prime agricultural lands or that the design and population of such housing is locally undesirable. Well-designed AgParks could address concerns about appropriately placed housing while at the same time tapping multiple well established funding streams for farm worker housing and associated land and utilities.

Mercy Housing, a national non-profit affordable housing organization, develops and operates affordable housing with supportive services. Staff in Northern California are pursuing an innovative strategy to locate farmworker housing on farmland protected by the California Williamson Act (contracts between landholders and the State, for up to 10 years, in which the farmer commits to farming the land and the State allows for property tax reductions). Mercy Housing is trying to use a little known, recent amendment to the Williamson Act that allows
for farmworker housing development\textsuperscript{17}, but has not achieved entitlement approvals to date. However, Mercy staff anticipate implementing the strategy on an appropriate site, and expect that funding from sources such as USDA (for affordable housing as well as utilities such as sewage treatment systems) could be readily funded.

The U.S. Department of Agriculture (USDA) operates several housing programs that provide financial and technical assistance to farmworkers and other low-income households in rural areas. These programs, while not directly aimed at agricultural production, nevertheless finance housing, land acquisition, and utility development, all key pieces of the AgPark concept. Types of USDA housing support include:

\begin{itemize}
  \item Section 502 – rural housing mortgages to promote home ownership,
  \item Section 514–516 – Multi-family housing production programs, farm labor housing
  \item Section 515 – rural rental housing
  \item Section 504 – repair program, housing rehabilitation programs
  \item Section 533 – housing preservation
\end{itemize}

Additionally, federal Low Income Housing Tax Credits, as administered by the California Tax Credit Allocation Committee (TCAC), provide financing for the development of affordable housing throughout California, including a set aside of tax credits for farmworker housing. This is an ongoing financing source, reauthorized periodically by the federal government.

Finally, at the state level, the Joe Serna Jr. Farmworker Housing Grant Program supports new construction, rehabilitation and acquisition of farmworker housing, either owner-occupied or rental, with priority for low-income households. As of October 2003, this program had received $108 million from Proposition 46 (administered by the State Housing and Community Development). Further, funds from Prop 46 were provided for JSJ Migrant Housing and JSJ Housing with Health Services with a combined allocation of $45 million.

\textit{Other Farmworker Housing programs:}

\begin{itemize}
  \item Home Investment Partnership Program (HOME)
  \item State Community Development Block Grants (CDBGs)
  \item Farm Labor Housing Loan and Grant Program
  \item State Tax Credit Allocation Commission
  \item Self-Help Enterprises
\end{itemize}

\textsuperscript{17} The amendments to the Williamson Act specifically require lands be adjacent to urban areas to allow the development of housing for farmworkers on the otherwise contractually undevelopable lands, making the tool a unique fit with the vision for the AgPark.
Direct Farmer Assistance

In order to support agriculture at the urban edge, it is likely that various forms of direct farmer assistance will be needed, such as training for new immigrants, organic production methods, adoption of new technologies, joint marketing, or financial/technical support to farmers unable to make an operating profit.

This type of support, which goes beyond the passive nature of an easement agreement, has generally been funded by philanthropic interests. Additionally, in-kind technical support is given through public organizations such as the UC Cooperative Extension and Sustainable Agriculture Research and Education Program.

The USDA Farm Service Agency’s New Entry Sustainable Farming Project (NESFP) highlights a geographically specific effort for direct assistance with key linkages between land, new farmers, and marketing. The USDA developed a comprehensive strategy with a wide range of partners including Tufts University, USDA FSA, University of Massachusetts Extension, Massachusetts Department of Food and Agriculture, USDA NRCS, and several community groups and local farmers. The initiative drew on the available programs and resources of these institutions in order to provide beginning farmers with full access to information and assistance to help them succeed in small-scale commercial agriculture. Created as a "mentor farm" program, established farmers provided access to land for program participants, assisted with land preparation, and gave on-site technical assistance. After working on a mentor farm site, new farmers were offered opportunities to move onto larger independent parcels of land in the area as identified by USDA. The Project also linked large immigrant communities in urban areas to consumer preferences for "specialty" crops with high values such as pea tendrils, encouraging farmers’ markets and retail grocery stores to sell the fresh, high quality products. The Project organized training and technical assistance for new farmers to address important issues such as production, pesticide use, farm safety, finances, recordkeeping, and marketing. Increasingly the project is emphasizing marketing- oriented strategies as central to successful farming strategies for project participants.

Locally, the Funders for Sustainable Food Systems (FSFS) have a vision of California as the leader and model state developing sustainable food systems. FSFS works toward this vision by raising funder awareness about the critical need for and the multiple problem areas addressed by sustainable food systems. Areas such as public health, environmental degradation, labor rights, marine ecosystems, animal welfare, and food security are linked to the way food is grown, distributed, and consumed in California. Participating grantmakers include:
• Arkay Foundation
• Columbia Foundation
• Gaia Fund
• Fred Gellert Family Foundation
• Richard and Rhoda Goldman Fund
• Clarence E. Heller Charitable Foundation
• Homeland Foundation
• W.K. Kellogg Foundation
• William Zimmerman Foundation
• Coastal Conservancy
• Rural Development Corporation
• American Farmland Trust
• California Rangeland Trust
• Conserving California Landscapes Initiative Resource Legacy Fund
Appendix F. Resources

The following agencies, publications, and organizations are useful in planning an AgPark.

**Regulatory Agencies**

- California Air Resources Board: [http://www.arb.ca.gov/homepage.htm](http://www.arb.ca.gov/homepage.htm)
- California Department of Food and Agriculture (CDFA)
  - CDFA Market Enforcement Branch:
  - CDFA Marketing Branch
  - CDFA CA Organic Program
- California Department of Water Resources: [http://wwwdwr.water.ca.gov/](http://wwwdwr.water.ca.gov/)
- California Irrigation Management Information System (CIMIS) [http://www.cimis.water.ca.gov/cimis/welcome.jsp](http://www.cimis.water.ca.gov/cimis/welcome.jsp)
- California Resources Agency: [http://resources.ca.gov/](http://resources.ca.gov/)
- California Uniform Retail Food Facilities Law (CURFFL)
- Colorado River Board: [http://crb.ca.gov/](http://crb.ca.gov/)
- Regional water districts: [http://www.water.ca.gov/agencies.cfm](http://www.water.ca.gov/agencies.cfm) (List of districts)
- State Water Resources Control Board: [http://www.waterboards.ca.gov/](http://www.waterboards.ca.gov/)
- The Reclamation Board: [http://recbd.ca.gov/](http://recbd.ca.gov/)
- USDA SARE
Real World Examples
4H Santa Clara County
http://clubs.ca4h.org/santaclara/

Alameda County Water District Drought Resistant Demonstration Garden
http://www.acwd.org/waterconserv-garden.html

Agriculture and Land–Based Training Program (ALBA)*
http://www.albafarmers.org/

Appalachian Center for Economic Networks
http://www.acenetworks.org/frames/framesfoodventures.htm

Ardenwood Historic Farm
http://www.ebparks.org/parks/arden.htm

Bon Appetit Management Company
http://www.bamco.com/

Berkeley EcoHouse Permaculture Garden
http://www.ecohouse.org/ecohouse.html

Berkeley Youth Alternatives
http://www.byaonline.org/

California FarmLink*
http://www.californiafarmlink.org/

Deer Hollow
http://www.fodhf.org/

Earthbound Farm Organic Kitchen and Café

Edible Schoolyard
http://www.edibleschoolyard.org/

Fairview Gardens
http://www.fairviewgardens.org/

Fetzer Vineyards Organic Demonstration Gardens

Foster Ranch
http://www.pinnacleorganic.com/

Full Belly Farm
http://www.fullbellyfarm.com/

Gizdich Ranch
http://www.gizdich-ranch.com/

Harley Goat Dairy
http://www.harleyfarms.com/

Hawaii Dept. of Ag
http://www.hawaiiad.org/hdoa/arm_agparks_info.htm

Intervale
http://www.intervale.com

Live Power Community Farm
http://www.covelo.net/agriculture/farm/pages/farms_lpf.shtml

Marin Organic
www.marinorganic.org

Oakland Bay–Friendly Demonstration Garden
http://www.stopwaste.org/home/index.asp?page=161

Philo Apple Farm
www.philoapplefarm.com

Sonoma County Agricultural Preservation and Open Space District
www.sonomacounty.org/opensp/preservation/smallfarms.asp

* Askterisked organizations could be helpful in locating potential AgPark farmers.
Publications

*Agritourism and Nature in California: A How-To Manual for Farmers and Ranchers*
University of California, Division and Agriculture and Natural Resources, 2002

*Building Better Rural Places: Federal Programs for Sustainable Agriculture, Forestry, Entrepreneurship, Conservation, and Community Development*
USDA, The Michael Fields Agricultural Institute, and the National Center for Appropriate Technology, 2004

*2004–2005 California Agricultural Directory*
California Farm Bureau Federation, 2004

*California Agriculture: Dimensions and Issues*
UC Giannini Foundation of Agricultural Economics, Division of Agriculture and Natural Resources, 2003

*County Wide Trails Master Plan, Santa Clara County*

*Coyote Valley Greenbelt Research Report*

*Critique Checklist for a Roadside Market*
http://agmarketing.extension.psu.edu/Retail/chklistRdSideMkt.html

*Direct Marketing of Farm Produce and Home Goods*
http://cecommerce.uwex.edu/pdfs/A3602.PDF

*Establishing a Shared Use Kitchen*
Cameron Wold

*Farmland Protection Action Guide*
Institute for Local Self-Government, 2002

*The Feasibility of Maintaining & Enhancing Agriculture in Santa Clara County AgInnovations Network, October 2001*
Feasibility Study for Urban Edge Agricultural Parks
Produced by Sustainable Agriculture Education 2004
http://www.sagecenter.org/AgParks%20BW%202.21.05_complete.PDF

Hedgerows for California Agriculture: A Resource Guide
Community Alliance with Family Farmers, 2004

How to Establish and Operate a Roadside Stand
http://www.sfc.ucdavis.edu/Pubs/Family_Farm_Series/Marketing/roadside.html#planning

Making San Francisco a Market City Farmers’ Market Resource Kit
http://www.sagecenter.org/Resource%20Kit%20%206.1.05.PDF

MetroFarm: The Guide to Growing for Big Profit on a Small Parcel of Land
Michael Olsen, 1994, TS Books

Small Farm Handbook
University of California, Division and Agriculture and Natural Resources, 2002

2005 Trends in Agricultural Land and Lease Values
California Chapter of the American Society of Farm Managers and Rural Appraisers, 2005

Western Profiles of Innovative Agricultural Marketing: Examples from Direct Farm Marketing and Agri-Tourism Enterprises
University of Arizona Cooperative Extension, 2003

Working Landscape Plan
Tri-Valley Business Council– Agriculture Water Taskforce, Working Draft, January 2005
Other Organizations
Agtourism Workgroup
http://groups.ucanr.org/Ag_Tour/

American Community Gardening Association
http://www.communitygarden.org/

American Grassfed Association
http://www.americangrassfed.org/

Brentwood Ag. Land Trust (BALT)
http://www.brentwoodaglandtrust.org/

Community Alliance with Family Farmers19
http://www.caff.org/

Cal Poly Organic Farm Internship*
http://www.calpoly.edu/~sarc/staff.htm

California Farm Bureau*
http://www.cfbf.com/

Capay Valley Vision
www.capayvalleyvision.org

Center for Urban Education about Sustainable Agriculture
www.cuesa.org

California Certified Organic Farmers*
http://www.ccof.org/

Eco Farm
http://www.eco-farm.org/

Equity Trust
www.equitytrust.org

Great Valley Center
http://www.greatvalley.org/

Local Harvest
http://www.greatvalley.org/

As asterisked organizations could be helpful in locating potential AgPark farmers.
Marin Agricultural Land Trust (MALT)
www.malt.org

Occidental Arts and Ecology Center (OAEC) Internships*
http://www.oaec.org/OAEC_2Work.html

Peninsula Open Space Trust (POST)
www.openspacetrust.org

Small Farm Center*
http://www.sfc.ucdavis.edu/

Solano Land Trust
www.solanolandtrust.org

Sonoma County Agricultural Preservation and Open Space District
www.sonoma-county.org/opensp

Tri-Valley Conservancy
http://easement.addr.com/tvc/index.html

UC Davis Student Farm Internships*
http://studentfarm.ucdavis.edu/Internships/Default.htm

UC SAREP
http://www.sarep.ucdavis.edu/

UCSC Center for Agroecology and Sustainable Food Systems (CASFS) Apprenticeship*
http://zzyx.ucsc.edu/casfs/training/

University of California Cooperative Extension*
http://zzyx.ucsc.edu/casfs/training/

Wild Farm Alliance
http://wildfarmalliance.org/

Willing Workers on Organic Farms*
http://www.wwoof.org/